



April 2, 2023

Mr. Dean Molina  
Chairman  
Public Utilities Commission  
4 Princess Margaret Drive  
Marina Towers. 2<sup>nd</sup> Floor  
Belize City, Belize

Dear Chairman Molina,

**Re: 2023 Annual Review Proceedings**

In accordance with the Electricity (Tariffs, Fees, and Charges) Byelaws, S.I. 145 of 2005 as amended by S.I. 116 of 2009, Belize Electricity Limited (BEL), hereby submits its proposal for tariffs, fees, and charges for the period July 1, 2023, through to June 30, 2024.

BEL's application is supported by the full documentation of its assumptions and the supplemental data requested by the PUC. The Company stands ready to provide any additional information the PUC may find useful in its analysis and review of the rate case.

BEL also acknowledges that its submission was expected by the PUC on April 1, 2023, and makes no objection if the PUC requires a day added to its review period for issuing its Initial Decision.

Sincerely,  
Belize Electricity Limited

Leon Westby  
Manager, Strategy, Innovation & Regulatory Affairs



**BELIZE ELECTRICITY LIMITED**

# 2023 Annual Review Proceedings

Rate Case Submission to the Public  
Utilities Commission for ATP 2023-2024

April 2, 2023

# 1 APPLICATION

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In accordance with the Electricity (Tariffs, Fees, and Charges) Byelaws, S.I. 145 of 2005 as amended by S.I. 116 of 2009, Belize Electricity Limited (BEL) hereby submits its rate case proposal for the 2023 Annual Review Proceedings (ARP). Summarily, BEL proposes to maintain average electricity prices to customers at \$0.40 per kWh through modest amendments to the approved rate schedule in the PUC’s Final Decision for the 2022 Annual Review Proceeding (ARP 2022), and the introduction of incentive pricing for tourism, distributed generation, electric vehicle, and wholesale energy customers. At these proposed prices, BEL will be able to aggressively expand its grid infrastructure to connect underserved customers, diversify its energy supply options to improve reliability, and modernize the full gamut of its services to meet emerging customer preferences.

While the proposal ensures that BEL can finance its development plans, the rates do not allow for the zeroing out of the Regulatory Account Balance (RAB) by the end of the current Full Tariff Period. Understandably, to achieve this, rates would need to increase but BEL does not vary from its position that price increases would do more harm than good to economic development. Instead, BEL maintains that this variance between actual costs and collections accumulate in the RAB in the medium-term and is confident that the higher sales borne out by its expansion plans will allow for the full recovery over the next decade with resultant benefits to both the Company and stakeholders in the industry. The supporting analysis and commentary for this rate proposal follows in the application.

## 2 OVERVIEW

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### 2.1 CORPORATE STATUS

Belize Electricity Limited generates and supplies electricity to consumers throughout the country of Belize. The Company is a public liability company incorporated and domiciled in Belize. The Government of Belize (GOB) holds 32.58% of the issued and outstanding shares of the Company, and the Social Security Board (SSB) holds 31.27%, resulting in a total public sector ownership interest of 63.85%. Fortis Cayman Inc. holds 33.30% interest and over 1,500 small shareholders own the remaining 2.85% of ordinary shares.

### 2.2 ELECTRIC UTILITY SYSTEM

BEL’s national electricity grid connects all major municipalities within Belize via approximately 2,000 miles of transmission and primary distribution lines. The grid is supplied by local Independent Power Producers (IPP) utilizing hydroelectricity, biomass, solar energy sources, and fossil fuel; and is secured and anchored by interconnection with Mexico. BEL operates two diesel generation facilities, a 20MW gas turbine as a standby plant for energy security and reliability, and an off-grid power station that supplies the island of Caye Caulker.

## **2.3 REGULATORY FRAMEWORK**

The Electricity Act, Chapter 221 of the Laws of Belize, and its subsidiary legislations, provides for the regulation of electricity services in Belize, specifically empowering the Public Utilities Commission (PUC) to govern the energy sector through the setting of tariffs, and charges, and quality of service standards. Statutory Instrument No. 145 of 2005, and its subsequent amendments, governs the tariffs, rates, charges, and fees for the transmission and supply of electricity and for existing and new services to be charged by the Company to consumers in Belize and the mechanisms, formulas, and procedures whereby such tariffs, rates, charges, and fees are calculated and determined.

The Company undergoes Full-Tariff Review Proceedings (FTRP), every four years, as well as Annual Tariff Review Proceedings (ARPs). These tariff review proceedings determine the Mean Electricity Rate (MER), and Tariffs and Fees based on three cost components comprising BEL's Revenue Requirement. The first component is the cost of power ("COP") which includes the capacity costs and variable cost of generation based on the latest forecasts and assumptions at the time of review. The second component of the electricity cost is the Value Added of Delivery ("VAD"); the VAD component of the tariff allows the Company to recover its operating expenses, transmission and distribution expenses, taxes, and depreciation, and assumes a rate of return on the Regulated Asset Value (RAV) in the range of 8 per cent to 12 per cent.

The third component is the rate adjustment based on corrections for differences between the PUC Approved Tariff Basket Revenue (BEL Revenue Requirement) and the realized Tariff basket Revenue (actual revenue collected by BEL as per audited financials) during any review proceeding.

## **2.4 BACKGROUND FOR RATE CASE**

Over the first three years of this current FTP, BEL invested approximately \$161.4 M to maintain, upgrade, expand and otherwise enhance the national grid network which now powers over 108,000 homes and enterprises across Belize with over 99.5% service reliability. While the cost of service to our customers has increased, BEL's strategy has been to delay justifiable increases in electricity prices into the future where higher sales volume and stable cost of power will allow for overall lower unit costs and eventual cost recovery without adverse economic impact on customers or the industry.

Additionally, the pace of change in the electricity sector has been rapid and consequential. BEL must implement new services to align with the evolution of energy solutions and to support the clean energy transition. Consumers are increasingly concerned about their carbon footprint and demanding that the energy they consume is 'cleaner' and more renewable and that they are given greater choice and control over how they consume energy. The Government and Tourism Industry players, especially resorts, who cater to visitors from developed countries are already proactively responding to the "green energy" trend and making a case to market Belize as a "green country". Several startups have started offering green energy solutions in the form of rooftop solar PV (distributed generation); and various major solar

PV projects are already in the works or being planned by several commercial enterprises and even large residential consumers for rollout within the immediate future.

These developments are happening upon the assumption that consumers will be able to interconnect their distributed generation (DG) sources to the grid and that the current volumetric pricing regime will remain in place where consumers pay only when energy is consumed from the grid and pay nothing for having the grid as backup when the power from their DG source is not available or not sufficient to meet their demand. This model is, however, wholly unsustainable, as the cost of operating and maintaining the grid is largely fixed and the greater the grid energy erosion, the higher the unit cost of grid energy, with the burden of these higher costs being disproportionately borne by the non-DG consumers. The compounding effect of increasing DG usage and higher grid energy unit costs – and hence grid energy prices - could potentially spiral out of control into mass “grid defection” as a worst-case scenario for BEL.

Though the Company continues to embrace these emerging technologies by setting up micro-grids and various residential and commercial DG pilot projects, the lack of an appropriate rate design for grid-tied DG consumers and the delay in implementing the requisite interconnection standards is constraining the rolling out of a DG program that comprehensively responds to the market without undermining the viability and the core value proposition of the grid. A first step toward solving this challenge necessarily involves a transition to a rate structure for DG customers that includes a demand charge to recover for the backup capacity/reliability services that flow from the grid regardless of non-use, and a variable cost to recover for the operations and energy supply costs that attend to the use of grid energy. BEL makes a first proposal for the PUC to consider along these lines.

The Tourism sector is an economic mainstay for Belize, contributing totally around 41.3 percent of GDP (compared to the Caribbean average of 15.2 percent of GDP). This includes the induced effects of tourism throughout the economy, for example commodities produced locally for export trade benefit from the exposure of Belizean products to tourists. Supporting the performance of this industry directly aligns with BEL’s Mission to enhance the productivity of enterprises and support national development and is a key element of this and future rate design proposals for the PUC to consider.

Globally, the private sector, notably large vehicle manufacturers, have signalled their intent to discontinue the production of internal combustion engine vehicles in favour of electric vehicles. This is an excellent opportunity for BEL and the PUC to lead in the transformation of Transport to a cleaner, more efficient technology. BEL has started with the roll-out of a national EV charging network and will work with the Government and other strategic partners to build a policy framework and broader ecosystem to facilitate the timely growth of this market. The PUC’s role in implementing an incentive pricing model for charging stations is a critical part of this ecosystem and BEL makes its proposal for the PUC to consider in this ARP as well.

The electricity grid is evolving into hub for various technologies and their operators – utility scale generators, distributed generators, charging station operators. The regulations and pricing schemes in place going forward must account for these realities through prices that allow for cost recovery based

on the cost of service to customers and operators, and that allow for the capture and sharing of benefits throughout the network – for example, a feed-in tariff for DG customers who provide clean energy to the grid.

## 2.5 FOCUS OF RATE CASE

BEL is filing this rate case to: (i) maintain average electricity prices at \$0.40 cents per kWh through modest amendments to the approved rate schedule in the PUC’s Final Decision for ARP 2022; and (ii) obtain approvals for the introduction of incentive pricing for tourism, distributed generation, electric ground transportation, and the Spanish Lookout community.

The proposed rates will spur sales growth, prevent grid defection, and ensure the sustainable recovery of business costs. Importantly, the proposal will support BEL’s development plans to deliver safe, reliable, and sustainable energy solutions to its Customers and support national development.

Table 1 below provides a summary of BEL’s capital investment plan over the planning horizon 2023-2027.

**Table 1: Capital Investments by Strategic Pillars (in thousands of Belize dollars)**

<b>Strategic Pillars</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>
Stabilizing Cost of Power	2,094	617	300	-	-
Reinforcing & Expanding the Grid	51,194	65,163	54,038	47,454	36,549
Modernizing Planning & Operations	2,338	880	459	451	1,143
Transforming our Organizational Culture	95	24	159	129	4
Evolving with our Markets & Customers	7,830	9,885	10,329	8,294	9,703
Non-Strategic	11,878	7,998	9,338	6,749	6,553
<i>Capitalized Interest</i>	<i>5,905</i>	<i>3,458</i>	<i>2,944</i>	<i>3,074</i>	<i>2,677</i>
<i>Administrative Cost</i>	<i>3,260</i>	<i>3,441</i>	<i>3,433</i>	<i>3,637</i>	<i>3,677</i>
<b>Total Capital Expenditures</b>	<b>98,192</b>	<b>127,834</b>	<b>110,436</b>	<b>93,235</b>	<b>97,524</b>

Table 2 below provides a summary of the major capital investment projects being undertaken over the planning horizon 2023-2027.

**Table 2: Major Capital Projects being undertaken over 2023-2027**

Project	Cost	Description
Battery Energy Storage Solution	\$100M	Investment for engineering, procurement, and construction of 40MW battery storage to meet capacity requirements and energy shifting.
Smart Grid (Country-wide Rollout AMI)	\$39.23M	For full-scale deployment of AMI meters and the buildout of BEL's smart-grid strategy. Smart meters will enable BEL to access customer metering information remotely, identify anomalies and analyse trends
Gas Turbine Repowering	\$38M	Recommended by LCEP To upgrade BEL's Gas Turbine Facility at Mile 8 George Price Highway. Investment would increase capacity from 19MW to 30.9MW and allow for dual fuel operations (diesel and natural gas)
Maskall to North Ambergris Caye 69 kV submarine interconnection	\$37M	Recommended by LCEP
115kV Transmission line Democracia to Dangriga	\$29.8M	Recommended by LCEP
North Ladyville to Belize II 115 kV Transmission Line	\$19.2M	Recommended by LCEP
Customized Electricity Service (CES)	\$16.2M	To support universal access to affordable, reliable, and safe electricity to customers that requires a non-standard connection via a cost sharing agreement between BEL and the customer
Construction of New Operations Facility (JSR)	\$15M	For the construction of a new modern warehouse facility to improve inventory management and achieve cost saving benefits
New Belize II 115/22 kV substation 2	\$12.78M	Recommended by LCEP
Rural Electrification	\$11M	To support universal access to affordable, reliable, and safe electricity to customers in rural areas
EU Project Implementation (Electrification of 5 villages using Microgrid)	\$10M	With EU support, to facilitate the electrification of five villages using microgrid
Solar PV Rooftop Rental Pilot	\$9.45M	To diversify the BEL's line of services to include Solar PV which will allow customers in remote areas to be connected to the grid and support BEL's strategy of incorporating distributed generation. This investment will also increase clean in-country production and stabilize cost of power.

### 2.5.1 Stabilizing the Cost of Power

Cost of Power, on average, represents more than 60% of BEL’s revenue requirement. It is also the most volatile cost element in the price setting process, notoriously difficult to project within acceptable margins of error because of suppliers like CFE Mexico (accounting for 40% of energy supply on average) whose prices fluctuate with market conditions. Stabilizing the cost of power would minimize the need for corrections, bringing the projected revenue requirements and actual revenues in closer alignment. More importantly, stabilizing the cost of power would mean stabilizing and even lowering prices to consumers in the medium to long-term.

By 2027, the successful implementation of Phase I of the LCEP will result in 1) a 14.3% reduction in Cost of Power; 2) 96% Increase in in-country generation capacity; 3) greater than 30% reserve margin; and 4) 57.2% in-country energy production. This will be achieved by bringing on additional generation sources as specified in Table 3 below.

**Table 3: Additional Generation Sources 2023 – 2027**

Generation Technology	Capacity (MW)	Location	In-Service Year
Gas Turbine (GT) Upgrade	12	West Lake	2023
Utility Scale Solar	7	Chan Chen	2024
Utility Scale Solar	10	Maskall	2025
RICE (Natural Gas)	22.5	Dangriga	2025
Utility Scale Solar	20	Ladyville	2026
Utility Scale Solar	20	TBD	2027

BEL intends to move expeditiously to facilitate the deployment of these generation technologies to reduce unit cost of power from 27.2 cents (2022) to 23.0 cents by 2027.

### 2.6 EVOLVING WITH OUR MARKETS AND CUSTOMERS

Currently, the price BEL customers face per kWh of energy consumed is a direct function of the total regulated costs divided by total sales – the price varies with the volume of sales. While projected costs to expand and modernize the grid would justify a tariff increase within the current FTP, BEL’s strategy is to maintain prices at their current levels and pursue aggressive market expansion to boost sales and so reduce unit costs. This strategy includes principally the following components:

**A. Lead and foster the development of electric transportation in Belize**

BEL’s greatest opportunity for market growth over the long term lies with the emerging market for electric ground transportation. Research and investigation into the Total Cost of Ownership/Operation



(TCO) of conventional internal combustion engine (ICE) based transportation versus electric vehicles (EVs) have consistently confirmed that there are significant savings to be made from making the switch to EVs. The business case(s) is expected to improve even further as capital costs for EVs, though still higher than ICE vehicles, continue to decrease rapidly, removing a significant barrier to their adoption.

BEL will focus on developing the full EV ecosystem, as this is critical to the realization of the market opportunity. As the technical subject matter expert and retailer of electricity in the marketplace, BEL is firmly positioned to lead the wider EV ecosystem, bringing together all the players who are critical to its fruition: guiding their roles, providing pro-active support for all stakeholders to promote uptake, and creating synergies across the emerging EV sector.

The Company will make the business case for nationwide EV adoption to the GOB and further develop propositions for other EV customer groups and stakeholders (including, bus companies, municipalities, commercial companies). It will further build customer and stakeholder awareness through public education and promotions campaigns. This will include not only promoting the benefits of ownership but providing information on the various types of EVs available, how and where to purchase EVs, and how to operate and maintain EVs. BEL will also transition its vehicle and equipment fleet to EVs over the next five (5) years to signal confidence in the product and market and will update its procurement policies to reflect this intention.

BEL is already building out a nationally distributed Electric Vehicle Charging Network (EVCN) in key locations throughout the country to support its EV strategy. This is being implemented in two phases under the brand 'ChargeNGo'. Phase 1 was initiated in March of 2022 with the rollout of two Level-2 AC charging stations in the Best Western Biltmore Hotel and Caribbean Motors compounds on the Philip Goldson Highway in Belize City and the first DC charging station being completed at BEL's Corporate Headquarters in Belize City. The remaining nine charging stations are being scheduled for completion by the end of Q2 2023. Phase 2 will start at the end of Q2 2023: Four Level-3 charging stations will be setup in Punta Gorda, Independence, Orange Walk, and Corozal to complete the nationwide coverage with DC rapid chargers. Eight Level-2 charging stations will be strategically installed at Tourist destinations in Placencia/Hopkins, Dangriga town, and BEL workplaces. The projected cost to complete the remainder of Phase 1 and all of Phase 2 is \$1.48M.

The EVCN is being setup under a business model where BEL builds, owns, and operates charging stations installed on private or government properties under leasing arrangements as well as on its own properties. These will all be managed and controlled through a common EV Charging Application Backend System, currently being tested and launched by BEL. Private developers will be encouraged to join the BEL network and purchase stations already developed by BEL or provide O&M services to BEL. BEL will collaborate with GOB and the PUC to formulate and adopt national EV (charging) standards and requirements, including site and safety guidelines for installation and public use. These will apply to charging stations setup under the BEL EVCN network and under private ventures to assure convergence towards a single eco-system.

BEL has also partnered with the Government of Belize (GOB) to implement the GOB's E-mobility Public Transport System project over 2023-2024 being funded by the UNDP. BEL will procure, install, and maintain the supporting public transport charging infrastructure, which will consist of three (3) Level-3 DC Chargers and five (5) Level-2 AC Chargers that will be procured along with the buses and installed at identified charging depots to facilitate public transport along the entire East-to-West corridor; and 15 Level-2 AC Chargers to cater for charging of pilot vehicles for GOB partners and taxis. It is expected that BEL will invest approximately \$1M in this project over the next three years.

**B. Pursue major locales not currently served by BEL, such as Spanish Lookout, by offering creative win-win energy solutions.**

The Spanish Lookout Community currently has a population of 3,000 persons, predominantly engaged mainly in agricultural, agro-processing, and construction-related light manufacturing activities. The community was previously connected to the BEL distribution grid from 2005 to 2010 through San Ignacio feeder #2 at 22 kV, with Farmers' Light and Power Company (FLPC), the local community-owned electricity company, retaining the responsibility for purchasing the energy and distributing to their customers. During this time, FLPC was being billed at the applicable industrial rate approved by the PUC and purchased on average 8.33 MWh of energy annually at an average price of 37.26 cents per kWh. The business relationship was abruptly discontinued at the end of 2010 amidst claims that the supply was too unreliable for the community's requirements.

After 2010, BEL has continually pursued the PUC to force the Spanish Lookout community to connect to the BEL grid and for FLPC to cease and desist from serving consumers in the community on the grounds that FLPC has no generation nor distribution license to do so and that the community falls within BEL's licensed distribution area. BEL has also successfully precluded and otherwise halted FLPC encroachments into supply areas outside of the Spanish Lookout community proper after 2010.

Over the past two years, FLPC has invested in 1 MW and a 2 MW Solar PV plant. Additionally, residents in the community have installed a combined 1 MW of Solar PV on their rooftops. As a result, 6.5 MWh of the Spanish Lookout's annual energy demand in 2022 was supplied from the solar PV systems, and the remaining 15 MWh from a legacy fossil fuel plant (of capacity 7 to 9 MW) burning crude oil. However, because weekend demand is usually between 2.5 to 3 MW maximum, FLPC has regularly had to curtail substantial quantities of Solar PV supply to maintain system stability.

FLPC and BEL have recently discussed restarting a new power-purchase arrangement. FLPC's plan is to eventually shut down its fossil fuel plants, install an additional two to three MW of Solar PV over the next 5 years, and supply demand from solar energy generated within their community backed up by BEL or other energy sources such as small-scale biomass plants, a reverse hydro operation, and/or battery storage. FLPC has indicated its requirements for interconnecting with BEL as follows: 1) Energy is to be supplied from a substation connected directly to the 115 kV transmission line to ensure reliability of supply; 2) As in the previous arrangement, FLPC will retain ownership of and will operate and maintain

their own distribution network and supply electricity the final consumers in the community as their customers; and 3) Excess energy from the FLPC system can be sold to BEL.

Spanish Lookout provides an opportunity for BEL to boost sales by 2.5%, though with only a small impact on profits. Using Bapcol as a standard for an efficient fossil fuel plant, the capacity (initial investment) cost of FLPC's fossil fuel plant is at least \$21 per kW per month, the fixed O&M cost is at least \$27 per kW (of capacity) per month, and the fuel cost is at least 27 cents per kWh based on 2022 prices for HFO. According to Siemens, this fuel cost is expected to continue to drop until 2024 and thereafter rise steadily into the long term.

Treating the initial investment of the fossil fuel plant as a sunk cost, BEL has estimated that FLPC's current cost of running its fossil fuel plant is approximately 42.2 cents per kWh given FLPC's current demand profile net of solar self-supply. This estimate was confirmed to be in the ballpark of their actual cost during a recent meeting with FLPC board members. The cost to BEL of building a dedicated 115/22 kV substation with the level of reliability required by FLPC is approximately \$10M. This works out to a cost of \$23.60 per kVA of peak power demand per month for full cost recovery over 10 years at FLPC's current level of demand net of solar self-supply.

BEL believes that it can formulate a win-win solution that captures the FLPC market while serving to stabilize and lower electricity prices in one of the major industrial and agricultural centres in Belize.

### **C. Build customer loyalty and protect against market erosion by introducing new products and services built around DG**

Customers in general view DG as an opportunity to lower their costs, reduce their carbon footprint, improve reliability of their supply, and gain more control over supplying their own energy needs. From their perspective, grid-tied Solar PV already costs less than grid-only supply at current electricity rates (given the existing volumetric tariff structure) for high consumption accounts and is projected to improve over time. However, for small residential consumers, grid-tied Solar PV is 50% more costly than grid-only electricity. While off-grid solutions using Solar PV backed up with batteries and diesel gensets are forecasted to remain substantially more costly than on-grid solutions through to 2030 for all categories of customers, these solutions are a viable alternative to grid-only or grid-tied solutions which require investments in line extensions to connect to the grid.

Based on BEL's research and forecasts, the cost of energy from the grid delivered to the customer's premises will remain lower than the cost of energy from rooftop Solar PV (at the customer's premises) for all DG configurations through to 2030. Grid-tied rooftop solar currently produces cost savings (for higher consumption customers) only because, under the current volumetric pricing regime, these customers pay BEL only when energy is consumed and pay nothing for having the grid as backup when the power from their solar panels is not available or not sufficient to meet their demand. Siemens (LCEP) estimates that, over time, 50% of the currently existing large commercial customers, principally Tourism-related businesses, will move to grid-tied Solar PV given the current favourable tariff regime. At the

projected load growth rate, this means that, by 2042, about 31% of these customers' demand (10% of total BEL demand) will be lost if BEL does not respond effectively to the market opportunity.

The findings of a market survey conducted by BEL have confirmed a large majority of both Residential and Commercial Customers are enthusiastic about Solar PV for its economic and environmental benefits. They expect BEL to play a leading role in the development of this emerging industry segment, and they also prefer a rental arrangement with a commercial supplier to avoid making the investment upfront (out of pocket or through a loan) and having to worry about maintenance and repair of the system.

Solar PV can also help BEL to serve customers at a lower cost in remote areas not currently connected to the grid. Moreover, it represents an opportunity to manage system costs, improve reliability of service in areas where it is deployed, increase reserves of energy in the system, and bolster in-country energy sources. Importantly, it can help to increase the proportion of green energy in the supply mix and so foster BEL's and Belize's image as a sustainability leader in the region and the world.

The Company has embarked on a multi-faceted program to exploit the advantages provided by DG to benefit its customers while maintaining the viability of the grid. This involves collaborating with the PUC to formulate and adopt national DG installation, interconnection and O&M standards and requirements (These will apply to DG setup under BEL as well as other installers) and to enforce current customer generation interconnection and safety standards and requirements for installations operating in parallel with grid supply.

BEL intends to separate its DG business under a new subsidiary and a new sustainable BEL-related brand. DG installations done by BEL, whether grid-tied or standalone/off-grid will be treated as a separate activity from its regulated activities. BEL will setup partnerships with experienced and established solar companies to supply solar equipment and carry out installation, maintenance, and repair work. However, it will also build solar expertise within the Company to control quality and cost of service and as a backup to external suppliers.

BEL will build customer and stakeholder awareness through public education and promotions campaigns, by leveraging its standing as technical subject matter expert, and promote itself as a visible leader in the industry by installing rooftop solar on its own buildings, including substations, and car ports for vehicle charging, and introducing solar streetlights in remote locations.

#### **D. Reach into unserved peri-urban and rural areas (and pre-empt competitor actions) by removing barriers to connecting new customers**

Under BEL's existing service connection policy, Customers pay a fixed service connection fee for all straightforward single-phase service connections and connections requiring the installation of up to two pole spans of secondary distribution line without BEL having to make any further upgrades to the distribution system ("One Pole/Two Pole" Policy). Service connections requiring longer spans of secondary distribution line extensions or requiring primary distribution line extensions or transformer upgrades (including three-phase transformers) or underground cabling or a dedicated supply are subject

to an economic analysis to determine whether the projected revenues from the Customer would be sufficient to cover the additional costs. Customers are required to pay the greater of the portion of costs that would not be covered by projected revenues over a reasonable period of time (usually 10 to 15 years) and the unrecoverable cost of the project.

The existing policy seeks to cover the risk of not realizing revenues from new installations and upgrades by requiring Customers to pay upfront the potential cost of such exposure. In many cases, Customers have had to pay thousands of dollars for Paid-for-Installations (PFIs) that did not meet the SCA1 or SCA2 criteria with no opportunity to obtain a refund when other new Customers connected/connect to BEL via the same installation. This has not only stymied expansion and development, running contrary to BEL's mission and market expansion strategies, but has further fed into the narrative of the cost of electricity service from BEL being amongst the highest in the region – in fact, BEL's electricity prices are amongst the lowest in the region - for straightforward connections, and has even caused BEL to be seen by some as an unfair and apathetic monopolist. As alternatives to grid supply emerge in the form of distributed energy resources and rooftop Solar PV, the Company runs the very real risk of losing market share of existing and new markets as a consequence of its risk-averse stance.

BEL is now rolling out a new Service Connection policy designed to remove completely or otherwise substantially lower the financial cost and bureaucracy to Customers of installing new electricity service connections or upgrading existing connections imposed by the existing policy. Instead of seeking to get a single Customer to pay huge costs upfront to cover the risk of not realizing revenues from a new line extension and/or system upgrade, the Company will instead promote these line extensions and upgrades to new Customers to connect to BEL. Where significant costs are involved, the Company will rely on redeemable security to cover risk exposure. This will spur market growth, prevent grid defection, and build the BEL brand as a Company that delivers energy solutions and supports national development.

**E. Encourage and promote the conversion and growth of other potential user segments under a new “Electrification of Everything” campaign**

Sectors that will be targeted under this campaign are cooking (conversion from LPG), heating, and industrial tools.

## **3 KEY ELEMENTS OF RATE CASE**

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### **3.1 REGULATED ACCOUNT BALANCE**

BEL's submission provides that, based on the current and proposed tariffs, the Regulatory Account Balance (RAB) at end 2024 will increase to \$52 million (owing to BEL).

### **3.2 AMENDED TARIFFS**

***Table 4: Proposed Tariffs for Annual Tariff Period July 1, 2023, to June 2024***

## Schedule 6

### Belize Electricity Limited (BEL) Proposed Tariffs for Annual Tariff Period July 1, 2023 to June 30, 2024

Customer Class	Service Type/Consumption Block	2023 2024 Jul-Jun
Social	Minimum Charge - Social	5.00
	Soc. - First 60 kWhs	0.22
Residential	Minimum Charge - Residential	10.00
	Res. -LV - First 50 kWh	0.33
	Res. -LV - 51 - 200 kWh	0.38
	Res. -LV- 201-300 Kwh	0.43
	Res. -LV- Above 300 kWh	0.45
Com I	Com1 - LV - Service Charge	10.00
	Com1 -LV - First 50 kWh	0.33
	Com1 -LV - 51 - 200 kWh	0.38
	Com1 -LV- 201-300 kWh	0.43
	Com1- LV- Above 300 kWh	0.45
Com II	Com. - HV - Service Charge	150.00
	Com. - HV - First 10,000 kWh	0.41
	Com. - HV - Above 10,000 kWh	0.39
Ind	Service Charge	250.00
	Energy	0.26
	Demand (per KVA)	23.00
St Lights	Energy	0.45

### 3.3 GRID-TIED DG PROPOSED RATE

The rate design for grid-tied DG should reflect the cost structure – a variable price component for the variable energy costs and a fixed price component for the fixed reliability costs. This is based on the cost of service and cost reflectivity principle, and it ensures that customers contribute to the utility’s fixed cost regardless of their level of consumption. Otherwise, the non-DG customers will disproportionately bear the cost of operating and maintaining the grid that DG customers depend upon for reliability of supply. Table 5 below shows BEL’s proposed rate for grid-tied DG consumers.

**Table 5: Proposed Grid-Tied DG Rates**

Category	Rate
Demand Charge (per KVA per month)	30.00
Peak Energy Charge (per kWh)	0.3500
Off-Peak Energy Charge (per kWh)	0.3000
Feed-in Tariff	0.1300

### 3.4 ELECTRIC VEHICLES (EVs)

The proposed tariff structure for EVs assume that the capital costs of the charging stations are absorbed into VAD and distributed across all customers and not recovered from charging station owners/users only. This is a reasonable proposal since the network is anticipated to benefit all customers as the technology gradually becomes ubiquitous. At the outset, BEL intends to track associated costs separately to be able to segment in the future if a different pricing structure is to be implemented.

The actual retail charges to final consumers by the charging point owners/operators (CPO) could be subject to further regulation or left unregulated and subject to competitive tactics of the CPOs. Table 6 below shows BEL proposed rate for Electric Vehicles.

**Table 6: Proposed EV Rates**

Category	Rate
Demand Charge (per KVA per month)	30.00
Peak Energy Charge (per kWh)	0.3500
Off-Peak Energy Charge (per kWh)	0.3000

### 3.5 SPECIAL RATE TO INTERCONNECT SPANISH LOOKOUT

Electricity services within the Spanish Lookout Community (SPLC) represent a legal and economic anomaly that needs to be corrected. BEL is proposing a wholesale rate structure for Spanish Lookout in the first instance. This rate approximates the current industrial rate with a demand charge of \$25 per KVA per month and two-part energy charge of 30 cents per kWh during peak hours and 26 cents per kWh during off-peak hours. The effective all-in per kWh rate under this arrangement is approximately 35.86 cents per kWh. BEL proposes to keep this rate in place for the first 10 years along with a take-or-pay power purchase agreement to ensure recovery of the capital cost of the dedicated substation. Thereafter, there will be a reduction of the demand charge by 66.7% to \$8.33 per KVA per month, effectively reducing the all-in rate to 30 cents per kWh; alternatively, the rate could be changed to a flat energy charge of 30 cents with demand charge beyond threshold limits. Interconnecting the community at a PUC-approved whole rate is a first step in regularizing electricity services in the SPLC and ensuring equal access to sustainably priced energy solutions throughout all services areas in the country.

Table 7 below shows BEL proposed wholesale rate to interconnect SPLC.

**Table 7: Proposed SPLC Tariff**

Category	First 10 Years	After 10 Years
Demand Charge (per KVA per month)	25.00	8.33
Peak Energy Charge (per kWh)	0.3000	0.3000
Off-Peak Energy Charge (per kWh)	0.2600	0.2600

### 3.6 TOURISM TARIFF

Service providers in the Tourism Industry, especially resorts, who cater to visitors from developed countries are already proactively responding to the “green energy” trend and making a case to market Belize as a “green country.” Through the provision of an incentivised tourism rate to attract sales, BEL anticipates that this new class of customers will account for 17% of BEL’s revenues over 2023-2027. Improved performance in this sector will translate to greater indirect and induced benefits to complementary services in the economy and support BEL’s growth strategy.

**Table 8: Proposed Tourism Tariff**

Category	Rate
Demand Charge (per KVA per month)	30.00
Peak Energy Charge (per kWh)	0.3500
Off-Peak Energy Charge (per kWh)	0.3000



# SCHEDULES

In Support of this Application, BEL’s filing includes the following schedules:

## Schedule 1

### Belize Electricity Limited (BEL) Annual Corrections - July 1, 2021 - June 30, 2022

#### General Corrections - July 1, 2021 - June 30, 2022

<b>Approved Tariff Basket Revenue - \$:</b>	<b>258,919,001</b>
<b>Realized Tariff Basket Revenue - \$:</b>	<b>235,332,346</b>
<b>Variance (Total Approved less Total Realize) - \$:</b>	<b>23,586,655</b>

## Schedule 4

### Belize Electricity Limited (BEL)

Proposed Tariff Basket Revenue (TBR) and Components and Mean Electricity Rate (MER) for Annual Tariff Period July 1, 2022 to June 30, 2024

	2020 2021	2021 2022	2022 2023	2023 2024	Total FTRP
<b>Revenue Components of TBR:</b>					
Value Added of Delivery (VAD)					
OPEX	32,524,967	33,012,258	<b>33,506,842</b>	34,008,830	133,052,897
Return	38,765,031	39,232,153	<b>32,532,827</b>	35,777,971	146,307,981
Depreciation	17,492,706	18,220,765	<b>18,402,270</b>	25,718,465	79,834,206
Net Annual Corrections - FTRP	8,842,163	8,842,163	<b>8,842,163</b>	8,842,163	35,368,652
IE Fees Reimbursement - FTRP 20	-	-	-	-	-
ARP 21	-	(338,486)	-	-	(338,486)
ARP 22	-	-	-	-	-
ARP 23	-	-	-	23,586,655	23,586,655
Taxes/License Fees	4,913,482	5,825,678	<b>5,646,729</b>	6,527,936	22,913,825
<b>Sub total (VAD)</b>	<b>102,538,349</b>	<b>104,794,530</b>	<b>94,078,790</b>	<b>129,609,979</b>	<b>431,021,649</b>
Reference Cost of Power	120,093,293	158,424,419	<b>161,070,371</b>	164,812,046	604,400,130
Less Other Income	4,254,659	4,299,949	<b>4,183,426</b>	4,291,542	17,029,577
<b>Tariff Basket Revenue</b>	<b>218,376,983</b>	<b>258,919,001</b>	<b>250,965,736</b>	<b>290,130,483</b>	<b>1,018,392,202</b>
<b>Demand (kWH)</b>	<b>534,376,841</b>	<b>585,706,369</b>	<b>614,614,608</b>	<b>660,521,472</b>	<b>2,395,219,291</b>
<b>ARP</b>					
MER	0.4087	0.4421	<b>0.4083</b>	0.4392	0.4252
COP	0.2247	0.2705	<b>0.2621</b>	0.2495	0.2523
VAD (excl. corrections)	0.1674	0.1571	<b>0.1319</b>	0.1763	0.1582
Corrections	0.0165	0.0145	<b>0.0144</b>	0.0134	0.0146

## Schedule 6

### Belize Electricity Limited (BEL)

#### Proposed Tariffs for Annual Tariff Period July 1, 2023 to June 30, 2024

Customer Class	Service Type/Consumption Block	2023 2024 Jul-Jun
Social	Minimum Charge - Social	5.00
	Soc. - First 60 kWhs	0.22
Residential	Minimum Charge - Residential	10.00
	Res. -LV - First 50 kWh	0.33
	Res. -LV - 51 - 200 kWh	0.38
	Res. -LV- 201-300 Kwh	0.43
	Res. -LV- Above 300 kWh	0.45
Com I	Com1 - LV - Service Charge	10.00
	Com1 -LV - First 50 kWh	0.33
	Com1 -LV - 51 - 200 kWh	0.38
	Com1 -LV- 201-300 kWh	0.43
	Com1- LV- Above 300 kWh	0.45
Com II	Com. - HV - Service Charge	150.00
	Com. - HV - First 10,000 kWh	0.41
	Com. - HV - Above 10,000 kWh	0.39
Ind	Service Charge	250.00
	Energy	0.26
	Demand (per KVA)	23.00
St Lights	Energy	0.45

## APPENDICES

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In Support of this Application, BEL's filing includes the following appendices:

- A. ARP 2023 Workbook (as an attached Excel file)
- B. PUC Supplemental Data Request (as an attached Excel file)
- C. Least Cost Expansion Plan (as a downloadable Excel file)