Report of the Commission on the Decision of the Jungle Energy Power Application for Tariff Review 2024

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Abbreviations

2015 ELL	2015 Electricity Law of Liberia
APR	Administrative Procedure Regulations
BoC	Board of Commissioners
CIE	Cote d' Ivoire Electric Company
CLSG	Cote d'Ivoire, Liberia, Sierra Leone, Guinea
EU	European Union
ETR	Electricity Tariff Regulations
EUTs	End- User Tariffs
JEP	Jungle Electricity Power
LEC	Liberia Electricity Corporation
LERC	Liberia Electricity Regulatory Commission
MYTM	Multi Year Tariff Methodology
O&M	Operations & Maintenance Costs
OPEX	Operational Costs
PPA	Power Purchase Agreement
RAB	Regulated Asset Base
RR	Revenue Requirement
USD	United States Dollars
WACC	Weighted Average Cost of Capital

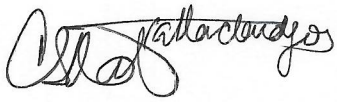
Acronyms

kWh	Kilowatt-hour

Foreword

On December 31, 2024, the Liberia Electricity Regulatory Commission (LERC), in fulfilment of its statutory mandate to set and approve tariffs under the 2015 Electricity Law of Liberia (2015 ELL), made and published a decision on the Tariff Application of the Jungle Energy Power (JEP) submitted on July 19, 2024. This report is issued to satisfy the requirements of Section 13.7(1) (l) of the 2015 ELL, to provide a complete explanation of the reasoning underlying the Commission's decisions. Furthermore, the report is in line with good regulatory practice and LERC's commitment to ensuring transparency in regulatory decision-making. This report discusses the processes and provides the justification for the newly approved tariffs that will take effect January 31, 2025, and is issued for the benefit of JEP, the Government of Liberia, consumers, the public, and potential investors.

The Commission would like to acknowledge the contribution of the technical team of JEP for the success of the tariff review exercise. This document is the property of the Commission which guarantees the accuracy of the information contained herein at the time of the decision. With the attainment of this milestone, the monitoring of the commercial and technical performance of JEP, including the areas of availability of supply and quality of service are now our uppermost priority.



Hon. Claude J. Katta
CHAIRMAN
BOARD OF COMMISSIONERS

Executive Summary

The Liberia Electricity Regulatory Commission (LERC), the Commission, was established by the 2015 Electricity Law of Liberia (2015 ELL) to, amongst other things, regulate the electricity supply industry. A fundamental function of the Commission is to set tariffs that allow operators in the industry to stay financially viable while still providing quality, affordable, and accessible service to customers at a prudent cost. This report presents the tariff-setting exercise and outcome for the Jungle Energy Power (JEP) tariff period, 2025- 2028.

On December 31, 2024, the Commission rendered its decision on the application for tariff review of JEP dated March 18, 2024, relating to its licensed operations. This report is issued in accordance with section 13.7 (1) (l) and (k) of the 2015 ELL which, among others, require the Commission to provide a complete explanation and reasoning underlying its decisions. In line with the Electricity Tariff Regulations (ETR), LERC requested JEP to submit an application for tariff review for the period 2025-2028. JEP submitted the application covering its operational areas of Nimba and Bong Counties. After receiving the application, the technical teams of JEP and the Commission held a series of engagements to ensure the completeness of the application. Subsequently, the Commission published the abridged version of JEP's complete application for stakeholders' comments. One Public Hearing was conducted at the Ganta United Methodist Gymnasium, Gompa City, Nimba County, on September 25, 2024, while another was conducted at the Bong County Women's Center in the city of Gbarnga, Bong County, on September 17, 2024. At both hearings, stakeholders' comments on the abridged application were obtained. The Commission took these comments into consideration in arriving at the decision on December 31, 2024, which was published in the national gazette and on its website.

The tariff approval process was consistent with the relevant provisions of the 2015 ELL, the ETR and the Multi- Year Tariff Methodology (MYTM). The process for arriving at the end-user tariffs (EUTs) involved the determination of the following:

(i) Revenue Requirement for the distribution area;
(ii) Efficient costs of the utility;
(iii) Generation source; and
(iv)A single tariff structure for all customers.

The EUT generated from these exercises is shown in the table below:

Customers' Class	Fixed Charge	Energy Charge
All	$1.25	$0.22/kWh

Introduction

The Liberia Electricity Regulatory Commission (LERC) is established by the 2015 Electricity Law of Liberia (2015 ELL) to, amongst other things, regulate the electricity supply industry. A fundamental function of the Commission is to set tariffs that allow operators in the industry to stay financially viable while still providing quality, affordable, and accessible services to customers at prudent cost. This report presents the tariff-setting exercise and outcome for the JEP tariff period, January 31, 2025, to January 30, 2028.

JEP is a subsidiary of the Jungle Water Group of Company registered and incorporated in 2015 under the Laws of Liberia for the provision of electricity services. On June 29, 2016, JEP signed a Distribution Licensee Assignment Agreement with the Liberia Electricity Corporation (LEC) to operate the Nimba County segment of the Cross-border Electrification Project.

The application submitted by JEP is for the Nimba and Bong Counties distribution areas. Below is the timeline for JEP contracts with LEC for the operation of the Nimba and Bong Counties distribution areas.

Date	Contract Title	Duration
June 29, 2016	Distribution Licensee Assignment Agreement for the Nimba Distribution Area	10 years
March 10, 2023	Distribution Asset Assignment and Power Supply Agreement for the Bong County Distribution Area	5 years
March 10, 2023	Amended Distribution Asset Assignment and Power Supply Agreement for the Nimba County Distribution Area	15 years
July 6, 2023	Amended Distribution Asset Assignment and Power Supply Agreement for the Bong County Distribution Area	15 years

On April 28,2022, the Commission requested JEP to submit its tariff application for the Nimba County distribution area. In response, the company submitted its initial application proposal to the Commission on June 30, 2022. While the Commission was in the process of reviewing and deciding on the tariff application proposal of JEP for Nimba County, the electricity distribution network in the Bong County distribution area was completed and turned over to the company after it emerged as the top candidate in a competitive selection process of firms to manage the network. As a result, it was decided by the Commission that the tariff review process for Nimba County be halted until the company met all requirements for license for the Bong County Distribution area. Thereafter, a single tariff review process will occur for the Nimba and Bong Distribution areas because both areas have the same supply source and Bong County distribution network is simply an extension of the Nimba Distribution network.

Having been licensed for both distribution areas, the Commission requested the company to submit its tariff application for Nimba and Bong Distribution areas on March 18, 2024, in accordance with Part III (18)(1) of the Electricity Tariff Regulations, 2021.

On December 31, 2024, the Commission rendered its decision on the application for tariff review of JEP Inc., for the tariff period beginning January 31, 2025, and ending on January 30, 2028. This report is issued in accordance with section 13.7(1) (k) and (l) of the 2015 ELL which, among others, require the Commission to provide a complete explanation and reasoning underlying its decisions.

The tariff approval process was consistent with the relevant provisions of the 2015 ELL, the Electricity Tariff Regulation (ETR) and the Multi- Year Tariff Methodology (MYTR). The process for arriving at the end-user tariffs involved the determination of the following:
(i). Revenue Requirement for efficiently operating in the Nimba and Bong counties distribution areas;

(i) Cost of electricity imports; and
(ii) A single tariff structure for all customers.

2.0 Background

The Liberia Electricity Regulatory Commission (LERC) was established by the 2015 Electricity Law of Liberia (2015 ELL) to regulate the electricity supply industry. A key component of the Commission regulatory oversight is to determine cost-reflective electricity prices for operators in the industry.

Under section 8.1(1) of the 2015 ELL, the specific objectives of the Commission with regards to setting or approval of tariffs are:

(i) must enable an efficient licensee to recover the full cost of its licensed activities, including a reasonable margin or return;
(ii) must provide for or prescribe incentives for continued improvement of the technical and economic efficiency with which services are to be provided;
(iii) must give end users proper information regarding the costs that their use imposes on the licensee's business; and
(iv) must avoid undue discrimination
(v) may permit the subsidization of tariff to certain classes of customers

Further, according to section 8.1(2) and 8.1(3) of 2015 ELL, a licensee shall not charge any other tariff than that determined by the Commission unless the Commission approves a deviation from the approved tariffs in prescribed circumstances.

In addition to the requirements of the 2015 ELL, the Commission's tariff determinations are further made in accordance with the ETR and MYTM issued by the Commission.

2.2 Regulated Entity

Section 5.1 and 5.3 of the 2015 ELL require that no person without a license or registration issued by LERC shall engage into any regulated activity in Liberia and that all applications for license or any other authorization shall be approved by LERC. In compliance with these provisions of the 2015 ELL, JEP Inc., a privately-owned entity is one of the operators licensed by the COmmission to operate the distribution network in Nimba County. The company was licensed by the Commission as a Large Micro Utility Distribution Licensee for the Nimba County Distribution Area on August 13, 2021, and Bong County Distribution Area on March 1, 2024. Both licenses have a duration of five years.

2.3 The Tariff Determination Process

In the exercise of its regulatory function, the Commission requested a tariff application from JEP to kick start the tariff setting process on March 18, 2024. The tariff application request provided enough details regarding the data and information required by the Commission to undertake its analysis to ensure that the approved tariffs meet the requirements of the Law as well as the ETR and the MYTM.

JEP's Management acknowledged receipt of the Commission letter and requested a meeting to fully understand the structure and content of the tariff application process. The meeting was held at JEP's headquarters in Ganta, Nimba County on March 29, 2024, paving the way for JEP submission on July 19, 2024. Subsequently, the Commission notified JEP inc. of complete application on September 18, 2024, and proceeded with the tariff review in accordance with the

ETR and the 2015 ELL. Subsequently, the Commission published the abridged version of JEP's application for stakeholders' comments.

Following the completeness of JEP's application, the Commission carried out a public hearing on the application proposal on September 25, 2024, in Ganta, Nimba County and on September 27, 2024, in Gbarnga, Bong County.

2.3.1 Public Hearing

The Commission held its first Public Hearing on JEP's application on September 25, 2024, at the Ganta United Methodist Gymnasium in the city of Ganta, Nimba County with a total of 79 individuals in attendance while 31 written submissions were received from stakeholders including government of Liberia representatives, civil society organizations, businesses and the public. A second Public Hearing was held on JEP application at the Bong County Women's Center in the city of Gbarnga, Bong County with 68 individuals in attendance while 28 written submissions were received from stakeholders including Government of Liberia representatives, civil society organizations, businesses and the public. These hearings were held in accordance with the procedures defined in the 2015 ELL, the ETR, and the Commission's Administrative Procedure Regulation (APR). Stakeholders were invited in writing while the public was informed about the hearing via radio, flyers, mobile publicity and social media.

At the hearings, JEP's General Manager, Mr. Aleyou Keita presented on behalf of JEP and answered questions and concerns raised by participants. The Commission also took due notice of the comments and concerns raised by the participants.

2.3.2 Effectiveness and Duration of Tariffs

The 2015 ELL stipulates in section 8.2 (6) that the regulator shall review tariff methodologies no less than every five years and approve tariffs for a period of no less than two years. In furtherance of the provision of the 2015 ELL, Section 3.4 of the MYTM sets the duration of tariff approved by the Commission for 3 years. The effective date of the approved tariff shall be the reference point for its duration, and it shall be the date it is approved by the Board of Commissioners of LERC.

3.0 Tariff Determination Analysis: 2025-2028

3.1 General Principles

Section 3.3 of the 2015 ELL mandates the Commission to, among other functions, regulate tariffs. Regulating tariffs involves the determination of revenue requirements and approving the tariffs for operators in the electricity supply industry. Further, since JEP is a Large Micro Utility Distribution Licensee, its tariff shall be regulated as one composite unit where the power supply cost and other operational costs are passed through to End User Tariffs (EUTs).

The Commission's tariff setting methodology for a licensee is based on the principle of efficient revenue requirement (RR). The RR is verified against JEP's test year which is 2024. In accordance with section 8.2.3(a) of the 2015 ELL which states that no more than six months of costs may be projected, the figures of the test year are derived by adding six months' actual figures to six-month projection.

3.2 Efficient Costs

In accordance with the ETR and the MYTM, LERC provided for the full recovery of all operational costs that are necessary and are prudently incurred by JEP Inc. In determining the revenue requirement, all operating costs were reviewed and analysed against prudency and efficiency in accordance with Section 8.2 (4) of the 2015 ELL.

3.3 Regulated Asset Base (RAB)

The RAB represents assets that are used and usable for the provision and supply of the electricity services in the Nimba and Bong Counties Distribution Areas. The value of all assets necessary for the provision of regulated services are included after deducting depreciation on the allowable assets.

3.4 Revenue Requirement Determination

Revenue requirement (RR) refers to the total revenue that must be realized through annual revenue collections from end-user tariffs to cover the costs associated with the operations of the utility.

In approving the tariffs, the Commission first determined the annual revenue requirement for JEP for its distribution business activities based on the formula below:

$$RR_t = OPEX_t + T_t + D_t + (WACC_t \times RAB_t)$$

Where:

RR_t = Revenue Requirement for current period
$OPEX_t$= Operating Expenses for current period (including cost of power)
D_t = Depreciation for current period
$WACC_t$ = Weighted Average Cost of Capital (rate of return) for current period
RAB_t = Regulated Asset Base for current period
T_t = Taxes for current period

The costs of electrical energy losses are not reflected in the operational costs ($OPEX_t$), but volumes sent out are adjusted to reflect the projected losses.

The Total Annual Revenue Requirement for JEP was calculated based on the considerations below:

a) Projected price and volume of imported electricity as contained in the Power Purchase Agreement (PPA)
b) Efficient Operational expenses for JEP as determined by the Commission;
c) Returns on assets financed by JEP;
d) Depreciation on all assets used in the provision of electricity distribution services.

Table 3.1 shows the summary of the RR submitted by JEP for the tariff period (2025-2028). The JEP application for a RR is set out in table 3.1 below and consist of annual cost of power, LEC's share as indicated in the Agreement and the annual operational expenses including depreciation.

Table 3.1 JEP's Revenue Requirement Submission ('000US$)

Indicators	2024	2025	2026	2027
Revenue	4,446	5,481	5,951	6,384
Postpaid Meter Sales	2,605	3,473	3,665	3,862
Prepaid Meter sales	1,548	1,884	2,178	2,430
Add: Power Connection Fees	294	124	108	92
Total Operating expenses (O&M	4,616	5,542	5,986	6,418
CIE Bill	2,526	3,310	3,597	3,862
Annual O&M (incl. LEC Share)	2,089	2,232	2,388	2,555
Profit	(169.38)	(60.55)	(34.55)	(33.32)

Source: JEP's Application

To arrive at the efficient RR, the Commission reviewed the detailed components of the RR submitted by JEP for the test year (2024) and the tariff period (2025-2028). The Commission's own analysis of the components of JEP's RR shows that the O&M cost of the utility is not cost-reflective. The efficient cost analysis of the utility which is discussed in detail in section 3.5 resulted in more than 7.6 percent reduction in the utility's annual O&M cost. As a result, the Commission's approved O&M differs from JEP's.

Using actual figures from the first quarter of 2024, the utility's forecast of annual energy supplied via CI-Energies was estimated at 17,093,023kWh. However, actual energy injected in the utility's grid as of end September 2024 summed up to 15,753,147.29kWh, with increasing month-on-month growth. The Commission produced the utility's annual energy needs by assuming that the energy supply for quarter III will remain unchanged for quarter IV, disregarding the month-on-month growth in supply. This provides the annual energy figure as well as the CIE bills for the base year of the tariff (2024). From these base year figures, the Commission used the utility's own year-on-year energy growth over the tariff regime to forecast the energy values in the tariff years. This exercise produced figures for CIE bills that are different from JEP's.

Table 3.2 Summary of Revenue Requirement (RR) approved by LERC ('000US$)

Revenue Requirement	2024	2025	2026	2027
Operating expenses (O&M)	4,602.09	5,033.01	5,390.48	5,718.66
Depreciation & Amortization		138.32	135.47	118.04
Income Tax	0	0	0	0
Return on Capital		49.34	76.27	69.47
Total Revenue Requirement	**4,602**	**5,221**	**5,602**	**5,906**

Source: LERC Approved RR

The Revenue Requirement (RR) is the total amount of revenue that a utility must collect from customers to cover all its cost of operations (Opex, taxes, and depreciation) and a return on investment. This amount is inflation-adjusted and is increasing from year to year throughout the tariff period because of increasing electricity demand. For the same reason, the CIE bill—the amount paid by the utility to CI-Energies for power purchased through the cross-border network—is increasing over the tariff period. As demand expands, the utility overhead cost expands to cater to the increasing scale of operations. As a result, Annual O&M cost increases over the tariff period.

The Return on Asset (RoA) is declining for the tariff period because the book value of the stock of asset is declining throughout the tariff period after accounting for depreciation expense.

The Commission allowed the Power Connection Fees as submitted by the utility. However, it was determined that the utility shall pass sixty percent of this amount through the tariff and collect the remaining 40 percent as fixed fees.

3.5 Loss Reduction Trajectory

The aggregate technical and commercial losses as projected by JEP and approved by LERC for each year of the tariff period is shown below in Table 3.3.

Table 3.3 Loss Reduction Trajectory

Loss Type	2024	2025	2026	2027
Technical Losses	5%	5%	5%	5%
Commercial Losses	6.0%	4.0%	3.0%	3.0%
Total Loss	**11%**	**9%**	**8%**	**8%**

Source: JEP Submission

The Commission believes that these trajectories are in line with an efficient operator in this sector, and as such, approved the utility's loss trajectory as submitted.

Table 3.4 Approved Loss Reduction Trajectory

Loss Type	2024	2025	2026	2027
Technical Losses	5%	5%	5%	5%
Commercial Losses	6.0%	4.0%	3.0%	3.0%
Total Loss	**11%**	**9%**	**8%**	**8%**

Source: LERC Analysis

3.5. Total Operating Expenses (OPEX)

The Opex consists of two major components:

(i) the cost of power, which includes cost of losses; and

(ii) direct operational expenses comprising salaries and other employee benefits, operation and maintenance costs, and general administrative expenses such as fuel for generator, excavator and vehicles cost, lubricants and solvents, and insurance cost.

Table 3.5 shows the OPEX submitted by JEP for the operation of the Nimba and Bong Counties distribution area for the tariff period.

Table 3.5 JEP Opex ('000US$)

Cost Items	2024	2025	2026	2027
Fuel for generation, Excavator and Vehicles	187	206	224	245
Lubricants & solvents	72	76	83	91
Salaries and other employees' benefits	592	622	653	685
Maintenance O&M	64	67	74	81
Insurance costs	71	75	82	91
Depreciation Expense	624	655	721	793
LEC SHARE	171	224	243	261
Power lost	308	308	308	308
Annual Cost of Power	2,526	3,310	3,597	3,862
Total OPEX	**4,616**	**5,542**	**5,986**	**6,418**

Source: JEP Application

3.5.1 Efficient Operational Costs Analysis

In setting the Opex, the Commission firstly determined the cost of the optimal power that ensures the projected system demand is served. The projected cost of the imported electricity (Annual Cost of Power) has been considered in this determination.

In undertaking the efficient cost analysis, the Commission reviewed each item in the build-up of Opex considering the historical Opex expenses of JEP as were submitted in the previous financial statements as well as current prices and best engineering estimates.

Fuel for Generator, Excavator and Vehicles: The Commission determined, by reviewing hardcopies of documents submitted by the utility, that the utility's submission for this line includes fuel costs not prudently incurred in the line of business. The prudent costs for this line were arrived at by summing only those costs directly appertaining to the line of business. The efficient cost for this expense item is presented in table 3.8 below.

Lubricants & Solvents: The Commission determined, by reviewing hardcopies of documents submitted by the utility, that the utility's submission for this line includes lubricants & solvents costs not prudently incurred in the line of business. To arrive at the efficient cost, the Commission summed only those costs that were incurred in the line of business for which this decision is taken.

Salaries and other employees' benefits: This cost covers salaries of staff and contractors, and include other benefits such as severance, social security payment and annual benefit. The company has a labor force of 104 staff and while it did not project increases in its labor force for the tariff period, it projected a 5 percent increase in Salaries & Benefits for the tariff period.

The commission believes that the 5 percent increase in Salaries & Benefits without a corresponding increase in the number of staff is unjustified. Based on the analysis of payroll data and documents provided by the utility, the Commission caps the personnel cost at its 2024 customer-staff efficiency level. By capping at this level, the Commission sets an ideal average growth target for the tariff period at 5.7 percent. The Commission believes that this average amount should be the minimum achievable efficiency growth over the tariff period.

Table 3.6 Customer-Staff Ratio

Parameters	2024	2025	2026	2027
Customers	18,056.0	19,297.0	20,374.0	21,298.0
Staff	104.0	104.0	104.0	104.0
Customer-Staff ratio	**173.6**	**185.5**	**195.9**	**204.8**
Customer-Staff efficiency	**0.0%**	**6.9%**	**5.6%**	**4.5%**

Source: LERC Analysis

Maintenance O&M: The Commission reviewed the maintenance plan of the utility and found that the costs are adequate to ensure that the network is maintained. Therefore, the amounts submitted by the utility were accepted.

Insurance costs: The utility provided an insurance contract to justify this cost item. However, the insurance contract was lower than the submission made by the utility. The Commission proceeded with the amount stipulated in the insurance contract.

Depreciation Expense: The Commission determined that the utility accelerated the depreciation of its employed asset by shortening the useful life of each asset. To arrive at the true depreciation values of the various assets in the network, the Commission firstly benchmarked each asset against its corresponding class within the Liberia Electricity Corporation and Government of Liberia Asset's Depreciation Policy and then compared the lifespan and costs coming out of this exercise with current market values and lifespan of these assets on the world market. Next, to account for the accelerated depreciation the utility employed, the Commission did the following:

A. computed the sum of accrued depreciation for each asset item up to end 2023;
B. took the actual 2024 first quarter figures submitted by the utility and multiplied this amount by four to arrive at the utility's total depreciation cost for 2024.
C. Summed the totals in point A and point B and deduct this new sum from the asset cost to arrive at the updated book value of the assets
D. To compute the depreciation expense over the tariff period, the Commission divided the updated book value of the asset by the remaining years of the asset life.

Table 4.0 Useful Life of Selected Assets

Assets	JEP's Submission	LERC's Calculation
Auto Recloser	10yrs	30yrs
Transformer	10yrs	30yrs
Building	10yrs	60 yrs

Source: LERC Analysis

The depreciation figures and asset values derived from the foregoing analysis are presented in table 4.1 below.

LEC's share: Section 14.3 of the Amended Distribution Asset Assignment and Power Supply Agreement Contract between JEP and LEC requires that JEP shall pay to LEC 0.01/kWh of gross revenue generated for each kilowatt-hour sold. The LEC Share was computed on the new consumption figures derived by the Commission rather than the utility's submission. Hence, the approved amounts over the tariff period are higher than those amounts proposed by the utility.

Power loss: The Commission allowed the utility to recover its losses via the tariff instead of using the utility's method of pricing the loss and feeding it back into the Opex. Adding the power loss as a cost item in the Opex leads to double counting since the model already accounts for such loss through the loss trajectory.

Following the analysis, the Commission arrived at what it considers Opex based on the efficient operations of JEP. Table 4.1 shows the efficient Opex as determined by the Commission.

Table 4.1 LERC's Efficient Opex Calculation (000US$)

OPEX	2024	2025	2026	20
Annual Cost of Power	**3,290.77**	**3,704.68**	**4,026.41**	**4,323.16**
LEC Share	**198.83**	**228.77**	**251.23**	**269.73**
Annual O&M Cost	**1,112.49**	**1,099.56**	**1,112.84**	**1,125.77**
Salaries and other employees' benefits	591.39	591.39	591.39	591.39
Fuel for generation, excavator and vehicles	80.00	84.00	88.20	92.61
Lubricants & solvents	33.60	35.28	37.04	38.90
Maintenance O&M Contract	64.00	67.20	73.92	81.31
Insurance costs	50.00	50.00	52.50	55.13
Power Connection Fees	293.50	124.10	107.70	92.40
Regulatory Levy	-	147.59	162.09	174.04
Total OPEX	**4,602.09**	**5,033.01**	**5,390.48**	**5,718.66**

Source: LERC Efficient Cost Analysis

Table 4.2 below breaks down the utility's revenue into its constituent elements. the growth in revenue is expected to be driven mainly by growth in energy consumption over the tariff period

Table 4.2 Energy Revenue

Energy Revenue	2024	2025	2026	2027
Postpaid Meter Sales	2,568.47	2,561.90	2,784.38	2,989.59
Prepaid Meter sales	2,402.20	2,505.94	2,781.43	2,986.43
Power Connection Fees	293.50	124.10	107.70	92.40
Return on Asset	-	49.34	76.27	69.47
Total	**5,264.17**	**5,241.28**	**5,749.77**	**6,137.89**

Source: LERC Efficient Cost Analysis

Given that the energy revenue grows more than its expected operational expense both over the tariff period and within each year in this time span, the utility's profit over the period and within each year is a positive value. Table 4.3 below shows this result.

Table 4.3 Profitability

Profitability Measures	2025	2026	2027
Approved Operating Expense	5,033.01	5,390.48	5,718.66
Approved Operating Revenue	5,241.28	5,749.77	6,137.89
Profit	**208.27**	**359.30**	**419.23**

Source: LERC Efficient Cost Analysis

Regulatory Levy: The Commission computed 3 percent of the utility's revenue as regulatory levy and inserted that amount in the Opex of the utility as a cost to be recovered.

4.0 Financing Considerations

The financing considerations are intended to provide for the financing aspects of the operations of JEP in respect of infrastructure development and capital expenditure and return on investment. The initial capital investments in the Nimba and Bong counties distribution areas were done by the European Union and USAID, respectively.

4.1 Return on RAB

To arrive at JEP's return on its Regulated Asset Base (RAB), the real Weighted Average Cost of Capital (WACC) was multiplied by the RAB. The real WACC was computed by consideration of the ratio of the nominal WACC and the economy-wide inflation rate.
The Real WACC was computed as presented below:

$$Real\ Weighted\ Average\ Cost\ of\ Capital_t = \frac{nominal\ WACC_t}{inflation_t}$$

Where $nominal\ WACC$[1] is 5.02% and the economy-wide rate of inflation is anchored at the rate of US inflation at 2%

4.3 Corporate Income Tax

Pursuant to section 201 of the Liberia Revenue Code Amended 2020, JEP shall pay Corporate Income Tax. However, JEP did not submit any information about corporate income tax in its application.

4.4 Capital Expenditure (Capex)

What the utility presented to the Commission and the public at the various Public Hearings in Nimba and Bong counties was a Capex plan that summed up to US$675,000. This amount is to be used to expand the network in the following communities:

A. Nimba: Ganta and Environment, Cocopa Community, Flompa City and Surrounding towns, Saclapea Community, Sanniquellie Environment, Karnplay Town, Douplay and Loquatuo, and Bahn City
B. Bong: Suakoko, Cari, phebe, Airstrike, Plato Town, and Gbarnga and Environment

[1] The Nominal WACC was computed as: $\frac{debt_t}{equity_t} \times 1 - income\ tax_t \times cost\ of\ debt + (\frac{equity_t}{debt_t + equity_t}) \times cost\ of\ equity_t$

Table 4.4 JEP Proposed Capital Expenditure ('000US$)

2025	2026	2027
400	275	0

Source: JEP Application

The utility estimates that the capital investments in these years will increase the number of customers on the grid.

Table 4.5 JEP Proposed Customer Number

Prepaid	**2024**	**2025**	**2026**	**2027**
Residential	16,525	17,325	18,025	18,625
Commercial	1,331	1,731	2,081	2,381
Government	-	-	-	-
NGO	69	82	87	87
JEP	-	-	-	-
Streetlights	-	-	-	-
Sub-total	**17,925**	**19,138**	**20,193**	**21,093**
Postpaid	**2024**	**2025**	**2026**	**2027**
Residential	-	-	-	-
Commercial	91	110	129	148
Industrial	3	6	6	6
Government	16	16	17	18
NGO	-	-	-	-
JEP	21	27	29	33
Streetlights	-	-	-	-
Sub-total	**131**	**159**	**181**	**205**
Grand Total	**18,056**	**19,297**	**20,374**	**21,298**

Source: JEP Application

The Commission approved these increases across customers' class as submitted by the utility.

4.5 Regulatory Asset Base (RAB)

The value of the RAB submitted by the utility is shown in table 4.4 below at US$ 2,386million. This amount represents JEP's own-financed assets that are used or usable in the provision of regulated electricity services in the Nimba and Bong distribution areas.

Table 4.6 Value of RAB submitted by JEP ('000US$)

Activity Area	JEP	GOL Financing	Donor Financing
Distribution	2,386	0	0

Source: JEP Application

The exercise employed by the Commission to arrive at the accrued depreciation cost of the assets produced a book value of US$983,000. Therefore, in addition to the depreciation cost, the utility will be allowed a return on this asset value over the tariff period.

Table 4.7 JEP's RAB ('000US$)

Activity Area	JEP	GOL Financing	Donor Financing
Distribution	983	0	0

Source: LERC Efficient Analysis

Table 4.6 JEP's Customer Demand/Consumption Demand

Table 4.8 below shows JEP's proposed customer consumption submitted during the tariff application period.

Table 4.8 Projected Customer Demand/Consumption - (in kWh)

Prepaid	**2024**	**2025**	**2026**	**2027**
Residential	2,043,398	2,142,321	2,228,880	2,303,073
Commercial	4,146,664	5,392,844	6,483,251	7,417,886
Government	-	-	-	-
NGO	-	-	-	-
JEP	-	-	-	-
Streetlights	-	-	-	-
Sub-total	6,190,061	7,535,165	8,712,131	9,720,959
Postpaid				
Residential	-	-	-	-
Commercial	2,136,614	2,582,720	3,028,826	3,474,933
Industrial	3,445,736	6,891,472	6,891,472	6,891,472
Government	4,678,807	4,678,807	4,971,232	5,263,658
NGO	-	-	-	-
JEP	180,805	232,464	249,683	284,122
Streetlights	461,000	473,000	485,000	497,000
Sub-total	10,902,962	14,858,463	15,626,214	16,411,184
Grand Total	17,093,023	22,393,628	24,338,345	26,132,143

Source: JEP Application

The Commission, however, observed that given its energy bill as of September 2024, the utility will have had annual consumption of 22,350,207kWh. This differs from JEP's estimate which is at 17,093,023kWh. The Commission then used the growth rate of consumption as estimated by

JEP to produce a forecast for the remaining years of the tariff. The new consumption figures for the period of the tariff are shown in table 4.7 below.

Table 4.9 Approved customer Demand/Consumption (in mWh)

After accounting for the losses, the consumption in kWh is provided below in Table 4.9.

Table 4.9 Consumption in '000'kWh

Prepaid	**2024**	**2025**	**2026**	**2027**
Residential	2,662	2,999.07	3,259.81	3,500.07
Commercial	5,401	6,086.02	6,615.13	7,102.68
Government	-	-	-	-
NGO	-	-	-	-
JEP	-	-	-	-
Streetlights	-	-	-	-
Sub-total	**8,063**	**9,085**	**9,875**	**10,603**
Postpaid	-			
Residential	-	-	-	-
Commercial	2,783	3,135.89	3,408.52	3,659.73
Industrial	4,488	5,057.27	5,496.94	5,902.08
Government	6,095	6,867.04	7,464.05	8,014.17
NGO	-	-	-	-
JEP	236	265.37	288.44	309.69
Streetlights	600	676.61	735.43	789.63
Sub-total	**14,202**	**16,002**	**17,393**	**18,675**
Grand Total	**22,265**	**25,087**	**27,268**	**29,278**

Source: LERC Analysis

To derive at the effective final consumption, the consumption figures in Table 4.9 above is discounted by the approved loss trajectory in Table 4.8 using the formula:

$$1 - [(1 - l_c) \times (1 - l_t)]$$

where: l_c and l_t represent commercial and technical losses, respectively.
The results are given in Table 4.10 below

Table 4.10 Final Consumption in (mWh)

Consumption	2024	2025	2026	2027
Social Tariff	-	-	-	-
Residential Prepaid	9,608.81	11,313.48	12,557.21	13,482.71
Residential Postpaid	10,273.88	11,566.11	12,570.54	13,497.02
Total Consumption	**19,882.68**	**22,879.58**	**25,127.75**	**26,979.73**

Source: LERC Analysis

5.0 Final Electricity Tariffs

5.1 Tariff Objectives

In approving the tariffs, the Commission has been guided by the following objectives:

(i) simplicity, easily understood by customers.
(ii) recognized socio-economic disparities and vulnerabilities.
(iii) suitability for business operations; and
(iv) transparency, create incentives for customers to pay their bills.

table 5.1 JEP's Current and Proposed Tariffs Structure per customer category
Source: JEP's Application

For the Commission to ensure an effective and sustainable tariff regime, we had to structure the tariff and rates. In that regard, several issues were identified towards achieving the objectives adduced above. The issues and the decision of the Commission are discussed below.

5.2.1 Types of Rate Design

The Commission reviewed the proposed tariff rate structure submitted by JEP and made the following decisions regarding the tariff rate structure as contained in the gazette:

a) **Fixed Charges**: The Commission approved the introduction of fixed charges to be applied to all categories of customers.
b) **Energy Charge**: The Commission approved a flat energy charge across all customers' categories. The final price of electricity customers will face is therefore a two-part tariff structure comprising a fixed monthly charge (US$/month) and a uniform energy charge (US$/kWh).

The tariff is computed by dividing the utility's revenue requirement in a year by its energy consumption in that year. Mathematically,

$$Tariff = \frac{Revenue\ Requirement_t}{Consumption_t}$$

Table 5.1 below breaks down the final tariff into two parts—the energy charge and the fixed charge.

Table 5.1 Final End-user's Tariff

Customers' Class	Fixed Charge	Energy Charge
All	$1.25	$0.22/kWh

Source: The BoC

5.3 Tariff Gazette

The Commission approved the below rates and charges payable by customers within the JEP's network effective January 31, 2025, with the following notes:
The tariffs may be adjusted by the Commission in accordance with the minor tariff review principles of the Commission's MYTM.

6.0 Conclusions

The Commission has carried out its mandate in a transparent and in alignment with the laid down legal provision contained in the 2015 ELL and the associated regulations in respect of electricity tariffs in Liberia. In doing so, the Commission took time to engage all key stakeholders of JEP including LEC the Assets Assignor, through several technical discussions, public consultation, and through public hearing engagement as required by law.

The gazetted tariffs shall be in effect covering the period January 31, 2025 – January 30, 2028. However, the Regulations provide for periodic adjustments and reviews as may be determined by socio-economic conditions, or by a request from JEP in the event of material changes in their progressions which would have significant financial impact on their operations.

Appendix 1: Tariff Review Schedule

Tariffs Review Schedule		
No	**Activity**	**Delivery Date**
1	Acknowledgement of complete application	September 13, 2024
2	Publication of Notice of Pendency	September 14, 2024
3	Publication of Abridged Application	September 14, 2024
5	Public Hearing on JEP's Application	September 25 & 27, 2024
6	BoC's decision on JEP's Proposal	December 31, 2024
7	Submission of decision to JEP for implementation	December 31, 2024
8	Publication in Official Gazette and in Newspapers	December 31, 2024
9	Tariffs Effective Date	January 31, 2025

Source: LERC BoC

Appendix 2: Institutional Representatives that attended the Public Hearing in Nimba County.

No(s)	**Name**	**Entity**
1	Emmanuel M.S. Gborlay	Nimba Business Association
2	Rev. James L. Vaye	PYJ Polytechnic University
3	Pinky Wonseah	Insurance Company of Africa
4	B. Kporseh Karnuah	Zlangruseh Business Center
5	Abraham Z. Barleah	Community Leader
6	Nathacieus K. Wonseah	Insurance Company of Africa
7	Bill N. Peters	Ganta LFA
8	G. Clinton Zean Toe	United Methodist University, Ganta
9	Rev. James Y. Karlorblee	Ganta United Methodist School
10	Daniel Saye Bonah, Jr	HOR Office District #1 Nimba County
11	Matthew N. Lungon	Nimba Youth Leader
12	Gabriel T. Sheniya	Disable Community
13	Daniel Garteh	ELBC Upper Nimba Reporter
14	P. Urius Suah	Radio Kergheamahn
15	Solomon S. W. Gaigie	Nimba Rubber Corporation

16	Caesar Daysee	Integrity Watch Nimba
17	Dennis S. Wleh	Ganta Methodist Hospital
18	Wuotema Abraham Suah	HOR Office District #3 Nimba County
19	Christine Gontee	Farmer
20	Buah Menkoah	Independent Youth
21	Aleyou Kieta	Jungle Energy Power
22	Amos S. Gbatu	District Commissioner/ Nimba-MIA
23	Joseph Kollie	Neghen Community Leader
24	Aleyou Kieta	Jungle Energy Power
25	Jerry Daniels	Nimba Petty Trader Association
26	Ma. Ellen Dahn	Woman Association of Nimba
27	Lisa Yah Vongan	Zion Astro- Feeding
28	Julius M. Gontor	Concern Citizen of Sanniquille
29	Elsha Weamie	Nimba Football Association
30	Africanus C. Dolo	Ganta City Corporation
31	Allen Yan Dollo	Transport Union

Appendix 3: Institutional Representatives that attended the Public Hearing in Bong County.

No(s)	Name	Entity
1	Leo Gongo	MoCI- Bong County
2	J. William Paye	Student Leader- BCTC
3	Gibson W. Flomo	NAYMOTE-Bong Branch
4	Princess W. Kerkulah	Bong Teacher Association
5	Enoch D. Morris	C B Dunbar Medical Hospital
6	Gondah K. Seton	Representing Senator Kpehe
7	Sedekie L. Kromah	MIA Bong CDO
8	Moses S. Duo	JPC Bong
9	Alex D. Mulbah Sr.	G.C.C.
10	P. Hansey Willie	Gboveh High School
11	William K. Smallwood	Ministry of Labour
12	Yusif A. F. Bility	Bong Intellectual Center
13	Emmanuel Ballah	Radio Gbarnga
14	Nelson Kerkulah	NTA Bong Branch
15	Joseph Y. Kerkulah	Grace Baptist Church
16	Josephus Jackson	YMCA Bong
17	Bobo Willie Voupawor	Phebe Hospital
18	J Allison Flomo	Cuttington University
19	Papa Morris	ELBC
20	Ernest Bee	CARI
21	Rufus T. Myers	United Bong Citizens in the Americas