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Draft NEPRA  
Guidelines for  
determination of  
Revenue Requirement  
& Use of System  
Charges

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## Section 1: Introduction

-----:- In exercise of the powers conferred by section 7(2)(i) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (XL of 1997) read with rule 3(2)(g) of NEPRA Tariff (Standards and Procedure) Rules, 1998, the National Electric Power Regulatory Authority, hereby issues the following guidelines to lay down the Methodology & Process for Determination of Revenue Requirement and Use of System Charges (UoSC) for a Transmission Licensee.

### Part 1: Introduction: Legal and rule/regulatory framework and objectives of the Guidelines

#### 1.1. Purpose/ Scope of these Guidelines

1.1.1. The objective is to establish a transparent methodology for the determination of transmission revenues and UoSC that is predictable and certain in its operation and is consistent with the requirements under the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (the NEPRA Act) and the rules and regulation made thereunder, and for the licensees to know in advance and prepare tariff petitions with adequate information and the required data.

1.1.2. The guidelines cover the methodologies and processes for:

1. the determination of the revenue requirements for the transmission Licensee
2. the setting of UoSC consistent with the determined revenue requirements

1.1.3. The guidelines set out the requirements on the Transmission Licensee in submitting their petition and how NEPRA will assess/decided the Petition.

#### 1.2. Structure of the Guidelines

1.2.1. The section 1 of the guideline outlines the purpose/scope, legal framework, definition, minimum filing requirement and notification of tariff. The section 2 of the guidelines deals with the tariff setting parameters and methodology for the National Transmission and Despatch Company i.e. NTDC. The section 3 deals with the Special Purpose Transmission Licensees in the private sector as well as transmission licensees owned by the Provincial Governments.

#### 1.3. Process for reviewing and modifying the guidelines

1.3.1. These guidelines may be modified by the Authority from time to time to enhance the methodology and address any issue identified during application. Modification of the guidelines will be done sufficiently in advance for the licensee to have time to adequately prepare the corresponding petition. Modification applicable to a petition will be approved at least 3-4 months prior to deadline for submission of the transmission tariff petition. Ideally

this would be done in this way, however, the Authority may frame an issue in this regard during the tariff petition process as well.

- 1.3.2. The Authority keeping in view the dynamic power sector of Pakistan and experience in the application of the methodology and process, may consider changing/modifying the existing guidelines. The Authority will advertise in leading newspapers and upload the proposed modifications<sup>5</sup> on the website for at least ten to fifteen working days, together with a document explaining the rationale and scope of the modifications under consideration, to seek stakeholder's comments. Additionally, the Authority may intimate the stakeholder through individual letters / notices requesting comments. Further the Authority may frame an issue in this regard during the proceeding of the UoSIC determination. The Authority after considering the submitted comments may or may not approve the proposed modification.

#### **1.4 Legal Framework**

- 1.4.1. NEPRA was established under the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (Act) and one of its core functions is to determine, specify or approve the tariffs for the generation, transmission and distribution companies. In accordance with Section 31 read with section 46 of the Act, NEPRA developed the National Electric Power Regulatory Authority (Tariff Standards and Procedure) Rules, 1998 which provides for tariff setting process and broad principle of tariff setting.
- 1.4.2. In accordance with the legal framework and NEPRA (Tariff Standards and Procedure) Rules, 1988, any licensee, consumer or person interested in tariff may file a tariff petition with the Authority to determine the revenue requirement and the associated Use of System Charges for the Transmission Licensee. NEPRA determines the revenue requirement of the Transmission Licensee by assessing the different components of revenue requirement. Upon admission of the petition, NEPRA uploads in the website and invites the public and other stakeholders to make comments. NEPRA may conduct public hearing after receiving comments from the public/ stakeholders in line with the Act, in order to enhance transparency and accountability.
- 1.4.3. The NEPRA Act establishes two types of transmission licensees: The national grid company licensed as defined in Section 17 of NEPRA Act, the National Transmission & Despatch Company, (NTDC, a Federal Government owned company), and special purpose transmission licenses as per Section 19 of the NEPRA Act.
- 1.4.4. As per the Policy Framework for Private Sector Transmission Lines Projects 2015, the Transmission Line projects would be offered on (BOOT) basis, (comprising of extra high voltage (EHV) overhead transmission lines (OHL) and grid stations (GS) or converter station (CS)). The term of these projects will be 25 years, following which they will be transferred to NTDC. Here it is pertinent to mention that in addition that private transmission can be built outside this Policy.

## Part 2: General

### 2.1. Short title and commencement:-

1. These guidelines shall be called NEPRA Determination of Use of System Charges (Methodology & Process) Guidelines, 2016.
2. These guidelines shall be applicable for all the transmission licensees and shall be applicable with immediate effect.

### 2.2. Definitions:-

2.2.1. In these guidelines, unless there is anything repugnant in the subject or context,

- a. "Act" means the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (XL of 1997);
- b. "Authority" means the National Electric Power Regulatory Authority (NEPRA);
- c. "Available" means the transmission capacity or tie line transfer capacity that is both (a) available in accordance with the Grid Code and (b) declared as available for the despatch of the power system.
- d. "Base Year" means the year on which the annual or multiyear tariff projection is being made. It 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.
- e. "bulk power consumer" means a consumer who purchases or receives electric power, at one premises, in an amount of one megawatt or more or in such other amount and voltage level and with such other characteristics as the Authority may determine and the Authority may determine different amounts and voltage levels and with such other characteristics for different areas;
- f. "Capital Base" means the Capital base as worked out in Annex-IV
- g. "Fixed Use of System Charge" means the UoSC to recover the allowed revenue requirement of the transmission licensee, calculated as Rs per kW/month of peak demand or Rs. per kW" per hour of total capacity.
- h. "Grid Code" means the NTDC Grid Code 2005
- i. "License" means a license issued for generation, transmission or distribution under the Act;
- j. "Licensee" means a licensee to whom a transmission license has been granted by NEPRA in accordance with the Act;

- (k) "National Transmission and Despatch Company Limited (NTDC)" means the national grid company licensed by the Authority;
- (l) "Petition" means a petition made to the Authority for the determination, modification or revision of tariff;
- (m) "Petitioner" means any licensee of NEPRA, consumer or person interested in tariff that may file a petition with the Authority;
- (n) "Planning Documents" means a detailed "Transmission Investment Plan" as required under PC-4 of the planning code of the Grid Code, which shall be prepared that is based on the NTDC Twenty Year load forecast, Indicative Generation Capacity Expansion Plan (IGCEP) and the Transmission System Expansion Plan (TSEP) based on ASRAI. The transmission plan may be prepared for next one, three, five and ten years into the future;
- (o) "Regulatory Asset Base (RAB)" means the RAB as worked out in Annex III;
- (p) "Registrar" means, registrar as defined in NEPRA (Tariff Standards and Procedure Rules, 1998);
- (q) "Revenue Requirement" (RR) means the costs allowed to be recovered by the licensee from Transmission Users to provide transmission services (and for NTDC, also system operation services);
- (r) "Rules" means NEPRA Tariff (Standards and Procedure, Rules, 1998) and any other such rules made by the Authority from time to time;
- (s) "System Operator" means a division of NTDC responsible for system operation and dispatch as established in license of NTDC and the grid code;
- (t) "Separate Business" means each of the transmission business of the licensee, the tie-line business of the licensee, and any other business of the licensee, undertaken separately;
- (u) "System Operation business" means the business of operation of power system for the transmission and dispatch of electric power including the balancing services and inter-connection services;
- (v) "Test Year" means the first year of tariff control period in multiyear tariff regime;
- (w) "Tie-Line" means interconnection facility for the transfer of electric power between a transmission licensee and other utilities not governed by the Act;
- (x) "Transmission Business" means the business of transmission of electric power carried on or to be carried on by a transmission licensee pursuant to and in accordance with the terms of its license in [planning], development, construction and maintenance of the licensee's transmission system and, as applicable, inter-connection services.

3. "Transmission System " means one or more systems comprising electrical facilities including, without limitation, electrical lines or circuits, electrical plant, transformers, sub-stations, switches, meters, interconnection facilities or other facilities operating at or above minimum transmission voltage constructed, owned, managed, controlled or operated by NTDCI or by one or more special purpose transmission licensees and used for transmission of electric power from the generation facility to sub-stations or to or from other generation facilities or between sub-stations or to or from any interconnection facilities or from the distribution facilities of one licensee to the distribution facilities of another licensee or from a generation facility to a distribution facility or a bulk-power consumer.

2. "Use of System Charge" (UoSC) means the charges to be paid by users of the transmission system to recover the allowed revenue requirement of the licensee.

2.2.2 Words and expressions used but not defined in these guidelines shall have the same meaning as in the Act and Rules and Regulations framed there under.

### **Part 3: Minimum Filing Requirements for Tariff Petitions**

- 3.1. Any petition seeking determination of transmission Revenue Requirement and UoSC filed, before NEPRA shall be signed/sealed by the Petitioner or its authorized representative and each page of the petition as well as annexure are to be initialed by the person filing the petition.
- 3.2. The petition shall be accompanied with copy of necessary authorization in favor of the signatory, if the petition is filed by a legal person other than natural person.
- 3.3. The affidavit filed as to correctness of the petition shall also be sealed/countersigned by the person authorized to take oaths.
- 3.4. beside the information required under sub rule (2) of rule 3 of NEPRA Tariff (Standards & Procedure) Rules, 1998, the information prescribed hereinafter as per Forms specified by NEPRA shall be included as part of the petitions. The information incorporated in all such Forms shall be accurate and complete in all respects. NEPRA may decline admission of a petition upon failure of the Petitioner to provide all the required Forms as hereinafter prescribed. NEPRA may amend any such Form as and when required, provided the change will be informed prior to the time for submission of the petition.
- 3.5. Prior to NTDCI submission of a tariff petition, the NTDCI shall be obliged to submit and seek prior approval of all the Planning Documents and Investment Program. Provided further that NEPRA may decline admission of a petition upon failure of the NTDCI to seek prior approval by NEPRA of the Planning Documents and Investment Program as required in Part 7 of the Guidelines or any of the forms.
- 3.6. The Petitioner shall submit the requisite information as per prescribed Forms along with their tariff petitions in one package, notwithstanding the size of the package.



- 3.7. The checklist of completeness of all the requisite information shall be ensured by the office of Registrar while receiving the tariff petitions. Notwithstanding provision of the information being prescribed through these Guidelines, the Authority may call for other relevant information to be filed and the admission of the petition could be refused by the Authority owing to non-filing of the requisite information.

#### **Part 4: Principles for determining Transmission revenues and tariffs**

- 4.1. In compliance with the requirements of the NEPRA Act, 1997 and the rules/regulations made thereunder, NEPRA determine the Revenue Requirement and UoS<sub>C</sub> using the methodology in these guidelines to achieve the objectives under the Act and to, in particular, promote the long term interest of electricity consumers through efficient provision and use of electricity services.
- 4.2. In determining tariffs that best achieve these objectives NEPRA will ensure that the approved Revenue Requirement and UoS<sub>C</sub> comply with the following regulatory principles:
- a. The Transmission licensee should be provided with a reasonable opportunity to recover prudent costs.
  - b. The regulation of Revenue Requirement and UoS<sub>C</sub> should promote economic efficiency with respect to network services by promoting:
    - i. Efficient investment in the transmission network,
    - ii. Efficient operation of the transmission network to the extent of T&T losses
  - c. In future, the Authority, with the advent of retail & wholesale market may introduce a performance based revenue regime in order to promote efficient use of electricity infrastructure.

#### **Part 5: Procedure for Notification of Tariff**

- 5.1. The Transmission Licensee may be granted an annual or a multi-year tariff that provides an opportunity to the company to fully recover the NEPRA approved revenue requirement.
- 5.2. The Order of the Authority along with relevant Annexes shall be intimated to the Government of Pakistan for notification in the official gazette in terms of section 31(4) of NEPRA Act, 1997.
- 5.3. The Tariff, once notified, shall remain effective until superseded by the new Tariff notified by the Government of Pakistan. The Tariff may be subject to periodic review as provided therein.

- 5.4 The order of the Authority to be notified will contain all the directions issued by NEPRA to be implemented by the licensee.

## **Section 2: National Transmission and Despatch Company Limited**

### **Part 6: Information to be submitted by NTDC**

- 6.1 The information required to be submitted by NTDC in the petition for the base year and the tariff control period, either under annual or Multi Year tariff regime, shall be as under:-

#### **6.2. General Information**

- a) The information required under rule 3(2) of NEPRA Tariff (Standards & Procedure) Rules, 1998.
- b) The costs components of the revenue requirement for the base year and the control period comprising General Establishment & Administrative Expenses, Repair & Maintenance (R&M) Expenses, Insurance, Depreciation, Other Expense, Prior Year Adjustment (PYA), Other Income, Financial Charges & Return on Equity or RORB.
- c) The details of pass through items, if any e.g. Corporate Tax etc.
- d) The justifications (e.g. cost/benefit analysis and payback periods etc.) for each of the costs requested in the petition not included in the approved Transmission Expansion Plan/Planning Documents.
- e) Availability of Transmission Capacity and level of congestion pertaining to the last three years, current and expected for the tariff control period.
- f) Actual and estimated MDI of each of the distribution licensee and bulk consumer connected to NTDC transmission system.
- g) Approved planning documents and assessment of Transmission losses for next years.
- h) Actual and estimated monthly demand for electricity (consumption and capacity) at transmission connection points.
- i) Asset register
- j) The details of the immediate prior five year's monthly and annual actual transmission losses.
- k) The details and explanations of the causes and/or reasons for the requested transmission losses (future losses).
- l) Details of financial charges along-with Term Sheet of Loans.
- m) Details of Capital base.

(n) Others, the licensee or the Authority may consider necessary to justify its petition

## Part 7: Schedule of petition and tariff determination Process

- 7.1. The Schedule establishes and maintains a detailed timeline for the submission, determination and notification of an annual or multi-year tariff of a transmission licensee, conforming to and consistent with the NEPRA Act and the NEPRA Tariff Rules.
- 7.2. The Scheduling assures that a quorum is present to take evidence and make decisions according to the administrative procedures and statutory requirements in force.
- 7.3. The following is the schedule for the submission and processing of the tariff petition.

<b>Schedule of Regulatory Proceedings</b>		
<b>A. Regulatory Proceeding for approval of Planning Documents and losses plan.</b>		
	<b>Description</b>	<b>Date</b>
1	Submission Planning Documents by NTDC. The Authority may club the approval proceedings of DIIP in the matter of XWDISCO along with the instant proceedings	September 01 each year
2	Submission of assessment of Transmission losses for next years by NTDC	September 01 each year
3	Review and Approval of the Planning Documents by NEPRA	Within 90 days of NTDC's submission plan. 30 <sup>th</sup> November, each year, if plan is submitted by September 1.
4	Approved Target of Transmission Losses by NEPRA	30 <sup>th</sup> November, each year, if assessment of Transmission losses is submitted by September 1
<b>B. Regulatory Proceeding for Rate case and Tariff Determination</b>		
1	Submit minimum filing requirements by NTDCL	By January 31 <sup>st</sup> each year under the SYT and in case of MYT as per the determination.
2	Revise minimum filing requirements (if necessary)	As required from time to time
3	NEPRA accepts minimum filing requirements	As required from time to time
4	Submit tariff petition by NTDCL(Complete in all respects)	January 31 <sup>st</sup>
5	NEPRA Admits tariff petition based on minimum filing requirements and appointment of Case Officer as well as decision to conduct of hearing.	Within 14 days from date of complete submission
6	Issuance of decision on admission/minutes of meeting	Within 04 days from date of meeting considering admission

7	Publication of notice of admission /hearing	Within 03 days from date of admission
8	Receipt of replies, comments or intervention requests	Within 07 days of publication
9	Filing of rejoinder, if any,	Within 07 days of filing of reply, comments etc
10	The Case Officer to thrash legal, financial and technical issues with help of NEPRA professionals, frame draft issues for hearing and submit initial case officer report to Authority	Within 21 days of receipt of input from in-house NEPRA professionals and from other stakeholders
11	Authority meeting to decide on items under Sr. No.7 and to Suggest holding of this hearing by one of the designated members of the Authority instead of the whole Authority, with each member acting as presiding officer for a number of tariff cases so that the work load is divided between the Authority members before it is ready for the determination of the full Authority	Within 04 days of submission of Case Officer Report as per Serial No. 7
12	Decision/minutes of the meeting at S. No. 11	Within 04 days of the meeting at S.NO. 11
13	Case Officer to communicate the "issues" to the parties for information and preparation of their case and publish on the website	Within 2 days of the meeting at S. No. 11
14	Conduct of hearing	Within 48 days from the date of advertisement
15	Close of Evidence, interrogatories, information directions etc.	Within 10 days of the conduct of last hearing
16	Case Officer Report with recommendations	Within 25 days of close of evidence
17	Authority meeting to discuss Case Officer's Report	Within 05 days of submission of case officer report at S.No. 16
18	Issuance of decision of Authority upon Case Office report at S.No.17	Within 05 days of meeting at S.No. 17
19	Authority's draft determination based on the recommendations of Case Officer	Within 10 days of decision taken vide S.No. 18
20	Vetting by Legal Section	Within 5 days of circulation of draft determination
21	Signature and issuance of determination	Within 5 days of legal vetting
22	Intimation of determination to Federal Government for notification	Within 3 days of signatures upon determination.
22	The Petitioner can file a motion for review of the determination as per the Rules	Within ten days of service of a final order
23	The GoP can fill a Reconsideration Request	Within fifteen days from the date of final order of the Authority
	If Reconsideration Request is filled by the GoP, Reconsideration Decision by the Authority	Within a period of fifteen days from the date of admission of Reconsideration Request
23.	Notification of the determination in official gazette	Within 15 days by Federal Government since receipt from NEPRA

- 7.4. These Guidelines schedule the time required to complete the determination of the transmission licensee's tariff within the timeframe as prescribed under the NEPRA Tariff Rules 1998.
- 7.5. The information provided by the respondents, interveners and commentators or otherwise available with NEPRA may also be considered during the course of tariff proceedings.
- 7.6. The 90 days' time line for the approval of Planning Documents and assessment of losses by NEPRA established in the Table Schedule of Regulatory Proceedings (22) can be extended up to 180 days in view of the comments from stakeholders requiring a review of the plan or additional information and clarification from NTDCI to respond or address received and subject to the approval of the Authority. In case the approval is granted the corresponding deadlines would change accordingly.

## **Part 8:- Petition Procedures and Approval of Planning Documents**

### **8.1. Tariff Petition Procedures**

1. The Petitioner may choose from among a past, current or future financial year as base year.
3. The Petitioner shall submit a complete financial analysis for the base year along with the information already prescribed in these guidelines.

### **8.2. Planning Documents**

- 8.2.1 NTDC shall prepare the Planning Documents and ensure that the same is integrated with the distribution expansion plan of NWDISCO's.
- 8.2.2 The Planning Documents will be reviewed and approved by NEPRA in a separate proceedings from tariff petition (as mentioned in Part 6) of these guidelines. The plan shall be analyzed by the Technical Division of NEPRA in consultation with stakeholders during a regulatory proceeding. The evaluation report prepared by the Technical Division of NEPRA along with the Technical Division's recommendations shall be submitted to the Authority for approval. NEPRA shall approve the Planning Documents prior to the submission of an annual or multi-year Revenue Requirement and CoSC petition.
- 8.2.3 NEPRA shall review and approve the Planning Documents for the transmission expansion plan based on information provided by the licensee as per procedures and deadlines provided in Part 6 of these guidelines.
- 8.2.4 NEPRA shall approve the Planning Documents of operations assets and facilities in order to improve the reliability and performance of the transmission system in Pakistan in accordance with the planning criteria and standards established in the planning code of the Grid Code.
- 8.2.5 Cost benefit analyses and payback periods for the operations investment plans shall be included.

- 8.2.6 Annual Investment Plans shall be reviewed by NEPRA staff for the purpose of determining allowances or disallowances in the determination of the revenue requirement.
- 8.2.7 Transmission licensees shall submit quarterly reports describing and justifying their actual investment for the purpose of monitoring of the implementation of planning documents subject to milestones submitted to and approved by NEPRA.
- 8.2.8 Transmission licensees shall submit details of the actual investments made during the year and the actual transfer of assets from Capital Work In Progress (CWIP) to Gross Fixed Assets in Operation (GF&AO) for making adjustments to the relevant components of Capital Base.
- 8.3. Losses Plan Procedures**
- 8.3.1 Although the losses of NTDC are only technical in nature, yet the NTDC should provide the future scenario of T&T losses, keeping in view the proposals / plans mentioned in the planning documents.
- 8.3.2 NTDC shall submit the details of the base year's monthly and progressive transmission losses as per the procedure and deadlines provided in part 6 of these Guidelines keeping in view the proposals / plans mentioned in the planning documents.
- 8.3.3 The NTDC shall submit the details of the immediately prior year's monthly and accumulated actual transmission losses.
- 8.3.4 The tariff petition shall include detailed report on transmission congestion and its impact on generation dispatch costs, load shedding and transmission losses if any. The report should also include non supplied energy due to unavailability or interruptions in transmission links or facilities as a performance indicator.
- 8.3.5 The aforementioned details / report submitted by the petitioner shall be analyzed by the Technical Division of NEPRA in consultation with the stake-holders during a regulatory proceeding.
- 8.3.6 A petition submitted, supported by a historical financial year, shall include only audited and verified technical losses and forecasted / projected transmission losses.

## **Part 9: Formulae and principles for determining the Revenue Requirement for NTDC**

- 9.1. The Revenue Requirement will be determined and recovered through the UoSC determined by NEPRA as per the following formulae:
- 9.2. The formula for the determination of the Revenue Requirement shall be:

$$RR = GF\&AO + RM + FC + D + CB + RoE \pm PY + I + T + O$$

Where

RR: is the transmission licensee's fixed Revenue Requirement

GE&A<sub>T</sub> is the General Establishment & Administrative expenses

RM<sub>T</sub> is the Repair & Maintenance Expenses

FC<sub>T</sub> is Financial Charges

D<sub>T</sub> is Depreciation Charges

CB<sub>T</sub> is Capital Base

ROE<sub>T</sub> is Rate of Return on equity.

PYA<sub>T</sub> is Prior Period Adjustment

I<sub>T</sub> is the Insurance Cost

t<sub>T</sub> is the Corporate Taxes (pass through as per actual)

OI<sub>T</sub> is the Other income

9.3. The revenue requirement includes ROE calculated separately and Financial Charges are allowed as per actual. However, NEPRA may, on the request of NTDC (if NTDC intends to change its risk profile), consider assessment of ROE and financial charges based on Weighted Average Cost of Capital Model. If such approach is agreed, then accordingly the aforementioned formula for determining of Revenue Requirement will be amended.

9.4. The formula for the determination of the Fixed UoSC:

9.4.1 The use of system charges apply to demand (Distribution licensees connected to NTDC system and Bulk Power Consumers that purchase directly from generation or other supplier that is not the distribution licensee, using NTDC network).

9.4.2 Following formula will be used for the calculation of fixed UoSC (kW) month to recover the determined Revenue Requirement:

$$\text{UoSC (kW) month} = \frac{\text{RR}_T}{\text{Sum of MDI of all Distribution licensees and bulk power consumer connected to NTDC transmission network}}$$

9.5. The formula for the determination of the variable UoSC; in terms of kWh in order to recover the cost of allowed transmission losses (applicable to only bulk power consumers):

$$\text{Variable charge (USCV)} = (\text{Rs. per kWh}) \times (\text{LAL factor}).$$

Where **Rs. per kWh** is to be determined by NEPRA.

9.6. The variable charge shall be applicable to the energy in kilowatt-hours (kWh), recorded during a billing period. Recording of the maximum demand in kW and energy delivered in kWh, shall

be carried out at meters installed at the delivery metering points i.e. inter-connection point between:

- a) NTDC transmission system (NTDC System) and the bulk power consumer.
- b) NTDC system and the transmission system of a special purpose transmission licensee.
- c) NTDC system and the transmission system of another country connected under an arrangement approved by the Federal Government.
- (d) NTDC system and a distribution company receiving power in bulk either for sale to its own consumers or on behalf of another distribution company or a BPC located in another distribution company.

#### 9.7. Principles governing the determination of the Revenue Requirement and UoS.C.

- 9.7.1 NEPRA may accept the requested base year or itself choose a base year for the purpose of determining the transmission licensee's Revenue Requirement under Annual or multi-year tariff regime. NEPRA may choose a past, current or future financial year as defined "Base Year" in the definition section of these guidelines for the purpose of determining Revenue Requirement.
- 9.7.2 A financing plan supporting the approved Planning Documents shall be included in the information to be filed along with petition for determination of a tariff in all cases, even if the petition is for a one year tariff. For the purpose of the determination, the relevant information for the period under consideration (one year tariff, multiyear tariff) will be considered out of the approved rolling forward expansion plan. In case of MYT, any investment and corresponding financing plan would be required to be reviewed annually for making necessary adjustments in the relevant tariff components based on the updated transmission expansion plan. Here it is pertinent to mention that the referred Planning Documents would be filed and approved in a separate proceedings as explained in Part 6 of these Guidelines.
- 9.7.3 "Used and useful" shall govern the determination of the Capital base and RAB.
- 9.7.4 Original cost i.e. the cost on which the asset was acquired shall be the foundation for the valuation of the Capital base.
- 9.7.5 Imprudent investments, as deemed by NEPRA, may not be included in the Capital base/ RAB for the purpose of determining the Revenue Requirement for any the NTDC's. The prudence will be determined through the review and approval of the Planning Documents. It is further clarified that purpose of investment would be questioned by NEPRA only when the investment plan is not based on the approved Planning Documents under a separate proceedings.



9.7.6 Any losses beyond the assessed level of transmission loss would be borne by the NTDC, and vice versa.

9.7.7 Cost of incentive-based rewards or penalties may be included in the determination of NTDC's revenue requirement.

9.7.8 The tariff petition submitted by NTDC will contain the legitimate and prudent costs of delivering transmission services with performance standards and quality established by NEPRA, and in accordance to the Planning Documents requirements and planning reliability criteria in the Grid Code.

## 9.8. Cost of Capital

9.8.1 Cost of Capital may be assessed under the two following methodologies depending on the conditions / provision in part 8 (1) of these guidelines:

### (a) Return on Equity (RoE) and Financial Charges Approach

(i) ROE may be assessed as under;

i. Return on Equity model approach i.e.  $CB_T \times k_e$

Where:

$CB_T$  = Capital Base  
 $k_e$  = Cost of Equity

Where:

$$k_e = R_f + (R_m - R_f) \times \beta$$

where,

$k_e$  = Cost of Equity  
 $R_f$  = Risk-free rate of return  
 $R_m$  = Market rate of return, also  $(R_m - R_f)$  is called market risk premium  
 $\beta$  = Beta, the measure of systematic risk

And the capital base would be calculated through the following formulae:

## Capital Base

Description	Rupees in Million	
	FY ---- Actual	FY ---- Forward Looking
Opening fixed assets in operation		

Add: Assets Transferred during the year		
Closing Fixed Assets in Operation		
Less: Accumulated Depreciation		
Net Fixed Assets in operation		
Add: Capital Work in Progress (Closing)		
<b>Fixed Assets (A)</b>		
Add: Current Asset*		
Store & Spares : 3% of the gross fixed assets in operation		
Accounts receivables : 2% of the value of the outstanding of annual billing		
Cash & bank Balance : 1.2% of annual cash and bank balance (whether deposits at the credit or debit side of the account subject to the maintenance of 1.0% of annual operating expense (other than non-cash items)		
<b>Current Assets (B)</b>		
<b>Less: Non-Current &amp; Current Liabilities (C)*</b>		
<b>Capital Base (A+B-C)</b>		

\* or as determined by the Authority

ii) Financial Charges with respect to NTDCL investments may be considered as per the actual, keeping in view the prudence of the cost.

iii) The adjustments in Return on equity for future periods under the MYT shall be based on changes in Capital Base only, meaning thereby that the cost of equity will be locked for the tariff control period and the NTDCL can maximize its returns in absolute terms through increasing its Capital base.

#### *(b) Weighted Average Cost of Capital (WACC) Approach*

i) Return on Rate Base may be determined through WACC using the principles of comparative risk. The assessment of optimum capital structure would be made, whereby, a minimum of 20% equity will be assumed in case of negative equity. Equity in excess of 30% may be considered as Debt. Under this approach the cost of Debt would be an assessment, irrespective of its actual debt profile and its actual capital structure. Any fluctuation in the reference KIBOR would be adjusted subsequently.

Formula for determining WACC is as under;

$$RORB = RAB \times WACC$$

Where:

RORB = Return on Rate Base

RAB = Regulatory Assets Base

WACC = Weighted Average Cost of Capital

ii) The WACC will be calculated as under;

$$WACC = \{k_e \times (E / V)\} + \{k_d \times (D / V)\}$$

where,

$k_e$  = cost of common equity

$k_d$  = cost of debt

D = the amount of debt in the capital structure

E = the amount of common equity in the capital structure

V = E+D

iii)  $k_e = R_f + (R_m - R_f) \times \beta$

where

$k_e$  = Cost of Equity

$R_f$  = Risk-free rate of return

$R_m$  = Market rate of return, also  $(R_m - R_f)$  is called market risk premium

$\beta$  = Beta, the measure of systematic risk

(iv) The adjustments in RORB for future periods under the MYT shall be based on changes in RAB only, meaning thereby that the cost of debt (except KIBOR) and equity will be locked for the tariff control period and the NTDCI can maximize its profits in absolute terms through increasing its RAB.

(v) The reference KIBOR shall be adjusted / tried up on annual basis under the WACC model. The Petitioner will file a request for the adjustment not later than 7<sup>th</sup> July each year. The adjustment shall be based on the information submitted by the Petitioner. The 3 month's KIBOR at the last date of each month will be used for average purpose. Detailed mechanism for assessment and adjustment in RAB and adjustment of KIBOR is given in Annexure- III, IX and XII.

(vi) For determining return of equity, the Authority may link the tenure of risk free debt instrument with the control period of tariff plus a market premium determined by NEPRA. The Return of equity may be calculated in accordance with Capital Asset Pricing Model (CAPM) or the principles of comparative risk. Assessment and Adjustment mechanism for RoE is given at Annexure VI & VIII.

## 9.9. Operating Cost

### *(a) Depreciation Expense*

Depreciation expense may be determined on the basis of Gross Fixed Assets in Operation, including new investment. Under MYT the assessment for future periods (years during the control period) will be made in a manner consistent with the test year as per the Annex - - . The gross depreciation expense may be adjusted to the extent of amortization of the deferred credits.

### *(b) Repair and Maintenance Expenses*

Repair & Maintenance expenses shall include the costs of scheduled maintenance and operations performance enhancement. Under MYT the assessment for future periods (years during the control period) will be made based on changes in CPI.

*(d) General Establishment & Administrative Expenses*

The cost of *General Establishment & Administrative Expenses* shall include the known budgeted increases and automatic annual increments in salaries, wages and other benefits. Specific procedures will be applied to the treatment of salaries, wages and benefits for new recruits. Under MYT the assessment for future periods (years during the control period) will be made based on changes in CPI.

*(e) Travel Expenses*

Travel expenses may include Monetary allowances provided for travel, accommodation and daily expenses during official visits, as long as these allowances are in accordance with the applicable Rules. Under MYT the assessment for future periods (years during the control period) will be made based on changes in CPI.

*(f) Vehicle Expenses*

Vehicle expenses may include, but not be limited to, the costs of fuel and maintenance. Under MYT the assessment for future periods (years during the control period) will be made based on changes in CPI.

*(g) Other Expenses*

Other expenses may include, but not be limited to, office supplies and stationary, other utilities expenses, rents, taxes, postage, overhead expenses, auditor remuneration, fees and charges, advertisement, publicity, provision for obsolete stores and miscellaneous expenses. Under MYT the assessment for future periods (years during the control period) will be made based on changes in CPI.

*(h) Other Income*

Other income may include, but not be limited to, amortization of deferred credit, profit on bank deposits, sale of scrap, and miscellaneous income (that do not correspond to transmission business). Other income will be monitored to identify trends. Other income may be considered to be a negative other cost.

*(i) Insurance Expenses*

The Insurance cost may include the local as well as the foreign insurance. The Authority while assessing the Insurance cost will take into account the prudence of the cost and may also consider the International and local benchmarks in this regard. Under MYT the assessment for future periods (years during the control period) will be made based on changes in CPI.

*(j) Under / Over Recovery Procedures*

Under-recovery or over-recovery of assessed Revenue Requirement through UoSC compared to the assessed / allowed revenue requirement in the determination shall be accounted for going forward under the head of prior year adjustment (PYA). This may also include impact of delayed notifications.

*(k) Financial Charge*

Financial Charges with respect to NTDCL investments may be considered as per the actual, keeping in view the prudence of the cost.

## **Part 10: Multiyear Tariff Methodology**

- 10.1. A multi-year tariff has the potential to yield more predictable rate levels over time. A multi-year tariff may be less volatile and subject to fewer intra-period adjustments.
- 10.2. Planning will be the foundation of the multi-year tariff. Additional transmission investment through private as well as public power companies in Pakistan power market will be governed by the Planning Documents. All the schedules and processes mentioned in the Part 6 and Part 7 of these guidelines would apply in the multiyear tariff regime.
- 10.3. **The objectives of the Multiyear Tariff for NTDCL include:-**
  - (1) To increase the stability and predictability of the future revenue streams of the transmission licensees.
  - (2) Allow and promote better planning of investment and financing needs, and strategic decision making.
  - (3) To strengthen the incentives for transmission licensees to provide transmission services as efficiently as possible.
  - (4) To minimize the risks and costs of regulatory assessments by the Authority (as the Annex from IV - IIX would only be relevant in case of assessment under Multiyear tariff regime).
- 10.4. A petition for a multi-year tariff must include the planning and investment information (Planning Documents which is already approved by the Authority in a separate proceedings as discussed in Part 7 of these guidelines).

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Annex - I

Revenue Requirement (under RoE model)

Description	Rupees in Million	
	FY ----- Actual	FY ---- Forward Looking
General Establishment and Administration		
Repair and Maintenance		
Insurance		
Other Expenses		
Return on Equity		
Financial Charges		
Depreciation		
- Prior Year Adjustment		
Pass through Costs		
Less: Other income		

Revenue Requirement (under WACC model)

Description	Rupees in Million	
	FY ----- Actual	FY ---- Forward Looking
General Establishment and Administration		
Repair and Maintenance		
Insurance		
Other Expenses		
RoRB		
Depreciation		
± Prior Year Adjustment		
Pass through Costs		
Less: Other income		