



# BAKERS BAY UTILITY LIMITED PROPOSED TARIFF AMENDMENT

## Consultation Document

**ES 02/2023**

**Issue Date: 14 March 2023**

**Response Date: 14 April 2023**

## **ABSTRACT**

On 21 December 2020 Bakers Bay Utility Limited (BBUC) was issued an Authorised Public Electricity Licence, APESL-20-0002 by the Utilities Regulation and Competition Authority (URCA).

The BBUC's APESL includes Price Controls Mechanism relative to the tariff which BBUC may charge. The APESL states that URCA shall determine rates for electric power pursuant to URCA's powers under the Electricity Act, 2015 ('EA') as amended from time to time and on the principles set out in its APESL.

BBUC has made an application to URCA to amend its existing tariff pursuant to the relevant sections of the EA, its APESL, and the regulatory guidelines.

The purpose of this Consultation Document is to present URCA's analysis of BBUC's tariff amendment proposal in accordance with the principles, methodologies and procedures outlined in URCA's tariff regulatory framework (ES 07/2021)<sup>1</sup> and to elicit input from all stakeholders.

All responses and comments will be taken into consideration in URCA's final decision.

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<sup>1</sup> See Guidelines and Procedure at <https://www.urbahamas.bs/wp-content/uploads/2021/07/Tariff-Review-Framework-Guidelines-and-Procedures-for-Public-Electricity-Suppliers-ES-07-2021.pdf>

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## **ACRONYMS, ABBREVIATIONS AND DEFINITIONS**

APESL -	Authorised Public Electricity Supplier
Base Year -	The latest twelve months of operation of the Licensed Business for which there are audited accounts adjusted to reflect:  1) Normal operation conditions, if necessary;  2) Such changes in revenues and costs as are known and measurable with reasonable accuracy at the time of filing and are demonstrated as part of the Business Plan.  The Base Year shall represent the first year of the Business Plan
EA	Electricity Act, 2015
PESL	Public Electricity Suppliers Licence
PES	Public Electricity Supplier
GoB	Government of The Bahamas
kWh	Kilowatt-hour
NEP	National Energy Policy
O&M	Operating and Maintenance
OPEX	Operating Expenses (prudently incurred)
PPE	Property Plant and Equipment
RAB	Regulatory Asset Base
RE -	Renewable Energy
ROE	Return on Equity
ROI	Return on Investment
ROR	Rate of Return
T&D	Transmission & Distribution
WACC	Weighted Average Cost of Capital
URCA	Utilities Regulation and Competition Authority

# 1 INTRODUCTION

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The Utilities Regulation and Competition Authority (“URCA”) is the independent regulator for the Electricity Sector (ES) in The Bahamas. URCA regulates the ES in accordance with the Electricity Act, 2015 (EA), which includes inter alia the functions and powers to issue regulatory and other measures to regulate the sector. Hence, URCA is responsible for the technical and economic regulation of the electricity sector. URCA’s role generally involves regulating prices, service standards, market conduct and consumer protection. URCA also investigates and issues orders on regulatory matters that affect the ES.

Baker’s Bay Utility Ltd. (“BBUC”) is a Public Electricity Supplier (PES) with an Authorized Public Electricity Suppliers License (APESL) issued by URCA on 21 December 2020.

On 7 February 2023 BBUC submitted an updated proposal to URCA requesting the following:

- To modify its electrical rate structure by splitting the electrical rate and method of billing into two parts, including a pass-through fuel rate and a non-fuel / tariff rate, and
- To set the non-fuel / tariff rate at \$0.3686 per kWh in accordance with the Tariff Review Framework, Guidelines and Procedures for Public Electricity Suppliers document issued by URCA on July 1, 2021.

## 1.1 BACKGROUND

In this section, URCA sets out a summary of the circumstances that gave rise to the issuance of this Consultation Document.

BBUC applied to URCA by letter dated 8 July 2022 proposing amendments to its tariff.

In response to BBUC’s application, URCA replied by letter to BBUL dated 21 July 2022 requesting additional evidence and details to support the proposed change.

BBUC initial request submission of 5 September 2022 to URCA sought approval:

- (a) To modify BBUC’s electrical rate structure by splitting the electrical rate and method of billing into two parts, including a pass-through fuel rate and a non-fuel / tariff rate, and
- (b) To set the non-fuel / tariff rate at \$0.36 per kWh in accordance with the Tariff Review Framework, Guidelines and Procedures for Public Electricity Suppliers document issued by URCA on July 1, 2021.

The essence of BBUC’s application is that it is proposing the disaggregation of the current unitary tariff rate into a fuel component and non-fuel component.

On the invitation of URCA, BBUL made a presentation on its submission to URCA on 26 September 2022. Considering the initial request, submission of 5 September 2022 and the subsequent presentation on 26 September 2022, URCA takes the view that whilst the presentation was useful, the data granularity was insufficient to properly support the evaluation of BBUL's tariff amendment.

URCA accordingly deemed the initial request submission not in full compliance with the Tariff Review Framework, Guidelines and Procedures for Public Electricity Suppliers document issued by URCA on July 1, 2021 and requested that BBUC submit to URCA additional data with sufficient granularity to afford a wholesome review

BBUC responded to the request and submitted additional data to URCA under a cover letter dated 11 October 2022 and received 14 October 2022. This submission provided URCA with the granular data which addressed the deficiencies which URCA identified in BBUC's initial application.

URCA completed its preliminary assessment of BBUC tariff request on 17 November 2022 and subsequently shared its assessments with BBUC by the end of November 2022. The consultation with BBUC resulted in BBUC submitting an updated proposal via cover letter dated 7 February 2023. BBUC latest proposal is the subject of this consultation document.

## 1.2 PURPOSE OF THIS BBUC TARIFF AMENDMENT CONSULTATION

This section outlines URCA's rationale in conducting this consultation as it relates to BBUC's application for an amendment to its tariff.

In undertaking the tariff review, URCA 's objective is to establish a process that both accords with the Public Electricity Supply Licence (PESL) and meets standards for good regulatory practice.

The rationale for the tariff review is to assess the continuing appropriateness of tariffs, both in terms of their level and structure. URCA's aims to find the right balance between the interests of the consumers of The Bahamas, of the utility, and of the Government. In short,

- customers should not pay more than necessary to receive electricity service of a given standard.
- the utility should be able to charge tariffs in such a manner that it can cover all its prudently incurred costs, and this includes operating, maintenance, and investment costs; and finally,
- the government needs to keep the long-term growth and economic development of The Bahamas in view and thus wants present tariffs to support improvements and future investments in electricity supply.

This consultation accordingly aims to provide the following:

- I. Analysis for determining the revenue required and the cost of service for BBUC

The building blocks approach involves building up BBUC's revenue from key components that reflect the operating and maintenance costs and financing requirements. BBUC's financing costs (return on and of capital) are built up with reference to the rolled forward value of the regulatory

asset base and the capital expenditure that BBUL is undertaking to improve the delivery of electricity to its customers.

II. Framework for translating the revenue requirement into a price control.

Having determined the revenue required, it is then translated into unit prices using forecasts of energy consumption and customer numbers. This is then translated into specific tariff proposals in accordance with a price control mechanism which specifies how prices will be adjusted annually, allowing an operator to recover a reasonable cost of service, and often uses forward looking estimates of reasonable costs as a basis for tariff resets.

URCA considers the proposed regulatory measure to be of public significance with the potential to affect members of the public, licensees and other stakeholders throughout The Bahamas in different ways. Therefore, pursuant to section 41(2) EA, URCA issues this consultation document to afford persons with sufficient interest or who are likely to be affected by the outcome of URCA's decision in relation to BBUC's tariff application to comment.

URCA has set out specific issues on which stakeholders are invited to comment. However, stakeholders should make any other comments that they wish, which may not be covered by the issues raised in this consultation document.

URCA, therefore, encourages full participation in this consultation process by all stakeholders and interested parties.

### 1.3 CONSULTATION TIMETABLE

The timetable for the consultation is summarized in the table below:

Event	Date
Publish Consultation Document	14 March 2023
Public Townhall Meeting and Responses to Consultation Document	14 April 2023
Comments on Responses to Consultation Document	21 April 2023
Publication of Results and the Final Decision	2 May 2023



## 1.4 HOW TO RESPOND TO THIS CONSULTATION DOCUMENT

URCA invites comments on this document from all interested parties. Responses to this document should be submitted to URCA by 5:00 p.m. on **14 April 2023**. Written responses or comments on this document should be sent to URCA’s Chief Executive Officer, either:

- By hand, to URCA’s office at Frederick House, Frederick Street, Nassau;
- By mail to P.O. Box N-4860, Nassau, Bahamas;
- By fax, to (242) 393-0153; or
- By email, to [info@urcabahamas.bs](mailto:info@urcabahamas.bs).

URCA reserves the right to make all responses available to the public by posting responses on its website at [www.urbahamas.bs](http://www.urbahamas.bs). If a response is marked confidential, reasons should be given to facilitate evaluation by URCA of the request for confidentiality. URCA may publish or refrain from publishing any document or submission, at its sole discretion.

URCA will review all responses and comments received from this consultation document before publishing its Statement of Results and the Final Decision.

## 1.5 STRUCTURE OF THE REMAINDER OF THIS DOCUMENT

The remainder of the document is structured as follows.

Section 2:	Outlines the legal basis and framework under which URCA is conducting this consultation process;
Section 3:	Provides a summary of BBUC’s Tariff Amendment Proposal;
Section 4:	Outlines URCA’s review of BBUC’s proposed tariff amendment;
Section 5:	Outlines URCA’s review of the tariff structure amendment – Fuel cost split;
Section 6:	Concludes and describes URCA’s “Next Steps” in the consultation process.
Annex A:	Summarizes the questions raised under this consultation document

## 2 LEGAL AND REGULATORY FRAMEWORK

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The EA empowers URCA with the function as the Regulator for the ES in The Bahamas, with implementing the ES regulatory framework and enforcing provisions of the EA and/or a licensee's license. As a public body, URCA must exercise this regulatory function within the remit of and consistent with its statutory authority.

This section of the consultation document, therefore, sets out in detail the legislative and regulatory provisions under which URCA proposes to exercise its discretion in its consideration of BBUC's application.

### 2.1 THE ELECTRICITY ACT, 2015

Section 6(1) of the EA establishes that *"the main goal and objective of the electricity sector policy shall be the creation of a regime for the supply of safe, least cost, reliable and environmentally sustainable electricity throughout The Bahamas"*.

Furthermore, section 6(2) of the EA establishes that the principles and objectives governing the sector policy and electricity supply regime, in accordance with the aims and goals of the national energy policy include the provision of safe, least cost electricity supplies to all consumers<sup>2</sup> and the provision of a regulatory structure that balance the interest of and affords opportunities for input from all stakeholders, honours contractual commitments and encourages investment.<sup>3</sup>

Section 37(2)(m) outlines that one of URCA's roles in the regulation of the ES shall be to *"provide for and carry out periodic rate reviews."*

Section 38 of the EA empowers URCA to give effect to the electricity sector policy objectives. Section 38 (1)(a) of the EA provides URCA with the function and power to *"review and determine that the rates and scale of charges comprising the tariff rate for electricity supply services proposed by a public electricity supplier are reasonable, reflect efficiently incurred costs and are not inconsistent with or in contravention of the Act or any other law and allow an opportunity for public input."*

Subsection 38(3)(i) and(j) states that URCA may issue regulatory and other measures, including without limitations, as follows: –

- (i) *"requiring any licensee to furnish such information and submit such returns in relations to the operations at such intervals as it may require;*

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<sup>2</sup> EA section 6(2)(a)

<sup>3</sup> EA section 6(2)(l)

- (j) *conducting market investigations and market reviews and publishing regular information and reports.”*

Section 64 of the EA gives URCA the remit to make determinations where URCA sees it necessary relating to the terms and conditions of a licence, including obligations in licence conditions, regulatory and other measures, standards or technical rules.

## 2.2 REGULATORY MEASURES ISSUED BY URCA

### 2.2.1 Rates and scales of charges for electricity by Public Electricity Providers (PES)

With respect to the powers, functions and roles issued by URCA aforesaid under the EA, URCA has consulted on and subsequently issued a Tariff Review Framework for Electricity Suppliers (ES: 07/2021).<sup>4</sup> This framework outlines the rationale, procedure and factors that URCA may consider in relation to a tariff review application.

## 2.3 LICENCE CONDITIONS

### 2.3.1 General Conditions

The general conditions of the PESL further states that *“the Licensees shall comply with regulatory and other measures including any directive, order, rule, decision or approval issued, made or granted by URCA in accordance with their duties and functions under the Act or their Licence”*.

Condition 5.1 of the PESL and APESL outline the role and duties of URCA. It states that the Licensee shall be subjected to the regulatory supervision of URCA. URCA shall perform its functions and carry out its duties pursuant to the URCA Act, the EA and any other relevant laws, the licence and have regard to relevant Government policy.

### 2.3.2 Reporting Obligations

Condition 23 of the APESL outlines BBUC’s reporting obligations. Conditions 23.2, 23.3 and 23.8 respectively state:

23.2 *“URCA may require the Licensee to maintain separate Regulatory Accounts for regulatory reporting and tariff analysis.”*

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<sup>4</sup> See Guidelines and Procedure at <https://www.urcabahamas.bs/wp-content/uploads/2021/07/Tariff-Review-Framework-Guidelines-and-Procedures-for-Public-Electricity-Suppliers-ES-07-2021.pdf>

23.3 “The Licensee shall furnish to URCA without delay such information, documents and details related to the Licensed Business, as URCA may reasonably require in order for it to fulfil its functions and discharge its obligations under the Act.”

23.8 “The Licensee shall, annually, provide URCA with its capital investment plan and updated five year capital investment plan.”

### 2.3.3 Engaging in other business

25.1 “The licensee may engage in other business activities and shall keep separate accounts for its different activities. The licensee’s profits and losses from such other business activities shall not be considered for the purpose of setting tariffs.”

### 2.3.4 Price controls mechanism and tariffs

Part G, Condition 51.1 outlines the Tariff Principles - “URCA shall determine the Licensee’s rates for electric power pursuant to URCA’s powers under the Act as amended from time to time and on the principles set out therein.”

Conditions 52.1 and 52.2 of the APESL licence stipulates the respective tariff reviews as follows:

“52.1 URCA shall conduct a tariff review for the Licensee in accordance with the procedure set out under section 20 of the Act,” and

“52.2 The Licensee shall comply with the process and timelines established by URCA for tariff reviews.”

The cumulative effect of the foregoing statutory, regulatory and license provisions provides the framework under which URCA has exercised its statutory mandate to consider and consult on BBUC’s tariff amendment application.

### 3 SUMMARY OF BBUC TARIFF AMENDMENT PROPOSAL

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This section sets out a summary of BBUC’s tariff amendment proposal.

#### 3.1 INTRODUCTION

Baker’s Bay Utility Ltd. (“BBUC”) is an authorized utility company that was established in 2008 which owns, operates, and manages water, wastewater, electricity generation, telecommunication services, internet services and fuel station services within the Baker’s Bay community. The Company’s was issued an APESL by URCA for its electricity operations effective December 21, 2020.

The Company is the sole provider of electricity to the approximately 205 residential and 65 commercial (club) consumers within the private Baker’s Bay community, none of which are low-income. BBUC asserted that currently, it is in the process of converting increased amounts of electricity generation from diesel production to the use of Liquefied Natural Gas (“LNG”) which is considered one of the cleaner fossil fuel. In addition, the Company posited that it is considering other renewable energy sources for electricity generation soon.

BBUC historically charged a flat rate per kWh for electrical energy use as recorded by monthly meter readings. The current rate of \$0.51 per kWh is unchanged since January 2019.

BBUC posited that the company’s goal will be to rebuild for resiliency, efficiency and profitability. This includes a utility rate review, revised staffing, an automated flexible fuel source power plant, and advanced metering infrastructure (AMI) for automation of power and water metering, monitoring, and billing.

#### 3.2 REQUESTED ACTION AND PROPOSED RATES

BBUC is requesting that URCA Authorize a change to the existing tariff structure of the unitary tariff rate to permit billing based on a fixed non-Fuel / tariff rate and a floating fuel rate.

##### **Non-fuel / Tariff Rate**

BBUC is proposing a non-fuel / tariff rate of \$0.3686 per kWh. BBUC has posited that this non-fuel rate is calculated based on the analysis consistent with the guidance in the Tariff Review Framework, Guidelines and Procedures for Public Electricity Suppliers issued by URCA on July 1, 2021 (“the Guidelines”). BBUC proposed calculation of the non-fuel / tariff rate is shown in Table 1

**Table 1**

**BAKER'S BAY UTILITY**

Non-Fuel / Tariff Rate (Revenue Requirement) Supporting Analysis

RR = ROI + DI&P + (OPEX + D + S&I) =

<b>5,199,899</b>	Revenue Requirement
<b>14,107,103</b>	kWh billed, TTM as of 8/31/2022
<b>0.3686</b>	Revenue Requirement per kWh billed

**Where:**

Symbol	Definition	Assumption	Comments
ROI	Return on Investment	1,162,080	
DI&P	Debt obligations in respect of Interest or Principal	157,289	Estimated average annual interest payments over term of the loan plus one year of debt issuance costs allocated to BBUC (total costs assumed to be amortized over life of loan).
OPEX	Non-fuel operating costs/expenses (prudently incurred)	2,369,433	TTM as of 8/31/2022, plus allocation of ground lease.
D	Depreciation	1,511,097	Estimate based on insurable value and 7 year life.
S&I	Cost of issuing Securities	-	

ROI = RB x WACC =

<b>1,162,080</b>
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**Where:**

Symbol	Definition	Assumption	Comments
RB	Rate Base (capital investment less accum. depr.)	12,077,680	Based on current insurable value of Electric department assets, plus near-term capital investment in microgrid system (\$5.4M) expected to be included in the rate base period.
WACC	Weighted Average Cost of Capital	9.62%	

WACC = (E/V \* r<sub>E</sub>) + ((D/V \* r<sub>D</sub>) \* (1-t))

<b>9.62%</b>
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**Where:**

Symbol	Definition	Assumption	Comments
r <sub>D</sub>	Cost of Debt	7.71%	Weighted average consistent with DI&P guidance.
r <sub>E</sub>	Rate of Return on Equity (ROE)	10.40%	
D	Value of Debt in the Capital Structure	3,500,000	
E	Value of Equity in the Capital Structure	8,577,680	Consistent with existing and planned near-term capital investment into electric assets, per URCA guidance, less value of debt used to finance capital investment.
t	Tax Rate	0.00%	

## **Fuel Rate**

BBUC has proposed the pass-through of the fuel rate calculated based on the cost of fuel used divided by the total metered electrical use. BBUC has proposed that the cost of fuel used should include BBUC purchase and transport costs to the powerplant. BBUC has asserted that due to rising fuel prices, BBUC cost to produce one kWh of electricity using LNG has increased from \$0.17 in December 2020 (when Baker's Bay received its APESL license) to \$0.21 in April 2022. Additionally, BBUC asserted that to produce one kWh of electricity using diesel during the same period, its costs have risen from \$0.17 to \$0.34. BBUC further asserted that based on recent invoices, the current blended fuel rate is \$0.31 per kWh based on a fuel generation mix of 60% diesel and 40% LNG.

BBUC has proposed that the fuel rate be applied to all customers equally without distinction between residential or commercial.

BBUC posited that with the current diesel price of \$5.05 per gallon, the variable rate would be \$0.29 per kWh (based on a fuel generation mix of 50% diesel and 50% LNG) and the (non-fuel) fixed rate would be \$0.36 per kWh for a total of \$0.65 per kWh.

## **PROPOSED POWER PLANT IMPROVEMENTS**

### Present status

- 2.3 MW LNG capacity (Three 750 kW Siemens LNG Gensets)
- 3.4 MW Diesel capacity (Two mobile 1.7 MW Caterpillar Gensets)
- BBUC LNG and diesel gensets are manually adjusted to meet load demand:
- Five RMUs (specialized switch gear) are manually switched to route power through the electrical main circuits (or turn off/isolate power).
- Rerouting of power is limited - two RMUs have been modified to connected to current gensets (one for diesel, the other for LNG).
- Electrical smart meters are manually read. There is no smart meter communication network or software system for data collection and storage.

**BBUC PLANNED EXPENDITURE FOR POWER PLANT SHORT TERM & LONG TERM IMPROVEMENTS**  
Proposed Estimated Expenditure (\$1.15M – \$5.5M )

## **Short Term**

- Add Plant Controller to automate control of gensets.
- Replace manual RMUs with automated (5 @\$70k/ea.).
- Add one automated RMU to normalize circuits with diesel backup.
- Rebuild/upgrade two best gensets with new transformer per genset.
- Addition of experienced mechanic, 3-phase electrician, & apprentice.
- Implement smart metering network and software to eliminate labor in reading meters & minimize errors.

## **Long Term**

- Add a 4th LNG genset for 3 MW total LNG capacity.
- Add microgrid controls and battery to increase efficiency of power by running gensets at peak efficiency.
- Add Solar Photovoltaic for a lower cost energy source. Microgrid controls will be programmed to use solar power first.

## **BBUC PROPOSED POST-DORIAN UTILITY PLANT CONFIGURATION – CONTEMPLATED IMPROVEMENTS AND IMPACT**

BBUC reported that all their power plant assets were destroyed in Hurricane Dorian. The powerplant is currently operating with two 1.7 MW Caterpillar diesel gensets and three 750 kW Siemens LNG gensets. BBUC is proposing that to achieve the goals of full automation with more efficient and resilient power, the following improvements are in progress:

- Development of a microgrid with battery and hardening of our infrastructure. The microgrid will enable BBUC to generate a much larger percentage of total electricity from LNG rather than diesel, which has significant efficiency and environmental advantages. According to natural gas provider Clean Energy Compression, natural gas emits 99% less Sulphur oxide, 80% less nitrogen oxide and 40% less carbon dioxide than diesel, and no release of heavy metals or soot particles. When these capital improvements are complete and assuming LNG prices remain less volatile than diesel prices, the proposed rate structure should result in a reduction to customer rates, all else held equal.
- Completion of technology upgrades to make the utility system modern, efficient, and resilient. Improvements include an AMI smart metering system with a new accounting system for better integration with the new smart meters, as well as the creation of a GIS database map of all utility assets. All new ring main switches (RMUs) were installed in October 2021, resulting in the percent uptime remaining above 99.9% since installation.



## 4 URCA REVIEW OF BBUC PROPOSED AMENDMENT

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PES tariffs have traditionally been set based on two components – fuel and non-fuel. URCA, as prescribed by legislation, namely EA, and the PESL has the remit to approve a tariff methodology and approve tariffs submitted by PES within that methodology.

In evaluating BBUC's tariff application, URCA has conducted an economic and technical analysis to consider, inter alia, the need for revenue derived by PES from sales, services, and other sources to be sufficient to pay for the Cost of Service.

This section outlines URCA's review and methodology for establishing BBUC tariffs that both accords with the Authorised Public Electricity Supply Licence (APESL) and meets standards for good regulatory practice.

### 4.1 NON-FUEL TARIFF SETTING –

URCA undertook a cost-based 'base year' adjustment of BBUC Revenue at the end of the 2020-2021 audited financial period reflecting an updated "building blocks" analysis of the most recently available actual costs and revenue data. This will allow BBUC the flexibility to align its price structures with the structure of its costs. The weighted average tariffs derived from expected sales will be adjusted annually over the next 5 years using the adjustment mechanism set out in equation 1 below

$$\text{Equation 1: } \% \text{ adj.} \leq \text{CPI} - X;^5$$

Under the existing pricing arrangement, annual revenue requirements for each full year were estimated, based on a "building blocks" approach, using data for 2020/2021. Tariffs were then set at a level to allow the company to earn enough revenue to cover costs including a reasonable return on capital. Tariffs were then allowed to escalate based on movements in inflation with an offset for efficiency.

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<sup>5</sup> where % adj is the average percentage change in prices allowed in a year, CPI is the inflation index, and X is the offset or efficiency factor.

URCA believes that setting an appropriate Heat rate and losses target (heat rate factor) within a hybrid regime will provide the right incentives for efficiency. The X-factor adjustment shall be determined around the magnitude of the variance of actual heat rate factor and targeted heat rate factor.

Additionally, URCA believes that the offset, X which represent the X-factor in price cap regimes remain zero until a comprehensive study on X factor is established. By implication also adjustment for inflation will be postponed until the X-factor is established.

By undertaking a base year cost analysis, URCA can explicitly incorporate updated asset values (Rate Base), WACC estimates and operating costs. URCA also examined the evidence submitted by the company to support assumptions on the relative efficiency of BBUC.

## 4.2 URCA ANALYSIS OF BBUC OF REVENUE REQUIREMENT<sup>6</sup>

The Regulatory process for the non-fuel tariff determination consists of two steps. The first step is the determination of revenue requirement of the utility. The second step is the design of the tariff elements which, when multiplied by sales, produce the allowed revenue that the utility can collect from customers. The allowed revenue should be equal to the revenue requirement to enable the utility to recover its costs.

The Revenue Requirement shall be the non-fuel cost (Cost of Service) that BBUC should recover through the non-fuel rates. This is so because the fuel cost with attendant adjustments is proposed to be a passthrough directly to customers through a separate rate.

The Revenue Requirement which approximates the Cost of Service shall comprise four (4) main elements:

- (1) Return on Investment (ROI)
- (2) Cost of Debt in respect of interest and or principal of money borrowed by a PES, whether there is a continuing economic return on the money borrowed; and
- (3) Recovery of all prudently incurred expenses of the Licensed Business including:
  - a. Non-fuel operating costs/expenses
  - b. Depreciation
  - c. Cost of Securities issued by a PES and interest charges

The Revenue Requirement shall be derived as follows:

$$RR = ROI + DI\&P + (OPEX + D + S\&I)$$

Where:

- RR = Revenue Requirement  
ROI = Return on Investment  
DI&P= Debt obligations in respect of Interest or Principal  
OPEX = non-fuel operating costs/expenses (prudently incurred)  
D = Depreciation  
S&I = Cost of issuing Securities

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<sup>6</sup> Reference:

<http://documents1.worldbank.org/curated/en/648501468218416920/pdf/ACS48450WPOP120cial0use0only0900ACS.pdf>

The five components of the Revenue Requirements (RR) shall be examined, encompassing the Return on Investment (ROI), Debt obligation in respect of Interest or Principal followed by the Non-Fuel Operating Costs/Expenses shall be examined.

### 4.3 RETURN ON INVESTMENT (ROI)

The Rate Base is the investment base established by the regulatory authority upon which a utility is allowed to earn a fair return. The ROI is the product of the utility's Rate Base (RB) and its Weighted Average Cost of Capital (WACC). Mathematically, this may be expressed as:

$$ROI = RB \times WACC$$

WACC combines the approved rate of return (ROR) of all categories of funds in the business in proportion to each funds' contribution to the actual or deemed capital structure to yield a single ROR for the company. WACC (pre-tax) may be expressed as<sup>7</sup>:

$$(pre-tax) = (D/D+E) + r_E / (1-t)(E/D+E)$$

Where:

- $r_D$  = Cost of debt
- $r_E$  = Rate of return on equity (or ROE)
- D = Value of debt in the capital structure
- E = Value of equity in the capital structure
- t = Tax rate.

#### 4.3.1 Rate Base (RB)

The Rate Base is the value of the net investment in the Licensed Business. Normally Utility Rate Base includes the assets that are in use, will be expected to be in use over the Rate Review period and are deemed useful in providing electricity services to its customers.

For vertically integrated electric utilities such as BBUC, rate base generally includes generation, transmission, and distribution infrastructure; but when it comes to valuing rate base, there can be many other items that are included in, or used to offset, the net value of the utility's plant and equipment.

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<sup>7</sup> Note,  $(D/D+E)$  represents the 'gearing ratio'.

In assessing BBUC rate base URCA seeks to identify the following components from the 31 December 2020 audited statutory accounts: <sup>8</sup>

- i. The Property Plant and Equipment (“PPE”); along with the net book value of the company’s assets this shall also include construction work in progress; offset by impaired assets, customer financed assets (including electricity efficiency improvement fund assets), rural electrification assets, less revaluation balance/capital reserve;
- ii. Intangible Assets (i.e. assets that are not physical in nature e.g. copyright, software licences)
- iii. The working capital (i.e. accounts receivable + cash & short term deposits + tax recoverable + inventory – account payable – customer deposits – bank overdraft – short term loans) deployed;
- iv. Long Term Receivables.
- v. Other Assets; and
- vi. Offsets which, refer to:
  - a. Employee benefit obligations; and
  - b. Deferred revenue.

URCA notes that BBUC statutory audited account has combined all its operations of water, wastewater, electricity generation, telecommunication services, internet services and fuel station services within the Baker’s Bay community. The accounts for the electricity business are not granularly separated enough to compute the rate base components.

BBUC proposed that its Rate Base is its capital investment less accumulative depreciation. To break out the capital investment attributable to the production of electricity, BBUC proposed a calculated Rate Base for Electricity based on current insurable value of electricity production assets, plus near-term capital investment in microgrid systems of US\$5.5 million.

In the absence of the regulations for Accounts Separation Guidelines, URCA accepts BBUC method of allocation of costs for its electricity assets. URCA also acknowledge that the planned expenditure on the acquisition of microgrid should be added to the computation of the Rate Base. URCA proposed that BBUC Rate Base shall be \$12,077,680

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<sup>8</sup> Reference: Regulatory Assistance Project (RAP); “Revenue Regulation and Decoupling: A Guide to theory and Application” November 2016. <http://www.raonline.org/wp-content/uploads/2016/11/rap-revenue-regulation-decouplingguide-second-printing-2016-november.pdf>

**Table 2: Rate Base assessment**

<b>BBUC Proposed Rate Base for Electricity Assets based on Actual Insurance Coverage</b>		<b>URCA Proposed Rate Base</b>
<b>Asset Category</b>	<b>Estimated Insurance Coverage US\$</b>	<b>URCA Assessed Rate Base</b>
Revised transformers estimate	2,144,100	2,144,100
3 Siemens 750 Gas Generators, 2 750W Caterpillar Diesel Generators, Ring Main Unit	4,510,000	4,510,000
<b>Subtotal</b>	<b>6,654,100</b>	<b>6,654,100</b>
Original microgrid estimate	3,500,000	3,500,000
<b>Subtotal</b>	<b>10,154,100</b>	<b>10,154,100</b>
Martin Energy price over original microgrid estimate	1,923,580	1,923,580
<b>Subtotal</b>	<b>12,077,680</b>	<b>12,077,680</b>
(rounded)	12,100,000	-

**Consultation Question 1:**

**Do you agree with the method and calculation of BBUC Rate Base? If yes, explain and if not why not?**

**4.3.2 BUCC Weighted Average Cost of Capital (WACC)**

As stated in previous section and restated for emphasis, WACC combines the approved rate of return (ROR) of all categories of funds in the business, namely debt and equity, in proportion to each funds' contribution to the actual or deemed capital structure to yield a single ROR for the company.

**4.3.2.1 Cost of Debt**

BBUC proposed cost of debt is 7.71% made up of the weighted interest rate of actual cost of outstanding debt principal of 3.00%. All-in floor plus existing transaction cost of 3.19%. BBUC proposed that using the actual cost of debt should be conditional upon the following:

**Bakers Bay Utility Company Debt Summary**

Loan Fees - Total and Allocation

Debt Assumptions			
Origination Date	4/30/2022	Collateral appraisal	17,057
Loan Amount	3,500,000	Lender set-up fees	108,900
Index	Term SOFR	Quantity surveyor fees	11,514
Current index rate	0.80%	Lender legal fees	63,207
Spread (bps)	435	Stamp duty	141,020
All-in floor	3.72%	Borrower legal fees	79,009
Term	5 years	<b>Total Fees</b>	<b>420,706</b>
Maturity (end of month)	4/30/2027	<b>BBUC Allocated Fees</b>	<b>111,551</b>
Amortization	5 years	<b>BBUC Allocated Fees</b>	<b>3.19%</b>
7.71%			

URCA in deciding on the cost of debt accepts BBUC proposal of using the actual cost of debt. The company has also satisfied URCA that the transaction costs have been amortized over the life of the loans. The cost of outstanding debt based on BBUC submission of outstanding loan principal is assessed to be 7.71%.

**Consultation Question 2: Comment on whether BBUC cost of debt is reasonable, whether URCA should allow BBUC to recover the actual cost of debt or if BBUC cost of debt should be benchmark against comparable electric utilities?**

#### 4.3.2.2 Return on Equity Capital

BBUC proposed the return on equity of 10.40% for the electricity business. Additionally, BBUC cost of equity was derived by adjusting the audited balance sheet cost of equity by a factor of 64.13%, representing the share of the electricity business of the total equity. Further, BBUC proposed an additional amount of equity totalling \$4,600,000 as know and measurable equity cost due to the investment in Microgrid

Of the two elements comprising WACC, the cost of equity has traditionally proven to be the most difficult to derive, and this is so even in countries with highly developed capital markets such as the USA and the United Kingdom. Notwithstanding, URCA is of the view that BBUC proposed return on equity of 10.40% is in line with the benchmark returns of comparable utilities in the industry. URCA therefore accepts that BBUC return on Equity of 10.40% is reasonable.

**Table 3: Calculation on the Return on Investment (rate base) (ROI)**

		BBUC Proposed	URCA Proposed Determination
Cost of Debt (%)	A	7.71%	7.71%
Return on Equity (%)	B	10.40%	10.40%
Tax Rate (%)	C	0.00%	0.00%
Gearing Ratio (%)	D=E/G	40.80%	40.80%
Long Term Debt (\$'000)	E	3,500	3,500
Shareholders Equity (\$'000)	F	8,578	8,578
Total Capitalization (\$'000)	G=E+F	12,078	12,078
Rate Base (\$'000)	H (see section on Rate Base)	12,100	12,078
Weighted Average Cost of Capital (WACC) (%)	$I = (F/G*B)+(E/G*A)*(1-C)$	9.62%	9.62%
Return on Investment (\$'000)	J=H*I	1,163.98	1,161.86

#### 4.3.2.3 Costs of debt and equity.

The costs of debt and equity determine the return the energy companies are allowed to earn on their rate bases. This is determined by the following:

- The respective costs of debt and equity allowed by the URCA; and
- The mix of debt and equity financing used.

URCA believes that a PES should be allowed to recover its revenue requirement by applying a deemed or benchmark capital structure<sup>9</sup> and an estimated Cost of Equity using CAPM<sup>10</sup> method and international benchmark data. The WACC derived from this alternative is then applied to the appropriate Rate Base. URCA proposes to adopt the method of comparative utilities in the Caribbean region as the basis of estimating WACC.

<sup>9</sup> Represents the amount of debt relative to the equity shareholding. Capital structure is the proportion of each source of funding used to support the utility's rate base

<sup>10</sup> is a popular pricing model that describes the relationship between systematic (market) risk and expected return and that is used to calculate the required rate of return for any risky asset.

Under the current system of taxation in The Bahamas, BBUC is not liable to pay income taxes as there is no corporate income tax in The Bahamas. The Company is subject to Value Added Tax (VAT) at a rate of 10%. Input VAT that the Company incurs with regards to its vatable purchases of goods and services is offset against the recorded output VAT, and any difference is recognized as net input VAT (an asset account) or net output VAT (a liability account).

Consequently, URCA has taken the view that scenario 2 outlined in table 3 represents a fair estimate of costs that will allow BBUC to recover its revenue requirements. URCA therefore accepts that BBUC cost of debt is 7.71%, return on equity 10.40% and its Weighted Cost of Capital (WACC) is 9.62%

**Consultation question 3: Do you agree with URCA’s calculation for the derivation of the WACC? If yes, why? If not why not?**

**4.3.3 Operational Expenses**

BBUC proposed operational expenses of \$4,037,819. Under the general framework and guidelines, BBUC has the responsibility of proving to URCA’s satisfaction that each proposed element of the revenue requirement is prudently incurred and is fair. With this criteria therefore, URCA has assessed that fuel oil/lubricant which BBUC posited has incurred as Non-Fuel operating expense was removed from operating expense as this cost was deemed to be not a non-fuel cost component and the operational expense was further adjusted by \$1,169. Table 4 shows URCA’s adjustment to BBUC proposed operational expenses

Table 4: Operational Expenses

Components of Operating Expenses	BBUC Proposed based on latest Data	URCA's adjustment based on known & measurable	URCA's assessed Operational Expenses
<b>Operational Expenses (\$)</b>	<b>4,037,819</b>	<b>(1,169)</b>	<b>4,036,650</b>
<b>Debt obligations in respect of Interest or Principal (DI&amp;P)</b>	<b>157,289</b>		<b>157,289</b>
<b>Non-fuel operating expenses (OPEX)</b>	<b>2,369,433</b>	<b>(1,169)</b>	<b>2,368,264</b>
Payroll Expense	951,839		951,839
Operating Expense	1,144,004	(1,169)	1,142,835
Cost of Sales	15,772		15,772
Insurance	257,817		257,817
<b>Depreciation</b>	<b>1,511,097</b>	<b>-</b>	<b>1,511,097</b>



#### 4.4 REVENUE REQUIREMENT

BBUC' proposed revenue requirement is based upon the values of the terms used in the formula during a "Test Year". This was adjusted for known and measurable changes in accounting principles as deemed by URCA. Table 5 shows the revenue requirement proposed by BBUC for the test year period, broken down according to main categories and URCA's adjustments deemed appropriate.

**Table 5: Revenue Requirement derivation**

	BBUC proposed	adjustment for known and measurable	URCA's Review
Components of Revenue Requirement	US\$	US\$	US\$
<b>Operational Expenses</b>	<b>4,037,819</b>	<b>(1,169)</b>	<b>4,036,650</b>
Debt obligations in respect of Interest or Principal (DI&P)	157,289	-	157,289
Non-fuel operating expenses (OPEX )	2,369,433	(1,169)	2,368,264
Payroll Expense	951,839	-	951,839
Operating Expense	1,144,004	(1,169)	1,142,835
Cost of Sales	15,772	-	15,772
Insurance	257,817	-	257,817
Depreciation	1,511,097	-	1,511,097
<b>Return on Investment</b>	<b>1,163,979</b>		<b>1,161,863</b>
<b>Taxation</b>	<b>-</b>		
<b>Revenue Requirement (US\$)</b>	<b>5,201,798</b>	<b>(1,169)</b>	<b>5,198,513</b>

##### 4.4.1 Test Year Billed Sales

BBUC proposed a "test year" billed sales at 14,107,103 kWh , using the most recent available 12-month billed as the known and measurable data offering a fairer estimate of the likely trend of electricity sales.

Based on the foregoing Table 6 highlights the unit cost that BBUC is recommended to charge its customers to recover its costs of operation. BBUC proposed \$0.3687/kWh whilst URCA is of the view that \$0.3685/kWh will suffice.

Month	kWh Billed
1/1/2021	564,562
2/1/2021	733,815
3/1/2021	732,752
4/1/2021	1,132,986
5/1/2021	995,961
6/1/2021	1,124,588
7/1/2021	1,272,928
8/1/2021	1,550,505
9/1/2021	703,157
10/1/2021	1,107,698
11/1/2021	1,030,219
12/1/2021	976,380
1/1/2022	890,339
2/1/2022	1,053,255
3/22/2022	1,306,063
4/22/2022	1,292,406
5/22/2022	1,384,072
6/22/2022	1,335,697
7/22/2022	1,598,989
8/22/2022	1,428,829
<b>Last 12-month Total</b>	<b>14,107,103</b>

Table 6: Average Price of Electricity based on required Revenue Requirement

	BBUC proposed	adjustment for known and measurable	URCA's Review
<b>Revenue Requirement (US\$)</b>	<b>5,201,798</b>	<b>(3,285)</b>	<b>5,198,513</b>
Billed Sales (kWh)	14,107,103	-	14,107,103
<b>Revenue Requirement (US\$/kWh)</b>	<b>0.3687</b>	<b>(0.0002)</b>	<b>0.3685</b>

**Consultation Question 4: Do you agree with URCA's Review of BBUC Revenue Requirement average unit price of electricity? If yes, explain, if no why?**

## 4.5 RATE DESIGN

BBUC is the sole provider of electricity to the approximately 205 residential and 65 commercial (club) consumers within the private Baker's Bay community, none of which are low-income. BBUC have proposed that both the Residential and Commercial customers be charge the same rates. BBUC posited that the cost of supplying both classification of customers is approximately the same based on the physical layout and social composition of the community.

The rate design structures that URCA considered shall meet the following objectives and best practices:

- Rates shall be equitable among customer classes and individuals within classes, taking into consideration the costs incurred to serve each customer class.
- Rates shall be affordable to the most vulnerable and economically challenged.
- Rates shall take into consideration other important factors such as competitive concerns, policies, etc.
- Rates shall be simple and understandable.

In the absence of a detailed Cost of Service Study (CoS) and based on the social characteristic of high-net-worth demography of the community, URCA takes the view that BBUC proposal of a unitary non-fuel rate design has merit. The social characteristic of the community is of one that can be described as a: high net worth' community where the consumers are almost homogeneous and are consistently high energy users based on their life style. Additionally, URCA is of the view that notwithstanding, the usefulness that a CoS could have, the absence of a CoS will not materially affect BBUC realising its Revenue Requirement as the homogeneity of usage patterns would not make a materialistic difference

**Consultation question 5: do you agree that a unitary non-fuel rate design for BBUC is justified?**

**Explain.**

## 5 URCA REVIEW OF TARIFF STRUCTURE AMENDMENT -FUEL COST SPLIT

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In its amendment submission BBUC proposed a modification of the electricity rate structure by splitting the electrical rate and method of billing into two parts, including a pass-through fuel rate and a non-fuel / tariff rate.

BBUC posited that the proposed rate structure is more equitable to the utility company and its customers during all market cycles and is consistent with other approved URCA rate structures.

URCA's view on the tariff structure, is informed by assessing questions such as:

- Is the current structure an appropriate way of meeting social objectives to help the Bakers Bay Community and high-income consumers?
- Is there an appropriate and cost-reflective split between fixed and variable charges?
- Are the differentials in charges between the various types of customers justified?
- What is the usefulness of the implicit cross-subsidies between customer categories? How effective would potential alternatives be?

URCA is of the view that significant variable costs such as fuel costs that are subject to changes on a monthly basis and these changes are outside the control of the utility, should be pass-through. URCA therefore agrees with BBUC proposal to decouple its existing pricing structure and method of billing into two parts, including a pass-through **fuel rate** and a **non-fuel / tariff rate** for the following reasons.

- URCA believes that BBUC proposed structure is an appropriate way of meeting social objectives to help the Bakers Bay Community
- BBUC proposed split of the Variable fuel cost is an appropriate and cost-reflective method that represents best practice and is the better economically efficient method of pricing electricity service
- URCA believes that a pass-through cost is most justified
- URCA believes that the cost split of the fuel cost and non-fuel costs offers the best alternative for tariff setting.

Since the costs for fuel used to generate electricity will be a pass-through cost which are likely to fluctuates month over month for BBUC and the consumers, URCA is of the view that BBUC pass-through fuel rate shall conform to the following regulatory guidelines<sup>11</sup>:

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<sup>11</sup> Adopted from Bahamas Electricity Corporation (Amendment) Regulations, 2020

## REGULATORY FUEL ADJUSTMENT CHARGE

1. The fuel adjustment charge shall be applicable to each of the basic rates proposed in this rate adjustment review and shall be a monthly amount per kilowatt-hour representing the total cost of fuel required to produce and deliver each kilowatt-hour of electricity to consumers.
2. The fuel adjustment charge shall be the total cost of fuel consumed in the previous month's billing period divided by the total amount of units billed for that corresponding period.
3. The total cost of fuel shall include —
  - a) the cost of fuels used to produce electricity;
  - b) the cost of upper cylinder lube oil;
  - c) the cost of fuel additives as mandated by the Original Engine Manufacturer or as may be contained in equipment warranties;
  - d) the costs associated with throughput fees;
  - e) any applicable reasonably incurred foreign exchange and bank fees associated with fuel payments;
  - f) relevant and reasonably incurred variable fuel costs associated with the purchase of electricity by an Independent Power Producer through a Power Purchase agreement;
  - g) relevant and reasonably incurred costs and fees associated with any fuel hedging transactions such as cost of premiums and professional fees incurred to support the Fuel Hedge Program;
  - h) any additional costs, including reasonably incurred demurrage, laboratory tests, inspection fees, and interest.
4. The fuel adjustment charge may be held constant for a period of up to twelve months to provide price stability to the consumer. An over or under recovery account shall be created to monitor the movement in this account.
5. A reconciliation adjustment shall be made to the fuel adjustment charge either —
  - a) at the end of the period to remediate any adjustments as may be necessary to the billing or fuel costs; or
  - b) the over or under recovery account exceeds  $\pm 5\%$  of estimated annual fuel cost.

The total of any adjustment to be made shall be prorated over the ensuing twelve months."

**Consultation Question 6: Do stakeholders agree with the BBUC fuel cost split, the fuel rate pass-through proposal and the proposed regulatory method? Explain.**

## 6 CONCLUSION AND NEXT STEP

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BBUC proposed \$0.3686/kWh for non-fuel tariff rate and modification of BBUC tariff structure by splitting the electrical rate and method of billing into two parts, including a pass-through fuel rate and a non-fuel / tariff rate, was reviewed, and assessed by URCA guided by the procedures outlined in the Tariff Review Framework, Guidelines and Procedures for Public Electricity Suppliers document issued by URCA on July 1, 2021.

Based on the information submitted by BBUC, it is proposed that:

- BBUC non-fuel tariff rate is **\$0.3685/kWh** predicated on an assessed Revenue Requirement of **\$ 5,201,798** and billed sales of **14,107,103 kWh**
- BBUC decouple its existing pricing structure and method of billing into two parts, including a pass-through **fuel rate** and a **non-fuel / tariff rate**

Additionally, URCA is proposing that BBUC fuel rate shall be a pass-through and should conform to the regulatory method outlined herein

URCA has set out specific issues on which stakeholders are invited to comment. However, stakeholders should make any other comments that they wish, which may not be covered by the issues raised in this consultation document. These comments will take into consideration in making a final determination on BBUC tariff amendment request.

## Annex A. SUMMARY OF CONSULTATION QUESTIONS

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**Consultation Question 1:**

**Do you agree with the method and calculation of BBUC Rate Base? If yes, explain and if not why?**

**Consultation Question 2:**

**Comment on whether BBUC cost of debt is reasonable, whether URCA should allow BBUC to recover the actual cost of debt or if BBUC cost of debt should be benchmark against comparable electric utilities?**

**Consultation question 3:**

**Do you agree with URCA's calculation for the derivation of the WACC? If yes, why? If not, why not?**

**Consultation Question 4:**

**Do you agree with URCA's Review of BBUC Revenue Requirement average unit price of electricity? If yes, explain, if no why?**

**Consultation question 5:**

**do you agree that a unitary non-fuel rate design for BBUC is justified? Explain.**

**Consultation Question 6:**

**Do stakeholders agree with the BBUC fuel cost split, the fuel rate pass-through proposal and the proposed regulatory method? Explain.**