National Electric Power Regulatory Authority
Islamic Republic of Pakistan

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No. NEPRA/R/ADG(Trf)/TRF-575/HESCO-2022/8654-8656
June 2, 2022

Subject: **DETERMINATION OF THE AUTHORITY IN THE MATTER OF PETITION FILED BY HYDERABAD ELECTRIC SUPPLY COMPANY LTD. (HESCO) FOR THE DETERMINATION OF DISTRIBUTION TARIFF UNDER MYT REGIME FOR THE FY 2020-21 TO FY 2024-25**
[Case # NEPRA/TRF-575/HESCO-2022]

Dear Sir,

Please find enclosed herewith subject Determination of the Authority along with Annex-A, B , C & D and additional note of Engr. Rafique Ahmed Shaikh, Member NEPRA (81 Pages) in Case No. NEPRA/TRF-575/HESCO-2022.

2. The Decision 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-575/HESCO(Distribution) - 2022

DETERMINATION OF DISTRIBUTION TARIFF PETITION

FOR

HYDERABAD ELECTRIC SUPPLY COMPANY LIMITED (HESCO)

FOR THE FY 2020-21 – FY 2024-25

UNDER

NEPRA TARIFF (STANDARDS AND PROCEDURE) RULES - 1998

Islamabad

2-6, 2022

NEPRA AUTHORITY

NATIONAL ELECTRIC POWER REGULATORY 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
HESCO	Hyderabad 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

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

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

CASE NO. NEPRA/TRF-575/HESCO (Distribution) - 2022

PETITIONER

Hyderabad Electric Supply Company Limited (HESCO), HESCO Headquarters, WAPDA Complex, Hussainabad, Hyderabad.

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

COMMENTATOR
M/s Deodar PMCL (Jazz)

REPRESENTATION

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

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

1. Background

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

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

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

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

Description	Unit	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Investment	Mln Rs.	2,124	13,355	11,896	13,648	13,437
Units Received	GWh	5,574.64	5,878.41	6,198.73	6,536.50	6,892.68
Units Lost						
T&D Losses (%)		28.00%	27.14%	25.97%	24.78%	23.56%
Unit Delivered	GWh	4,013.74	4,283.01	4,588.92	4,916.76	5,268.77
O & M	Mln Rs.	12,063	14,452	15,489	16,557	1,765
Depriciation		1,342	1,487	1,628	1,747	1,863
Returrn on Asset Base(RORB)	Mln Rs.	2,959	3,657	4,876	6,092	7,381
Tax	Mln Rs.	152	180	195	211	228
Other Income	Mln Rs.	(1,444.64)	(1,467.26)	(1,442.71)	(1,451.54)	(1,453.83)
Distribution Margin	**Mln Rs.**	**15,071**	**18,309**	**20,745**	**23,155**	**25,675**
Net Average Sale Rate	**Rs./k Wh**	**3.75**	**4.28**	**4.52**	**4.71**	**4.87**

NEPRA AUTHORITY

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 initially scheduled on December 02, 2021, for which notice of admission / hearing along-with the title and brief description of the petition was published in newspapers on November 20, 2021 and also uploaded on NEPRA website; Individual notices were also issued to stakeholders/ interested parties. However, on the request of HESCO, the hearing was re-scheduled for December 16, 2021, for which notice of rescheduling was uploaded on NEPRA website on 27.11.2021.

3. **Issues of Hearing**

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

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

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

iii. Whether the projected energy purchases are justified?

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

v. Whether the projected O&M is justified?

vi. Whether the request of the petitioner for allowance for additional hiring and creation of new divisions/ sub-divisions is justified?

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

viii. Whether requested financial charges are justified?

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

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

xi. Whether HESCO 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.

xii. Whether HESCO 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.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

xiii. Whether HESCO 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?

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

xv. What is the load shedding criteria of HESCO to meet the load demand?

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

xvii. What are the remedial measures taken by HESCO 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?

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

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

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

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

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

xxiii. What are the remedial measures taken for the achievement of performance standards are as laid down in Performance Standards (Distribution) Rules 2005?

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

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

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

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

xxviii. Whether the indicated Capital Cost of Rs. 54,459 Million for next five years is justified?

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

xxx. 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 and M/s Telenor. Written comments also received from M/s Deodar PMCL (Jazz). A brief of the concerns raised in the IR/ comments is as under;

NEPRA AUTHORITY

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

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

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

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

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

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

4.5. 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.

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

5. **Whether the request of Petitioner to allow MYT for a period of five years is justified, considering the fact that distribution license is valid till April 2022?**

5.1. The Authority noted that the Petitioner has filed its MYT Petition for a period of five years i.e. FY 2020-21 to FY 2024-25, however, the Distribution license of the Petitioner is valid

NEPRA AUTHORITY
NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

only till 30.04.2022. In view thereof, the Authority decided to deliberate the matter during the hearing.

5.2. The Petitioner during the hearing submitted that HESCO is considered as a going concern, having natural monopoly over distribution system in its service jurisdiction and will continue its operations in the future. The company is in process of filing a request for renewal of its license within due course of time. The 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.

5.3. 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.

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

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

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

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

8. <u>Transfer the already collected provision of postretirement benefits into the fund by June 30, 2021.</u>

8.1. The Petitioner submitted during the hearing that it had complied with the directions of the Authority to the extent of creation of separate fund and also transferred a sum of Rs. 100 million in to the fund. However, keeping in view the recovery position of HESCO and the ensuing liquidity problems, HESCO has so far remained unable to fully comply with this direction of the Authority.

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

9. <u>Maintain a proper record of its assets by way of tagging each asset for its proper tracking</u>

9.1. The Petitioner submitted during the hearing that tenders were published in April 2020 in three newspapers, however, due to outbreak of Corona Virus across the globe and

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

subsequent lockdown the opening of the tender was temporarily postponed. Retendering was done in January 2021. Two firms submitted their proposals. After Bid evaluation both the participants were declared non responsive in August 2021. Further retendering is in process once again.

9.2. The Authority noted that despite repeated directions and lapse of significant time, the Petitioner has not been able to comply with the directions of the Authority. 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 complete tagging of its assets by December 31, 2022.

10. **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.**

10.1. 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.

10.2. 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.

10.3. The Petitioner during the hearing submitted that PEPCO Management Fee amounting to Rs.274.75 million has been booked by HESCO from the FY 2011-12 to 2019-20 as per the following detail:

Sr. No	Financial Year	Amount
1	2012	27,547,805
2	2013	19,579,744
3	2014	2,513,321
4	2015	966,672
5	2016	1,167,624
6	2017	875,088
7	2018	63,682,503
8	2019	57,796,069
9	2020	100,623,954
Total		274,752,780

10.4. Although the Petitioner has provided the detail of amount booked on account of PEPCO fee, however, the petitioner is directed to provide the detail of PEPCO fee claimed in tariff till June 30, 2021 with its subsequent tariff adjustment/indexation request.

11. **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.**

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

11.2. The Petitioner submitted that in compliance of the Authority's instructions HESCO has stopped the 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.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

12. **<u>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.</u>**

13. **<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>**

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

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

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

13.4. The Petitioner submitted that there is no unlawful utilization of Receipts against Deposit Works however, previously Security Deposits were invested in TDRs for a specific period of time but after directives of NEPRA compliance has been made and noted for future.

13.5. The Petitioner further submitted that work in progress and cash balances can be bifurcated in the financial statements for the FY 2020-21 however, the segregation of store and spares could only be possible after implementation of ERP system.

13.6. The matter has been deliberated in detail under the issue of RoRB.

14. **<u>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.</u>**

14.1. The Petitioner submitted that the details of late payment charges recovered from the consumers and invoices raised by CPPA (G) under the head of mark-up on delayed payments for the period from FY 2015-16 TO FY 2019-20 are as under:

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

Sr. No	PARTICULAR	F.Y	CPPA-G	HESCO	Balance
1	Delayed Payment Charges	2015-16	1,263,318,660	1,172,511,792	90,806,868
2	Delayed Payment Charges	2016-17	1,798,434,267	1,058,949,307	739,484,960
3	Delayed Payment Charges	2017-18	2,050,200,766	1,267,352,058	782,848,708
4	Delayed Payment Charges	2018-19	5,566,225,949	1,286,740,399	4,279,485,550
5	Delayed Payment Charges	2019-20	9,059,278,607	1,438,976,875	7,620,301,732
Total			**19,737,458,249**	**6,224,530,431**	**13,512,927,818**

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

15. **Segment reporting with clear break-up of costs in financial statements for the Distribution and Supply Functions in light of the amended NEPRA Act.**

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 submitted during the hearing that since HESCO has not yet administratively bifurcated its offices in Supply and Distribution business therefore, the financial data is combined for both business, so HESCO is unable to provide the segment reporting with break-up of costs as per NEPRA amendment Act and HESCO is working on the consolidated financial reporting till to date.

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. **Provide clear breakup of postretirement benefits in terms of its distribution & supply functions in its next tariff petition**

16.1. The Petitioner submitted during hearing that in compliance of the Authority's direction HESCO has filed separate petitions for its Distribution and Supply functions and Post-Retirement benefits has been bifurcated accordingly.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

17. **Whether the projected energy purchases are justified?**

17.1. The Petitioner during the hearing submitted the following projected Energy (GWh), based on average growth rate of sanctioned load for last 06 years i.e. 4.29%.

Financial Year	Sanctioned Load (MW)	Increase (MW)	Growth Rate (%age)
2014-15	2420.49	--	--
2015-16	2515.18	94.71	3.91
2016-17	2630.72	115.52	4.59
2017-18	2735.45	104.73	3.98
2018-19	2860.33	124.88	4.57
2019-20	3008.41	148.08	5.18
2020-21	3114.12	105.71	3.51
Average		693.63	4.29

17.2. The Petitioner submitted that the captive power plants are expected to be shifted on HESCO system due to National Gas shortage. However, the Purchases may be adjusted keeping in view the most recent Market Trends.

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 the Petitioner for the MYT control period.

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

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

Costs of Departments assumed under POWER SUPPLY BUSINESS	Costs of Departments assumed under POWER DISTRIBUTION BUSINESS
a. Commercial Directorate b. MIS Directorate c. Revenue Offices d. Meter Reading e. Bill Distribution f. Bill Collection g. MIRAD	All the existing Departments / Tasks excluding the Power Supply Business. Finance and Human Resource Departments work for both the business.

18.2. 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.

NEPRA AUTHORITY

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

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

18.4. 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. **Whether the projected O&M is justified?**

20. **Whether the request of the petitioner for allowance for additional hiring and creation of new divisions/ sub-divisions is justified?**

21. **Whether the projected Return on Regulatory Asset Base (RORB), Depreciation & Other Income is justified?**

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

22.1. The Petitioner submitted that the requested O&M expenses includes salaries and other benefits of employees, repair and maintenance expenses, traveling allowance, vehicle maintenance allowance and other operating costs related to its distribution and supply business. The Pay & allowances for the FY 2020-21 have been estimated based on the Company's present strength.

22.2. Pay & allowances and employee benefits including retirement benefits constitute a major portion of the Company's O&M expenses. A summary of the final O&M costs requested by the Petitioner, under the MYT control period, during hearing of the instant Petition for the Distribution function is as under:

Description	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Actual	Provisional	Budgeted	Projected	Projected	Projected
Salaries, Wages & Benefits	4,220	4,782	5,587	6,933	7,559	8,183
Hiring Cost		-	372	150	87	39
PM Assistance Package	16	288	455	449	446	443
Retirement Benefits	4,665	5,080	5,487	5,816	6,165	6,535
Total Employees Cost	**8,901**	**10,150**	**11,900**	**13,348**	**14,257**	**15,200**
Repair & Maintenance	596	1,059	1,403	1,285	1,374	1,464
Travelling	207	225	243	258	273	290

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

Transportation	139	151	225	370	412	447
Miscellaneous Expenses	174	194	243	228	242	256
Total O&M	10,016	11,779	14,015	15,489	16,557	17,657

23. **Plan for Additional hiring:**

23.1. On the issue of Additional Hiring, the Petitioner submitted that it is a staff deficient company and planning to hire the employees for its smooth operation and achieve efficiency. The Petitioner further submitted has hat the connections in HESCO increased by 20.1% during last five years, whereas, the shortage of technical staff is existing according to old yardstick. It further stated that the addition of 11 kV feeders and transformers in HESCO territory, the work load and pressure of the work especially in hot season increases with the growing number of complaints. Therefore, there is a dire need to revise the yardstick in HESCO according to the current position of electric connections.

23.2. The Petitioner submitted the following detail of division wise comparison of connections;

Sr. No.	Name of Division	Total Connections – June 2015	Total Connections Ending 06/2021	Total Connections Increased	%Age of Total Connections Increased
1	Garikhatta	58,129	65,277	7,148	12.3
2	Latifabad	83,705	101,042	17,337	20.7
3	Tando Allahyar	76,856	88,836	11,980	15.6
4	Qasimabad	51,464	67,325	15,861	30.8
	Circle Hyderabad	270,154	322,480	52,326	19.4
1	Kotri	52,685	64,459	11,774	22.3
2	Phulleli	52,712	57,112	4,400	8.3
3	T.M Khan	41,724	49,998	8,274	19.8
4	Thatta	32,210	36,784	4,574	14.2
5	Badin	45,433	51,904	6,471	14.2
	Circle Laar	224,764	260,257	35,493	15.8
1	Nawabshah	111,216	142,476	31,260	28.1
2	Tando Adam	81,609	96,120	14,511	17.8
3	Sanghar	103,982	120,536	16,554	15.9
	Circle Nawabshah	296,807	359,132	62,325	21.0
1	Mirpurkhas	63,196	76,165	12,969	20.5
2	Digri	66,683	84,774	18,091	27.1
3	Umerkot	55,284	70,182	14,898	26.9
	Circle Mirpurkhas	185,163	231,121	45,958	24.8
	HESCO	976,888	1,172,990	196,102	20.1

23.3. The Petitioner further submitted that keeping in view the prevailing position of shortage of technical staff, the proposed creation of new Sub Divisions to be created from the large and

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

scattered Divisions of HESCO viz Garikhatta, Latifabad, Qasimabad, Kotri, Tando Muhammad Khan, Badin, Nawabshah, Tando Adam, Sanghar, Mirpurkhas, Digri and Umerkot, so as to avail easy access to consumers and timely re-dressal of their day to day complaints of billing and other electricity related affairs of the public at large.

23.4. The Petitioner provide the following details of the plan for the creation of Sub Divisions, Divisions and Circles;

Detail	Total	FY-2021	FY-2022	FY 2023	FY 2024	FY 2025
Circle	01	-	-	-	01	-
Division	08	-	04	02	02	-
Sub Division	24	-	08	11	05	-
TOTAL	**33**	**-**	**12**	**13**	**08**	**-**

23.5. The Petitioner also in its Petition provided the following details of proposed hiring during the MYT period;

Detail		2021-22	2021-22	2022-23	2023-24	2024-25
		Tentative	Tentative	Tentative	Tentative	Tentative
Number of Employees (A+B)		0	1840	473	279	129
A-	Qualified Professionals	0	81	13	6	1
	Engineers	0	43	12	6	1
	Others	0	38	1	0	0
B-	Staff	0	1759	460	273	128
	Technical	0	818	224	119	34
	Clerical	0	215	73	43	6
	Non Technical	0	726	163	111	88

24. <u>PM Assistance Package</u>

24.1. The Petitioner although has requested certain amounts under the head of PM assistance package, however, no further details or submissions have been submitted in this regard.

25. <u>Post Retirement Fund</u>

25.1. The Petitioner submitted that it has created a separate Fund for the retirement benefits for all employees of Supply as well as for distribution business, which needs to bi-furcated in detail through an actuarial. The Petitioner submitted that for the purpose of this petition, the retirement liabilities have been bi-furcated proportionately on the basis of Basic pay and projected on the basis of CPI as detailed hereunder;

Head of Account	FY21	FY22	FY23	FY24	FY25
Pension	4,310.20	4,655.01	4,934.32	5,230.37	5,544.20
Free electricity (retired)	157.54	170.14	180.35	191.17	202.64
Medical	426.42	460.54	488.17	517.46	548.51
Leave Encashment	185.99	200.87	212.93	225.70	239.24
Total	4,310.20	4,655.01	4,934.32	5,230.37	5,544.20

NEPRA AUTHORITY

26. **Repair & maintenance expenses:**

26.1. The Petitioner in the tariff Petition submitted that under the cost for repair & maintenance, it requested an amount of Rs.893 million for the FY 2019-20, and during the hearing of that Petition it was elaborated that such amount shall enable 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 and system breakdowns and also help in reduction of the T&D Losses. However, NEPRA allowed only Rs.490 million for the FY 2019-20, and declined the remaining amount of Rs.403 million.

26.2. The Petitioner in view thereof submitted that the amount of repair and maintenance allowed by NEPRA in the past has been insufficient to cover the expenditure required to maintain the distribution infrastructure. Past trend of actual expenditure is thus not reflective of the actual requirements of the DISCO. This is because underutilization is partially caused by delays in determination of tariff which is often approved after a significant portion of the fiscal year has already elapsed. This coupled with the subsequent delays caused in procurement mean that the Company is unable to book an expense in its financial statement in the year the repairs were approved.

26.3. The Petitioner further mentioned that 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, not undertaking routine repairs results in accumulation of faults, with the utility requiring significant investments few years down the line - for 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.

26.4. For the purpose of instant Petition, the Petitioner stated that R&M expenses have been calculated at 2.5% of net fixed assets at the end of the year. In light of the above, the Petitioner has requested NEPRA to allow the following repairs and maintenance expense for the period FY 2020-21 to FY 2024-25 during hearing of the instant Petition;

Mln. Rs.

HEAD OF ACCOUNT	2020-21	2021-22	2022-23	2023-24	2024-25
Repair & Maintenance	1,059	1,403	1,285	1,374	1,464

27. **Travelling & Other Operating expenses:**

27.1. The Petitioner submitted that the Travelling expenses are paid to employees in lieu of discharge of duty out of head quarter. It also stated that these expenses are necessary and company is liable to pay as per travelling rules of the company. The Petitioner accordingly requested to allow the following costs in this regard under the MYT control period;

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

Mln. Rs.

HEAD OF ACCOUNT	2020-21	2021-22	2022-23	2023-24	2024-25
Travelling Expenses	220	237	252	267	283
Transfer grant	5	6	6	7	7
Travelling Expenses	**225**	**243**	**258**	**273**	**290**

27.2. Regarding Other expenses, the Petitioner has stated that these costs are almost fixed in nature like building rent, collection expenses, stationary and supplies, legal fees, software license fees, NEPRA license fees, tariff petition fees, photo state expenses, audit fees etc. while collection expense and software license fee are linked to growth in the Company's customers. NEPRA license fee is computed on the basis of the mechanism prescribed by NEPRA and projected annual demand of electricity. All other expenses are increased by CPI during the entire tariff period.

HEAD OF ACCOUNT	2020-21	2021-22	2022-23	2023-24	2024-25
Miscellaneous Expenses	194	243	228	242	256

28. **Vehicle running Expenses**

28.1. The Petitioner submitted that Vehicle running expenses have been calculated on base year and indexed as per CPI. The Petitioner during the hearing requested NEPRA to allow the Company the vehicle expense for the period FY2020-21 to FY2024-25 as requested hereunder;

HEAD OF ACCOUNT	2020-21	2021-22	2022-23	2023-24	2024-25
Vehicle Expense - Repairs	17	25	40	45	48
Vehicle Expenses - Fuel and Oil	133	193	300	333	361
Vehicle Expenses - License & Ins.	1	8	30	34	37
Vehicle Exp.	**151**	**225**	**370**	**412**	**447**

29. **RORB**

29.1. On the issue of RoRB, the Petitioner submitted the following request during the hearing; The Petitioner also stated that it has taken the weighted average cost of capital as 10.95%, and 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. The Petitioner further suggested that at the end of every year, the NEPRA when adjusting RORB for variance between actual and budgeted CAPEX, also recalculate the WACC for changes in various input parameters.

29.2. The Petitioner accordingly projected the following RoRB for the FY 2020-21 to 2024-25;

Sr. #	Description	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
		Actual	Provisional	Projected	Projected	Projected	Projected
		-----Rs. in Million----					
1	Fixed assets O/B	49,751	54,055	59,052	66,408	76,115	88,150
2	Addition	4,304	4,996	7,356	9,708	12,034	15,745
3	Fixed assets C/B	54,055	59,052	66,408	76,115	88,150	103,895
4	Less: Depreciation	-20,073	-21,420	-22,974	-24,804	-26,985	-29,639
5	Net fixed assets	33,983	37,631	43,434	51,311	61,164	74,256
6	WIP C/B	10,933	8,163	12,739	22,575	28,928	29,413
7	Fixed asset including WIP	44,916	45,795	56,173	73,887	90,092	103,668
8	Less: Deferred credit	-18,285	-18,169	-18,227	-18,198	-18,213	-18,205
		26,631	**27,625**	**37,946**	**55,688**	**71,880**	**85,463**
	Regulatory Asset Base	25,796	27,128	32,786	46,817	63,784	78,671
	WACC	10.95%	10.95%	10.95%	10.95%	10.95%	10.95%
	RORB	2,825	2,971	3,590	5,126	6,984	8,615

NEPRA AUTHORITY

30. **Depreciation:**

30.1. Regarding depreciation charges, the Petitioner submitted that Depreciation is charged on written down value (WDV) method. 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 Petitioner accordingly during the hearing requested the following amounts on account of depreciation;

Description	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Provisional	Projected	Projected	Projected	Projected
Fixed Assets O/B	54,055	59,052	66,408	76,115	88,150
Additions /Deletion	4,996	7,356	9,708	12,034	15,745
Fixed Assets C/B	**59,052**	**66,408**	**76,115**	**88,150**	**103,895**
Accumulated depreciation O/B	-20,073	-21,420	-22,974	-24,804	-26,985
Depreciation for the year	-1,348	-1,553	-1,831	-2,181	-2,654
Accumulated depreciation C/B	**-21,420**	**-22,974**	**-24,804**	**-26,985**	**-29,639**
Net Book value	**37,631**	**43,434**	**51,311**	**61,164**	**74,256**

31. **Other Income:**

31.1. On the issue of Other Income, the Petitioner submitted that it 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 has been increased by considering moving average of last three financial years. It also submitted that Late Payment Surcharge has been excluded from the Total Other Income as per decision of NEPRA in the Tariff determination of FY 2014-15.The Petitioner accordingly requested the following other income for the MYT control period;

Description	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Provisional	Projected	Projected	Projected	Projected
Sale of scrap	-	-	-	-	-
Non-utility operations	171.45	175.2	166.85	171.16	171.07
Stores handling and others	437.57	437.97	418.35	431.3	429.21
Amortization of deferred credit	835.63	854.09	857.51	849.08	853.56
Total	**1,444.64**	**1,467.26**	**1,442.71**	**1,451.54**	**1,453.83**

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

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

31.3. Further, as per NEPRA determination of Consumer-end-Tariff (Methodology & Process) Guidelines, 2015, the Authority shall choose a base year for the purpose of determining

NEPRA AUTHORITY

Malta

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.

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

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

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

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

32. **Salaries and wages:**

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

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

NEPRA AUTHORITY

32.3. The actual total cost reflected in the accounts of the Petitioner for the FY 2019-20, under Salaries & Wages (excluding postretirement benefits, discussed separately) is Rs.4,945 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.5,454 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.

32.4. Since the accounts of the Petitioner, do not provide bifurcation of the Salaries, Wages and other benefits costs in terms of Distribution and Supply Functions, therefore, for the purpose of allocation of total cost of Salaries, Wages and other benefits in terms of Distribution and Supply Functions, the criteria as adopted by the Petitioner has been used. Accordingly, the cost of Salaries, Wages and other benefits (excluding postretirement benefits) for the FY 2020-21 pertaining to the distribution function works out as Rs.4,763 million.

32.5. The assessed Salaries & Wages costs for the FY 2020-21 i.e. Rs.4,763 million, shall be considered as the reference cost for working out future Salaries & Wages expenses of Distribution function, in the remaining control period as per the adjustment mechanism prescribed in the instant determination.

33. **<u>Additional Hiring</u>**

33.1. Regarding additional 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.

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

34.1. Regarding request of the Petitioner to create 01 new circle, 08 Divisions and 24 sub-divisions, 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

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY NEPRA AUTHORITY

revamping of BoDs, the idea could be to get the benefit of technological advancements to improve efficiency with reduced reliance on more man power.

34.2. 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.

34.3. 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;
- ✓ 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.

34.4. 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.

35. <u>Hiring for MIRAD</u>

35.1. 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-

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

term demand forecasting, transmission planning, and overseeing legal and regulatory affairs.

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

PM assistance package

35.3. Regarding PM assistance package, although the Petitioner has not provided any detailed workings/ submissions, however, 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.

Post Retirement Benefit

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

35.5. In compliance with the Authority's direction, the Petitioner has created a separate Fund for its post-retirement benefits. Although, the Petitioner has created the Fund, however, the Authority is also cognizant of the operational performance of the Petitioner in terms of achieving the Regulatory Targets of T&D losses and Recoveries etc. The actual losses of the Petitioner for the FY 2019-20 remained at around 29% as compared to the allowed target of 19.47%. Similarly, the recovery ratio of the Petitioner during FY 2019-20 remained well below the allowed level of 100% recovery target.

35.6. 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	2,140	2,089	1,519	1,093
2	Medical Facilities	190	149	116	84
3	Free Electricity	67	53	35	7
4	Leave Encashment	95	91	63	46
	Total	**2,492**	**2,381**	**1,733**	**1,230**

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

35.7. 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	3,701.85	3,998	4,238	4,492	4,762
Medical Facilities	329	355	376	399	423
Free Electricity	116	125	132	140	149
Leave Encashment	164	177	188	199	211
	4,310	4,655	4,934	5,230	5,544

35.8. The Authority keeping in view the operational performance of the Petitioner considers that at this point in time allowing provision for post-retirement benefits instead of actual payments made by the Petitioner, would not be in the interest of the consumers as any additional amount over & above the actual payments, would be eaten-up by the inefficiencies of the Petitioner and the Petitioner would not be able to deposit the excess amount in the Fund. However, if the Petitioner still manages to deposit any additional amount in the Fund, the Authority may consider to allow the same as PYA in the subsequent adjustment request.

35.9. In view thereof, the Authority has decided to considered the amount of actual payments as per the accounts of the Petitioner for the FY 2019-20 as base cost and by applying thereon the increases as approved by the Federal Government on Pension Benefits in the Federal Budget for the FY 2020-21, the cost of post-retirement benefits for the FY 2020-21 for both the Distribution and Supply Functions works out as Rs.2,525million. 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.

35.10. Since the 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.2,297 million.

35.11. Regarding **Repair and Maintenance** expenses, the Petitioner has submitted that amount of repair and maintenance allowed by NEPRA in the past has been insufficient to cover the expenditure required to maintain the distribution infrastructure. Past trend of actual expenditure is thus not reflective of the actual requirements of the DISCO.

35.12. The Authority noted that for the FY 2019-20, the Petitioner requested an amount of Rs.893 million, whereas its actual expenditure remained at around Rs.599 million for both function i.e. Supply and Distribution, thus the request of the Petitioner has been on the higher side.

35.13. The Petitioner further for the purpose of instant adjustment has requested R&M cost @ 2.5% of net fixed assets at the end of the year.

35.14. 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 two years as

NEPRA AUTHORITY

per its audited accounts, observed that the same works out as 1.45% and 1.76% of the Net 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 2.5% of Net fixed assets except that it has to maintain vast & old distribution system.

35.13. 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 over Rs.76 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. Thus, the request of the Petitioner to link R&M cost with the certain % of Fixed Assets is not justified.

35.14. In view of the foregoing and keeping in view the current approved tariff methodology, the Authority has decided to allow an amount of Rs.653 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, for both the Distribution and Supply Functions. The same is hereby allowed to the Petitioner for the FY 2020-21 for both its distribution and Supply Functions.

35.15. 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 cost of repair & maintenance for the FY 2020-21 pertaining to the Distribution function works out as Rs.639 million.

35.16. The assessed repair and maintenance cost for the FY 2020-21 i.e. Rs.639 million, shall be considered as the reference cost for working out future repair and maintenance expenses for its distribution function, in the remaining control period as per the adjustment mechanism prescribed in the instant determination.

35.17. For other O&M Expenses, the Authority noted that as per the approved tariff methodology, all other operating expenses are part of O&M costs which are to be assessed through CPI-X formulae for the whole tariff control period. Accordingly, for the assessment pertaining to the FY 2020-21 (reference cost), the Authority keeping in view the cost as per the accounts of the Petitioner for the FY 2019-20, and the request of the Petitioner (for Transportation) has assessed the other O&M expenses as Rs.691 million for both the distribution and Supply of Power Function for the FY 2020-21.

35.18. 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.517 million.

35.19. The assessed Other O&M cost for the FY 2020-21 i.e. Rs.517 million, shall be considered as the reference cost for working out future repair and maintenance expenses for its distribution function, in the remaining control period as per the adjustment mechanism prescribed in the instant determination.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

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

36. **RORB**

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

- *(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;*

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

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

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

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

NEPRA AUTHORITY

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

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

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

Cost of Equity;

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

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

The cost of debt is;

$Kd = 9.03\%$

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%;

$WACC = ((14.47\% \times 30\%) + (9.03\% \times 70\%)) = 10.66\%$

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

37.1. 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;

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

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

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RAB calculation: net approach

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

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

where:

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

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

D - depreciation for year t of regulatory period;

AD - assets disposal for year t of regulatory period;

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

DWC - annual change over year t in working capital;

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

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

38.2. 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.

38.3. 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.

38.4. 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;

Fixed Assets O/B	49,798	54,130
Addition	4,332	3,086
Fixed Assets C/B	54,130	57,217
Depreciation	20,127	21,428
Net Fixed Assets	34,004	35,789
Capital WIP C/B	-	-
Fixed Assets Inc. WIP	34,004	35,789
Less: Deferred Credits	21,038	21,369
Total	**12,965**	**14,420**
RAB		**13,692**
WACC		10.66%
RORB		**1,460**
Capital WIP C/B		8,992
Equity Portion of CWIP 30%		2,698
ROE on CWIP		390
Total RORB		**1,850**

38.5. 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 an amount of RORB i.e. Rs.1,850 million for the FY 2020-21 has been allocated to the distribution function.

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

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

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

38.8. 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.

Depreciation

38.9. 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.

38.10. 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.57,217 million. Accordingly, the depreciation charge for the FY 2020-21 has been assessed as Rs.1,301 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.

38.11. 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.964 million for the FY 2020-21. Accordingly, the consumers would bear net depreciation of Rs.338 million.

38.12. The actual depreciation reflected in the accounts of the Petitioner for the FY 2019-20, do not provide bifurcation of depreciation cost in terms of Distribution and Supply Functions, therefore, for the purpose of allocation of depreciation cost in terms of Distribution and Supply Functions, the criteria as adopted by the Petitioner has been used. Accordingly, the entire depreciation cost of Rs.1,300 million for the FY 2020-21 has been allocated to the distribution function.

38.13. 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. 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.

39.2. Since the other income would be trued up every year as per the mechanism provided in the instant determination, therefore, for the FY 2020-21, the Authority has assessed Rs.2,831 million as Other Income of the Petitioner for the FY 2020-21, which does not include late payment charge but includes amortization of deferred credit.

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

Late Payment charge recovered from consumers shall be made part of other income and deducted from revenue requirement in the subsequent year.

39.4. The total amount of Other Income as worked out above has been allocated in terms of Distribution and Supply Functions, as per the criteria adopted by the Petitioner itself. Accordingly, Other Income for the FY 2020-21 pertaining to the distribution function works out as Rs.2,022 million, to be adjusted during the MYT control period as per the adjustment mechanism prescribed in the instant determination.

40. **Adjustment Mechanism:**

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

Sr. No.	Tariff Component	Adjustment	Sr. No.	Tariff Component	Adjustment
01	Fuel Cost	Monthly	05	RORB	Annually
02	Var. O&M, CPP & UOSC	Quarterly	06	Other Income	Annually
03	O&M Cost	Annually	07	Financing Cost	Annually
04	Depreciation	Annually	08	PYA	Annually

40.2. The Petitioner submitted that the O&M cost is being proposed to be indexed to Consumer Price O&M Index (CPI) during the tariff period. For the year 2020-21, the CPI has been taken as average of July 2020 to March 2021 i.e. 8.34% and for FY 2021=22 is 8%, for FY 2022-23, 2023-24 & 2024-25 is 6%. The Petitioner further submitted that efficiency factor (X) be kept 0% during the tariff period to allow the company sufficient time to make investment and to bring inefficiencies in the utility's operations. Further improvements in operational and governance structures at the Company are also expected to increase costs in the first few years and therefore sufficient time should be allowed to the Company to recover these costs.

41. **Z factor for force majeure events**

41.1. The Petitioner has also requested that there was no provision for costs incurred as a result of force majeure events such as earthquakes, flooding, acts of terrorism, etc. Immense flooding in 2010 for instance caused significant damage to the Company's network. In the absence of a provision for such events and adjustments restricted strictly to the CPI factor, the Company was unable to recoup the costs required to undertake the necessary repairs.

41.2. The Petitioner accordingly submitted that an additional Z factor should he 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 he covered through proposed investments to be approved by NEPRA, it is anticipated that major costs falling under Z factor will comprise repair & maintenance 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.

41.3. The Authority, while assessing the O&M costs of the Petitioner i.e. rent, rates & taxes, Injuries & damages, travelling, transportation, collection expenses, legal charges, management fee, and Audit Charges etc., has incorporated these costs in the reference cost,

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

keeping in view the audited accounts of the Petitioner for the FY 2019-20/amount requested by 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.

41.4. Regarding adjustment of O&M costs with the efficiency factor X, the Authority noted that the Petitioner although has proposed to index its O&M to be adjusted with efficiency factor "X", however, 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.

41.5. 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.

41.6. 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;

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

42.1. 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.

43. **Post-retirement benefits**

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

44. **O&M Costs**

44.1. 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)]

NEPRA AUTHORITY

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45. **RORB**

45.1. 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)

45.2. 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.

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

46. **Depreciation Expenses**

46.1. 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

46.2. 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

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY NEPRA AUTHORITY

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.

47. **Other Income**

47.1. 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.

48. **Whether requested financial charges are justified?**

48.1. The Petitioner submitted the following financial charges request during the hearing:

FINANCIAL CHARGES					
FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	Total
1,791.147	597.049	597.049	597.049	597.049	4,179.343

48.2. The Authority observed that the Petitioner has not provided any detail in terms of nature of these charges nor has provided any workings / calculations of the amount requested. In view thereof, the Authority does not see any justification to consider the request of the Petitioner.

49. **PYA**

49.1. On the point of Prior-year adjustments, the Petitioner submitted that it comprises of unrecovered or excess recovery of distribution margin, unrecovered PYA for prior years. The Petitioner, however, did not request any amount in this regard in its Petition, but mentioned that Working on PYA is in process. Similarly during hearing, the Petitioner also did not make any submissions in this regard.

49.2. The Authority, however, understands that 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 the previously assessed PYA/ quarterly adjustment and the amount actually recovered.
- ✓ Difference between actual other income and the amount allowed
- ✓ Variation due to Sales Mix

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

49.4. The Authority is also cognizant of the fact that for the FY 2020-21, for which the assessment is being made has already lapsed, therefore, while calculating the PYA of the

NEPRA AUTHORITY

Petitioner, the Authority has also included therein the impact of under/ over recovery of the assessed DM for the FY 2020-21.

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

Description	Rs. Mln HESCO
1st & 2nd Qtr. FY 2018-19	
Allowed Amount	11,984
Qtr. Rs./kWh	2.1093
Recovered	11,833
Under/(Over) Recovery	**151**
3rd & 4th Qtr. FY 2018-19	
Allowed Amount	942
Qtr. Rs./kWh	0.2073
Recovered	891
Under/(Over) Recovery	**51**
Interim D.M FY 2018-19	
Allowed Amount	1,613
Qtr. Rs./kWh	0.3548
Recovered	1,526
Under/(Over) Recovery	**87**
1st Qtr. FY 2019-20	
Allowed Amount	2,194
Qtr. Rs./kWh	0.4827
Recovered	2,075
Under/(Over) Recovery	**119**
Distribution Margin FY 2019-20	
Allowed	13,451
Recovered	9,768
Under/(Over) Recovery	**3,683**
Other Income FY 2019-20	
Allowed	(963)
Actual	(2,831)
Under/(Over) Recovery	**(1,868)**
Sales Mix Variances	
FY 2019 20	1,293
	1,293
Distribution Margin FY 2020-21	
Allowed	13,451
Recovered	11,580
Under/(Over) Recovery	**1,871**
Total Prior Period Adjustment	**5,388**

49.6. The Authority in line with its earlier decision in the matter of negative FCA, has calculated the impact of negative FCA pertaining to the FY 2019-20 in the matter of lifeline consumers, domestic consumers (consuming up-to 300 units) and Agriculture Consumers which has been retained by the Petitioner. The Authority has also worked out the impact of positive FCAs not recovered by the Petitioner from life line consumers. The Authority

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
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.

49.7. After considering all the aforementioned factors, the Authority observed that the Petitioner has retained a net amount of Rs.532 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.

49.8. The Authority in view of the above and in line with its earlier decisions, has decided not to adjust the impact of negative FCA across different consumer categories. Thus, the net negative FCA amount pertaining to the lifeline consumers, domestic consumers (consuming up-to 300 units) and Agriculture Consumers for the FY 2019-20 i.e. Rs.532 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.

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

50. **<u>Whether the requested investment along-with its prospective benefits are justified?</u>**

51. **<u>Whether the indicated Capital Cost of Rs.54,459 Million for next five years is justified?</u>**

51.1. The Petitioner initially in its tariff petition dated 17-09-2021 submitted a summary of investments during next five (05) years amounting to Rs. 54,459 million. However, during the course of hearing of MYT held on 16-12-2021, informed that the indicated Capital Cost has been changed from Rs. 54,459 Million to Rs. 68,320 Million for next five years keeping in view the Load / Energy demand and also the system over loading / constraint. However, the details of investments on DIIP formats were not provided by HESCO.

51.2. In order to arrive an informed decision on the investments claimed by HESCO for its five years tariff control period, the Authority desired HESCO to present its investment plan before the Authority. HESCO presented its investment plan on dated: 17-2-2022. The Authority during the said presentation and through subsequent letter dated 02-03-2022 directed HESCO to submit the investment plan as per prescribed DIIP formats at the earliest keeping in view the improvement of safety, consumer services, compliance with NEPRA standards, losses, recovery and making model sub-divisions. In this regard, e-mails

NEPRA AUTHORITY

dated 31-3-2022 and 4-4-2022 were also sent to CEO HESCO for submission of DIIP. Subsequently, HESCO vide email dated 14-4-2022 submitted its DIIP amounting of Rs. 76,344 Million for next five year MYT control period.

51.3. The scope of STG, DOP, ELR and other measures to improve commercial and operational efficiency of HESCO as highlighted in Optimally Achievable Case of DIIP are as under:

52. **STG SCOPE:**

52.1. This section covers scope for the expansion and rehabilitation of secondary transmission network (132 kV) of HESCO:

STG SCOPE (Grid Stations):

Sr. No	Description	Total No.	2020-21	2021-22	2022-23	2023-24	2024-25
1	New						
A	132 KV	10	-	2	4	-	4
2	Conversion						
A	66 to 132 KV	4	-	3	-	-	1
3	Augmentation	2	0	1	0	1	0
4	Rehabilitation of Grids	3	0	3	0	0	0
5	Extension of Power Transformer	6	0	5	0	1	0
6	Extension of Line Bays	28	0	6	0	16	6
7	Removal of operational constraints	8	0	8	0	0	0

STG SCOPE (Transmission Lines):

Sr. No.	Description	Total Length (km)	2020-21	2021-22	2022-23	2023-24	2024-25
	New Transmission Lines						
1	New 132 KV Line	576	0	248	12	81	235
2	Reconductoring/ Rehabilitation of 132 KV	222	0	157	0	65	0
3	2nd circuit stringing	246	0	9.5	0	237	0

Sindh Development Plan STG (Federal PSDP):

Sr. No.	Description	Total Nos./km	2020-21	2021-22	2022-23	2023-24	2024-25
	Grid Stations						
1	New 132 KV Grid Stations	3	0	0	0	0	3

NEPRA AUTHORITY
NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

2	Conversion from 66 kV to 132 kV	4	0	0	0	0	4
3	Extension of Line Bays	30	Detailed breakup not provided				
4	Transformer Augmentations (20/26 MVA to 40 MVA T/F	6	0	0	0	6	0
Transmission Lines							
5	132 kV SDT Line	263	0	0	0	0	263
6	132 kV D/C Line	60	0	0	0	0	60
7	Stringing of 132 kV Circuit	62	0	0	0	0	62

53. **Distribution Expansion & Rehabilitation (DOP+ELR):**

53.1. This section covers the expansion and rehabilitation of distribution network (11kV and below):

Sr. No.	**Description**	**Unit**	**Quantities**					
			2020-21	2021-22	2022-23	2023-24	2024-25	Total
1	Number of HT proposals	Nos.	24	26	70	75	78	273
2	Number of LT proposals	Nos.	86	750	1,496	1,485	1,548	5,365

54. **Other Functional Improvement Plans:**

55. **Commercial Improvement Plan:**

55.1. This plan covers the commercial improvement activities including but not limited to metering including AMRs as well as creation of model sub-divisions:

Sr. No.	**Description**	**Unit**	**Quantities**					
			2020-21	2021-22	2022-23	2023-24	2024-25	Total
1	AMI/AMR	Nos.	-	-	-	30,000	30,000	60,000
2	Model Sub Divisions	Nos.	-	-	1	4	5	10

56. **Financial Improvement Plan:**

56.1. The Petitioner stated that it has started work to improve the internal audit function and audit and accounting manuals. Further, under this plan HESCO envisages to conduct specialized studies like Assets tagging and valuation.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY NEPRA AUTHORITY

57. **Human Resource Improvement Plan**

57.1. The Petitioner claimed that under this plan it HESCO intends to improve HR activities, revamping / addition of training facilities, training of employees through external facilities, conducting some studies, improving the working environment etc.

58. **Communication Improvement Plan**

58.1. HESCO informed that this plan aims the communications improvement activities including but not limited to improving the internal communication amongst employees and external communication with customers to improve image of the company etc.

59. **Linemen Training, Tools and Equipment**

59.1. In this plan, all the needs of Safety Organization restructuring, Trainings and Safety Professional Development Programs for management and line staff, provision of Bucket Mounted Trucks for transport for supply complaints handling, communication, Linemen equipment and PPEs have been catered with to make HESCO lineman safe, effective and efficient (that includes miscellaneous gang-tools, individual tools, personal protective equipment are planned to be procured). This plan also includes provision for customized trainings for HESCO's LM.

59.2. This plan under safety when executed well save HESCO from huge losses due to poor quality of work and rampant accidents of experienced lineman caused in the shape of heavy financial losses and human loss and it will also improve response to complaint time resulted in improved customer services.

59.3. Besides purchases of T&P, PPE, vehicle HESCO is also going to construct Transformer Reclamation workshop as well Protection of Distribution Transformers and 11kV Sectionalizers to ensure best measures for safety.

60. **Summary of Revised DIIP:**

60.1. The Petitioner provided following summary of cost requirements for its DIIP under STG, DOP, ELR and other measures to improve commercial and operational efficiency of HESCO:

DESCRIPTION	2020-21	2021-22	2022-23	2023-24	2024-25	TOTAL
STG Own Resource	712	7,812	8,050	7,862	10,946	**35,382**
Sindh Dev. Plan - STG	0	0	3,370	4,332	1,925	**9,627**
DOP - P&E	69	292	914	938	1,022	**3,235**
DOP – Civil	19	390	526	544	179	**1,658**
ELR	133	538	2,224	2,236	2,270	**7,401**
Sub Total (STG, DOP &ELR)	**933**	**9,032**	**15,084**	**15,912**	**16,342**	**57,303**

NEPRA AUTHORITY

SCADA System (Feasibility)	0	0	0	30	50	**80**
Model Sub Division	0	0	250	1,000	1,250	**2,500**
AMR / AMI	0	0	250	250	250	**750**
Village Electrification	623	654	687	721	757	**3,442**
Others (Deposit Work)	671	705	740	777	816	**3,709**
Transformer Workshop	0	135	0	0	0	**135**
Software for Analysis and Prediction and Allied Module / Consultancy	0	117	0	0	0	**117**
11kV Sectionalizers	0	50	0	0	0	**50**
Fire Safety Equipment	0	10	0	0	0	**10**
Protection of Distribution Transformers	0	700	2,908	2,411	796	**6,815**
Customer Care	0	148	38	25	5	**216**
Vehicles	0	381	729	69	38	**1,217**
Grand Total	**2,227**	**11,932**	**20,686**	**21,195**	**20,304**	**76,344**

60.2. The year wise breakup of cost for above heads as provided by petitioner are given below:

61. **<u>STG Cost:</u>**

i. **Grid Stations:** **(Million Rs.)**

Sr. No	**Description**	**Total Cost**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**
1	**New**						
a	132 KV	6,817	0	738.70	3,495	402	2,182
2	**Conversion**						
a	66 to 132 KV	3939	0	2138	1080	360	360
3	**Augmentation**						
A	132 KV	348	0	93	53	201	0
4	**Rehabilitation of G/S**	**7**	**0**	**7**	**0**	**0**	**0**
5	**Extension (Transformer)**						
A	132 KV	968	0	686	45	238	0
Sub Total Grid Stations		**12,079**	**0**	**3,663**	**4,673**	**1,201**	**2,542**

ii. **Transmission Lines:** **(Million Rs.)**

Sr. No	**Description**	**Total Cost**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**
1	New T/Line	8,193	0	2,625	0	2,900	2,267
2	Reconductoring/2nd circuit stringing	2,486	0	40.30	339	2,064	42
Sub Total transmission lines		**10,679**	**0**	**2,665**	**339**	**4,964**	**2,309**

iii. **Others:** **(Million Rs.)**

Sr. No	Description	Total Cost	2020-21	2021-22	2022-23	2023-24	2024-25
1	Operational constraints	128	-	128	-	-	-
2	Technical Assistance	104	-	-	52	52	-
3	AMI / AMR System for 30,000 meters	477	-	-	334	95	48
4	Project Implementation Support	420			126	126	168
5	Financing cost (IDC + Commitment)	373			221	89	64
6	Project Overhead (HESCO support)	373			221	89	64
7	Improved O&M	1,693			1,185	254	254
8	GSO (O&M)	2,429		1,200	600	330	300
9	GSO/GSC Firefighting	35		35			
10	GSO/GSC T&P	120		120			
Sub Total others		**6,152**	**0**	**1,483**	**2,739**	**1,035**	**898**

iv. **Sindh Development Plan:** **(Million Rs.)**

Sr. No.	Description	Total Cost	2020-21	2021-22	2022-23	2023-24	2024-25
1	New 132 KV Grid Stations	1150	0	0	0	0	1150
2	Conversion from 66 kV to 132 kV	1200	0	0	0	0	1200
3	Extension of Line Bays	378	Detailed breakup not provided				
4	Transformer Augmentations (20/26 MVA to 40 MVA T/F	560	0	0	0	560	0
5	132 kV SDT Line	3985	0	0	0	0	3985
6	132 kV D/C Line	753	0	0	0	0	753
7	Stringing of 132 kV Circuit	496	0	0	0	0	496
Total Sindh Development Plan		**8522**	**0**	**0**	**0**	**560**	**7584**

B. **Distribution Expansion & Rehabilitation (DOP+ELR):** **(Million Rs.)**

Sr. No.	Description	2020-21	2021-22	2022-23	2023-24	2024-25	Total
A	H.T Expansion						

NEPRA AUTHORITY
NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

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1	New Number of Proposal	14	11	25	29	31	110
2	Cost	55	100	226	262	280	923
B	**L.T Expansion**						
3	New Number of Proposal	19	250	529	520	571	1889
4	Cost	14	192	688	676	742	2312
Sub Total DOP		**69**	**292**	**914**	**938**	**1022**	**3,235**
C	**H.T Rehabilitations**						
5	New Number of Proposal	10	15	45	46	47	163
6	Cost	68	225	677	692	707	2369
D	**L.T Rehabilitations**						
7	New Number of Proposal	67	500	967	965	977	3476
8	Cost	65	313	1547	1544	1563	5032
Sub Total ELR		**133**	**538**	**2224**	**2236**	**2270**	**7401**
Grand Total Cost (DOP & ELR)		**202**	**830**	**3138**	**3174**	**3292**	**10,636**

61.1. The Petitioner stated following benefits will be achieved through above mentioned investment:

i. Loss Reduction up to 23.56%.

ii. Improvement of collection efficiency up to 100%.

iii. Achieve zero accidents.

iv. SCADA Phase IV roll out at 132 kV level.

v. 30,000 AMI deployment and GIS Mapping.

vi. Additional energy available for sales 8,985 MkWh.

Financial Year	MVA to be Added	Energy Available for Sale (MkWh)
2020-21	26.00	163.99
2021-22	253.0	1,595.722
2022-23	121.0	763.171
2023-24	576.0	3,632.947
2024-25	448.50	2,828.779
Total	**1424.5**	**8,985**

NEPRA AUTHORITY

vii. Improvement of quality of electric supply to end consumers.

viii. Removal of system constraints.

ix. Stability & Reliability of system will be enhanced.

x. Reduction in loading of transmission lines & power transformers.

xi. Reduction / Savings as well as capping the losses.

xii. To avoid unnecessary O&M cost on transmission and distribution network.

xiii. Increase in the available system capacity to meet future load growth at/around proposed projects.

xiv. Preventing of electrical equipment's, from damaging / burning due to overloading of system.

xv. Removal of hazards and ensuring safety of personal, public and property.

xvi. The Petitioner provided following targets of SAIFI and SAIDI as well:

Financial Year	SAIFI	SAIDI	Fault Rate
2020-21	137	7,853	2.48
2021-22	130	7,068	2.35
2022-23	124	6,361	2.23
2023-24	117	5,725	2.12
2024-25	112	5,152	2.01

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

61.3. The above functions have been grouped as follows:

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

S. #	Major Area	Sub-Projects
1	Secondary Transmission and Grid (STG) Expansion and Rehabilitation Projects	Construction of New 132 kV Grid Stations
		Up gradation of 66 kV Grid Stations to 132 kV Grid Stations
		Augmentation of 132 kV and 66 kV Grid Stations
		Extension of 132 kV and 66 kV Transformer Bays
		Extension of 132 kV and 66 kV Line Bays
		Erection of New 132 kV D/C Transmission Lines
		Erection of New 132 kV SDT Transmission Lines
		Circuit Stringing of New 132 kV SDT Transmission Lines
		Re-Conductoring of Existing 132 kV Transmission Lines
		Installation of Capacitors at 132 kV Grid Stations
2	Distribution of Power (DOP) Expansion and Rehabilitation Projects	Installation of New 11 kV Lines
		Installation of New Distribution Transformers
		Reinforcement of Overloaded Distribution Transformers
		Installation of New LT Lines
3	Energy and Loss Reduction (ELR) Projects	Replacement of Defective/Burnt Distribution Transformers
		Rehabilitation of Existing LT Lines
		GIS Mapping/Re-routification of 11 kV Feeders
		GIS Mapping of LT Lines
4	Commercial Improvement Plans	Installation of AMR Meters
		HHUs for Meter Reading
		Consumer Census
		Anti-Theft Efforts
		Installation of IT Infrastructures
5		Hiring of Additional Manpower to undertake the Projects

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

	Human Resource Improvement Plans	Capacity Building of Human Resource

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

61.5. Pursuant to above requirements, HESCO submitted summary of its investment plans, required for expansion and removal of system constraints for the next five years, under Optimally Achievable Case and initially claimed a total investment of Rs. 54,459 million

61.6. As discussed above, HESCO, in compliance with the directions of the Authority to revise the DIIP on the basis of certain improvements and the strategic agreements between MOE (PD) and HESCO, submitted its revised DIIP detailed as below:

DESCRIPTION	2020-21	2021-22	2022-23	2023-24	2024-25	TOTAL
STG Own Resource	712	7,812	8,050	7,862	10,946	**35,382**
Sindh Dev. Plan - STG	0	0	3,370	4,332	1,925	**9,627**
DOP - P&E	69	292	914	938	1,022	**3,235**
DOP – Civil	19	390	526	544	179	**1,658**
ELR	133	538	2,224	2,236	2,270	**7,401**
Sub Total (STG, DOP &ELR)	**933**	**9,032**	**15,084**	**15,912**	**16,342**	**57,303**
SCADA System (Feasibility)	0	0	0	30	50	**80**
Model Sub Division	0	0	250	1,000	1,250	**2,500**
AMR / AMI	0	0	250	250	250	**750**
Village Electrification	623	654	687	721	757	**3,442**
Others (Deposit Work)	671	705	740	777	816	**3,709**
Transformer Workshop	0	135	0	0	0	**135**
Software for Analysis and Prediction and Allied Module / Consultancy	0	117	0	0	0	**117**
11kV Sectionalizers	0	50	0	0	0	**50**
Fire Safety Equipment	0	10	0	0	0	**10**
Protection of Distribution Transformers	0	700	2,908	2,411	796	**6,815**
Customer Care	0	148	38	25	5	**216**
Vehicles	0	381	729	69	38	**1,217**
Grand Total	**2,227**	**11,932**	**20,686**	**21,195**	**20,304**	**76,344**

NEPRA AUTHORITY

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

(Million Rs.)

Description	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Foreign / Local Loans	-	-	4,830	1,935	1,392	**8,157**
Own Resources / Annual Development Budget	933	10,573	11,059	13,430	15,414	**51,409**
Sindh Govt. Development Plan for STG	-	-	3,370	4,332	1,925	**9,627**
Village Electrification	623	654	687	721	757	**3,442**
Consumer Contribution / Deposit Works	671	705	740	777	816	**3,709**
Total	**2,227**	**11,932**	**20,686**	**21,195**	**20,304**	**76,344**

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

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

Description	Unit	Quantity
Grid Stations		
132 kV Grid Stations	No.	61
66 kV Grid Stations	No.	15
33 kV Grid Stations	No.	NIL
132 kV Consumer Owned Grid Stations	No.	9
Power Transformers	No.	122
Capacity of Power Transformers	MVA	2791
Transmission Lines (132 kV & 66 kV)		

Total Length of 132kV Transmission Lines	KM	2771
Total Length of 66kV Transmission Lines	KM	687
Total Length of 33kV Transmission Lines	KM	NIL
Distribution System		
11 kV Feeders	No.	570
Total Length of 11 kV Lines	KM	28471
Total Length of LT Lines	KM	15057
Distribution Transformers	No.	43873
Capacity of Distribution Transformers	KVA	2680585
Existing HT / LT Ratio	Ratio	1.89
Average Length of 11kV Feeder	KM	49.95

Constraints in Existing System of HESCO:

Description	Unit	Quantity
Overloaded Power Transformers	No.	14
Overloaded 11 kV Feeders	No.	77
Overloaded Distribution Transformers	No.	1114

61.9. 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 HESCO. 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	112	161	146	102	75	**596**
ELR	278	453	477	162	165	**1,535**
STG	1,145	861	1,925	1,937	868	**6,736**
Others	1,052	-	-	75	863	**1,990**
Total	**2,587**	**1,475**	**2,548**	**2,276**	**1,971**	**10,857**

NEPRA AUTHORITY

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

(Million Rs.)

Description	2015-16	2016-17	2017-18	2018-19	2019-20	TOTAL
Requested	5,935	3,759	7,309	6,212	4,723	**27,938**
Allowed	3,067	4,729	5,500	3,072	4,597	**20,965**
Actual	4,048	4,729	4,804	3,072	1,971	**18,624**
Excess/(Less)	981	0	-696	0	-2,626	**-2,341**
%age	131.99	100.00	87.35	100.00	42.88	**88.83**

61.11. From above, it is observed that during last 5-years, HESCO has utilized major portion of the allowed investment and has spent the maximum of Rs. 4,804 million in FY 2017-18 over the last five years period.

61.12. Based on the aforementioned observations, analysis, assessment, discussion and keeping in view the historical capability of HESCO to utilize the allocated budget against investment requirements, it is expected that HESCO would make all necessary efforts to carry out its proposed investment plans under Optimally Achievable Case so that MYT regime proves to be a success. Accordingly the Authority allows the following investment to HESCO for the 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 Own Resource	**35,382**	**35,382**
Sindh Dev. Plan - STG	**9,627**	**9,627**
DOP - P&E	**3,235**	**3,235**
DOP – Civil	**1,658**	**1,658**
ELR	**7,401**	**7,401**
Sub Total (STG, DOP &ELR)	57,303	57,303
SCADA System (Feasibility)	**80**	**80**
Model Sub Division	**2,500**	**2,500**
AMR / AMI	**750**	**750**
Village Electrification	**3,442**	**3,442**
Others (Deposit Work)	**3,709**	**3,709**
Transformer Workshop	**135**	**135**
Software for Analysis and Prediction and Allied Module / Consultancy	117	117
11kV Sectionalizers	50	50
Fire Safety Equipment	10	10

NEPRA AUTHORITY

Protection of Distribution Transformers	**6,815**	**6,815**
Customer Care	**216**	**216**
Vehicles	**1,217**	**1,217**
Grand Total	**76,344**	**76,344**

61.13. The detailed additions expected to be included in T&D networks of HESCO are attached at **Annex – A, B and C** under Optimally Achievable Case.

61.14. Based on the above, a year-wise detail of the allowed investments under Optimally Achievable Case is as under:

DESCRIPTION	2020-21	2021-22	2022-23	2023-24	2024-25	TOTAL
STG Own Resource	712	7,812	8,050	7,862	10,946	**35,382**
Sindh Dev. Plan – STG	0	0	3,370	4,332	1,925	**9,627**
DOP - P&E	69	292	914	938	1,022	**3,235**
DOP – Civil	19	390	526	544	179	**1,658**
ELR	133	538	2,224	2,236	2,270	**7,401**
Sub Total (STG, DOP &ELR)	**933**	**9,032**	**15,084**	**15,912**	**16,342**	**57,303**
SCADA System (Feasibility)	0	0	0	30	50	**80**
Model Sub Division	0	0	250	1,000	1,250	**2,500**
AMR / AMI	0	0	250	250	250	**750**
Village Electrification	623	654	687	721	757	**3,442**
Others (Deposit Work)	671	705	740	777	816	**3,709**
Transformer Workshop	0	135	0	0	0	**135**
Software for Analysis and Prediction and Allied Module / Consultancy	0	117	0	0	0	**117**
11kV Sectionalizers	0	50	0	0	0	**50**
Fire Safety Equipment	0	10	0	0	0	**10**
Protection of Distribution Transformers	0	700	2,908	2,411	796	**6,815**
Customer Care	0	148	38	25	5	**216**
Vehicles	0	381	729	69	38	**1,217**
Grand Total	**2,227**	**11,932**	**20,686**	**21,195**	**20,304**	**76,344**

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

NEPRA AUTHORITY

61.16. The Authority also directs HESCO 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.

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

62.1. The Petitioner requested the following target of T&D losses during the MYT control period.

Year	2019-20 (Actual)	2020-21	2021-22	2022-23	2023-24	2024-25
Losses	28.89%	28.20%	27.14%	25.97%	24.78%	23.56%

62.2. The Petitioner submitted that it will reduce T&D losses from 28.0% in FY 2020-21 to 23.56% by FY 2024-25 i.e. to the tune 4.44%. The petitioner provided the following detailed breakup regarding projected losses in its petition:

Year	Units Purchased (GWh)	Units Sold (GWh)	Units Lost (GWh)	Total T&D (%)	Breakup of T&D Losses (%)		Breakup of Technical Losses (%)		
					Technical Losses	Admin. Losses	132 kV	11 kV	L.T
2019-20 (Actual)	5470.78	3890.00	1580.78	28.89	19.02	9.88	2.88	10.96	5.18
2020-21	5590.98	4014.10	1576.88	28.20	18.41	9.80	3.27	9.96	5.17
2021-22	5878.41	4283.01	1595.40	27.14	18.28	8.86	3.24	9.91	5.12
2022-23	6198.73	4588.92	1609.81	25.97	18.15	7.82	3.21	9.86	5.07
2023-24	6536.50	4916.76	1619.75	24.78	18.02	6.76	3.18	9.81	5.02
2024-25	6892.68	5268.77	1623.92	23.56	17.89	5.67	3.15	9.76	4.97

62.3. HESCO in its tariff petition has provided the following reasons of high T&D losses:

i. The worst Law Order situation does not permit frequent movement to HESCO staff in their jurisdiction. Attacks on employees / offices are common.

ii. Massive theft of electricity & non-payment culture are the main problems of HESCO. Law Enforcing Agencies are not extending cooperation for providing security to stall and lodging FIRs against stealers of electricity. Out of 3,386 referred cases of electricity theft only 120 No. FIRs has so far been lodged from July-2012 to June-2016.

iii. Majority of villages/town/colonies are HESCO defaulters, and in case of disconnection, the defaulters blocks the highways/ roads to create hurdles.

iv. Out of total 3,458.46 KM transmission line 687.12 KM is of 66kV i.e. 19.86%. The transmission system is old and deteriorated, which causes high loss.

v. Out of 555 feeders, 310 feeders (56%) supplying electricity to rural areas.

vi. Due to worst Law & Order situation customers stealing electricity through Kunda / Hooking in negated LT lines.

NEPRA AUTHORITY

vii. Even ABC (Aerial Bundled Conductor) installed in Hyderabad City has been damaged by stealers for direct hooking/ Kunda.

viii. Due to above reasons a theft culture has been established in HESCO jurisdiction, but HESCO management is trying best to curtail it, which will take a considerable time.

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

Financial Year	T&D Actual Losses (%)
2014-15	27.11
2015-16	26.46
2016-17	30.74
2017-18	29.88
2018-19	29.52
2019-20	28.90

62.5. The Petitioner also submitted that considering the significance of T&D loss reduction as a primary driver for improved efficiency and hence, customer service, it is proposed that an added incentive be provided to the Company for achieving the T&D loss level target.

62.6. 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	26.5	20.5	6.0	3,069	10,486	13,555
FY 2017	30.8	20.5	10.3	5,879	11,701	17,581
FY 2018	29.8	21.2	8.6	6,491	15,923	22,413
FY 2019	29.5	22.6	6.9	7,673	25,084	32,757
FY 2020	28.9	22.6	6.3	7,915	28,335	36,250

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

63.1. HESCO has requested following transmission losses for MYT control period:

Description	2020-21	2021-22	2022-23	2023-24	2024-25
Transmission Losses at 132kV (%)	3.27	3.24	3.21	3.18	3.15

63.2. The Authority noted that HESCO's requested transmission losses as mentioned above are lower than its transmission losses of 3.418% as assessed by the third party consultant. In this regard, it is noted that HESCO submitted its third party transmission loss study conducted by M/s. PPI during the proceedings of the Re-Determination for FY 2015-16. Based on results of the said study, the petitioner requested 3.418% transmission losses for FY 2015-16. It is also noted that the Third Party Loss study was conducted in FY 2013-14 on the basis of HESCO's transmission assets (132kV, 66kV and 33kV) statistics pertaining to FY 2012-13 which are tabulated as under:

Sr. #	Description	As on 30th June, 2013
1	Grid Stations	75 Nos.
2	Transmission line length	2914 KMs

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

"The data of actual line current flows, bus voltages and power transformer load currents for entire 132kV and 66kV system of HESCO was gathered for the conditions of peak and off-peak hours of each month of 2012-13. Thus data for 24- snapshots of the year 2012-13 was captured and processed to be used as input to the Study. Thus the annual energy loss come out as 3.418%.

NEPRA AUTHORITY

63.4. It is also observed that in the said study the third party consultant, keeping in view the higher transmission losses of 3.418% for HESCO, recommended the following:

"For HESCO, 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 Rail Conductor to bring the loading reasonably below the limit to operate the system comfortably and with lower losses."

63.5. In view of the above, the Authority understood that HESCO faced transmission network congestion / constraints and overloading situation in FY 2012-13 and when PPI conducted the said transmission losses study on the basis of transmission data pertaining to FY 2012-13, the transmission losses of 3.418% have been assessed by the third party consultant. The Authority also understood that the higher transmission losses of 3.418% were reflective of the above mentioned critical conditions. Therefore the Authority had no reservations on the results of the transmission losses study conducted by PPI at that time.

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

Sr. #	Description	2014	2015	2016	2017	2018	2019
1	No. of Grid Stations	77	77	78	80	83	84
2	MVA Capacity	--	1991	2041	2411	2564	2695
3	Transmission line length	3042	3108	3133	3344	3384	3396

63.7. In view of the above, the Authority was of the view that with such additions, the constraints and overloading in HESCO's transmission networks would be eliminated that also resulted in reduced transmission losses which HESCO achieved in FY 2018-19 on actual basis (3.31%). Therefore the Authority decided to allow a target of 3.31% for HESCO for FY 2019-20.

63.8. For the purpose of instant MYT petition and in order to set a starting point with respect to HESCO's transmission network losses, it is noted that HESCO requested 3.27% transmission losses for the first year of its MYT control period i.e. FY 2020-21, are lower than the third party assessed transmission losses of 3.418% and also lower than the target of 3.31% as allowed earlier by the Authority vide its determination for FY 2019-20 in respect of HESCO. Therefore, the Authority has decided to allow the requested transmission losses of 3.27% to HESCO for the first year of MYT control period i.e. FY 2020-21.

63.9. For rest of the four years of MYT control period, it is noted that HESCO proposed a reduction of 0.12% only in its transmission losses over a MYT control period of next 5-years which is not acceptable. The Authority considers that reduction in transmission network losses needs to be linked with the investments allowed to HESCO against MVA capacity additions at HESCO's grid stations which will be undertaken for removal of constraints / overloading at transmission networks of HESCO. Since HESCO requested to allow an investment of Rs.5,464 million in next 5-years required to overcome the congestions and overloading issues at transmission networks therefore an overall reduction of 0.54% in transmission network losses of HESCO is considered for the MYT control period of 5-years i.e. from FY 2020-21 to FY 2024-25. Accordingly following transmission network losses are allowed to HESCO:

Description	2020-21	2021-22	2022-23	2023-24	2024-25
Loss Reduction (%)	0	0.14	0.13	0.14	0.13
Allowed Transmission Losses (%)	**3.27**	**3.13**	**3.00**	**2.86**	**2.73**

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

64.1. The Authority noted that for the purpose of instant MYT petition, HESCO requested following distribution losses at 11kV level:

2020-21	2021-22	2022-23	2023-24	2024-25
9.96 %	9.91 %	9.86 %	9.81 %	9.76 %

64.2. While considering the above distribution losses at 11kV level, it is noted that the above requested losses are higher than the targeted losses of 9.59% allowed to HESCO in Authority's earlier determination for FY 2019-20 and also higher than the results (9.75%) of third party distribution loss study conducted by third party consultant i.e. M/s PPI. The Authority has therefore decided to maintain the already determined target of distribution losses at 11kV i.e. 9.59% as starting point for HESCO for the FY 2020-21.

64.3. For setting the distribution loss targets at 11kV level for remaining control period of the MYT, the Authority considers that by allowing an investment of Rs.7,401 million in ELR component; HESCO is encouraged to achieve better results in the MYT control period than the requested T&D loss targets. Further, a reduction of only 0.20% in distribution losses at 11kV level as proposed by HESCO over the MYT control period is not acceptable and an overall reduction of 0.74% in distribution losses at 11kV level is required to be achieved by HESCO. Accordingly following distribution loss targets at 11kV level are allowed to HESCO:

Description	2021-22	2022-23	2023-24	2024-25
Requested Dist. Losses at 11kV Level (%)	9.91	9.86	9.81	9.76
Investment Allowed for ELR Projects (Million Rs.)	671	2,224	2,236	2,270
Allowed Reduction in 11kV Dist. Losses (%)	0.07	0.22	0.22	0.23
Allowed Dist. Losses at 11kV Level (%)	**9.52**	**9.30**	**9.08**	**8.85**

NEPRA AUTHORITY

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

65.1. It is noted that for the purpose of instant MYT petition, HESCO requested following LT losses:

2020-21	2021-22	2022-23	2023-24	2024-25
5.17 %	5.12 %	5.07 %	5.02 %	4.97 %

65.2. While considering the above distribution losses at LT networks level, it is noted that the above requested losses are equal to the targeted losses of 5.17% allowed to HESCO in Authority's earlier determination for FY 2019-20. It is also noted that above requested LT losses are lower than the results (5.29%) of third party distribution loss study conducted by third party consultant i.e. M/s PPI. In view thereof, the Authority has decided to accept the request of the Petitioner for the LT losses as per following:

2020-21	2021-22	2022-23	2023-24	2024-25
5.17 %	5.12 %	5.07 %	5.02 %	4.97 %

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

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

2020-21	2021-22	2022-23	2023-24	2024-25
9.80 %	8.86 %	7.82 %	6.76 %	5.67 %

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

66.3. For the purpose of instant MYT petition, the Authority has decided to maintain the earlier determined target of 1.40% to HESCO for the first year of MYT control period, which would be gradually reduced to 1.0% margin in the remaining period of 4-years of MYT control period for HESCO as follows:

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

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

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

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

Year	Transmission Losses (%)	11kV Distribution Losses (%)	LT Losses (%)	Margin for Law & Order (%)	Total T&D Losses (%)
2020-21	3.27	9.59	5.17	1.40	**19.43**
2021-22	3.13	9.52	5.12	1.30	**19.07**
2022-23	3.00	9.30	5.07	1.20	**18.57**
2023-24	2.86	9.08	5.02	1.10	**18.06**
2024-25	2.73	8.85	4.97	1.00	**17.55**

67.2. On the point of the Petitioner for providing an added incentive for achieving the T&D loss target, the Authority considers that the Petitioner is required to achieve the target set by the Authority. If the Petitioner fails to achieve the targets, it would not be able to recover its prudently incurred costs, rather its allowed RoRB would also be eaten up by this inefficiency, which would be reflected in its financial statements as loss. Therefore the request of the Petitioner for any added incentive is not understandable. Here it is pertinent to mention that in case the Petitioner over achieves the target of T&D losses, the gains in this regard would also be kept by the Petitioner as the Authority would make adjustments only on the level of allowed T&D losses. Thus, there is an inbuilt mechanism in the determination to provide incentive for achieving the targets given by the Authority. Similarly if the Petitioner fails to achieve the targets, it would bear the losses.

67.3. The Authority directs HESCO to target high loss feeders to bring the overall losses down. A detailed plan be prepared and submitted to the Authority for monitoring the progress of HESCO in this respect.

68. **Whether HESCO has prepared 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.**

68.1. The Authority in the previous tariff determination 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.

68.2. The Petitioner during the hearing affirmed that the schemes have been prepared keeping in view of future Load / Energy demand and after removal of system overloading / constraints, in-accordance with NEPRA guidelines for determination of Consumer end Tariff (Methodology and Process) 2015.

68.3. The Authority has considered the submissions of HESCO and is of the opinion that HESCO has submitted only generic information in this regard. However, the detailed scheme/plan hasn't been shared with NEPRA. Therefore, HESCO is hereby directed to provide complete specific information as earlier required.

69. **Whether HESCO 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.**

NEPRA AUTHORITY

69.1. 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.

69.2. The Petitioner during the hearing submitted that HESCO is committed to follow consumers Eligibility Criteria and Performance Standard Distribution Rules, 2005.

69.3. The Authority is of the opinion that the petitioner has submitted only generic statement in this regard. HESCO hasn't submitted any data which shows specific number of pending connections and the connections which have been provided so far to the eligible consumers.

69.4. Therefore, HESCO is directed to clear all pending connections and submit a detailed report on a monthly basis.

70. **Whether HESCO 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?**

70.1. 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?

70.2. The Petitioner during the hearing submitted that Corporate desk at Kotri and Hyderabad have been established partially. However, by end of March 2022, the desk would be fully equipped / functional with central corporate desk.

70.3. The Authority considered the submissions of HESCO and directed that a report be submitted by HESCO indicating the current/latest status pertaining to establishment of corporate desk to facilitate corporate clients.

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

71.1. 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.

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

Overall Loss

High Loss feeders Ending 06/2021

20 - 30% Slab	=	115 Nos.
30 - 40% Slab	=	108 Nos.
40 - 50% Slab	=	5 Nos.
Above 50% Slab	=	42 Nos.

72. **Technical Loss**

72.1. HESCO included in MYT that 273 No. 11 kV feeders will be executed in next five years.

72.2. The Authority has considered the submissions of HESCO and is of the opinion that HESCO has submitted a future plan to be executed in the next five years, however, HESCO should also have submitted previous measures too. Therefore, HESCO is directed to submit the detailed (project wise) report along with its timelines executed and/or to be executed in

NEPRA AUTHORITY
NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

upcoming years. HESCO 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.

73. **What is the load shedding criteria of HESCO to meet the load demand?**

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

73.2. The Petitioner during the hearing submitted that the load shedding is being carried out as per 11 kV Feeder wise %age of AT&C losses to meet the load demand, the load shedding schedule for the month of 06-2021 was as under:

Category	AT&C Losses	No. of Hours	Total HESCO
Category-I	Up to 10%	0	127
Category-II	10 to 20%	0	3
Category-III	20 to 30%	2	3
Category-IV	30 to 40%	4	24
Category-V	40 to 60%	6	88
Category-VI	60 to 80%	8	289
Category-VII	Above 80%	12	28
Total Number of 11KV Feeder			**562**

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

74. **What are the system constraints due to which HESCO draws less power as compared to the allocated quota?**

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

74.2. The Petitioner during the hearing submitted that at present one system constraint (physical) is present in HESCO, due to which HESCO draws less power as compared to allocated quota. Further, HESCO is facing system congestion due to following NTDC related constraints in Peak Summer Season (when zero load shedding in country, due to Ramzan or else).

a. Delay in construction of 220kV new Grid Station at Mirpur Khas.

b. New Transmission Line feeding for 220kV grid station Hala Road (as a second source) for removing of existing transmission line constraint of 220kV grid station Hala Road.

74.3. The Authority has considered the submissions of HESCO and is of the view that HESCO should have submitted the quantified details that how much power (MW) is not being drawn by HESCO due to single constraint on HESCO's part. HESCO has further pointed out that it is facing system congestion due to NTDC constraints, however, HESCO hasn't

NEPRA AUTHORITY
NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

submitted what efforts it has taken to engage NTDC for the removal of such constraints. Therefore, HESCO is directed to coordinate with NTDC and make a plan for removal of constraints and submit the report for consideration of the Authority.

75. **What are the remedial measures taken by HESCO 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?**

75.1. The Authority in the previous tariff determination directed the Petitioner to submit the details of remedial measures taken by HESCO 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.

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

- HESCO carried-out preventive maintenance of the transmission lines, Grid Station, Power Transformers, Circuit Breakers, Line Isolators, 11 kV outgoing feeders, distribution transformers and L.T lines during the year to improve stability and reliability of the network for SAIFI and SAIDI index in accordance with NEPRA standards.
- Rehabilitation of distribution system has been carried out under ELR & DOP head.
- Maintenance as well as deteriorated / rustic / off-size conductors HT /LT has been replaced.
- Load balancing of transformers has been carried out.
- Fuses on distribution transformers have been installed.
- Trimming of the trees obstructing H.T / L.T lines.

75.3. The Authority has considered the submissions of HESCO and is of the view that HESCO has submitted the detail of measures taken, but it hasn't given %age of achievement regarding performance standards. HESCO should have submitted impact analysis in terms of SAIFI/SAIDI improvement against the measures taken. Therefore, HESCO is directed to submit the project-wise detail and subsequent improvement of performance standards.

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

76.1. 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?

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

i. Conducted Safety Committee Meetings and Safety Seminars in field formation under HESCO for awareness of technical staff about the prevention of accidents and lectures were given to participants regarding the awareness to promote the safety culture in vogue enabling to avoid the accidents.

ii. Conducted the enquiries of fatal / non fatal accidents of employees and general public and recommended the actions against the delinquents involved into the happening of accidents.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

iii. Conducted T&P and PPE Parades to ascertain the quality and quantity of PPE and T&P items of technical staff under the HESCO formations. Safety committee meetings conducted on monthly basis, ensuring to organize the morning assemblies on daily basis under field formations of HESCO.

iv. Legal Notices were issued to Concerned Departments to take action against the raised projections / encroachments towards the installations of HESCO in order to avoid any mishap.

v. Action against illegal activities by the private persons / private electricians interfering HESCO installations.

vi. HESCO Management allocated 135 million for the establishment of Transformer Repairing / Reclamation of workshop during this year to avoid the repairing of Transformer from private workshop in order to avoid the fatal / non fatal accident in HESCO.

vii. The field formation has removed 228 No. hazards points and the remaining progress is under going in field formation of HESCO, the details are as under:-

Total no. Of pending hazards points	Newly identified during the year	Total	No. of Hazards removed	Remaining Hazards
116	395	511	228	283

76.3. The Authority has considered the submissions of HESCO and is of the view that HESCO has tried to portray the picture that it has taken a lot of measures to avoid/reduce fatal accidents and create a safety culture, however, the number of fatal accidents for both employees and the public occurred in HESCO service territory during the year 2020-21 is 32 which is much more as compared to previous years i.e.

FY 2016-17	03
FY 2017-18	15
FY 2018-19	12.
FY 2019-20	08

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

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

77.1. 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.

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

ABSTRACT OF COMPLETED STG WORKS (2020-21)

NEPRA AUTHORITY

A. Grid Station

Sr.#	Description	Nos	Cost (MRs.)	Works
1	Augmentation	01	55.756	i. 132kV Grid Station Nooriabad
2	Extension	01	50.460	i. 132kV G/S Golarchi
3	Extension (L/Bay)	03	44.439	i. 132KV Gird Station Daulatpur ii. 132KV Gird Station Thatta iii. 132KV Gird Station Sujawal
4	Rehabilitation (Bus Bar)	02	67.277	i. Renovation of Bus Bar at 132KV Grid Station GTPS Kotri ii. Rehabilitation of Existing 132KV G/S Jamshoro Old
	Total A	07	217.932	

Abstract of Completed Works 2020-21

Sr. No.	HEAD	No of Proposals Completed		Scope	Expenditure Rs. In Million	Estimated Saving MkWh	System Improvement and Benefits Achieved: Base line condition	Improved condition	Financial Impact (Monetary Saving Million Rs)
1	ELR	HT	19	New Line HT = 81.65M Re-Cond: HT= 40.66KM	191.05	16.28	Strengthening of distribution network. Reduction in length of HT + LT network.	Addition to kVA. Stable & reliable power supply.	374
		LT	84	New Line HT = 37.33KM New Line LT= 4.12 KM Re-Cond: LT= --- New T/F = 263 No. Aug T/F= 01 No.	75.3	1.87	To cope load growth. Removing hazardous points.	Cater load demand. Resultantly reducing loading of distribution Transformers	43
2	DOP	HT	22	New Line HT = 11.86 KM Re-Cond: HT=19.03 KM	27.54	0.655			15
		LT	27	New Line HT = 8.93 KM New Line LT= -- Re-Cond: LT= -- New T/F = 75 No. Aug T/F= --	14.25	0.068			1.60

Year wise reduction in T&D Losses

Financial Year	%age Loss	%age Inc/Dec
2019-20	28.9	--
2020-21	28.0	-0.9

NEPRA AUTHORITY

77.3. The Authority has considered the submissions of HESCO and is of the opinion that HESCO has invested amounts by carrying out augmentation, extension and rehabilitation of grids under, STG, DOP and ELR Heads. However, HESCO hasn't submitted the technical benefits achieved by it after investing such amounts. Therefore, HESCO is directed to submit detail of technical benefits in term of significant improvement in reliability and quality of supply accrued against expenditure of amounts.

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

78.1. The Authority in the previous tariff determination directed the Petitioner to install the TOU meters for all the eligible connections and submit the details in this regard.

78.2. The Petitioner during the hearing submitted that TOU meters have been installed to most of the eligible connections i.e about 97% plus. Further installation of TOU meters is under process.

Sr.#	Tariff Category	Total No. of Connections for installation of TOU Meters (Three Phase)	TOU Meters installed (Three Phase) 10/2021	TOU Meters yet to be installed (three Phase)	Reasons for delaying installation
1	Residential	4,115	3,798	317	The installation of TOU meters is under process
2	Commercial	5,403	5,226	177	
3	Industrial	9,007	8,942	65	
4	Bulk Supply	227	165	62	
5	Agriculture	10,057	9,974	83	
	Total	28,809	28,105	704	

78.3. The Authority has considered the submissions of HESCO and further directed HESCO to clear all pendency and install TOU meters within one month and submit a compliance report to NEPRA in this regard.

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

79.1. 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.

79.2. The Petitioner during the hearing submitted that AMI/AMR system has been installed on all connections of Sindh Government Departments.

Total No. of GoS Connections

Month	AMR Communicated	AMR Non-Communicated	Total connections-AMR meters installed	Non-AMR	P-Disc.	G. Total
Nov-21	5,952	5,587	11,539	153	4,235	15,927

79.3. The Authority has considered the submissions of HESCO and directed HESCO to submit the impact analysis/benefits achieved due to the installation of AMR meters on government connections, particularly in term of reduction in losses and improvement in recovery. HESCO is further directed to submit a plan for the installation of AMR meters at least on PMT level in its service territory.

NEPRA AUTHORITY

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

80.1. 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.

80.2. The Petitioner during the hearing submitted as such no future plan for Aerial Bundle Cable (ABC) in HESCO.

80.3. The Authority has considered the submissions of HESCO and directs HESCO to submit a plan for laying ABC cable, especially in high loss areas in order to control theft and improve recovery.

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

81.1. The Authority in the previous tariff determination directed the Petitioner to submit the details IGTDP for last five years.

81.2. The Petitioner during the hearing submitted that the investment made for last years 5 years, was as per IGTDP. The achievements are as under;

Financial Year	%age Loss	%age Inc/Dec
2015-16	26.6	--
2016-17	30.8	4.1
2017-18	29.8	-0.9
2018-19	29.5	-0.3
2019-20	28.9	-0.6
2020-21	28.0	-0.9

81.3. The Authority has considered the submissions of HESCO and is of the view that despite spending huge amounts under the investment head, there is no significant reduction in percentage losses by HESCO. A third-party performance audit may be carried out in order to ensure whether utilization of funds was proper or otherwise. A compliance report may be submitted to NEPRA in this regard.

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

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

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

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

83. 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.

84. <u>Order</u>

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

Distribution of Power (DOP)

Description	Unit	FY 2020-21 DOP	FY 2021-22 DOP	FY 2022-23 DOP
Units Purchased	[MkWh]	5,443	5,443	5,957
Units Sold	[MkWh]	4,386	4,405	4,851
Units Lost	[MkWh]	1,058	1,038	1,106
Units Lost	[%]	**19.43%**	**19.07%**	**18.57%**
Investment	[Mln. Rs.]	2,227.00	11,932.00	20,686.00
Pay & Allowances		4,763	5,787	6,407
Post Retirement Benefits		2,297	2,526	2,744
Repair & Maintainance		639	720	782
Traveling allowance		222	250	272
Vehicle maintenance		151	170	185
Other expenses		144	162	176
O&M Cost	[Mln. Rs.]	**8,216**	**9,615**	**10,564**
Depriciation		1,300	1,423	1,636
RORB		1,850	2,442	3,528
O.Income		(2,022)	(1,466)	(1,466)
Margin	[Mln. Rs.]	9,344	12,015	14,263
Avergae Tariff	[Rs./kWh]	2.13	2.73	2.94

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

NEPRA AUTHORITY

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%

84.3. Hyderabad Electric Supply Company Limited (HESCO), being a distribution licensee, is allowed to charge its consumers, the following "Use of system charge" (UOSC) for the FY 2022-23;

Description	For 132 kV only	For 11 kV only	For both 132kV & 11 kV
Asset Allocation	24.00%	58.27%	82.27%
Level of Losses	3.00%	9.98%	12.69%
UoSC Rs./kWh	0.65	1.84	2.56

84.4. 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,

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

84.6. 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;

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

84.8. 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.

84.9. 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.

85. **<u>Summary of Direction</u>**

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

i. To complete tagging of its assets by December 31, 2022.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

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

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

v. 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

vi. 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.

vii. To clear all pending connections and submit a detailed report on a monthly basis.

viii. To submit report indicating the current/latest status pertaining to establishment of corporate desk to facilitate corporate clients.

ix. To submit the detailed (project wise) report along with its timelines executed and/or to be executed in upcoming years. HESCO 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 coordinate with NTDC and make a plan for removal of constraints and submit the report for consideration of the Authority.

xii. To submit the project-wise detail and subsequent improvement of performance standards.

xiii. To submit detail of technical benefits in term of significant improvement in reliability and quality of supply accrued against expenditure of amounts.

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

xv. To submit the impact analysis/benefits achieved due to the installation of AMR meters on government connections, particularly in term of reduction in losses and improvement in recovery. HESCO is further directed to submit a plan for the installation of AMR meters at least on PMT level in its service territory.

xvi. To submit a plan for laying ABC cable, especially in high loss areas in order to control theft and improve recovery.

NEPRA AUTHORITY

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

xviii. STG and HT connectivity proposals should be reflective of the new grid stations as planned and approved under TSEP be given in the tariff determination

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

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

xxi. 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.

xxii. 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.

xxiii. 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.

xxiv. 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.

xxv. 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.

xxvi. 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.

xxvii. 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.

xxviii. 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.

xxix. 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.

xxx. To provide the details of the corrective measures to tackle the future demand and removal of constraints.

xxxi. To provide detailed reasoning for less drawl of power against its allocated quota.

xxxii. To submit the measures that can be taken to convert hard areas into soft

xxxiii. To take all the possible preventive measures to ensure no fatal accidents occur in future.

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

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

AUTHORITY

⊗ 02/06/22

Rafique Ahmed Shaikh
Member

Engr. Maqsood Anwar Khan
Member

Tauseef H. Farooqi
Chairman

⊗ My additional note is attached herewith.

02/06/22

NEPRA AUTHORITY
NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

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Additional Note:

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

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

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

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

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

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

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

Annexure A
STG Own Resource / WB Loan

Year FY 2021-22

Sr	Scope of Work	Nature	Total Cost
1	In & Out Arrangement at Saeedabad G/S 2 No. L/Bays at Substation	New Transmission Lines	187.93
2	Sakrand -- Nawabshah Society 2 No. L/Bays (1 No. at Sakrand & 1 No at NawabShah)		131.60
3	132 KV Sujawal - Golarchi T/L		724.88
4	132KV G/S JAM NAWAZ ALI (1x20/26MVA Power T/Bay) a/w allied T/L	New Grids & Associated Lines	729.49
5	132KV G/S Sakhi Wahab Hussain (New)		9.21
6	66/132KV G/S KUNRI (CONV: FROM 66KV to 132KV) a/w allied TL	Conversion	397.83
7	66/132KV G/S MITHI alongwith T/L Naukot-Mithi (2 No: Line Bays (CONV:)		866.53
8	66/132KV G/S ISLAMKOT along with T/L Mithi - Islamkot (2 No: Line Bays (1 No: at each end)CONV:		874.08
9	Ext: of 40 MVA T/Bay at 132KV G/S LATIFABAD	Extension	118.46
10	Ext: of 31.5/40 MVA T/Bay at 132KV G/S KOTRI SITE		185.04
11	Ext: of 31.5/40 MVA T/Bay at 132KV G/S Nooriabad		185.04
12	Ext: of 31.5/40 MVA T/Bay at 132KV G/S Kohsar		185.04
13	Extension of 10/13MVA P/Transformer at 66KV G/S KADHAN		11.98
14	Aug: of 20/26MVA P/Transformer at 132KV G/S NOORIABAD	Augmentation	93.35
15	Rehabilitation work at 132KV G/S NTPS, Hyd:	Rehabilitation	0.18
16	Installation of Twin Bundle conductor Bus Bar at 132KV G/S M.P.KHAS		4.58
17	Installation of Twin Bundle conductor at 132KV G/S JAMSHORO (Rehab: work)		2.18
18	Installation of Twin Bundle conductor at 132KV G/S SAKRAND (Rehab: work)		0.21
19	Operational Constraints (Conversion of Iso Bays in to Line Bays) (No Iso Bays)	Op Constraints/ Remodeling/ Diversion Work	127.77
20	132kV T.M Khan - B.S Karim Transmission Line		325.56
21	132kV SDT B.S Karim - Sujawal Transmission Line		263.70
22	132kV SDT Thatta - Pir Patho Transmission Line		220.98
23	132kV SDT Pir Patho - Mirpur Sakro Transmission Line		173.79

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

24	132kV D/C NTPS - Hala Road Transmission Line		101.92
25	132kV SDT NTPS - T.M Khan		495.54
26	132kV D/C Thatta - Sujawal Transmission Line		40.30
	Total of GSC Works		6,459.56
27	Grid System Operation Material		778.24
28	GSO maintenance Material (Annual)		421.35
29	GSO/ GSC T&P		120.26
30	Fire Fighting Equipment for Existing System		32.44
	Total of GSO Works		1,352.29
	Grand Total		7,811.85

Year FY 2022-23

Sr. No.	Scope of Works	Nature	Total cost
1	132 kV Mirpurkhas II	New Grid Station and Allied T/Lines	468.25
2	132 kV Bhit Shah		338.06
3	132kV Kotri Site-2 S/S		674.75
4	132kV Gulistan Sarmast S/S		808.27
5	Rashidabad,		522.24
6	River Bund Grid Stations		683.52
7	Khipro	Conversion	1,080.39
8	1). Tando Adam	Extension	52.88
9	1). Hala T-2,	Augmentation	44.77
10	Double Circuit (28Km) (Jamshoro-Qasimabad-Hala Road) (Jamshoro-Rajputana-Hala Road)	Remodeling	339.20
11	SCADA 80 Nos. Grid Stations	SCADA	-
12	Complete facility for AMI System for 30,000 AMR meters (For Hyderabad & Laar Circle)	AMI	334.24
13	Supply of goods & equipment including Power Transformers, Circuit Breakers, CT/PT, LAs, 11 kV switch gears, 132 KV T/L material , Testing Sets, Crane, Crane mounted Loaders, Lifters, vehicles with built in iron man hoists, Non Ceramic Composite Insulators.	Improved O&M	1,184.96
14	Technical Assistance (TA)	Trainings	51.99
15	Hiring Project Implementation and Management Support Consultants PIMSC)	Project Implementation Support.	125.93
16	Financing Cost (IDC + Commitment)		221.01
17	Project Overhead (HESCO Support)		221.01

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY NEPRA AUTHORITY

-70-

	GSC Works Total		7,151.47
18	Grid System Operation Material		389.12
19	GSO maintenance Material (Annual)		210.68
	GSO works		599.79
	Grand Total		7,751.26

Year FY 2023-24

Sr. No.	Scope of Works	Nature	Cost
1	Construction of 06 Nos. 132 kV Transmission Lines from proposed 220kV New Mirpur Khas Grid Station (of NTDC) to HESCO's Network. 2KM 2xD/C with Greely Conductor 42 KM 1xSDT with Rail Conductor 7 KM 1xSDT with Rail Conductor	New Transmission Line	159.49
2			864.73
3			160.02
4	2nd circuit Mirpur Khas – Samaro S/S		297.84
5	2nd circuit Noukot - Mithi - Islamkot		755.98
6	2nd circuit Samaro - Umerkot T/L		326.85
7	2nd Circuit N'Shah-1 – Dour T/L		683.39
8	Remodeling of Jamshoro New-Lakhra-Khanote	Remodeling	1,673.18
9	Double Circuit (28Km) (Jamshoro-Qasimabad-Hala Road) (Jamshoro-Rajputana-Hala Road)		42.40
10	Rashidabad,	New G/S + T/L	174.08
11	River Bund Grid Stations		227.84
12	Khipro	Conversion	360.13
13	1). Tando Adam	Extension	237.97
14	1). Hala T-2,	Augmentation	201.48
15	SCADA 80 Nos. Grid Stations	SCADA	-
16	Complete facility for AMI System for 30,000 AMR meters (For Hyderabad & Laar Circle)	AMI	95.50
17	Supply of goods & equipment including Power Transformers, Circuit Breakers, CT/PT, LAs, 11 kV switch gears, 132 KV T/L material , Testing Sets, Crane, Crane mounted Loaders, Lifters, vehicles with built in iron man hoists, Non Ceramic Composite Insulators.	Improved O&M	253.92
18	Technical Assistance (TA)	Trainings	51.99
19	Hiring Project Implementation and Management Support Consultants PIMSC)	Project Implementation Support.	125.93
20	Financing Cost (IDC + Commitment)		88.56

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

21	Project Overhead (HESCO Support)		88.56
	Total of GSC Works		6,869.85
22	Grid System Operation Material		214.02
23	GSO maintenance Material (Annual)		115.87
	Total of GSO Works		329.89
	Grand Total		7,199.73

Year FY 2024-25

Sr. No.	Scope of Works	Nature of Work	Total Cost
1	Jam Nawaz Ali – Tando Adam S/S 2xLine Bays	New Transmission Line	578.35
2	Kazi Ahmed - Dour S/S		683.39
3	132kV Sanghar - Shahpurchakar - Nawabshah-II - Nawabshah-I S/S	Remodeling	1,405.60
3	132kV Jam Sahib S/S	New GS + TL	782.76
4	132kV Garho S/S		997.10
5	Rashidabad,		174.08
6	River Bund Grid Stations		227.84
7	Khipro	Conversion	360.13
8	Double Circuit (28Km) (Jamshoro-Qasimabad-Hala Road) (Jamshoro-Rajputana-Hala Road)	Remodeling	42.40
9	SCADA 80 Nos. Grid Stations	SCADA	-
10	Complete facility for AMI System for 30,000 AMR meters (For Hyderabad & Laar Circle)	AMI	47.75
11	Supply of goods & equipment including Power Transformers, Circuit Breakers, CT/PT, LAs, 11 kV switch gears, 132 KV T/L material , Testing Sets, Crane, Crane mounted Loaders, Lifters, vehicles with built in iron man hoists, Non Ceramic Composite Insulators.	Improved O&M	253.92
12	Hiring Project Implementation and Management Support Consultants PIMSC)	Project Implementation Support.	167.90
13	Financing Cost (IDC + Commitment)		63.70
14	Project Overhead (HESCO Support)		63.70
	Total of GSC Works		5,849
15	Grid System Operation Material		194.56
16	GSO maintenance Material (Annual)		105.34
	Total GSO		299.9
	Grand Total		6,148

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

Annexure B
Sindh Development Plan / Federal PSDP

Grid Stations

Sr. No	Name of Grid Station	Voltage (kV)	Year of Implementation	Transformer Detail
New Grid Stations				
1	Nooriabad-II	132	2024-25	2 x 31.5/40
2	Jhudo	132	2024-25	1 x 31.5/40
3	Nindo Town	132	2024-25	1 x 31.5/40
Conversion				
1	Pithoro	132	2024-25	1 x 31.5/40
2	Tando Bago	132	2024-25	1 x 31.5/40
3	Pangrio	132	2024-25	1 x 31.5/40
4	Kaloi	132	2024-25	1 x 31.5/40
Augmentations				
1	Sakrand	132	2023-24	T-2 20/26 to 40 MVA
2	Sanghar	132	2023-24	T-2 20/26 to 40 MVA
3	Qazi Ahmad	132	2023-24	T-2 20/26 to 40 MVA
4	Mirpur Khas	132	2023-24	T-3 20/26 to 40 MVA
5	Tando Jam	132	2023-24	T-1 20/26 to 40 MVA
6	Hala	132	2023-24	T-3 20/26 to 40 MVA

Transmission Line

Sr. No.	Name & Description	Length (km)	Circuit Type	Conductor Name	Year
1	132kV In/Out T/L for Nooriabad-II G/S from TGF to Nooriabad T/L	5	D/C	Greely	2024-25
2	132kV In/Out T/L for Judo G/S from Noukot to Tando Jan Mohammad T/L	3	D/C	Lynx	2024-25
3	132kV S/C T/L from Nindo Town to Badin G/S	28	SDT	Cairo	2024-25
4	132kV S/C T/L from Pithoro to Samaro G/S	30	SDT	Lynx	2024-25
5	132kV S/C T/L from Tando Bago to Badin G/S	25	SDT	Cairo	2024-25
6	132kV S/C T/L from Pangrio to Tando Bago G/S	28	SDT	Cairo	2024-25
7	132kV S/C T/L from Kaloi to Pangrio G/S	22	SDT	Cairo	2024-25
8	132kV S/C T/L from Tando Mohammad Khan to Shaikh Bhirkio G/S	25	SDT	Cairo	2024-25

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

9	132kV S/C T/L from Tando Mohammad Khan to New Matli G/S	25	SDT	Greely	2024-25
10	132kV S/C T/L from Daultpur to Daur G/S	40	SDT	Lynx	2024-25
11	132kV S/C T/L from Kaloi to Noukot G/S	40	SDT	Cairo	2024-25
12	132kV D/C T/L from Nooriabad to Kalu Kohar G/S	10	D/C	Greely	2024-25
13	132kV D/C T/L from Hala Road to Tando Adam to Hala G/S	12	D/C	Rail	2024-25
14	132kV S/C T/L from Hala Road to Hala G/S	62	Stringing	Rail	2024-25

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

Annexure C
Detail of GSO/GSC T&P

REQUIREMENT OF T&P BY GSC / GSO ORGANIZATION

S#	Description of T&P	Unit	GSC	GSO	TOTAL (Qty)
1	Oil Test Set With Printer	Sets	1	1	2
2	Dehydration Plant 10000 Ltr / Hour (Make European)	No.	0	0	0
3	C&DF Test Set (Make European) 12 KV	No.	1	1	2
4	Insulation Resistance Test Set (Make European) 10 KV	No.	1	5	6
5	Three Phase Transformer Turn Ration test set	No.	1	2	3
6	AC Hipot Test set(80 KV)	No.	1	1	2
7	DC Hipot Test Set 120 KV	No.	1	1	2
8	SF6 Gas analyzer Test Set	No.	0	1	1
9	Vacuum Bottle Test Set Vidar or Equivalent	No.	1	1	2
10	Battery Loader Set (Torkel 9030 or equivalent)	No.	1	0	1
11	Relay Testing Set (Omicron 256/356 or equivalent)	No.	1	1	2
12	Winding Resistance Test Set	No.	1	1	2
13	CT Analyzer	No.	1	0	1
14	Earth Resistance Test Set	No.	0	4	4
15	Hydraulic Jack (50 Ton)	No.	8	0	8
16	Wooden Sleeper 13(1/2)"x5.5"x8"	No.	100	0	100
17	AVO Meter	Nos.	5	10	15
18	Clamp on Meter(0-100 Amps) Jermany or equivalent	Nos.	5	6	11
19	Generator 5 KVA, 3 phase, Portable	Nos.	2	3	5
20	FIBER LADDER 45' FEET	No.	0	77	77
21	SAFETY HARNESS with Carabineer, Pole strap and lanyard	No.	10	30	40
22	SAFETY GOGGLES	No.	0	45	45
23	BINOCULAR (10 X 50)	No.	0	15	15
24	Thermo vision Camera	No.	0	3	3
25	FIRST AID BOX WITH MEDICINES	No.	0	0	0
26	HYDRO METER	No.	0	0	0
27	TORCH	No.	0	0	0
28	T&P BOXES	No.	0	0	30
29	CHAMPION SET	Set	0	0	0
30	CHAIN HOIST 1-1/2 TON	No.	0	0	0
31	CHAIN HOIST 3 TON	No.	0	18	18
32	CHAIN HOIST 5 TON	No.	0	13	13

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

-75-

33	TREE TRIMMER (MOTOR OPERATED SAW TYPE)	No.	0	0	6
34	HYDRAULIC CONDUCTOR CUTTER 50 mm	No.	0	10	10
35	ANVIL	No.	0	0	0
36	BENCH VICE (GENERAL)	No.	0	0	0
37	BENCH VICE (FOR PIPES)	No.	0	0	0
38	GAS CUTTER COMPLETE WITH CYLINDERS AND 25FT PRESSURE PIPE/SET	No.	0	0	0
39	IRON CUTING MACHINE	No.	0	0	34
40	DRILL MACHINE (HAND HELD)	No.	0	20	20
41	CROW BAR 1" dia , 10 ft long	Set	0	15	15
42	HAND LINE HOOK 500 LBS	No.	0	0	0
43	RING SPANNER SET	No.	0	0	83
44	FIX SPANNER SET	No.	0	0	83
45	BOX SPANNER SET	No.	0	0	88
46	02 POUND SMALL HAMMER	No.	0	0	0
47	SLAG HAMMER	No.	0	0	0
48	ANCHOR SHACKLE 6"L, 1/2"dia (Forged Steel)	No.	0	0	0
49	Pedestal Drill Machine	No	0	0	0
50	Silica Gel	kg	0	0	0
51	Pipe wrench 12"	No.	0	34	34
52	Pipe wrench 18"	No.	0	34	34
53	Torque Wrench (120 NT)	No.	0	12	12
54	Bolt Cutter	No.	12	14	26
55	Screw Wrench 200	No.	0	70	70
56	Screw Wrench 300	No.	0	70	70
57	Pulling GRIP SHIELD WIRE (Kelin or equalent)	No.	4	0	4
58	PULLING GRIP FOR LYNX COND: (Kelin or equalent)	No.	20	30	50
59	PULLING GRIP FOR RAIL COND: (Kelin or equalent)	No.	10	10	20
60	Pulling Grip for Greely (Kelin or equalent)	No.	4	9	13
61	PULLING GRIP FOR DOG COND: (Kelin or equalent)	No.	0	11	11
62	HAVENS , 10MM Wire Rope Grip	No.	5	19	24
63	NYLON Web SLINGS (End Less) 1" wide, 4Ft long, 5 Ton	No.	20	40	60
64	NYLON Web SLINGS (End Less) 2" wide, 4Ft long, 5 Ton	No.	20	60	80
65	NYLON Web SLINGS (End Less) 2.5" wide,6Ft long, 8 Ton	No.	20	60	80
66	Wire Rope SLINGS 5/8" dia (Eye & Eye) 4 Ft Long	No.	0	0	0

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

67	Wire Rope SLINGS 5/8" dia (Eye & Eye) 6 Ft Long	No.	0	0	0
68	Wire Rope SLINGS 3/4" dia (Eye & Eye) 8 Ft Long.	No.	0	0	0
69	Polypropylene Rope 3 strand twisted 3/4"Dia	Mtr	200	300	500
70	Polypropylene Rope 3 strand twisted 1/2"Dia	Mtr	200	300	500
71	Polypropylene Rope 3 strand twisted 1"Dia	Mtr	200	300	500
72	Polypropylene Rope 1/4 "Dia	Mtr	200	300	500
73	Steel Wire Rope 1/2" dia	Mtr	150	150	300
74	Steel Wire Rope 1/3" dia	Mtr	150	150	300
75	Single Sheave Tackle Block 6" dia, 5 Ton SWL for 1" PP rope	No	0	25	25
76	Single Sheave snatch Block 4" dia, 5 Ton SWL for 1" PP rope.	No	0	25	25
77	Single Sheave snatch Block 4" dia, 5 Ton SWL for 1/2" wire rope.	No	0	25	25
78	Single Sheave Stringing Snatch Block 6" dia,	No	34	0	34
79	Single Sheave Stringing Snatch Block 4" dia,	No	44	0	44
80	11 KV EARTHING SET	Set	0	20	20
81	132 KV EARTHING SET	Set	0	20	20
82	Chain Pulley Block 10 Ton	No	4	0	4
83	Chain Pulley Block 5 Ton	No	4	0	4
84	Chain Pulley Block 3 Ton	No	2	0	2
85	Megger 1 KV	No	0	5	5

Description of Firefighting Equipment

S#	Description of Fire Fighting Equipment	Quantity
1	Chemical Foam Type 10 Gallon	128
2	Foam Type 02 Gallon	293
3	Sand Container with Shovel	405
4	Fire Buckets with Stand	558
5	CO2 Trolley Mounted Twin Cylinder of 20Kg Capacity Each = 40Kg	59
6	CO2 trolley Mounted 40 Kg	85
7	CO2 20Kg Trolley	11
8	CO2 5-7Kg	20
9	DCP 50 Kg	170
10	Warning caution tape 3", 120 ft	500
11	Stand for Buckets	200
12	Barrier Cones 28"	150

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

Annex-D

HSE Objectives/Targets

Definition

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

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

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

HSE Objectives/Targets

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

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.

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.

NEPRA AUTHORITY
NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

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

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.	

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