



## NIGERIAN ELECTRICITY REGULATORY COMMISSION

### CONSULTATION PAPER FOR THE REVIEW OF THE TRANSMISSION LOSS FACTOR FOR THE TRANSMISSION COMPANY OF NIGERIA

#### 1.0. Purpose:

This document sets out for consultation, the proposed review of the Transmission Loss Factor ("TLF") applied in the determination of transmission tariff with a view to passing-on efficiency improvements to end-users. Specifically, the consultation focuses on a proposed review of TLF from 8.05% applied in the determination of transmission tariffs since June 2012 to 7.5% effective 1st January 2022. This consultation process is an integral part of the Extraordinary Tariff Review process the Commission is undertaking to reflect the proposed change and relevant reviews to macroeconomic indices and capital investments in accordance with the extant industry rules.

#### 2.0. Context:

The Nigerian Electricity Regulatory Commission ("NERC" or "the Commission") is empowered by the Electric Power Sector Reform Act ("EPSRA") to regulate all facets of the electricity supply industry including generation, transmission, system operations, distribution, and trading. One of the core objects of the Commission as enshrined in section 32(d) of EPSRA is to "ensure that the prices charged by licensees are fair to consumers and are sufficient to allow the licensees to finance their activities and to allow for reasonable earnings for efficient operations". Pursuant to this and other provisions of EPSRA, the Commission approved the MYTO Tariff Orders for transmission services with an allowable TLF benchmark of 8.05% across the transmission network.

The Transmission Company of Nigeria Plc operates and maintains the high voltage ( $\geq 132\text{kV}$ ) lines and is responsible for wheeling high voltage electric power generated by the electricity generating companies ("GenCos") to the distribution companies (DisCos), to large electrical users which are directly connected to the transmission network, and the international customers under the West African Power Pool (WAPP). In order to deliver on its mandate, TCN was issued two operational licenses by the Commission. These are: (1)

Transmission Service Provider (TSP) License to oversee the development and maintenance of the transmission infrastructure; and (2) the System Operations (SO) License to manage dispatch and ensure efficient administration of the electricity market through its Market Operations (MO) Department.

Transmission (network) losses represent the portion of electrical energy that is 'lost' in the form of heat due to physical factors such as electrical resistance in the transmission network. These losses are unavoidable as electricity flow from one point to another but can be minimised through efficiency improvement. Transmission Loss Factor (TLF) reflects the minimum electricity transmission loss allowance along the transmission network to be applied in the determination of transmission tariffs. The Transmission Loss Factor (TLF) serves as a key performance indicator for assessing the efficiency of the transmission system. The 2012 to 2021 MYTO Tariff Orders envisage that TLFs will be reviewed from time to time to reflect efficiency improvements in grid performance and performance targets.

### 3.0. Issues for Consideration

The transmission pricing structure adopted in the MYTO assigns charges for system usage to the user or group of users based on the cost causation principle in three forms:

- a. A connection charge for new generators;
- b. A transmission use of system (TUOS) charge paid by users for a contracted volume of energy;
- c. A Transmission loss factor that requires generators to make allowance for the rate (8.05%) of transmission losses in their contract terms with off-takers (DisCos/retailers).

Section 8(k) of the Supplementary Order on the Commencement of the Transitional Electricity Market obliges the Market Operator (MO) to apportion the positive or negative difference between the actual TLF and 8.05% to the respective off-takers in line with their percentage of total consumption. If the actual TLF is more than 8.05%, each off-taker may net off the amount due to it from the TCN (i.e., the Transmission Service Provider unit), as a deduction from TSP's wheeling charges for the monthly settlement cycle. While, if the actual TLF is below 8.05%, each off-taker will pay its portion of the differential to TSP, in addition to the wheeling charge for the settlement cycle. The amount to be paid by each off-taker will be calculated by applying a charge rate that is equivalent to the weighted average cost of energy and capacity for the settlement cycle.

Recent records from the System Operator (SO) have shown considerable improvement in TCN’s operational efficiency which has resulted in an average actual TLF of 7.29% in 2020 as against the 8.05% allowance provided in transmission tariff since 2012. The incentive-based approach adopted by the Commission allows a licensee that outperforms the set targets to hold back and keep the efficiency gains until such a time when new targets will be determined. The Commission, therefore, proposes to review the efficiency target (i.e., TLF) for TCN and set TLF reduction trajectory for the next five years in order to nudge the TCN towards better operational efficiency. Table – 1 below presents the MYTO TLF benchmark and the actual average annual TLF in Nigeria for the period 2016 – 2020:

**Table – 1: Average Annual TLF of the electricity transmission network from 2016 – 2020**

Trend Analysis of TCN's TLF					
Year	2016	2017	2018	2019	2020
Regulated Loss	8.05%	8.05%	8.05%	8.05%	8.05%
Actual Loss	8.29%	8.68%	8.39%	7.68%	7.29%

#### 4.0. Proposed Changes

Accordingly, the Commission is considering a review of the benchmark allowance for TLF to reflect the level of improvement and make necessary adjustments in the determination of industry tariffs and minimum loss allowances to be considered by generators on the transmission network. As a result:

- i. a benchmark TLF of 7.5%, being the average TLF for 2019 and 2020, is proposed for consideration effective from 1<sup>st</sup> January 2022.
- ii. a TLF reduction trajectory of one percentage point over the next five years to incent improved operational efficiency as provided in Table – 2 below:

**Table – 2: TLF Improvement Trajectory 2022 – 2026**

Year	2022	2023	2024	2025	2026
Regulated Loss	7.50%	7.25%	7.00%	6.75%	6.50%

#### 5.0. Response to consultation

This consultation paper sets out to draw the attention of the industry stakeholders – GenCos, DisCos, large energy users, and other interested parties. Respondents may submit their input in response to the proposal in this document. The submission may include a modification or alternatives to the proposal for further consideration by the Commission.

Pursuant to the review of stakeholders' comments, a public hearing would be held in Abuja during December 2021. Responses are expected no later than 21 days from the date of the publication of this consultation paper.

Upon completion of the consultation process, the Commission's decision shall be incorporated in the MYTO model and accordingly reflected in the subsequent Order. All reactions, comments, queries, and further clarifications should be sent for consideration by the Commission to [TLF@nerc.gov.ng](mailto:TLF@nerc.gov.ng) with copies to:

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