GHANA GRID COMPANY LTD. (GRIDCo)

2025- 2030 TARIFF PROPOSAL (Abridged Version)

August 2025

1 Introduction

Ghana Grid Company LTD (GRIDCo) was established in 2006 in accordance with the Energy Commission Act, 1997 (Act 541), and the Volta River Development (Amendment) Act, 2005 (Act 692). GRIDCo is responsible for developing, managing, and operating the National Interconnected Transmission System (NITS) to ensure its reliability, efficiency, and sustainability. As the Electricity Transmission Utility (ETU), GRIDCo is also responsible for the implementation of Ghana's Wholesale Electricity Market in accordance with Electricity Regulations, 2008 (LI 1937). Since commencing independent operations in 2008, GRIDCo has facilitated wholesale electricity trading and provided ancillary services within the NITS. GRIDCo is committed to maintaining a resilient and reliable grid that supports Ghana's development and the broader sub-region, with sustainability and financial stability at the core of our short and long-term strategies.

In compliance to regulatory requirement, GRIDCo submits the 2025-2030 Transmission Service Tariff the Public Utilities Regulatory Commission (PURC). The proposal reflects GRIDCo's operational enhancements, recent network expansions, and the ongoing commitment to ensuring a stable and resilient electricity transmission system that supports national development.

1.1 Rationale Underpinning Tariff Submission

Ghana's electricity transmission system is the backbone of the nation's power supply, ensuring the stable and reliable delivery of electricity to the three (3) major electricity distribution companies, mining companies, and other bulk customers. The objective of this tariff proposal is to present a detailed justification for achieving a cost-reflective tariff. This will enable GRIDCo to enhance service delivery, maintain quality standards, and ensure financial sustainability in the short, medium, and long term.

1.1.1 Increasing Cost of Maintenance

The reliability of the NITS depends on our ability to develop and maintain assets as required and our promptness in resolving intermittent disruptions. GRIDCo faces rising costs associated with maintaining vegetation undergrowth, managing encroachment including illegal mining along its Right of Way, and upgrading the transmission network to reduce congestion within the NITS. Without adequate funding, the reliability and efficiency of Ghana's power transmission system could be severely compromised and affect power delivery.

GRIDCo operates over 6,000 circuit kilometres of transmission lines, most of which traverses densely populated areas, high vegetation growth areas, and areas akin to legal mining activities. The cost of clearing undergrowth and reclaiming land in illegal mining areas along these transmission corridors has increased significantly. Between 2022 and 2024, vegetation management and reclamation costs surged from GH₵5.82 million to GH₵ 23.59million, representing a staggering 305.5% increase.

Beyond the challenge of dense vegetation threating the transmission lines, GRIDCo faces severe corrosion along the Coastal Transmission Backbone, a critical corridor for evacuating over 1,500MW of power generated from the Western Region. Additionally, increased transformer capacity at most substations aimed at reducing congestion, and improving reliability has significantly increased maintenance costs.

Unfortunately, GRIDCo's weakened liquidity position does not allow for comprehensive coverage of all these maintenance obligations. These factors, among others, are detrimental to the optimal performance of transmission assets. To address these challenges, GRIDCo requires the implementation of a cost-reflective tariff to provide the necessary resources for infrastructure development, maintenance and operational efficiency, ensuring the continued reliability of the NITS in the short to medium term.

1.1.1 Planned Infrastructure Investments

GRIDCo urgently needs to undertake fifteen (15) critical transmission project including the implementation of the Wholesale Electricity Market estimated at USD 978.35 million. These projects are essential to:

I. Improve NITS reliability and stability,
II. Provide transmission capacity for renewable energy integration and export.
III. Reduce transmission losses.
IV. Improve voltages.
V. Increase transparency and competition in power generation.

Details of the critical investments list (Short-term, Medium-term and Long- term) are as illustrated in Appendix 1.

1.1.3 Financial Constraints

Despite quarterly tariff adjustments, GRIDCo continues to face revenue shortfalls that limits full cost recovery for transmission services. The current tariff of 7.3853 GHp/kWh for the third quarter of 2025 falls well below the proposed cost-reflective tariff average of 13.1121 GHp/kWh for 2025–2030. These financial pressures \ are exacerbated by the following:

I. Exchange rate volatility - weakens financial performance and borrowing capacity.
II. Limited access to direct loans - lenders require cost-reflective tariffs to ensure investment viability.
III. Funding constraints - GRIDCo relies primarily on concessionary funding and grants, which are insufficient for large-scale infrastructure development.

As a result, critical projects have been delayed or suspended, as evidenced by the suspension of loan disbursements by Agence Française de Développement (AFD) due to GRIDCo's inability to raise counterpart funding. Therefore, implementing a cost-reflective tariff is essential to enhance GRIDCo's financial health, enabling the company to secure necessary financing and attract private investors for critical infrastructure projects.

This proposal will ensure the sustainability and efficiency of Ghana's power transmission infrastructure, thereby supporting the nation's economic growth and energy security.

1.2 Key Tariff Assumptions

The Revenue Requirement Methodology prescribed by the PURC was employed in the development of GRIDCo's 2025-2030 Transmission Tariff Proposal. Key Operational Assumptions underlying the proposal include the following:

Table 1: Key Operational Assumptions

Assumption	Unit of Measure (UoM)	2025	2026	2027	2028	2029	2030
Projected Energy Transmission	GWh	28,338.9	30,982.7	33,207.5	35,280.0	38,334.1	41,965.9
Expected Rate of Return on Net Fixed Asset	%	12	12	12	12.5	14	16
Projected Transmission Losses	GWh	1,197.0	1,368.0	1,461.3	1,551.3	1,680.9	1,840.0
Network Usage	GWh	14.2	14.4	15.4	16.3	17.8	19.2

Data Source: 2025 Supply Plan and GRIDCo_PURC Info Data Model

Based on the above assumptions and the revenue requirement methodology outlined by PURC, GRIDCo proposes the following Transmission Service Charges **for the 2025-2030 Major Tariff Review** shown in the table 2. The Transmission Service Charge (TSC) is attributable to network operations, maintenance, depreciation, return on regulatory asset base, working capital and corporate tax. The TSC charge excludes all levies.

Table 2: Proposed Tariff for 2025 – 2030

		Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
		2025	**2026**	**2027**	**2028**	**2029**	**2030**
Total Energy Sales GWh	GWh	22,520	24,889	26,590	28,065	29,921	31,716
Operating Cost	Gh¢'M	1,096,688	1,203,660	1,250,496	1,300,485	1,327,472	1,350,409
Depreciation	Gh¢'M	600,097	727,368	804,273	866,993	881,140	924,114
Return on regulated fixed asset base	Gh¢'M	1,858,064	1,967,385	2,065,101	2,227,701	2,591,610	3,104,348
Cost of Working Capital	Gh¢'M	9,189,720	15,751,391	25,491,771	32,862,983	43,034,368	57,144,852
Annual Revenue Requirement	**Gh¢'M**	28,338,900	30,982,700	33,207,500	35,280,000	38,334,100	41,965,900
Projected TSC	**GHp/kWh**	**12.9768**	**13.04680**	**12.97983**	**13.10881**	**13.11561**	**13.44491**

2 Initiatives Undertaken Since August 2022 Tariff Review

2.1 Projects Completed

Since the last major tariff review, GRIDCo has embarked on numerous projects aimed at improving the reliability of the NITS to enhance customer satisfaction and support economic development. The projects and initiatives completed are listed in Table 3 below:

Table 3: Completed Projects

No.	Project	Date Commenced	Year of Completion	Project Cost (Million USD)	Source of Funding
1	Supply Of 4 No. 120/145MVA Power Transformers at Accra East, Afienya, Smelter II and Kumasi Substations	2022	2024	6.3	IGF
2	Supply of Two (2no.) 330/225/34.5kV, 250MVA Autotransformers at Nayagnia Substation Background	2022	2024	6.2	IGF
3a	Upgrade of Scada and Corporate Telecommunications Network - SCADA Component at Tema and Kumasi	2023	2024	5	World Bank/IGF
3b	Upgrade of Scada and Corporate Telecommunications Network - Telecom Component at Tema and Kumasi	2023	2024	3.5	AFD/IGF

Data Source: GRIDCo Investment Plan

2.1.1 PURC Approved Critical Short-Term Investments (GRIDCo Projects 2025-2030)

The PURC approved critical short-term investment projects as part of the ongoing tariff review process. This is to ensure that approved revenues are directed toward strengthening the NITS. The implementation of these critical transmission projects will significantly strengthen GRIDCo's operational capacity, efficiency, and resilience across the NITS. Summary of the projects are below.

Table 4: Approved Projects

SUMMARY OF GRIDCo INVESTMENT PROJECTS

SUMMARY OF PURC APPROVED CRITICAL SHORT-TERM INVESTMENTS-GRIDCO (2025-2030)

No	Project Type	Project Cost	Project Location
1	Supply and Installation of 6No. 161/34.5 kV, 50/66 MVA Power Transformers	USD 12 Million	Tafo, Cape Coast, Adubiliyili, Yendi and Yendi Solar
2	Installation of 5No. 161/34.5 kV, 120/145 MVA Power Transformer at Kumasi (K1BSP), Anwomaso (K2BSP), Smelter II, Accra East (A3BSP) and Afienya Substations, provision of transformer and feeder bays at Anwomaso, Accra East and K1BSP. Provision of Line Bay for the termination of the second circuit of 161 kV Konongo - Kumasi (J2K) Line.	USD 1.156 Million	Kumasi (K13), Anwomaso (AW58), Accra East (AE59), Afienya (AA80), and Smelter II (SM60) Substations
3	Provision of Feeder Bay and Installation of 2No. 161/34.5 kV, 25/33 MVA Power Transformer at Elubo and Essiama Substations	USD 0.994 Million	Elubo and Essiama
4	Provision of 2No. 161 kV Transmission line Bays at Anwomaso Substation	USD 0.5 Million	Anwomaso
5	161 kV Mallam - Kasoa Transmission Line Upgrade Project	USD 11.6 Million	Accra
6	Supply of 6No. Transformers	USD 22 Million	Various
7	330kV Awodua-Prestea Transmission Project Construction of 330/225kV Prestea Substation Project	USD 44.1 Million	Prestea, Awodua
8	Tafo Substation Expansion Project	USD 25 Million	Tafo
9	330kV Accra - Kumasi Transmission line project	USD 200 Million	Accra, Kumasi, Nkawkaw
10	50 MVAr SVC at Nayagnia Substation	USD 15 Million	Nayagnia Substation
11	330 kV Kintampo - Adubiliyili Transmission Line Project	USD 110 Million	Adubiliyili (Tamale), Kintampo
12	330 kV Kumasi (Anwomaso) - Kintampo Transmission Line Project	USD 118 Million	Kumasi (K3BSP), Kintampo

No	Project Type	Project Cost	Project Location
13	330 kV Kumasi III Substation Project	USD 40 Million	Kumasi (Offinso)
14	Ghana Wholesale Electricity Market	USD 25 Million	National
15	161 kV Eastern Corridor Transmission Line Project	USD 353 Million	Tamale, Salaga, Kpandai, Nkwanta, Kadjebi, Kintampo, Atebubu, Asiekpe and Ho

3 Proposed Service Delivery and Efficiency Improvements During Tariff Period

3.1 Provision of Redundancy (Transformer, Transmission line and feeder):

GRIDCo will maintain ongoing collaboration with distribution companies to optimise the redistribution of load across substations, aiming to reduce losses and enhance system reliability, particularly in key load centres such as Western corridors and Kumasi. Additionally, GRIDCo will prioritise the upgrade of transmission lines between major load centres, including the Prestea-Bogoso transmission reinforcement project, which involves the termination of the second Prestea-Bogoso transmission line, as well as the development of a 330/225 kV substation at Prestea (including the 225/161 kV Prestea Substation Improvement Project). These programmes are designed to enhance transfer capabilities, increase transformer capacity efficiently, alleviate congestion, and improve operational flexibility and overall system reliability.

3.2 Closing of the loops:

The Eastern Corridor Transmission Project, which is intended to create the eastern loop from Akosombo-Yendi, remains a concern to GRIDCo. This project seeks to improve reliability, increase transfer capacity, and improve voltages for NEDCo (Bimbila, Kete Krachi, Salaga) as well as ECG Customers in the Volta Region.

3.3 Installation of Static Var Compensator (SVC):

The installation of SVC at Nayagnia will improve system voltages in the northern sectors. The project, when completed, will enhance the quality of power supply to Bolgatanga, adjoining communities, and mining industries while supporting the integration of intermittent renewable energy sources.

3.4 161 kV Coastal Corridor Transmission Upgrade Project (Aboadze-Cape Coast-Winneba - Kasoa Transmission Line Upgrade Project:

The project, when completed, will enhance power supply quality for customers in the West, Central, and Greater Accra Region while increasing

transfer capacity along the Aboadze–Cape Coast–Winneba–Kasoa transmission corridor. Additionally, the upgrade will improve system reliability, reduce transmission losses, and facilitate power exchange between the East and West generation enclaves.

4 Key Challenges Likely to Impact Service Delivery

4.1 Major Transmission Constraints

The NITS is currently challenged with the following major constraints:

- Low voltages in Western corridors of Ghana
- Low voltages in Eastern corridors of Ghana
- Low voltages in the Middle corridors of Ghana

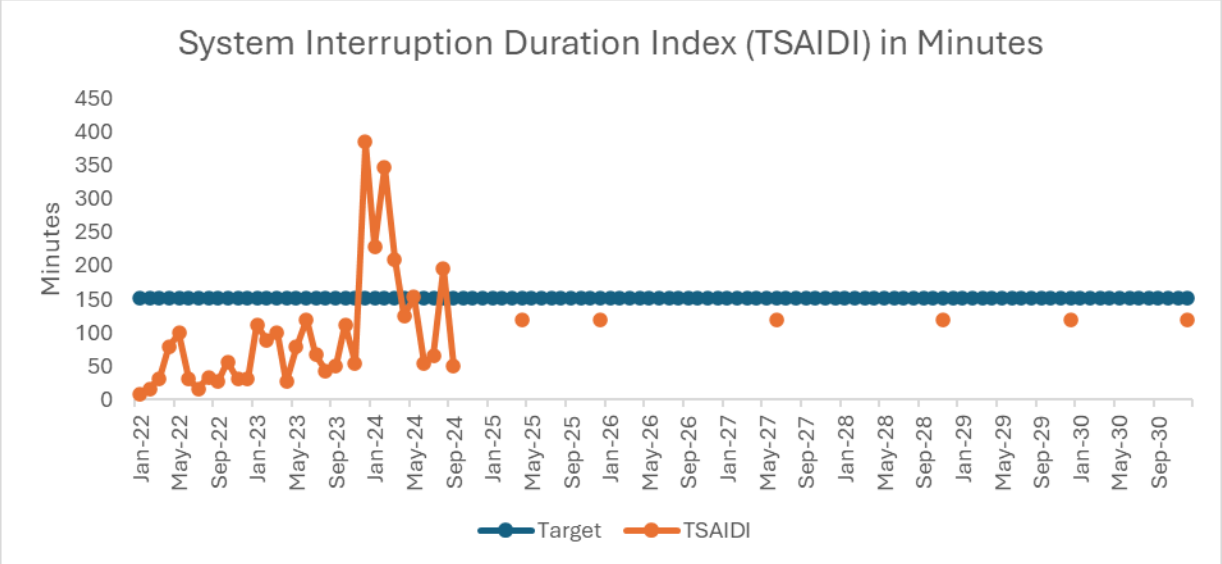
4.2 Expected Service Outcome/Service Target

4.2.1 Transmission Loss Reduction Strategy

The system losses as projected are with the expectation that the following projects will be commissioned into service within the tariff period -2026 to 2030.

- 330kV Pokuase - Anwomaso (Accra-Kumasi) transmission line
- Upgrade of 161 kV Mallam-Kasoa transmission line
- 161kV Pokuase - Mallam Transmission line
- Upgrade of overloaded transformers (Tamale, Techiman, Sunyani, Tafo)
- Upgrade of Eastern Corridor Transmission lines

4.2.2 System Interruption Duration Index



5 Conclusion

GRIDCo is committed to deliver on its mandate to provide to fair and non-discriminatory access to power transmission to support economic development. This request therefore seeks a cost reflective tariff to sustain GRIDCo's operation of the NITS.