COMMENTS RELATED TO THE INITIAL DECISION ISSUED BY THE COMMISSION IN RESPECT OF THE 2021 ANNUAL TARIFF REVIEW PROCEEDING (ATRP) FOR BELIZE ELECTRICITY LIMITED (BEL)

In its 2021 ATRP submission, BEL indicated to the Commission that there should be no adjustments to the Mean Electricity Rate (MER) and tariffs. BEL also did not recommend any adjustments to other currently approved fees and charges. BEL did not include any proposed tariffs for the *Industrial I* class of customers.

BEL's submissions, including supplemental information requested by the Commission, supported an increase in the Cost of Power (COP) projected for the remainder of the 2020|24 Full Tariff Period (FTP); plus an increase in the Value-added of Delivery (VAD) as a consequence of assets added to the Regulated Asset Value (RAV) in an environment where electricity sales and revenues are lower than expected.

The Commission reviewed the submission and various historical and forecast data, then made revisions to the recommended regulated values, tariffs, fees and charges and forecast data before approving them. The Commission then applied the Rate Setting Methodology (RSM) that it had refined in the 2020 Full Tariff Review Proceedings (2020 FTRP) to determine the regulated values, tariffs, fees and charges to be applied over the remaining 2021|24 Tariff Period.

In applying the RSM for the Initial Decision, the Commission has adjusted the current schedule of Tariffs, Fees and Charges in light of its assessment of the MER at $0.3999 per kilowatt-hour, resulting in a reduction in rates payable by customers.

Comments Related to and Rationale for the Commission's various Decisions

The 2020 FTRP and the underlying Business Environment

In its 2020 FTRP Final Decision the PUC approved a mean electricity rate (MER) of BZ$0.4151/kWh for the period July 1, 2020, to December 31, 2020 and BZ$0.4018/kWh for the period January 1, 2021, to June 30, 2024. The current 2021 ATRP seeks to amend this Final Decisions to reflect actual business results for the year just concluded (2020) and update projections for the upcoming four years (2021-24).

In making its 2021 ATRP Initial Decision, the Commission considered how assumptions and projections made in the 2020 FTRP Final Decision have changed.

The considerations of the Commission in making its 2020 FTRP Final Decision are summarized:

<u>*COVID-19 Pandemic*</u>
For 2020 the Commission had assumed that electricity sales and revenues "lost" to the pandemic would be 11.5%. The actual outturn is 14%.
Furthermore, the Commission expected that in 2021 the "lost" sales and revenues would be 6%, and there is a 3% permanent loss in sales and revenues for 2022 and beyond. BEL's most recent projections

are more pessimistic being approximately 12% in 2021, 10% in 2022, 8% in 2023 and 6% thereafter. The Commission is in agreement with BEL that it is prudent to adopt lower forecasts.

Of note, these changes in demand have caused BEL's load factor to worsen; which should improve as the business environment returns to normalcy. The impact on load factor was not considered in the RSM modelling.

Weather Patterns
The El Niño-Southern Oscillation (ENSO) is probably the most consequential weather feature impacting precipitation and hydroelectric production in Belize. As of late-2020 the ENSO moved firmly into the La Niña phase and is now forecasted to shift back to Neutral in the 2nd Quarter of 2021 This weather pattern produced copious amounts of precipitation in the second half of 2020.

The assumption in the 2020 FTRP was over the 2020|24 FTP hydroelectric production will average itself out. BEL is a bit more pessimistic on hydroelectric production for 2021 and then returns to normal for 2022 thru to 2024.

The Commission saw no reason to change its 2020 FTRP assumptions in respect of hydroelectric production.

Planning and Associated Regulatory Filings
In the 2020 FTRP, the Commission identified two key weakness in BEL's planning approach when making its justification for both COP and RAV.

i. **Generation & Transmission Plan** – It is standard practice for least cost expansion plans to be prepared beforehand and widely consulted on. Such a plan creates common ground for all parties – Regulator, Utility, Ratepayers and Interested Parties.
   Instead from the Commission's perspective, BEL in responding to a proposal from an associate of that Licensee (i) proposed to increase the share of PV in the energy mix for utility-scale variable renewable energy (VRE) above 40%; (ii) supports the addition of up to 25MW of gas-fired generation in Dangriga; and (iii) continue operating Mile 8 as an oil-fired power plant.
   The Commission replaced the proposed BEL Business Plan with (i) the share of PV in the energy mix, already auctioned off, is capped at 15%; (ii) there is a fundamental shift in the energy matrix from oil- to gas-fired generation with at least 20MW at Dangriga, plus the upgrade of the LM2500 at Mile 8, and (iii) the 2nd transmission line at 230 kV to Mexico is prioritized.
   The Commission had no rational basis to change its 2020 FTRP assumptions in respect of COP inputs.

ii. **Detailed Project Costings, Justifications and associated Project Plans in respect of the RAV Determination –** Some of the proposed capital expenditures (CAPEX) were standard projects for the purpose of maintaining the integrity of network and business assets over its useful life. Such items were readily agreed upon by the Commission.
   Most of the CAPEX items were either major upgrades or projects for the purpose of expanding network and business assets. Where the Commission had previous knowledge of the prudency of a particular project investment it was approved; otherwise, the related project costs were disallowed.

Notwithstanding these challenges in the 2020 FTRP, the Commission was able to make the following determinations:

- **Modelling assumptions used for setting Reference COP**:
  - ✓ **CFE Supply**: The PUC established a dialogue with counterparts in Mexico, and was thus able to obtain (i) Plans by Mexican Authorities to significantly shore up and expand gas supply to the Peninsular Region. Termed Cuxtal I, II and III the expansion proposes to double the supply of natural gas from 150 Mcd in 2020 to 300 Mcd in 2022; then to 500 Mcd plus a new combined cycle power plant in 2024, and (ii) Projections on the prices in the wholesale market for the 2020 to 2024 period;
  - ✓ **Hydroelectric**: The Commission adopted the design output for each project based on normal hydrology. Thus Chalillo/Mollejon is 160 GWh, Vaca is 80 GWh and Hydro Maya is 13.5 GWh per annum;
  - ✓ **Sugarcane Co-generation**: The Commission adopted the design output for each sugar mill based on normal sugarcane deliveries in a commercial operating year. In the case of BelCoGen that is 70 GWh export on 1.25 million tonnes of cane per annum and for SSEL its 42 GWh on 0.9 million tonnes of cane annually. The Commission then applied a discount factor to account for lesser deliveries in any given operating year;
  - ✓ **Gas-fired Generation**: SEAONE Holdings LLC signed a Memorandum of Understanding (MOU) with the Government of Belize to *"(a) deliver its patented Compressed Gas Liquids (CGL) solution thru Commerce Bight by 2023, capitalizing on its own fleet of maritime vessels operating from its Gulf Port, Mississippi gas processing Facility, (b) locating the CGL processing facility at Commerce Bight Port, able to deliver large volumes of natural gas liquids at prices much lower than currently available, and (c) electricity export to the BEL grid from the 20 MW Power facility in Dangriga.*"

    Subsequently in 2020 the PUC conducted a Gaseous Fuels Request for Proposal (GtE RFP) wherein SEAONE Holdings LLC was the successful bidder. The evaluated price being US$0.109/kWh;
  - ✓ **Utility-Solar**: The Commission adopted a cap of 15% VRE penetration, on the advice of BEL, under the RFPEG2013. Within that proceeding BAPCOL was selected to supply the 15 MW utilizing photovoltaic technology. In setting a price for this project, the Commission has been applying the benchmarks published annually by International Renewable Energy Agency (IRENA) to the evaluated price.

- **Major Projects in respect of the Regulated Asset Value (RAV) Determination**:
  - ✓ **2nd Transmission Line between La Democracia and Dangriga:** "*BEL indicated to the Independent Expert two arguments for constructing the new transmission line. First, the need to interconnect the new 25 MW plant. According to BEL, the PUC indicated that the existing line (further referred to as 62L) has sufficient capacity to accommodate this. BEL did not dispute this but argued that the reason for a new line is necessary improvement in reliability*".

    The Commission had no rational economic basis for approving this investment.

- ✓ **Interconnection for 30 MW of Utility-Solar proposed by BECOL:** The Commission had no rational technical or economic basis for approving these BECOL related investments.
- ✓ **Smart Grid Deployment and related Communications Infrastructure**: In its 2016 FTRP Final decision, the Commission approved resources for the piloting of advanced metering infrastructure (AMI) and related Smart Grid technologies. BEL has yet to file a Report to the Commission on the performance of the pilot and indicate lessons learnt going forward.

  Furthermore, BEL did not file: (a) build metrics {assets and functions}, including the number of installed devices, device functions, and their costs; and (b) impact metrics {impacts and benefits} (e.g., avoided meter operations costs) that assessed the effects of the new technologies and systems on grid operations and business practices.

  The Commission was therefore unable to establish the value proposition of BEL's proposed Smart Grid deployment and thereby set standards of performance.
- ✓ **2nd Transmission Line between Belize and Mexico:** In May 2018, BEL approached the Government of Belize to assist the licensee in securing funding for a 2nd 230 kV line between Belize and Mexico. The PUC indicated its support for the project given that going forward import prices were expected to be less than US$0.070/kWh. Furthermore, there are positive spill overs in network reliability, efficiency, and transfer capacity; in addition to the synergies with the arterial road connecting the North and West.

  BEL appears to have indefinitely delayed this endeavour without any sound rationale being filed with the Commission.
- ✓ **2nd Transmission Line to San Pedro:** BEL is forecasting that by 2024 the current 17 MVA submarine cable will reach its technical limit. The PUC approved the project given the clear business case; and asked BEL to make a separate regulatory filing on the broad strategic considerations, the engineering design, environmental impacts and economics in order to garner input from Interest Parties.

  The Commission views this project as having a high priority.
- ✓ **Major Transmission Lines/Substation Upgrades:** BEL is conducting a series of works intended to better sectionalize and improve network topology. The PUC approved these projects given the strategic, technical and economic benefits; and has asked BEL to make a more detailed submittal on the impact on operational limits and constraints in the context of proposed technical designs, timing and economics.

  The Commission's support for these upgrades are undiminished.

- o **Standards of Performance**:
  - ✓ **Operational Expenditures (OPEX)**: The Commission approved BEL's proposed budget (for administration and operations of the utility) as the regulated values for operational expenses. That is, the licensee's Annual Budget for the period 2020 to 2024 were largely adopted as the OPEX and GEC for the ATPs 2020|21, 2021|22, 2022|23 and 2023|24.

In doing so the Commission's treatment of general expenses capitalized (GEC) is now a revenue cap, instead of being an incurred pass through as before. While OPEX has always been a revenue cap.

- ✓ **Capital Expenditures (CAPEX) and the associated Regulated Asset Value (RAV):** The Commission approved a Capital programme totalling $255.072 million for the 2020 to 2024 period to meet load growth, improve reliability and drive system efficiency.
  Furthermore, the standard of performance in respect of the execution of Caye Caulker Interconnection was reaffirmed.
- ✓ **Cost of Power (COP):** The Commission made a commitment to set and enforce standards of performance on BEL in respect of BEL owned and operated generation and for system dispatch.
  Since the commercial arrangements for the LM2500 at Mile 8 expired effective July 1, 2018 the Commission is awaiting a repowering plan from BEL. In lieu of such a filing the Commission allocated in the rates a capacity charge of $830k for the 2018|19 ATP and $839k for the 2019|20 ATP.

Validation of 2019|20 ATP and Approved Regulated Values, Tariffs, Fees and Charges for the 2020|24 FTP

The determinations of the Commission in respect of the 2021 ATRP Initial Decision are summarized as follows:

a) Corrections (Schedule 1):

i) **General Corrections for the 2019|20 ATP**– The Commission approved corrections of $2,668,862 in favour of BEL as a result of recalculating the Regulated Values, reimbursed BEL $48,245 for engagement of the Independent Expert in the 2020 FTRP and implemented a performance penalty of $3,732,564 on Return applicable for the 2019|20 ATP.

b) Investments/RAV (Schedule 2):

i) The Depreciation and RAV for 2020 was recalculated to be consistent with BEL's Fixed Assets Register as of December 31, 2020.

ii) The Depreciation and RAV for 2021, 2022 and 2023 were recalculated to be consistent with 2020 business results, while maintaining the same level of capital spending and related additions in those years, as per the 2020 FTRP Final Decisions.

iii) The Commission adopted BEL's updated Capital Contributions schedule.

iv) The Commission recalculated IDC for the FTP by applying the Gearing Ratio (G) of 0.6 and an interest rate of 8%.

v) The GEC shall be treated similar to OPEX whereby the approved annual amounts will not be changed throughout the FTP. For the avoidance of doubt, the GEC approved for each respective ATP of the FTP is as follows: $2,615,387; $2,654,419; $2,708,677; $2,751,442. Any actual GEC in excess of these regulated values shall be disallowed (Disallowed GEC)

vi) This Disallowed GEC shall be treated as follows: 50% of the value added to the line item Disallowed RAV the next year, with the remaining 50% being added the following year.

vii) In determining the RAV, the Commission classified investments made in a given year as Work in Progress (WIP) for that year to be capitalized the following year.

viii) In determining the RAV, the Commission added 50% of capitalized investments in a given year, with the remaining 50% being added the following year.

c) Cost of Power (Schedule 3):

i) The Commission adjusted the Reference Cost of Power (COP) forecasts made in the 2020 FTRP for the 2021 to 2024 period

   a. BELCOGEN output has been cut in 2021 to reflect current understanding from BEL of declared available capacity at 8 MW, which rebounds to 12 MW thereafter;
   b. The gaseous fuel supplies have been updated using the actual prices being offered in the Gas-to-Electricity (GtE) Auction. It is assumed that if a gas-fired solution comes into service it will be in 2024;
   c. The BAPCOL solar is delayed to 2023 and continued price deceleration from the 2019 price of $0.17/kWh to $0.135/kWh is modelled;
   d. CFE prices have been adjusted wherein the Commission reduced the price premium approved in the 2020 FTRP from 30% to 20% as of 2021-2024;
   e. All other variables for hydroelectric and sugar mills output and prices, fuel oil prices remain as previously modelled in the 2020 FTRP Final Decision.

ii) Economic Dispatch – going forward, the Commission intends to introduce a method for measuring the efficiency of dispatch by BEL and disallowing pass through where it is shown that BEL has been egregiously negligent.

d) Electricity Sales Forecast:

i) In an attempt to factor in the impact of the COVID-19 Pandemic the electricity sales forecast submitted by BEL in 2020 has been adjusted as follows:

   a. For the period April-December 2020 the forecast is down 14%;
   b. For the calendar year 2021 the forecast is discounted by 12%;
   c. For the calendar year 2022 the forecast is discounted by 9%;
   d. For the calendar year 2023 the forecast is discounted by 6%;
   e. For the calendar year 2024 the forecast is discounted by 5%.

e) Tariff Basket Revenue, Value Added of Delivery, Other Income and Mean Electricity Rates (Schedule 5):

i) The Return component of the VAD was determined using the approved RAV and approved ROR for each period;
ii) The Depreciation component of the VAD was determined using the approved RAV and rates of depreciation for the relevant assets for each period;
iii) The Taxes and Licence Fees component of the VAD was determined using the net VAD and Cost of Power, less Other Income, and the applicable tax rate (1.75%) and licence levy (1%) for each period;
iv) The Corrections are applied over the full FTP in equal tranches;
v) The VAD is the sum of its various components (OPEX, Return, Depreciation, and Taxes and Licence Fees).
vi) The Commission made no adjustments to the Other Income proposed by BEL for each period.
vii) The Tariff Basket Revenue for each period is the sum of the VAD and Cost of Power, but less Other Revenues for each period.
viii) The Mean Electricity Rate approved for the period July 1, 2021, to June 30, 2024, is the quotient of the TBR approved for the period and the total Sales forecasted.

f) Approved Tariffs, Fees and Charges (Schedule 6):

The Commission reaffirms the current Fees and Charges but lowers the Tariffs for the July 1, 2021 to June 30, 2024 period.

Other Matters and Determinations

g) Standards of Performance

i) **Outage Metrics** - The PUC hasn't approved any SAIDI/SAIFI values, as there isn't currently a satisfactorily effective way for the Commission to monitor such metrics. The Commission and BEL need to agree on a more effective way to measure quality of service going forward and take necessary steps for implementation. Effectively, previously approved SAIDI/SAIFI values remain in force.
ii) **Capital Expenditures (CAPEX) and the associated Regulated Asset Value (RAV)**: The Commission's previously approved Capital programme and associated investments totalling $255.072 million for the 2020 to 2024 period to meet load growth, improve reliability and drive system efficiency remains in force.
iii) **Caye Caulker Interconnection** - The standards of performance in respect of the execution of Caye Caulker Interconnection made by the Commission in its 2018 ATRP Decision remains in force, and shall apply *mutatis mutandis* for subsequent ATPs.
iv) **2nd Submarine Cable to San Pedro** - The standard of performance in respect of the execution of 2nd submarine cable made by the Commission in its 2020 FTRP Final Decision shall be January 1, 2024. Failure to meet this timeline shall cause the ROR for 2024 to fall from 10% to 9%, and shall apply *mutatis mutandis* for any subsequent years. Notwithstanding approval of BZ$37.95 million in consideration of a 2nd submarine link between the cayes and the mainland, the PUC is requiring BEL to explain its proposed planning and design thinking before proceeding with procurement and construction activities.

v) **Cost of Power (COP):** The Commission reaffirms its commitment to set and enforce standards of performance on BEL in respect of BEL owned and operated generation and for system dispatch.

vi) **Mile 8 Standards of Performance** – BEL shall file proposed standards of performance for the current LM2500 unit at Mile 8 no later than June 30, 2021.

vii) **Mile 8 Capacity Charge** - In lieu of a repowering plan with proposed standards of performance and resulting charges being filed and approved by the Commission, the allocation in the rates for the capacity charge shall be $848.3k for the 2021|22 ATP.
An adequate repowering plan shall consider at the minimum (a) the status quo of this 1st generation LM2500, (b) a later generation LM2500 having dual fuel capability and sync condensing, (c) gas-fired options, (d) Cheng cycle and gas-fired, (e) characteristics and economics of a solar + storage solution having comparable duty (e.g., peaking, intermediate, baseload).

h) Adequate Analytics and required Regulatory Filings to determine value proposition, standards of performance and associated cost recovery by BEL

i) The preparation of a comprehensive Generation and Transmission Plan is the highest priority. The Commission had directed BEL, since December 18, 2019, to submit its Least Cost Expansion Plan (LCEP) for the purpose of identifying future needs, elucidating the utility's planning philosophy, and propose performance metrics and associated investments;

ii) BEL must submit adequate, detailed justifications for its proposed CAPEX in accordance with previously accepted format for filing such;

iii) The preparation and filing of a comprehensive Grid Modernization Plan is a precondition for BEL to be allowed to recover any further investments in Smart Grid technologies, in excess of resources already approved for the pilot phase in the 2016 FTRP Final Decision;

iv) The Commission hereby invites Hydro Maya and BEL to file no later than September 30, 2021 any proposed changes in terms and conditions applicable to the renewal of their power purchase agreement (PPA) set to expire in March 2022.