



February 24, 2020

Sent by email (commission.secretary@bcuc.com)

Mr. Patrick Wruck
Commission Secretary
British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, BC V6Z 2N3

**Re: British Columbia Utilities Commission (Commission)
Boralex Ocean Falls Limited Partnership (Boralex LP)
Application for Approval of Rates and Terms and Conditions of Service
for Boralex LP's Service to British Columbia Hydro and Power Authority
Response to Commission Information Request No. 1
Project No. 1599046**

Dear Mr. Wruck,

In accordance with the regulatory timetable set out in Order G-3-20, enclosed is Boralex LP's response to Commission Information Request No. 1.

Yours truly,

Boralex Ocean Falls Limited Partnership

A handwritten signature in blue ink, appearing to read "Maxime Tremblay".

Maxime Tremblay, ing.
Regional Manager, wind and hydro
maxime.tremblay@boralex.com

Enclosure



Boralex – Ocean Falls
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Boralex Ocean Falls Limited Partnership
 Application for Rates and Terms and Conditions for Service to the British Columbia
 Hydro and Power Authority – July 1, 2019 to December 31, 2022

RESPONSE OF BORALEX LP TO BCUC INFORMATION REQUEST NO. 1

A. OVERVIEW OF OPERATIONS OCEAN FALLS FACILITIES

**1.0 Reference: OVERVIEW OF OCEAN FALLS FACILITIES
 Exhibit B-1 (Application), Section 4.1, p. 7; Section 5.5, p. 12; Exhibit B-5, p. 3
 Facilities and Reliability Requirements**

On page 7 of the Application, Boralex Ocean Falls Limited Partnership (Boralex LP) states:

BC Hydro has approximately 550 customers in the Bella Bella NIA. Boralex LP supplies approximately 97% of the electricity consumed annually by these customers, with the remaining supplied by BC Hydro itself through its back-up diesel generating station at Shearwater. The electricity supplied by Boralex LP to BC Hydro is metered and sold to BC Hydro at Boralex LP's Shearwater substation on Denny Island, adjacent to BC Hydro's diesel generating station.

On page 12 of the Application, Boralex LP states:

The generating units within the powerhouse comprise four horizontal-axis Francis turbines directly connected to synchronous generators. Units 1 and 2 are single-runner units with generator nameplate ratings of 2,150 kVA. The current achievable capacities of units 1 and 2 are 1,900 kW (based on present configuration and headpond level). Units 3 and 4 are both double-runner units (i.e., two runners on a single shaft, which allows for a higher turbine design speed to be achieved with a similar water flow) with generator nameplate ratings of 5,250 kVA. The current achievable capacities for Units 3 and 4 are 4,200 kW (based on present configuration and headpond level). Thus, the total nameplate capacity of the four generators is 14.8 MVA generated at 2,300 V, with an actual effective capacity of approximately 12.2 MW.

On page 3 of Boralex LP's Submission of Supplemental Information (Exhibit B-5), Boralex provides an estimate of annual peak demand by customer class, as follows:

	Historic Peak Demand (kW)						Forecast Peak Demand (kW)		
	2014	2015	2016	2017	2018	2019	2020	2021	2022
BC Hydro Bella Bella NIA (metered demand and estimated line losses)	3035	2829	3515	3268	3100	3532	3593	3654	3717
Ocean Falls Industrial Customers (estimate only)	430	410	440	450	1150	1150	1150	1150	1150
Ocean Falls Retail Customers (estimate only)	143	134	164	153	146	165	168	170	173

1.1 Please discuss what levels of redundancy Boralex LP maintains for contingency operations of its generators, transformers, and distribution lines serving BC Hydro.

RESPONSE:

Generators:

Although the unit dispatch configuration varies seasonally depending on expected demand, the

typical operating configuration at Ocean Falls involves running at least two units at all times: one of the larger units (G3 or G4) in isochronous mode and one of the smaller units (G1 or G2) in frequency droop mode (the two larger units are sometimes run together during peak load periods to provide additional operating headroom). This represents a stable and reliable operational configuration that enables Boralex LP to deliver power and all required ancillary system services to the Bella Bella NIA, including frequency control, voltage/reactive power control, spinning and non-spinning reserves, automatic generation control, adequate system inertia, black start capability and reliable operation of the protections on the 25 kV transmission line between Ocean Falls and Shearwater. Should either spinning unit be forced out of service, there is normally an identical non-spinning unit available to be rapidly put into service, unless one of the offline units is undergoing maintenance or in situations when both of the larger units are being operated simultaneously (i.e., during high winter load periods).

This typical operating configuration has been utilized since the Ocean Falls plant first began serving BC Hydro's Bella Bella NIA in the mid-1980s. Operating the units in this manner reduces electrical and mechanical loads on the individual units (all of which have been in service for approximately 100 years) and balances the total service hours between all four units, thereby extending machine service lives and increasing the interval between major maintenance activities. This operating practice has enabled Boralex LP to provide extremely reliable service to the Bella Bella NIA, which avoids the need for BC Hydro to operate its costly and environmentally undesirable diesel generating station at Shearwater.

Transformers:

There is no transformer (or regulator) redundancy at Shearwater. There are two step up transformers (T10 and T11) at the Ocean Falls station switchyard, but only T11 has adequate capacity to serve the Bella Bella NIA peak load. Boralex LP also notes that there is no 12.5 kV or 25 kV breaker redundancy at Shearwater or Ocean Falls, respectively.

25 kV Transmission Line:

The overhead sections of the 45 km 25 kV transmission line connecting Ocean Falls to the Bella Bella NIA are non-redundant.

There are three single-phase backup cables available at each undersea crossing, comprising the un-failed remaining undersea cables that were originally installed in the mid-1980's (please see paragraph 59 of the Application). Although these backup undersea cables are the same vintage as the cable that failed on December 23, 2015, they should be able to provide adequate short-term redundancy in the event that one of the new energized undersea cables installed by Boralex LP in 2016 fails in operation at some time in the future, thereby enabling Boralex LP to continue serving the Bella Bella NIA load while a replacement cable is installed.

- 1.2 Please provide the minimum level of redundancy that would allow Boralex to maintain an acceptable level of service to its customers at the lowest operating cost and discuss how this compares to current levels of redundancy for each asset class.

RESPONSE:

The level of generator redundancy described in Boralex LP's response to BCUC IR 1.1 is the minimum level of redundancy necessary to allow Boralex LP to maintain historical levels of service reliability to its customers at the lowest operating cost. Boralex LP would note that the 1986 EPA contained fixed power prices and did not require Boralex LP to maintain redundant generating capacity, which would have allowed Boralex LP (and before it Central Coast Power Corporation) to benefit financially if it was able to maintain service levels and reduce costs by idling capacity. However, Boralex LP chose to

maintain the operating practice for the four generating units described in Boralex LP's response to BCUC IR 1.1 because operating and maintaining the units in this manner does allow Boralex LP to maintain historic levels of service reliability at the lowest operating cost.

Together the two smaller units (G1 and G2) do not have sufficient capacity to serve even the Bella Bella NIA peak load, which together with line losses and plant/shop loads is forecast to be approximately 4220 kW in 2022 (3717 kW for the Bella Bella NIA with line losses and approximately 500 kW for plant/shop loads). Although either of the two larger units (G3 and G4) would notionally be able to serve the Bella Bella NIA load (but not the entire customer load), at least two units are required to meet the Bella Bella peak demand and provide all required system ancillary services, including frequency control, voltage/reactive power control, spinning and non-spinning reserves, automatic generation control, adequate system inertia, black start capability and reliable operation of the protections on the 25 kV transmission line. In the absence of the redundant units, any extended outage to either of larger units (again, both of which have been in service for approximately 100 years) would require BC Hydro to operate its costly and environmentally undesirable backup diesel generating station at Shearwater. As discussed in Boralex LP's response to BCUC IR 7.1, unit G4 has been out of service since Q3 2019 due to replacement bearing identified during shaft and turbine maintenance work. A forced outage to unit G3 during this maintenance period would leave Boralex LP unable to serve peak Bella Bella NIA loads even with both units G1 and G2 available.

Moreover, the incremental industrial customer loads in Ocean Falls, the revenue from which reduces the net revenue requirement to be recovered from BC Hydro by over \$500,000 per annum over the forecast period, cannot be reliably supported without maintaining all four existing units.

- 1.3 Please confirm, or explain otherwise, if BC Hydro's Shearwater generating facility has capacity to serve the entire peak load of the Bella Bella Non-integrated Area (NIA).

RESPONSE:

Boralex LP understands that BC Hydro's Shearwater diesel generating station has capacity to serve the entire peak load of the Bella Bella NIA. However, as noted in footnote 3 on page 7 of the Application, according to BC Hydro (BC Hydro's August 29, 2017 Application Requesting the Commission set a Rate for Boralex LP's Electricity Service to BC Hydro, page 16) the diesel generating station is not in suitable condition to act as the primary electrical generating station for an extended or long-run basis and substantial upgrades would be required before the station could safely and reliably generate sufficient electricity to serve the Bella Bella NIA.

- 1.4 Please confirm whether BC Hydro's Shearwater facility provides undervoltage/underfrequency support to the Bella Bella NIA during normal operation.

RESPONSE:

Boralex LP understands that BC Hydro's Shearwater diesel generating station does not provide undervoltage or under-frequency support to the Bella Bella NIA in normal operating conditions.

- 1.5 Please discuss whether BC Hydro's Shearwater facility can provide immediate power to Bella Bella NIA customers, should a disruption to generation at Boralex LP's Ocean Falls facility occur.

RESPONSE:

Boralex LP understands that BC Hydro's Shearwater diesel generating station cannot provide immediate power to the Bella Bella NIA under normal operations should a disruption to generation at Boralex LP's Ocean Falls facility occur, as the Shearwater facility does not normally operate in parallel with the Ocean Falls facility. Loss of power from Ocean Falls in normal operating conditions would result in a blackout to the Bella Bella NIA, requiring BC Hydro to blackstart the Shearwater facility and subsequently pick up the Bella Bella NIA loads.

- 1.6 Please provide historical SAIDI, SAIFI, and CAIDI for Boralex LP's customers for the past 5 years, if available.

RESPONSE:

Boralex LP does not collect and maintain SAIDI, SAIFI or CAIDI data.

- 1.6.1 If data is available, please discuss how historical SAIDI, SAIFI, and CAIDI compares to the reliability performance of other non-integrated areas in BC, or any other benchmarks used by Boralex LP.

RESPONSE:

N/A

- 1.6.2 If data is unavailable, please explain what system reliability performance targets are used by Boralex LP and discuss to what extent Boralex LP has been successful in maintaining adequate system reliability.

RESPONSE:

Boralex LP's system reliability performance target is to maximize generator availability and maintain all generating and interconnection facilities in appropriate condition to minimize customer interruptions. Boralex LP loses revenue anytime it fails or is unable to provide service to BC Hydro and its other customers in Ocean Falls, so Boralex LP is aligned with its customers on the need to maintain system reliability. Boralex LP has been very successful in maintaining high levels of system reliability since acquiring the Ocean Falls facilities, supplying on average approximately 99 percent of BC Hydro's electricity requirements for the Bella Bella NIA over the period F2010 to F2017 (BC Hydro's August 29, 2017 Application Requesting the Commission set a Rate for Boralex LP's Electricity Service to BC Hydro, Table 1, page 13).

- 1.7 Please discuss how many turbines Boralex LP requires to be in-service at one time to provide reliable service to its entire customer base, including BC Hydro.

RESPONSE:

Please see Boralex LP's responses to BCUC IRs 1.1 and 1.2. Boralex LP requires two units (one larger unit and one smaller unit) to be in-service at one time to provide reliable service to its entire customer base during most seasons. The two larger units are sometimes run together during peak load periods to provide additional operating headroom.

- 1.7.1 Please discuss how many turbines Boralex LP would require to be in-service at one time to provide reliable service to BC Hydro's Bella Bella NIA load only.

RESPONSE:

Please see Boralex LP's response to BCUC IRs 1.2. Boralex LP requires two units (one larger unit and one smaller unit) to be in-service at one time to provide reliable service to BC Hydro's Bella Bella NIA load only.

- 1.7.2 Please discuss whether Boralex LP expects this number to change following the proposed 2019–2022 turbine and penstock maintenance projects.

RESPONSE:

This number will not change following the proposed 2019–2022 turbine and penstock maintenance

projects.

1.8 Please discuss how the reliability requirements of Boralex LP customers vary across customer classes, if at all.

RESPONSE:

Boralex LP’s retail customers in Ocean Falls have similar reliability requirements as BC Hydro’s customers in the Bella Bella NIA. Boralex LP’s industrial customer Mowi Canada West requires uninterrupted power supply to maintain its fish hatchery operation and live fish in Ocean Falls, and in this regard maintains its own diesel back-up generation capability. Ocean Falls Blockchain, Boralex LP’s other industrial customer, requires power supply for its cryptocurrency mining operation but does not have back-up power generation capability.

B. REVENUE REQUIREMENTS SUMMARY

**2.0 Reference: REVENUE REQUIREMENTS SUMMARY
Exhibit B-1, pp. 1, 5, 9, 15; Exhibit B-5, p. 3
Allocation for BC Hydro and other Ocean Falls customers**

On page 1 of the Application, Boralex LP states:

The rates for BC Hydro set out in this Application have been determined on a utility cost of service basis based on the historical depreciated cost of the Ocean Falls Facilities and Boralex LP’s forecast revenue requirement for each of 2019 (six months), 2020, 2021 and 2022, after deducting from the revenue requirement all of Boralex LP’s forecast revenue from its retail and industrial customers in Ocean Falls.

In Table 3 on page 15 of the Application, Boralex LP shows its forecast revenue requirement for 2019 (Q3–Q4) to 2022.

In Tables 1 and 2 on page 9 of the Application, Boralex LP shows its annual electricity sales and the corresponding annual revenue from 2014 to 2018. In Exhibit B-5 of the Boralex LP supplementary information, it provides general estimate of the historic and forecast annual peak demand for the Ocean Falls including BC Hydro’s Bella Bella NIA, Ocean Falls industrial customers, and Ocean Falls retail customers.

On page 5 of the Application Boralex submits that “CCPC [Central Coast Power Corporation] also built a 45 km distribution voltage (25 kV) transmission line with two submarine sections to connect the hydroelectric facilities to BC Hydro’s Bella Bella NIA electrical system at Shearwater on Denny Island.”

2.1 Please provide an updated version of Table 3 with a column for actual Q3–Q4 2019 data and discuss the impact on the proposed BC Hydro rates with supporting calculations.

RESPONSE:

The following is a revised version of Table 3 updated to reflect actual Q3-Q4 2019 data. The increase in the net revenue requirement as a result of this update is less than 1.5%, which would impact the BC Hydro rates by a similar amount.

Table 3: Revenue Requirement 2019 to 2022 (\$000’s)

	2019	2020	2021	2022
Rate Base	\$13,582	\$14,708	\$18,545	\$21,961
Deemed Equity	\$6,791	\$7,354	\$9,273	\$10,980
Deemed Debt	\$6,791	\$7,354	\$9,273	\$10,980

	2019 (Q3-Q4)	2020	2021	2022
Return on Equity	\$332	\$700	\$823	\$1,003
Return on Debt	\$183	\$385	\$453	\$551
Depreciation Expense	\$134	\$288	\$334	\$401
Income Taxes	\$0	\$0	\$0	\$0
Property and School Taxes	\$177	\$362	\$373	\$384
Water Rentals	\$33	\$66	\$68	\$69
O&M	\$945	\$2,271	\$2,224	\$2,202
Gross Revenue Requirement	\$1,804	\$4,072	\$4,274	\$4,609

Ocean Falls Retail and Industrial Revenue	\$356	\$580	\$591	\$602
Total	\$356	\$580	\$591	\$602

Net Revenue Requirement	\$1,448	\$3,491	\$3,683	\$4,008
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As discussed in Boralex LP's response to BCUC IR 7.1, Boralex LP will be providing an update to the forecast cost and timing of the Penstock 2 rehabilitation project and will provide an updated version of Table 3 and the BC Hydro rates at that time to reflect the updated forecast.

2.2 Please discuss the relevant factors that were considered by Boralex LP in determining that cost of service is the most appropriate approach for setting its rates for service to BC Hydro.

2.2.1 Please discuss any alternatives to cost of service that were considered by Boralex LP and why these alternatives were rejected.

RESPONSE:

Boralex LP believes that the most appropriate approach to setting rates for its service to BC Hydro is through negotiations with BC Hydro, which is the basis on which BC Hydro rates have been set since 1986. However, given that the parties were unsuccessful in reaching agreement on rates under a new EPA, it has become necessary for the Commission to fix BC Hydro's rates. Boralex LP has applied to the Commission for cost of service based rates because other rate setting methodologies (including those identified on page 3 of the Commission's letter to Boralex LP and BC Hydro dated May 3, 2018, such as a rate pegged to a tariff of another utility or some form of benchmark rate plus inflation) would not be reflective of Boralex LP's forecast capital and operating costs or result in rates that were not unjust or unreasonable within the meaning of Section 59(5) of the Utilities Commission Act. It has also been BC Hydro's position, as expressed in its August 29, 2017 Application Requesting the Commission set a Rate for Boralex LP's Electricity Service to BC Hydro, that the rates for Boralex LP's service to BC Hydro should be established on a utility cost of service basis (please see pages 17 to 19 of BC Hydro's August 29, 2017 Application).

2.3 Please explain Boralex LP's rationale in its approach to allocating cost of service to BC Hydro by forecasting the entire utility's gross revenue requirement and deducting Boralex LP's forecast revenue from its retail and industrial customers in Ocean Falls. Evaluate the pros and cons of this approach and address the potential for cross subsidization.

2.3.1 Specifically, please discuss if the costs associated with the capital infrastructure that connect to BC Hydro's Bella Bella NIA electrical system were considered in determining the appropriate cost allocation methodology. If not, please explain why not.

- 2.3.2 How does Boralex LP account for potential cross subsidization issues in the proposed rates to serve BC Hydro when the revenues from industrial customers are based on negotiated rates? If there are no potential cross subsidization issues, please justify.

RESPONSE:

Boralex LP has determined the rates for service to BC Hydro based on its gross forecast revenue requirement and then deducting the forecast revenue from its retail and industrial customers for the following reasons.

First, virtually all of Boralex LP's capital and operating costs are required to provide service to BC Hydro and the Bella Bella NIA. If Boralex LP had no retail or industrial customers, the only costs that Boralex LP would be able to avoid are the relatively minor costs associated with the distribution lines in the Ocean Falls town site and Martin Valley. Accordingly, while Boralex LP does not incur any significant costs in providing service to its retail and industrial customers, the revenue that Boralex LP is able to generate from these customers is beneficial to BC Hydro because Boralex LP is able to use that revenue to reduce its gross revenue requirement.

Second, the rates for Boralex LP's service to its retail and industrial customers are already fixed without reference to Boralex LP's cost of service in accordance with Order G-26-10 (and as confirmed by Order G-143-19). Consequently, allocating costs to these customers would be inconsistent with the basis on which the rates for these customers have been established in the first place. Boralex LP notes that BC Hydro, in its August 29, 2017 Application Requesting the Commission set a Rate for Boralex LP's Electricity Service to BC Hydro, stated that "To be clear, BC Hydro is not requesting the Commission to amend the terms of [Order G-26-10] that are applicable to the services Boralex provides to its other customers in Ocean Falls" (page 4).

With regard to Boralex LP's retail customers, the rates that Boralex LP is permitted to charge these customers are regulated under the terms of Order G-26-10 (and as confirmed by Order G-143-19), which requires that these rates be the same as the rates charged by BC Hydro in Rate Zone II (non-integrated areas). This has been the case since the Ocean Falls facilities were acquired by Central Coast Power Corporation (CCPC) from the Provincial government in 1986. In fact, it was a condition precedent to the completion of the acquisition that the Commission issue an exemption order that tied the rates CCPC was permitted to charge its retail customers to BC Hydro's Zone II rates (non-integrated area) (see Section 5.01(d) of the Agreement dated March 27, 1986 between Ocean Falls Corporation and CCPC attached as Appendix II to Commission Order G-40-86 dated July 4, 1986). This ensured that retail customers in Ocean Falls (a non-integrated area) paid the same rates as customers in BC Hydro's non-integrated areas. Boralex LP also understands that the BC Hydro Zone IB rates (Bella Bella NIA) are the same as the BC Hydro Zone II rates, with the exception that the Zone IB rates do not have the second tier inclining block rate which is part of the Zone II rates (i.e., the Zone IB rates are the same as the Zone II tier 1 rates). Consequently, with the exception of the inclining tier 2 rate paid by retail customers in Ocean Falls, retail customers in Ocean Falls pay the same rates as customers in the Bella Bella NIA. This stands to reason since both customer groups receive their electricity from the very same Ocean Falls Facilities.

With regard to Boralex LP's two industrial customers, under the terms of Order G-26-10 (and as confirmed by Order G-143-19), the rates charged by Boralex LP to these customers are negotiated rates not to exceed the comparable BC Hydro industrial rates. Boralex LP would have no industrial customers, and hence no revenue from these customers to offset its gross revenue requirement, if it was not able to negotiate rates with these customers.

With regard to cross-subsidization, as discussed above the rates that Boralex LP is able to charge its retail and industrial customers are determined in accordance with Order G-26-10 and not through some form of cost allocation. Accordingly, Boralex LP does not believe that the potential for

cross-subsidization is a germane issue. Nevertheless, with regard to Boralex LP's two industrial customers, these customers are not entitled to any capacity from the Ocean Falls facilities and Boralex LP would not avoid any material costs if it did not sell electricity to these customers. Accordingly, the revenue that Boralex LP is able to generate through the rates that it has been able to negotiate with these customers is a significant benefit to BC Hydro because it allows Boralex LP to reduce its gross revenue requirement.

2.4 Other than the proposed approach, has Boralex LP considered alternative methods to allocate cost of service to BC Hydro (e.g. allocation based on annual energy sales, revenue from energy sales, or peak demand etc.)? Why were these methods rejected? If no alternatives were considered, please explain why.

2.4.1 To the extent possible, please recalculate the proposed rates for BC Hydro based on the alternative methods. Show supporting assumptions and calculations.

RESPONSE:

Please see Boralex LP's response to BCUC IR 2.3. Boralex LP understands that cost allocation methodologies are used to allocate a utility's cost of service to its various customer classes in order to establish rates for each customer class based on the allocated cost of service. In Boralex LP's case, the rates for its retail and industrial customers are not determined by reference to Boralex LP's cost of service. Accordingly, allocating costs to BC Hydro and to Boralex LP's other retail and industrial customers using some alternative methodology, when the rates for the other customers are already fixed on a different basis in accordance with Order G-26-10 (and as confirmed by Order G-143-19), would not serve any purpose. If Boralex LP was required to allocate costs to its retail and industrial customers that exceed the revenue that Boralex LP is able to recover from those customers under the rates established under Order G-26-10, then Boralex LP would not be able to recover its cost of service, including its allowed return on common equity.

2.5 Please provide any cost analysis available for Boralex LP to serve BC Hydro as a customer.

RESPONSE:

Boralex LP has not undertaken any such analysis. Please see Boralex LP's response to BCUC IRs 2.3 and 2.4.

2.6 Please indicate whether there have been any cost of service allocation (COSA) studies conducted for Ocean Falls since 1986. If so, please summarize and file the studies.

2.6.1 If not, please indicate whether Boralex LP has considered undertaking a COSA study. Discuss the feasibility, costs and timing of conducting a COSA study.

RESPONSE:

Boralex LP is not aware of any COSA studies conducted for Ocean Falls since 1986. Boralex LP has not considered undertaking a COSA study for the reasons set out in Boralex LP's responses to BCUC IRs 2.3 and 2.4.

3.0 Reference: **REVENUE REQUIREMENT SUMMARY**
Exhibit B-1, pp. 1, 44; BC Hydro 2015 Rate Design Application Decision and Order

G-5-17 dated January 20, 2017, pp. 11–14
Allocation for BC Hydro and Other Ocean Falls Customers and Rate Structure

On page 1 of the Application, Boralex LP states:

The rates for BC Hydro set out in this Application have been determined on a utility cost of service basis based on the historical depreciated cost of the Ocean Falls Facilities and Boralex LP's forecast revenue requirement for each of 2019 (six months), 2020, 2021 and 2022, after deducting from the revenue requirement all of Boralex LP's forecast revenue from its retail and industrial customers in Ocean Falls.

On page 44, Boralex LP states:

Boralex LP is seeking Commission approval of a two-tier energy charge rate structure for its service to BC Hydro, consisting of a Tier 1 rate per GWh for the first 11.63 GWh of electricity in any year and a lower Tier 2 rate for all electricity above 11.63 GWh for that year.

In the BC Hydro 2015 Rate Design Application Decision and Order G-5-17 dated January 20, 2017¹, on pages 11–14, the British Columbia Utilities Commission (BCUC) cited the following eight generally accepted rate design criteria that were assessed by BC Hydro, which are derived from *Principles of Public Utility Rates* by James C. Bonbright:

- Price signals that encourage efficient use and discourage inefficient use (economic efficiency);
- Fair apportionment of costs among customers (fairness);
- Avoid undue discrimination (fairness);
- Customer understanding and acceptance, practical and cost effective to implement (practicality);
- Freedom of controversies as to proper interpretation (practicality);
- Recovery of the revenue requirement (stability);
- Revenue stability (stability); and
- Rate stability (stability).

3.1 Please evaluate each of the eight Bonbright principles against the following items:

- Boralex LP's allocation methodology to arrive at its proposed forecast revenue requirements applicable to BC Hydro (i.e. by deducting from the revenue requirement all of Boralex LP's forecast revenue from its retail and industrial customers in Ocean Falls); and
- The proposed rate structure for BC Hydro.

¹ https://www.bcuc.com/Documents/Proceedings/2017/DOC_48618_01-20-2017_G-5-17_BCH-2015-RDA-Decision-WEB.pdf

In the evaluation, specify how the terms “economic efficiency”, “fairness”, “practicality” and “stability” should apply to Boralex LP’s circumstances.

RESPONSE:

Boralex LP understands that the eight cited Bonbright principles are used as a guide in developing utility rate designs and customer rates. For the reasons set out in Boralex LP’s response to BCUC IRs 2.3 and 2.4, Boralex LP does not believe that these principles are germane or can be applied with regard to the use of the net revenue requirement as the basis to establish BC Hydro’s rates. Boralex LP’s evaluation of these eight principles against the proposed rate structure for BC Hydro is as follows:

- **Price signals that encourage efficient use and discourage inefficient use (economic efficiency)**

The marginal cost to produce electricity at Ocean Falls is extremely low. The two-tier declining block rate structure for BC Hydro provides BC Hydro an incentive to encourage higher electricity consumption in the Bella-Bella NIA which would have the effect of reducing BC Hydro’s average cost of power. Boralex LP understanding, for example, that there are opportunities within the Bella-Bella NIA for fuel switching from oil-fired or propane-fired residential space heating units to air electric heat pumps. If this were to occur and electricity consumption from Ocean Falls increased, it would reduce BC Hydro’s average cost of power and provide clean and renewable energy environmental benefits within the community. Please also see Boralex LP’s response to BCUC IR 24.6.
- **Fair apportionment of costs among customers (fairness)**

This principle is not germane to the proposed rate structure for BC Hydro since BC Hydro is the only customer subject to the rate structure.
- **Avoid undue discrimination (fairness)**

This principle is not germane to the proposed rate structure for BC Hydro since BC Hydro is the only customer subject to the rate structure.
- **Customer understanding and acceptance, practical and cost effective to implement (practicality)**

The two-tier rate structure for BC Hydro is well understood and has been accepted by BC Hydro since 1986, and it is practical and cost effective to implement.
- **Freedom of controversies as to proper interpretation (practicality)**

The two-tier rate structure for BC Hydro is not complex and Boralex LP does not believe that there should be any controversies as to its interpretation or application. Boralex LP is not aware of any interpretation issues that arose in the past regarding the two-tier rate structure under the 1986 EPA.
- **Recovery of the revenue requirement (stability)**

The two-tier rate structure for BC Hydro has been designed to recover Boralex LP’s net revenue requirement based on BC Hydro’s forecast load.
- **Revenue stability (stability)**

The two-tier rate structure for BC Hydro will result in revenue stability for Boralex LP if there is no material variance between BC Hydro’s forecast and actual load.

- **Rate stability (stability).**

The two-tier rate structure for BC Hydro will result in rate stability for BC Hydro because both tiers will be fixed until the end of 2022 with no deferral mechanisms operating within this period to cause an adjustment to the rates (with the possible exception of the First Nations Deferral Account, and Boralex LP expects that it would most likely apply for approval to recover any balance in that deferral account in its application for rates covering the period beyond 2022).

- 3.1.1 Please indicate and explain whether Boralex LP prioritizes some Bonbright criteria over others.

RESPONSE:

Boralex LP does not prioritize anyone of these principles over the other, although as noted above Boralex LP does believe that encouraging the greater use of clean and renewable electricity from Ocean Falls in the Bella Bella NIA would be a positive outcome for all stakeholders.

C. HISTORICAL CAPITAL EXPENDITURES

- 4.0 Reference: HISTORICAL CAPITAL EXPENDITURES
Exhibit B-1, Section 7.2, pp. 17–19
2008 to 2018 Capital Expenditures**

On page 17 of the Application, Boralex LP states:

Since acquiring the Ocean Falls Facilities from CCPC in 2009, Boralex has invested \$7,625,000 in capital additions to maintain the structural and operational integrity of the facilities and provide safe, reliable and secure service to BC Hydro and its other customers in Ocean Falls.

- 4.1 Please explain how, if at all, the timeline and scope of any of the capital improvements undertaken by Boralex LP since its acquisition of the Ocean Falls facilities were affected by the increase in system load from new industrial customers.

RESPONSE:

Boralex LP has not undertaken any capital improvements since its acquisition of the Ocean Falls facilities to accommodate the increase in system load from its two industrial customers (Mowi Canada West and Ocean Falls Blockchain). Mowi Canada West was an existing customer when Boralex LP acquired the facilities, and is connected to the system by a 900 meter 25 kV distribution line that forms part of Boralex LP's distribution facilities in Ocean Falls. Ocean Falls Blockchain began taking power in July 2018 and paid all of the costs required to connect its operations to the Ocean Falls facilities (none of these interconnection facilities are included in Boralex LP's rate base).

On page 18 of the Application, Boralex LP states:

Extensive upstream and downstream dam and spillway re-surfacing and concrete rehabilitation work was carried out from 2009 to 2011 to mitigate concrete erosion and to restore the dam to its original design condition to the extent possible. Upstream dam rehabilitation work required the lake level to be lowered to enable preparation of the eroded dam surface and shotcrete application. The lake level was lowered by installing penstocks 1(a) and 1(b) and connecting them to the turbines in the ground wood

building that formed part of the original mill facilities. Downstream spillway resurfacing was carried out using conventional concrete form and pour methods.

- 4.2 Please explain how long the concrete dam and spillway work conducted in 2009–2011 is expected to last before additional concrete repairs are required.

RESPONSE:

The concrete dam and spillway work conducted in 2009-2011 is expected to last at least 50 years. The concrete dam and spillway work conducted in 2009-2011 did not remediate all of the dam, and some elements still require remediation in the future. The overall dam structure is anticipated to remain serviceable for 100 more years with regular inspection and maintenance.

On page 18 of the Application, Boralex LP states:

The Link River bridge suffered a structural failure and had to be completely replaced in 2011. This bridge provides the only access between the Ocean Falls town site and all facilities south of the river, including the powerhouse, the shop building and the south dam abutment.

- 4.3 Please confirm, or explain otherwise, that the Link River bridge failure occurred in 2011.

RESPONSE:

The Link River bridge failure occurred in June of 2008 and a temporary floating steel walkway was then installed across the Link River to allow the necessary continued access to the hydro plant, the workshop/storage building, the south dam abutment and the intake gatehouse. Boralex LP determined that a new permanent bridge needed to be installed to provide safe access across the river and to improve logistics for transporting equipment and supplies between the town site and the power plant, workshop/storage building and south dam abutment. The new bridge was commissioned in September of 2011.

- 4.4 Please confirm, or explain otherwise, that the Link River bridge was actively used by Boralex LP vehicles in the months prior to its failure.

RESPONSE:

Confirmed. The bridge was actively used by Boralex LP (and before then by Central Coast Power Corporation) prior to its failure.

- 4.5 Please confirm, or explain otherwise, that the Link River bridge is a private bridge owned and used exclusively by Boralex LP.

RESPONSE:

The Link River bridge is a private bridge owned and used by Boralex LP. The bridge is also used by Mowi Canada West to access its fish hatchery operation, by Ocean Falls Blockchain to access its cryptocurrency mining operation in the space leased from Boralex LP in Boralex LP's workshop/storage building, and occasionally by members of the public to access the local landfill. Mowi Canada West contributed \$200,000 to the cost of the new bridge and supplied the quarry rock required for the bridge construction in exchange for its use of the bridge.

- 4.5.1 If not confirmed, please explain why Boralex LP is responsible for the entire cost of the bridge replacement.

RESPONSE:

Boralex LP cannot safely and economically operate the Ocean Falls Facilities without continuous land access between the Ocean Falls town site and the plant, the workshop/storage building, the south dam abutment and the intake gatehouse, so it was incumbent upon Boralex LP to rebuild the bridge across the river as no other parties were willing to do so. Please see Boralex LP's response to BCUC IR 4.5 regarding Mowi Canada West's contribution to the cost of the new bridge.

On page 19 of the Application, Boralex LP states:

One of the submarine cables on the Johnson Channel crossing failed in 2016, requiring re-termination of the failed phase using the spare cable (the longer Johnson Channel crossing was initially built using 4 single phase cables to mitigate such an event). Three new single-phase cables were installed by Boralex LP at both crossings in 2016. The original cables were left in place at both crossings to serve as emergency spares.

- 4.6 Please explain why the installation of three new single-phase cables in addition to the existing submarine cables on the Johnson Channel crossing was necessary. Please include discussion of the age, condition, and expected life of the existing cables at the time of the cable failure.

RESPONSE:

The subsea cables were installed in 1986 and 1987 when Central Coast Power Corporation built the 45 km 25 kV transmission line between Ocean Falls and Shearwater. All of these original subsea cables were approximately 30 years old, were at or approaching the end of useful life and did not meet modern subsea cable specifications when they were replaced in 2016 following the failure of one of the Johnson Channel cables on December 23, 2015. Continued operation of the old cables without replacement would have exposed BC Hydro's Bella Bella NIA to extended outages in the event any one of the other old single phase cables failed. Installing the new cables while keeping the old cables in place as backups means that, should any of the new cables fail unexpectedly, there are available spares in place which can be quickly reconfigured to put the facilities back in service while the failed cable is replaced (Boralex LP does not intend to put any of the old cables back in service indefinitely, as they are at the end of useful life, do not meet current specifications and would be subject to irreparable failure at any time).

- 4.7 Please discuss to what extent, if any, customers in Shearwater and Bella Bella will experience improvements in service because of the redundancy in submarine cables, given that backup generation is available at BC Hydro's Shearwater facility.

RESPONSE:

Customers in Shearwater and Bella Bella experience the following improvements in service because of the redundancy in the subsea cables:

- 1. Without redundancy, the failure of just one subsea cable would require BC Hydro to operate its diesel generating station at Shearwater while the failed cable (or cables) is replaced, which potentially is a multi-month process depending upon the time of year of the failure. Boralex LP understands that the Shearwater diesel generating facility is not in a suitable condition to act as a primary electrical generator for an extended basis (please see Boralex LP's response to BCUC IR 1.3). Accordingly, redundancy in the subsea cables provides customers in Shearwater and Bella Bella with greater service reliability.**

2. The operation of BC Hydro’s Shearwater diesel generating station has undesirable environmental effects for the communities, including noise and exhaust emissions, and risks associated with the marine transport and storage of diesel fuel.

BC Hydro and its customers generally also benefits from the redundancy because of the high cost to operate and maintain BC Hydro’s Shearwater diesel generation station in the event of a subsea cable failure.

5.0 Reference: **HISTORICAL CAPITAL EXPENDITURES**
Exhibit B-1, Section 7, pp. 17–19, 21; Appendix C, p. 1; Exhibit B-3, ‘CAPEX Historic’ tab
Initial Rate Base 2009–2018 Accounting Treatment

On page 17 of the Application, in Table 5 Boralex LP outlines the rate base as at December 31, 2008 – reorganized by asset category:

Asset Category	Asset Category Description	Value	Concordance to BCUC Accepted Valuation Category
1	Major Civil Works (Dam, Spillway, Tailrace)	\$0	n/a
2	Miscellaneous Civil Works (Powerhouse, Workshop, Access Roads)	\$744,400	Workshop plus \$500,000 of Powerhouse costs
3	Inlet Gates	\$0	n/a
4	Penstocks	\$1,503,000	Penstocks
5	Turbine-Generators	\$2,038,700	Powerhouse (All, less \$500,000 of costs included with Category 2)
6	Controls & Ancillary Systems	\$135,400	Station Service Building and 150 kW Generator Facility
7	Substation Equipment	\$332,500	Ocean Falls Substation
8	Overhead Distribution	\$1,343,400	Transmission Line (All, less \$290,000 included with Category 9)
9	Subsea Distribution Cable	\$290,000	\$290,000 of Transmission Line costs
10	General Plant	\$855,100	Equipment
	Total	\$7,242,500	

5.1 Further to the description in Table 5, please explain why:

- 1) \$500,000 of Powerhouse costs have been allocated to “Miscellaneous Civil Works”; and
- 2) \$290,000 of Transmission Line costs have been allocated to “Subsea Distribution Cable”.

RESPONSE:

The original “Powerhouse” category set out in Table 4 of the Application (BCUC Accepted Valuation) is a non-homogenous group of asset, comprising such discrete assets as generators, turbines, switchgear, control systems and the building envelope and foundation. In preparing Table 5, a simplifying assumption was made that the bulk of the “Powerhouse” asset value was related to the turbine generators, net of \$500,000 in estimated value attributed to the civil works (building envelope and foundation). Accordingly, \$500,000 of “Powerhouse” costs were re-allocated from “Turbine-Generators” to “Miscellaneous Civil Works” because this amount represents the estimated value of assets that have characteristics that better align with “Miscellaneous Civil Works” rather than “Turbine-Generators”. Boralex LP notes that both asset categories have the same estimated 75 year depreciation life.

Similarly, \$290,000 of “Transmission Line” costs (Table 4) were re-allocated to “Subsea Distribution Cable” (Table 5) and the balance of “Transmission Line” costs re-named “Overhead Distribution” (Table 5), because this amount represents the estimated value of the subsea cables that form part of the 45 km 25 kV transmission line between Ocean Falls and Shearwater. Subsea cables and overhead power lines have different service lives (and hence different depreciation lives), as demonstrated by the failure of one of the Johnson Channel cables after 30 years of service, whereas overhead lines generally have expected service lives of 40 to 50 years with proper maintenance.

On page 18 of the Application, in Table 6, Boralex LP shows the capital additions from 2009 to 2018. On pages 18 to 19, Boralex LP provides a summary of the major expenditures from 2009 to 2018, including the following projects:

- a) Extensive upstream and downstream dam and spillway re-surfacing and concrete rehabilitation work was carried out from 2009 to 2011 to mitigate concrete erosion and to restore the dam to its original design condition to the extent possible...
- f) Inlet gates 1 & 2 reached end of life condition and were replaced between 2014 and 2018.

The ‘CAPEX Historic’ tab of Exhibit B-3 (financial model) shows the detailed breakdown of historical capital expenditures by major project.

5.2 Please provide a brief description of the following capital expenditures outlined in the financial model:

- a) Shop – Building Repairs (cell I11)
- b) 25 kV distribution Line 25F51 & Poles (45 km) (cell F9)

RESPONSE:

- a) **This capital expenditure involved repairs to the workshop/storage building exterior walls, including shotcrete and a waterproof membrane application.**
- b) **This capital expenditure involved replacement of structures, hardware and conductors to return the interconnection line between Ocean Falls and Shearwater to service following a significant ice and wind storm event that occurred in December 2011.**

5.3 Please confirm, or explain otherwise, that Boralex LP proposes that capital expenditures for the dam and spillway re-surfacing and rehabilitation work are added to rate base in the same year the expenditures were incurred (assuming a mid-year in-service date).

RESPONSE:

Confirmed. Capital expenditures for dam and spillway re-surfacing and rehabilitation work have been added to rate base in the same year the expenditures were incurred (assuming a mid-year in-service date).

- 5.3.1 Please clarify why the dam and spillway project resulted in additions to rate base in each year from 2009 to 2011 as opposed to when the project was complete, with specific reference to the in-service dates for the assets.

RESPONSE:

The dam and spillway re-surfacing and rehabilitation work was undertaken and completed in discrete stages or projects in 2009, 2010 and 2011. The dam and spillway remained in service (and remained used and useful assets) on completion of each stage and therefore the cost of each stage of work was included in rate base in the year in which the stage of work was completed.

5.4 Please confirm, or explain otherwise, that work on Inlet gate 1 was not completed until 2017, but capital expenditures were made from 2014 to 2017.

RESPONSE:

The work on inlet gate 1 was undertaken and completed in discrete stages or projects in 2014, 2015 and 2016. Inlet gate 1 remained in service (and remained a used and useful asset) on completion of each stage and therefore the cost of each stage of work was included in rate base in the year in which the stage of work was completed.

5.4.1 Please confirm, or explain otherwise, that Boralex LP proposes that capital expenditures for the replacement of Inlet gate 1 are added to rate base in the same year the expenditures were incurred (assuming a mid-year in-service date).

RESPONSE:

Confirmed. Capital expenditures for the replacement of inlet gate 1 have been added to rate base in the same year the expenditures were incurred (assuming a mid-year in-service date). Please see Boralex LP's response to BCUC IR 5.4.

5.4.1.1 Please clarify why the Inlet gate 1 project resulted in additions to rate base in each year from 2014 to 2017 as opposed to when the project was complete, with specific reference to the in-service dates for the assets.

RESPONSE:

Please see Boralex LP's response to BCUC IR 5.4.

Table 10 on page 21 of the Application shows the ending rate base for 2018 as \$12.8 million. On page 1 of Appendix C (2018 Audited Financial Statements), the value for "Property, plant and equipment" is shown as \$17.5 million as of December 31, 2018.

5.5 Please provide an explanation for the difference between the two values.

RESPONSE:

The amount shown in Table 10 on page 21 of the Application is the 2018 end of year rate base balance calculated as described in paragraphs 70 to 81 of the Application, starting with the total net book value of the assets as of December 31, 2008 of \$7,242,500 accepted by the Commission when it approved the acquisition of the facilities by Boralex LP in 2009 (Table 4) plus capital additions between 2009 and 2018 (Table 6) less depreciation expense between 2009 and 2018 (Table 8). The asset value as at December 31, 2018 shown in the 2018 Financial Statements is the depreciated value of the Ocean Falls Facilities based on the original acquisition cost of the facilities by Boralex LP, which includes the value of intangibles and goodwill.

**6.0 Reference: HISTORICAL CAPITAL EXPENDITURES
Exhibit B-1, Section 7, p. 19; Appendix C, p. 5
Depreciation Rates**

On page 19 of the Application, Boralex LP states:

Boralex LP has calculated depreciation expense for the Ocean Falls Facilities on a straight-line basis using the depreciation rates set out in Table 7, which are based on the estimated depreciation life of each asset category assuming regular maintenance and refurbishment as required.

On page 5 of Appendix C (2018 Audited Financial Statements), PricewaterhouseCoopers states:

Property, plant and equipment

Property, plant and equipment, consisting mainly of the power stations, are recorded at cost less accumulated amortization and impairment losses, including interest incurred during the construction period. Amortization begins on the date the assets are commissioned using the following methods:

Hydroelectric power station

The hydroelectric power station is amortized by component using the straight-line method over their useful life of 40 years.

6.1 Please provide a detailed explanation of the methodology undertaken by Boralex LP to estimate depreciation life of each asset category as set out in Table 7.

RESPONSE:

Boralex LP estimated the depreciation life for each asset category as set out in Table 7 based on typical depreciation lives for similar hydroelectric, distribution and substation assets applied by other Canadian electric utilities.

With regard to the hydroelectric asset categories in Table 7 (i.e., Major Civil Works: Dam, Spillway, Tailrace; Miscellaneous Civil Works: Powerhouse, Workshop, Access Roads; Penstocks; Turbine-Generators), Boralex LP based the depreciation lives in general conformance with the recommendations in a depreciation study by Gannett Fleming² filed with the Ontario Energy Board by Ontario Power Generation (OPG) in its 2013 cost of service revenue requirement application³. The Gannett Fleming study assessed the regulated asset depreciation rates applied by OPG, and compared those rates against the rates used by other major Canadian utilities including BC Hydro. Boralex LP slightly adjusted some asset category depreciation lives to accommodate for the historical pooled nature of Boralex LP's rate base.

With regard to the distribution, substation, communications and general plant asset categories, Boralex LP based the depreciation lives set out in Table 7 on the depreciation lives typically used by other Canadian electric utilities for similar asset groups. For example, the following table compares the depreciation life of Boralex LP's assets and those submitted by Alectra Utilities in a recent revenue

² "Assessment Of Regulated Asset Depreciation Rates And Generating Station Lives", Gannett Fleming Canada ULC, November 2013

³ EB-2013-0321, Ex. F5-3-1

requirement filing (Ontario Energy Board: EB-2019-0018 Alectra Utilities Corporation 2020 EDR Application Exhibit 04 Appendix D, 2018 Asset Condition Assessment Report dated September 2018):

Boralex LP Asset Category	Boralex LP Depreciation Life	Alectra Utilities Asset Category	Alectra Depreciation Life
Substation	45 years	Power Transformers	45 years
		Station Switchgear	40 years
		Circuit Breakers	40 years
Overhead Distribution	45 years	Overhead Switches	40 years
		Polemount Transformers	40 years
		Conductor	60 years
		Pad Mount Transformers	40 years
		Distribution Switchgear	30 years
		Wood Poles	45 years
Subsea Distribution Cable	30 years	XLPE Underground Cables (Terrestrial Cable/Not Submarine Cable)	30, 35, & 40 years depending on XLPE cable type

Please discuss any other methodologies for calculating depreciation life assumptions that were explored by Boralex LP, and why these were rejected.

RESPONSE:

No other methodologies for calculating depreciation life assumptions were explored by Boralex LP.

- 6.1.1 Please discuss if Boralex has undertaken a depreciation study for the Ocean Falls Facilities. If yes, please provide a copy of the study and a summary.

RESPONSE:

Boralex LP has not undertaken a depreciation study for the Ocean Falls Facilities.

- 6.1.2 If not, please explain why not. Please also provide an estimate of the time and cost required to undertake a depreciation study.

RESPONSE:

Boralex LP does not believe that the cost to undertake and complete a depreciation study is warranted given the very small size of the Ocean Falls asset base and the likelihood that the results of such a study would not be materially different than the depreciation rates set out in Table 7 of the Application. Boralex LP understands that the cost required to undertake and complete a comprehensive depreciation study could exceed \$200,000.

- 6.1.3 Please discuss if Boralex LP has undertaken a review of the depreciation life assumptions used by other utilities for similar assets.

RESPONSE:

Please see Boralex LP's response to BCUC IR 6.1.

- 6.1.3.1 If so, please provide a comparison with the depreciation life estimates outlined in Table 7 with supporting explanation.

RESPONSE:

Please see Boralex LP's response to BCUC IR 6.1.

- 6.1.4 Please explain why Boralex LP has established depreciation rates by broader asset categories, rather than by specific asset types/components.

RESPONSE:

The historical, depreciated value of the Ocean Falls Facilities accepted by the Commission in 2009 (Table 4) was based upon broad asset categories rather than individual assets. For the Application, Boralex LP extracted two additional asset categories to recognize the different depreciation lives applicable to i) the powerhouse building vs the turbine-generators, and ii) the overhead distribution line segments vs the subsea segments (please see Boralex LP's response to BCUC IR 5.1).

Significant effort would be required to retroactively estimate the appropriate pooled rate base proportions that should be applied to establish individual asset-level depreciation accounts. Boralex LP does not believe that this would result in materially different depreciation lives and depreciation expense from that set out in Tables 7 and 8 of the Application.

Please confirm, or explain otherwise, that "hydroelectric power station" in the 2018 Financial Statements has the same meaning as the combination of all the asset categories outlined in Table 7.

RESPONSE:

Confirmed.

- 6.1.5 Please explain why in the 2018 Audited Financial Statements, the hydroelectric power station is amortized over a useful life of 40 years as compared to the depreciation lives included in Table 7 of the Application.

RESPONSE:

The 2018 Audited Financial Statements were prepared in accordance with IFRS standards on the basis that Boralex LP was not a rate regulated entity subject to utility rate regulation and that the primary source of revenue from the Ocean Falls Facilities was the negotiated EPA between Boralex LP and BC Hydro. Now that rates for Boralex LP's service to BC Hydro are subject to rate regulation by the Commission and have been determined on a utility cost of service basis based on the historical depreciated cost of the Ocean Falls Facilities, Boralex LP has adopted depreciation rates appropriate for similar rate regulated entities having regard for the estimated depreciation life of the facilities set out in Table 7.

D. FORECAST CAPITAL ADDITIONS

**7.0 Reference: FORECAST RATE BASE ADDITIONS: 2019 TO 2022
Exhibit B-1, Section 8.1, pp. 22–25, 27, 28; Section 5.5, p. 12
Future Capital Projects**

On page 22 of the Application, Boralex LP states:

Although the Ocean Falls facilities are generally in good operating condition, the plant is over 100 years old and, unsurprisingly, some components require replacement or rehabilitation. A number of capital projects are planned for 2019 to 2022 to address asset conditions or obsolescence and to satisfy BC Hydro’s interconnection standards.

Table 11 shows the forecast capital additions from 2019 to 2022 by project.

7.1 Please provide an update, as applicable, on the timing and expenditures of the projects outlined in Table 11 since the filing of the Application.

RESPONSE:

Based on further advice and discussions with BBA Engineering, Boralex LP has decided to rehabilitate Penstock 2 by replacing penstock sections with new sections on a staged basis, rather than undertaking the work and activities described in paragraphs 87 and 88 of the Application (i.e., conducting spot repairs and adding steel reinforcements to address localized areas of corrosion and metal fatigue, removal of internal and external corrosion debris, rehabilitating failed rivets and installation of an inner liner and applying an outer coating). This decision was reached in part based upon review of a recent rehabilitation project similar to that initially proposed for Penstock 2 on a similar size and vintage riveted penstock, which had unsatisfactory results. Rehabilitating Penstock 2 with new sections will result in a penstock that is fully up to current design codes, will require less ongoing maintenance and associated costs and will have a life expectancy of 50 years (compared to 25 years for the initially proposed rehabilitation plan) which can be further extended with routine maintenance.

The revised rehabilitation project will continue to be staged over several years to minimize the required shutdown window in any single year, thereby reducing the period that BC Hydro’s Shearwater diesel generation station needs to be in operation. Work requiring plant shutdowns will continue to be conducted during a six week window in the spring each year (mid-April to the end of May) to align with the lightest seasonal loads in the Bella Bella NIA and Ocean Falls.

Boralex LP is currently completing a revised cost estimate for the Penstock 2 rehabilitation project that is expect to be completed by March 9, 2020. The overall cost of the revised rehabilitation project is not expected to be materially different than the initial rehabilitation project. However, as the revised cost estimate and timing of expenditures is expected to affect Table 11 of the Application, Boralex LP will also file an update to Table 11 with the Commission by March 9, 2020. As indicated in Boralex LP’s response to BCUC 2.1, Boralex LP will also file an update to Table 3 and to the BC Hydro rates at that time.

In addition, as indicated in paragraph 91 of the application, work on generating unit G4 commenced in 2019 (Q3-Q4) to address bearing issues discovered during investigative work. Completion of this work has been delayed into 2020 due to problems with the repaired bearings. G4 remains out of service while replacement parts are being fabricated, and it has been decided to complete all remaining G4 turbine rehabilitation work that was originally planned for 2021 in 2020 to enable the unit to be returned to service. The sequence of rehabilitation work for the other three units remains unchanged. Investigative work will commence on the G3 turbine unit in 2020, but the unit will be

returned to service before year-end and the rehabilitation work on the unit will then be completed in 2021. The change in the work turbine work schedule will be reflected in the update to Tables 3 and 11 discussed above, but the total capital costs of the turbine rehabilitation work planned during the test period is not expected to change materially.

There are no other changes to the estimated cost and timing of expenditures of the other five projects outlined in Table 11 since the filing of the Application.

7.2 At a high level, please discuss to what extent Boralex LP considers that all the 2019 to 2022 forecast capital additions identified are essential to complete within the timelines identified for safe and reliable operation of the Ocean Falls facilities.

RESPONSE:

All the projects listed in the forecast of capital additions (as updated) are essential to be completed within the timelines identified to maintain safe and reliable operation of the Ocean Falls Facilities. Boralex LP has deferred beyond the forecast period project work that it believes can reasonably be delayed without materially impacting safety or operational reliability.

7.3 Please discuss the risk that any of the proposed capital additions identified will not be completed and in-service in the year identified in Boralex LP's plan.

RESPONSE:

Given the remote location, harsh environment and difficult site access issues associated with the Ocean Falls Facilities, there will always be some risk that the proposed capital additions will not be completed and in-service as planned. However, given its experience in successfully operating these facilities for many years and undertaking and completing numerous challenging capital projects at Ocean Falls over this period, Boralex LP is confident that the projects can be completed as planned.

7.3.1 Please discuss the overall feasibility and any risks associated with delivering the significant capital program within the test period.

RESPONSE:

The risks associated with delivering the capital program within the test period include: meteorological (e.g., extended inclement weather conditions); geotechnical (e.g., unknown subsurface conditions at the Penstock 2 saddle foundation locations); procurement and logistics (e.g., transportation/shipping heavy equipment and materials to site), and normal project management risks associated with delivering a number of projects in a relatively small geographic area. Boralex LP has considered these risks in developing the capital program and, based on its years of experience at Ocean Falls, is confident that the projects can be completed as planned.

7.4 Please explain the basis for the cost estimates to complete the proposed capital additions and discuss the expected accuracy of the estimates.

RESPONSE:

Capital cost estimates are based on a combination of industry experience, contractor quotes, supplier quotes, and Boralex LP's experience in completing capital projects at Ocean Falls. The estimates fall into the Class 3 designation as per AACE standard 17R-97 with an expected average accuracy of +30%/-15%.

7.5 Please explain how, if at all, the timeline or scope of any of the future capital improvements proposed by Boralex LP has been affected by the historical or forecast increase in system load from its industrial customers.

RESPONSE:

Neither the timeline nor scope of any forecast capital improvements has been affected by the historical or forecast increase in system load from Boralex LP's industrial customers. The future capital improvements are driven by asset condition and BC Hydro interconnection requirements and are necessary in order to maintain safe and reliable service to BC Hydro and the Bella Bella NIA.

On page 22 of the application, Boralex LP states:

Boralex had originally intended to repurpose Penstocks 1(a) and 1(b) (that were installed to lower the level of Link Lake in order to undertake dam rehabilitation work from 2009 to 2011) by tying them into the turbines of generating units G1 and G2 in the powerhouse and installing a new smaller diameter penstock to replace Penstock 2 to supply to the two dual runner units G3 and G4 in the powerhouse.

A recently completed engineering assessment has determined that Penstock 2 can be rehabilitated at a lower cost than would be involved in implementing a complete penstock replacement.

On page 23 of the application, Boralex LP states:

Project activities will also extend into 2023 and 2024 to pace the project work and minimize the annual shutdown period.

7.6 Please confirm, or explain otherwise, if penstocks 1(a) and 1(b) can provide sufficient water flow to serve the entire load in the Bella Bella NIA.

RESPONSE:

Penstocks 1(a) and 1(b) would only be capable of fully supplying the two smaller generating units, G1 and G2. These units, operating individually or together, are not able to serve the peak load of the Bella Bella NIA and would have no capacity to provide required operating reserves, voltage control, frequency control or load following. Please see Boralex LP's response to BCUC IR 1.2.

7.6.1 If not confirmed, please explain the rationale used when sizing penstocks 1(a) and 1(b).

RESPONSE:

Penstocks 1(a) and 1(b) were installed for the purpose of lowering the Link Lake reservoir level to enable dam rehabilitation work from 2007 to 2011, by diverting water through the old pulp and paper plant ground wood mill turbines. This was necessary because there is no alternate path to drain water from the reservoir except through the Ocean Falls turbine generators through Penstock 2 (there is no bypass from Penstock 2 directly into the tailrace) and discharging through the turbine generators would generate excess electricity that cannot be absorbed by the connected loads (thereby leading to overvoltage and over frequency system conditions). Penstocks 1(a) and 1(b) were not installed for the purpose of providing water flow to the powerhouse.

7.7 Please explain how, if at all, Boralex LP plans to make use of penstocks 1(a) and 1(b) following the proposed rehabilitation of penstock 2.

RESPONSE:

Penstocks 1(a) and 1(b) will remain in place and can be used again in the future to once again lower the Link Lake reservoir level, should that become necessary for future dam repair work.

7.8 Please provide a comparison of the expected service life and cost of a rehabilitated penstock 2 to that of any other considered rehabilitation or replacement alternatives for penstock 2.

RESPONSE:

As discussed in Boralex LP's BCUC IR 7.1, Boralex LP has determined that replacing sections of Penstock 2 in stages with new sections provides a more reliable permanent solution to mitigating the condition of the existing penstock. Rehabilitating the penstock with new sections will result in a penstock that is fully up to current design codes, it will require less ongoing maintenance and associated costs, and it will have a life expectancy of 50 years (compared to 25 years for the initially proposed rehabilitation plan described in the Application) which can be further extended with routine maintenance. The revised cost estimate for the project will be reflected in the updated Table 11 to be filed by Boralex LP by March 9, 2020 and Boralex LP will provide the requested cost comparison at that time.

7.9 Please confirm the total cost estimate for the penstock rehabilitation project by year, including any planned activities beyond 2022.

RESPONSE:

Please see Boralex LP's response to BCUC IR 7.1.

On page 12 of the Application, Boralex LP states:

The operating practice for the four generating units since the Ocean Falls Facilities were interconnected with the Bella Bella NIA in 1986 has been to alternate operating duty between the units, with typically two of the four units in production at any given time. This operating practice reduces electrical and mechanical loads on the individual machines and balances total service hours between all four units, thereby extending expected machine service lives and increasing the interval between major refurbishment activities such as stator rewinding.

Turbine rehabilitation work, including runner repairs and replacement of wicket gates was carried out on unit G3 in 2016.

On pages 23-24 of the Application, Boralex LP states:

Project 2 scope involves dismantling the G2, G3 and G4 turbines, removing the shafts, non-destructive testing to locate shaft surface cracks, shaft rehabilitation (repairing cracks, machine and add shaft sleeves at the water bearing locations), replace water bearings, and rehabilitate or replace babbitt bearings, bearing pedestals and bearing housings. One turbine will be rehabilitated in each of 2020 (G3), 2021 (G4) and 2022 (G2). Work on G1 will be undertaken in 2023. Additional work on G4 is also required in 2019 (Q3-Q4) due to bearing issues discovered during investigative work.

7.10 Please explain why the unit G3 turbine rehabilitation work in 2016 was necessary, given that typically only two of the 4 generators are in production at any time.

RESPONSE:

As discussed in Boralex LP's responses to BCUC 1.1 and 1.2, all existing turbines (all of which have been in service for approximately 100 years) must be maintained to continue providing the historical high level of service reliability to BC Hydro and the Bella Bella NIA. For example, if unit G3 was not rehabilitated and eventually allowed to fail, units G1 and G2 have insufficient capacity to serve the Bella Bella NIA peak load during any subsequent forced or extended maintenance outages of unit G4.

7.11 Please discuss why the proposed turbine G3 rehabilitation work in 2020 wasn't undertaken to coincide with the 2016 rehabilitation work.

RESPONSE:

The unit G3 rehabilitation work originally proposed for 2020 will be started after unit G4 is back in service (as discussed in Boralex LP's response to BCUC 7.1) and was not undertaken to coincide with the 2016 rehabilitation work because it had not been identified as being required in 2016. In 2016, the unit G3 runner and wicket gates were identified as the primary sources of operating issues with the G3 turbine. Although the unit G3 runner repair and wicket gates were successfully remediated in 2016, residual shaft vibration and bearing issues have been observed with the unit. The unit G3 shaft and bearing rehabilitation will commence with investigative work in 2020. G3 will be placed back in service before year end 2020 and the bulk of the rehabilitation work will now be postponed until 2021 to coordinate with the currently in-progress unit G4 rehabilitation work that will be completed in 2020.

7.12 Please explain the rationale Boralex LP used to identify an optimal timeline for turbine refurbishment.

RESPONSE:

The following process was used to determine the optimal timeline for turbine refurbishment:

- 1. Asset Risk: Work is planned when turbine condition deteriorates to the point where there is a significant risk of imminent asset equipment failure.**
- 2. Priority: The order of turbine refurbishment is based on identifying the turbines that pose the greatest equipment failure and consequent system reliability risks.**
- 3. Pacing: The project timeline is planned so that only one turbine unit is taken out of service in each calendar year, although because the unit G4 work has carried over from 2019 both units G4 and G3 will be worked on in 2020.**

Boralex LP identified shaft vibration and bearing problems with unit G4 in 2019 that, if not addressed, could lead to major equipment failure. Subsequent observation of unit G3 identified similar issues arising with that unit. Failing to carry out necessary repairs could ultimately lead to bearing or shaft failures during operation and subsequent damage to, or destruction of, the associated turbine generator units.

7.13 Please provide any alternative refurbishment timelines considered by Boralex LP and discuss the pros and cons of each strategy.

RESPONSE:

Delaying or altering the planned bearing and shaft refurbishment timelines would expose the turbine generator components to risk of catastrophic failure and damage. Failure to maintain the units in serviceable condition after having identified the condition problems would not be a prudent operating strategy. Please see Boralex LP’s response to BCUC IR 1.2.

7.14 Please discuss if and how performance of the turbines is expected to change following the proposed rehabilitation work.

RESPONSE:

Following the proposed refurbishments of each unit, associated shaft vibration will be reduced to acceptable levels, water leakage at the shaft/turbine interface will be reduced, and the risk of catastrophic bearing or shaft failure will be substantially mitigated.

7.15 Please confirm, or explain otherwise, if Boralex LP would be able to reliably meet the generation needs of its entire customer base on two turbines, following the refurbishment of G3 and G4.

RESPONSE:

No. Please see Boralex LP’s responses to BCUC IRs 1.1 and 1.2.

On page 25 of the application, Boralex LP states:

Other required Ocean Falls switchyard equipment replacements are being deferred beyond 2022 to help pace capital work. This equipment includes step up transformers T10 and T11, the station service transformer, and of several other switchgear and protection components, all of which are approaching end of life condition.

7.16 Please provide a cost estimate by year to complete all identified switchyard rehabilitation work which will be deferred beyond 2022.

RESPONSE:

The following table shows the estimated cost by year to complete all identified switchyard rehabilitation work which will be deferred beyond 2022, broken down by asset replacement:

	2023	2024
Ocean Falls GS – Station Service Transformer	\$75,000	
Ocean Falls GS – Step Up Transformer T11 (2.3 kV to 25 kV)	\$225,000	
Ocean Falls GS – High Voltage Protection		\$135,000
Ocean Falls GS –Switchgear		\$50,000
Total	\$300,000	\$185,000

On page 22 of the Application, Boralex LP submits that “[a] number of capital projects are planned for

2019 to 2022 to address asset conditions or obsolescence and to satisfy BC Hydro’s interconnection standards.”

7.17 Please identify any capital projects that are required in order to provide service to a specific customer rather than all Boralex LP’s customers.

RESPONSE:

The Shearwater Substation (Project 5) and Interconnection Line (Project 6) capital projects are specifically required to provide service to BC Hydro and the Bella Bella NIA. The other capital projects are also required to provide service to BC Hydro and the Bella Bella NIA, but they also support the entire customer base load.

**8.0 Reference: FORECAST CAPITAL ADDITIONS
Exhibit B-1, Section 8, pp. 22–23, 27–28
Accounting Treatment**

On page 22 of the Application, Boralex LP states:

The forecast capital costs do not include, and Boralex LP is not proposing to include, any allowance for funds used during construction (AFUDC) or capitalized overhead costs.

8.1 Please explain why Boralex LP is not proposing to include any AFUDC in the forecast capital costs.

RESPONSE:

Boralex LP is not proposing to include any AFUDC in the forecast capital costs for the following reasons:

- 1. Generally Single Year and Short Duration Projects: The vast majority of the forecast capital projects are completed within the same calendar year over a relatively short period of time.**
- 2. Cost Savings From Simplified Accounting: Having regard for the relatively short duration of the forecast capital projects, Boralex LP does not believe that the additional costs (e.g., accounting and project tracking labour) associated with forecasting and tracking AFUDC on individual projects is warranted.**
- 3. Working Capital Provision: The working capital provision of \$400,000 serves to provide some compensation that would otherwise be provided through the recovery of AFUDC.**

8.2 Please discuss the impact on the cost-of-service of not including AFUDC in the forecast capital costs.

RESPONSE:

Not including AFUDC in the forecast capital costs reduces rate base from what it would be with the inclusion of AFUDC and therefore reduces the cost of service.

Table 11 shows the forecast capital additions (2019 to 2022):

8.3 Please provide an updated Table 11 to include a column for actual 2019 capital additions.

RESPONSE:

Please see Boralex LP's response to BCUC IR 7.1. The updated Table 11 to be filed by Boralex LP by March 9, 2020 will be updated for actual 2019 capital additions.

On pages 22 to 23, Boralex LP describes the Penstock Rehabilitation project. Boralex LP states:

The project scope involves conducting spot repairs and adding steel reinforcement to address localized areas of corrosion and metal fatigue, removal of internal and external corrosion debris, removal of soil presently contacting the underside of the penstock underside, rehabilitation of failed rivets, and installation of an inner lining and application of an outer coating. The project will also require the gate closing mechanism and controls to be upgraded to enable rapid closure if a penstock breach is detected. The project will be staged over several years to minimize the required shutdown window in any individual year... Project activities will also extend into 2023 and 2024 to pace the project work and minimize the annual shutdown period.

On page 28, Boralex LP states:

Depreciation calculations have been simplified by assuming a mid-year in-service date regardless of when the new additions go into service during the year, and by pooling all undepreciated capital of a given asset category with all new capital additions of a given asset category to calculate single annual depreciation expense (as opposed to tracking the depreciation of each capital addition separately).

8.4 Please provide an estimate of the total cost of the penstock rehabilitation project and confirm the estimated end date.

RESPONSE:

Please see Boralex LP's response to BCUC IR 7.1.

8.5 Please briefly describe the overall objective of the project.

RESPONSE:

Penstock 2 is a riveted plate steel penstock that was initially installed in 1917 and has incurred rivet deterioration, localized corrosion pitting and metal stress over its long service life. An assessment of the condition of Penstock 2 is set out in the BBA Engineering reports referred to in Boralex LP's response to BCOAPO Supplemental Information Request 6 (Exhibit B-4, Appendix A). The rehabilitation project will result in a penstock that is fully up to current design codes, will require less ongoing maintenance and associated costs, and will have a life expectancy of 50 years which can be further extended with routine maintenance.

8.6 Please confirm and explain that Boralex LP is proposing to add expenditures related to the penstock rehabilitation to rate base in the same year that the expenditures are incurred (assuming a mid-year in-service date).

RESPONSE:

Confirmed. The penstock rehabilitation project will be completed in discrete stages over several years to minimize the annual outage duration and after the completion of each stage the penstock will be

returned to service. Accordingly, the cost of each stage of work will be included in rate base in the same year that the expenditures are incurred (assuming a mid-year in-service date).

- 8.6.1 Please discuss whether Boralex LP considers that for the penstock rehabilitation project, the expenditures made from 2019 to 2022 will result in used and useful assets in the same year, or whether these assets could only be considered used and useful upon completion of the project.

RESPONSE:

Yes. The penstock will be placed back in service each year following completion of each stage of the project work, so the expenditures made each year from 2019 to 2022 will result in used and useful assets in the same year.

On page 27, Boralex LP describes the Interconnection Line Capital Maintenance project. Boralex LP states:

Inspection, repair and maintenance activities often involve accessing the line structures via a combination of boat, helicopter and on foot. Repairs can require workers to climb poles located in steep and rocky terrain, often with exposure to sheer oceanside cliffs and typically in inclement weather conditions. Failures of structures or other line components can cause extended line outages due to the access challenges, so it is essential that the line facilities are maintained in excellent operating condition to maintain service reliability. Annual inspections identify any structures and other line components that require repair or replacement. This project involves repairing or replacing deteriorated structures and line components based on assessed asset condition requirements.

- 8.7 Please confirm, or explain otherwise, that Boralex LP is proposing to capitalize costs related to inspection, repair and maintenance activities for this project, rather than expense these costs. Please provide an explanation for this approach.

RESPONSE:

Boralex LP only plans to capitalize costs related to line inspections, repairs and maintenance work that comprises capital maintenance life extension projects, such as structure and line component replacements. For example, a significant section of the 45 km 25 kV transmission line was destroyed by a major ice and wind storm in 2011 and had to be replaced. The cost of this work was capitalized.

On page 28 of the Application, Boralex LP states:

Ocean Falls general plant assets that have reached or will reach end of expected service life and that will be replaced during the forecast period include mobile radio and satellite phone equipment, the crew boat, two 4x4 pickup trucks and the Cat 235 log loader wood debris cleanup unit. In addition to these end-of-life like-for-like asset replacements, a teleboom is required for ongoing facility maintenance and to enable efficient execution of planned capital projects, including the penstock rehabilitation. The crew boat, 4x4 trucks, log loader and teleboom will be acquired under capital lease-to-buy arrangements.

- 8.8 Please describe the regulatory accounting treatment of the costs associated with the lease-to-buy arrangements, including principal and interest payments.

RESPONSE:

The regulatory accounting treatment of the costs associated with the lease-to-buy arrangements is to treat the equipment as a capital asset and capitalize the lease costs in each year of the lease.

**9.0 Reference: FORECAST CAPITAL ADDITIONS
Exhibit B-1, p. 29; Exhibit B-4, Appendix A, p. A-3; Appendix B, 2016 Boralex Financial Statements
Working Capital**

Boralex LP has included a \$400,000 working capital allowance in rate base to cover approximately three months' worth of operating, maintenance and administration expenses and to address the timing issues in payment and receipt of invoices.

In the supplemental information provided in Exhibit B-4, Boralex LP provides the following information to support the calculation of the working capital balance on page A-3:

Boralex LP estimated its working capital requirements of \$400,000 by first calculating the difference between its balance sheet receivables and its balance sheet payables over the past five years. The calculation is presented in the table below which shows an average working capital requirement of \$380,000 from 2014 to 2017. Boralex LP excluded 2018 from the calculation due to the abnormally higher payables recorded on the balance sheet at year end.

In estimating its forecast working capital requirements, Boralex LP then added only \$20,000 to the past average working capital amount notwithstanding the planned capital program which is expected to create a significant additional demand for working capital over the forecast period.

- 9.1 Please clarify how the working capital allowance balance of \$400,000 in rate base covers approximately three months' worth of operating, maintenance and administrative expenses, and why three months was selected.

RESPONSE:

Assuming that O&M expenses are incurred monthly at a rate of approximately 1/12th of the annual total, \$400,000 corresponds to approximately three months of 2019's forecast O&M expenses (forecast O&M expenses for 2019 were \$1,590,000 (Table 27), i.e. \$795,000 for the first half of 2019 and \$795,000 for the second half of 2019). Three months was selected because it represents the average working capital required in a typical year to deal with the estimated average timing differences between the collection of receivables and the payment of payables.

Boralex LP also estimated its working capital requirements of \$400,000 by calculating the difference between its balance sheet receivables and its balance sheet payables over the past five years using the data in the revised table below. The table originally provided in Boralex LP's response to BCOAPO Supplemental Information Request 6 (Exhibit B-4, Appendix A) contained an error (i.e., receivables for 2018 and 2017 were erroneously reversed) and has been corrected in the revised table below. Excluding 2018 from the calculation, an average working capital requirement of \$407,000 was required from 2014 to 2017. Boralex LP excluded 2018 from the calculation due to the abnormally higher payables recorded on the balance sheet at year end.

	Receivables	Payables	Working Capital Need
2018	\$366	\$1,689	\$1,323
2017	\$259	\$799	\$540
2016	\$247	\$403	\$156
2015	\$243	\$726	\$483
2014	\$278	\$727	\$449
2014-17 Working Capital Requirement			\$407

9.2 Please elaborate on why the working capital balance is estimated using the year-end balances, as opposed to some other method. For example, by using average month-end balances or by the lead-lag method.

RESPONSE:

Borex LP estimated its working capital requirement using the year-end balances as well as using approximately three months of 2019 O&M expenses, rather than some other method (such as lead-lag method), because estimating working capital needs this way is simple and can be easily verified and because Borex LP believes that it is representative of its average demands on working capital during the year.

9.3 Please provide an estimate of the net cash working capital balance using the balance sheet method with average month-end balances for 2018 and 2019.

RESPONSE:

Please see the following table showing the average month-end balances for 2018 and 2019.

Month / Year	Current Assets	Current Liabilities	Difference
January 2018	\$ 904,450	\$ 2,305,039	-\$ 1,400,589
February 2018	\$ 1,078,515	\$ 2,398,107	-\$ 1,319,592
March 2018	\$ 1,294,698	\$ 2,653,205	-\$ 1,358,507
April 2018	\$ 1,469,689	\$ 2,831,451	-\$ 1,361,762
May 2018	\$ 1,419,323	\$ 2,498,223	-\$ 1,078,900
June 2018	\$ 1,278,859	\$ 2,487,845	-\$ 1,208,986
July 2018	\$ 1,306,278	\$ 2,515,950	-\$ 1,209,673
August 2018	\$ 1,428,556	\$ 2,733,872	-\$ 1,305,317
September 2018	\$ 847,681	\$ 2,081,991	-\$ 1,234,309
October 2018	\$ 1,062,678	\$ 2,244,137	-\$ 1,181,459

November 2018	\$ 1,163,715	\$ 2,345,453	-\$ 1,181,738
December 2018	\$ 1,291,630	\$ 2,645,350	-\$ 1,353,720
January 2019	\$ 1,542,509	\$ 2,642,032	-\$ 1,099,524
February 2019	\$ 1,800,510	\$ 2,829,736	-\$ 1,029,225
March 2019	\$ 1,793,515	\$ 2,949,755	-\$ 1,156,240
April 2019	\$ 1,893,143	\$ 3,108,322	-\$ 1,215,179
May 2019	\$ 1,903,554	\$ 3,395,699	-\$ 1,492,144
June 2019	\$ 1,921,732	\$ 3,597,929	-\$ 1,676,196
July 2019	\$ 1,644,409	\$ 3,479,637	-\$ 1,835,228
August 2019	\$ 1,553,720	\$ 3,579,973	-\$ 2,026,253
September 2019	\$ 1,542,390	\$ 3,852,991	-\$ 2,310,601
October 2019	\$ 1,569,992	\$ 3,789,527	-\$ 2,219,536
November 2019	\$ 1,649,992	\$ 3,961,652	-\$ 2,311,660
December 2019	\$ 1,563,846	\$ 4,310,104	-\$ 2,746,258
			-\$ 1,513,025

Boralex LP does not believe that the balance sheet method (i.e., subtracting current liabilities from current assets) is representative of its working capital requirements. However, the table above suggests that the working capital needed by Boralex LP to meet its current liabilities is higher than \$400,000.

9.4 Please explain the difference between the 2016 payables balance of \$403 in the table provided on page A-3 of Exhibit B-4 and the Trade and Other Payables balance at December 31, 2016 of \$951 thousand on page 1 of the 2016 Boralex LP Financial Statements.

RESPONSE:

\$548,000 of the \$951,000 recorded on the 2016 balance sheet under “Trade and Other Payables” was reclassified as “Advanced from Partner” in the 2017 Financial Statements. This can be seen in the 2017 Financial Statements, where the amount of \$548,000 is shown on the 2016 and 2017 balance sheets as a non-current liability and \$403,000 is shown on the 2016 balance sheet as “Trade and Other Payables”.

E. REVENUE REQUIREMENT COMPONENTS

**10.0 Reference: REVENUE REQUIREMENT COMPONENTS
Exhibit B-1, pp. 36–37
Debt Interest Rate**

Boralex LP believes that an appropriate deemed interest rate on the debt component of its capital structure is 5.5%. On page 36, Boralex LP states:

Boralex LP currently has long term third party debt that was issued following its acquisition of the Ocean Falls Facilities. The loan was made by a single lender in 2011. The loan is secured by the Ocean Falls Facilities, bears interest at a fixed rate of 6.55% per annum with monthly payments of principal and interest, and matures in April 2024...

... Boralex LP’s current lender, which is intimately familiar with the Ocean Falls Facilities, has advised that assuming the level and stability of Boralex LP’s cash flows remain

substantially the same as they are now following approval by the Commission of the rates for Boralex LP's service to BC Hydro, if it were to finance the debt component of Boralex LP's rate base in today's market on a stand-alone basis, the interest rate on the debt with a 30 year term would be approximately 5.3%. This reflects a Government of Canada Bond yield on an equivalent term of 1.80% plus a spread of 350 basis points.

- 10.1 Please clarify whether Boralex LP is referring to the same or different lending entity for the 2011 loan at a fixed rate of 6.55% and the current lender that quoted the 5.3% variable rate.

RESPONSE:

The lending entity that advised Boralex LP on the current rate of interest available to Boralex LP on long term debt is the same lending entity that made the 2011 loan to Boralex LP.

- 10.2 Please clarify what is meant by "stand-alone basis" in the context of the debt offer. Is the "stand-alone basis" referring to Boralex LP as a stand-alone company as opposed to leveraging off Boralex Inc.? Or is the "stand-alone basis" referring to financing Boralex LP's rate base for only BC Hydro as a customer?

RESPONSE:

The term "stand-alone basis" means Boralex LP as a stand-alone utility borrowing on a long-term basis without any credit support (such as a loan guarantee) from its parent or any other affiliated entity.

- 10.3 Please confirm, or otherwise explain, that Boralex LP has assessed the deemed interest rate on the debt component of its capital structure from the perspective of the entire utility's debt profile.

- 10.3.1 Please explain whether the BCUC should consider Boralex LP's debt requirements on the utility as a whole or solely on the basis of its debt requirements to serve BC Hydro as a customer?

RESPONSE:

Boralex LP has assessed the deemed interest rate on the debt component of its capital structure from the perspective of the entire utility's debt profile, which is how debt lenders would view it. While the rates paid by Boralex LP's retail and industrial customers are determined in accordance with Order G-26-10 (and as confirmed by Order G-143-19) and are not being set by the Commission in this proceeding, this does not change the fact that Boralex LP is reliant on the revenue from both BC Hydro and its retail and industrial customers to recover its gross revenue requirement and to support its debt payment obligations. Accordingly the Commission should consider Boralex LP's debt requirements on the utility as a whole.

- 11.0 Reference: REVENUE REQUIREMENT COMPONENTS
Exhibit B-1, pp. 31–36
Capital Structure and Rate of Return on Common Equity**

On pages 31 to 36, Boralex LP provides its proposed capital structure and allowed rate of return on common equity (ROE) by reference to the benchmark utility, FortisBC Energy Inc. (FEI), used by the BCUC to establish the capital structure and ROE for other regulated utilities.

In Table 21 on pages 31 to 35, Boralex LP provides a modified version of the BCUC's risk matrix, which compares the risks faced by Boralex with those of FEI. In Table 22 on page 35, Boralex LP proposes the

following:

Table 22: Equity Ratio and Return on Equity

Equity Ratio	50%
Benchmark Utility ROE	8.75%
Borex LP Risk Premium	125 basis points
Resulting Borex LP ROE	10.0%

11.1 Please provide credit rating reports for Borex LP, specifically for the Ocean Falls Facilities operations where available, since 2008.

RESPONSE:

The debt of Borex LP is not rated by any credit rating agency and accordingly there are no credit rating reports for Borex LP.

11.1.1 If credit rating reports for Borex LP are not available, please provide excerpts and commentary of credit rating reports or analyst research related to the Ocean Falls Facilities operations, from Borex Western Energy Inc. or Borex Inc. since 2008.

RESPONSE:

Borex LP is not aware of any excerpts or commentary of credit rating reports or analyst research related to the Ocean Falls Facilities operations, from Borex Western Energy Inc. or Borex Inc. since 2008.

11.2 Please state Borex LP's actual equity ratio and actual ROE since 2008. Include supporting calculations including net income, shareholder's equity, and total liabilities.

RESPONSE:

Please see the following table for Borex LP's actual equity ratio and ROE since 2009. Supporting information is not available for 2008.

	\$ figures in thousands	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009 (9 months)
A	Net Earnings/ (Loss)	\$51	\$59	-\$134	\$272	\$367	\$100	-\$54	-\$86	-\$201	-\$230
B	Partners' Equity	\$13,495	\$13,444	\$13,385	\$12,419	\$12,147	\$11,780	\$11,680	\$11,734	\$12,409	\$6,770
C	Total Liabilities + Partners' Equity	\$21,382	\$21,281	\$21,608	\$21,146	\$21,554	\$21,820	\$22,514	\$22,847	\$23,584	\$22,226
B/C	Equity Ratio	63%	63%	59%	62%	56%	54%	52%	51%	53%	30%
A/B	Return on Equity	0.4%	0.4%	2.2%	-1.0%	3.0%	0.8%	-0.5%	-0.7%	-1.6%	-3.4%

11.3 In the Table 21 risk matrix, please confirm, or otherwise explain, that Boralex LP has assessed its risk profile of Boralex LP from the perspective of the entire utility rather than the risks related to providing service to BC Hydro.

11.3.1 Please explain whether the BCUC should determine Boralex LP's equity ratio and return on equity on the basis of the entire utility's risk profile relative to the FEI benchmark, or solely on the basis of the utility's risk profile of serving BC Hydro as a customer relative to the FEI benchmark.

RESPONSE:

Boralex LP has assessed its risk profile from the perspective of the entire utility, which is how equity investors would assess Boralex LP's risk profile. While the rates paid by Boralex LP's retail and industrial customers are determined in accordance with Order G-26-10 (and as confirmed under Order G-143-19) and are not being set by the Commission in this proceeding, this does not change the fact that Boralex LP is reliant on the revenue from both BC Hydro and its retail and industrial customers to recover its gross revenue requirement and to support its allowed return on common equity. For example, because the forecast revenue from Boralex LP's retail and industrial customers has been credited to the gross revenue requirement and reduces BC Hydro's rates, the loss of revenue from these customers has a direct adverse impact on Boralex LP's overall revenues and opportunity to earn its allowed return on common equity.

11.4 With respect to Table 21 under risk factor #3 Fuel Risk cost and availability, please clarify why Boralex LP's water licenses entitling it to less water than is naturally available is of "lower" risk compared to the FEI benchmark?

RESPONSE:

Boralex LP's water licenses entitle Boralex LP to sufficient water to meet its customer load requirements and the cost of water is set by the Provincial government through relatively stable water rental rates. Since the amount of naturally available water is significantly higher than Boralex LP's water license entitlements (even in extreme low water years), there is low risk that Boralex LP will have insufficient water to meet its customer load requirements. Accordingly, Boralex LP believes that its fuel supply risk is lower than the risks faced by FEI with regard to the cost and delivery of natural gas to its distribution facilities in the Province.

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11.5 With respect to Table 21 under risk factor #4 Customer Base (e.g.: diversity, certainty, growing, declining), please clarify why Boralex LP is concerned about the slow growth in the Bella Bella NIA when the community is served under the BC Hydro Rate Zone 1B service territory. Please reconcile this risk commentary with Boralex LP's statement that "the risk of default by BC Hydro is low" under risk factor #5.

RESPONSE:

Slow growth in the Bella Bella NIA means that the customer base remains small and undiversified with less opportunity for Boralex LP to increase its sales to BC Hydro and reduce BC Hydro's average cost of power accordingly.

11.5.1 Under what circumstances would BC Hydro terminate electricity purchases from Boralex LP? In Boralex LP's view, what is the likelihood of these events, and what would be the impact to Boralex LP?

RESPONSE:

Boralex LP does not expect BC Hydro to terminate electricity purchases from Boralex LP unless it was able to displace these purchases with a lower cost source with similar levels of reliability. Boralex LP views this as unlikely at least in the short and medium terms, but would note that if there is any erosion in the Bella Bella NIA customer base this would reduce BC Hydro's revenues from these customers and increase its average cost of power from Boralex LP, making alternative sources of power more viable over the longer term.

11.6 With respect to Table 21, does Boralex LP view that its retail and industrial customer rates, particularly that "the rates charged by Boralex LP to its industrial customers are negotiated rates not to exceed the comparable BC Hydro industrial rates,"⁴ should be assessed in the risk matrix? If so, what is Boralex LP's assessment relative to the FEI benchmark? If not, why?

RESPONSE:

Yes. Please see Boralex LP's response to BCUC IR 11.3. All of the forecast revenue from Boralex LP's retail and industrial customers has been credited to Boralex LP's forecast gross revenue requirement, which reduces BC Hydro's rates. Accordingly, the risks associated with the recovery of this revenue has to be factored into an assessment of Boralex LP's overall risk profile. Boralex LP would assess this risk as being much higher relative to the FEI benchmark. Boralex LP has just two industrial customers operating in a remote and isolated location, one of which is engaged in a politically sensitive industry (commercial fish farming) and the other of which is engaged in a new and speculative industry (cryptocurrency mining). The electricity sales agreements with these two customers have energy charge rate structures with no minimum consumption, fixed charge, take-or-pay or similar obligations on the part of the customer. The loss of either of these customers would have an adverse impact on Boralex LP's opportunity to earn its allowed return on common equity. By contrast, FEI has a very large and economically and geographically diverse commercial/industrial customer base with no equivalent single customer risk.

11.7 With respect to the equity ratio and ROE proposal as shown in Table 22, please explain how Boralex LP arrived at the proposed figures. Was there any quantitative analysis performed (e.g. comparing a similar utility of Boralex LP's size and risk profile, or placing more/less weight on certain risk factors)? Please specify.

RESPONSE:

Boralex LP's assessment of its overall risks was based on a qualitative assessment of each risk relative to FEI. Boralex LP did, however, have regard for how certain risk factors could impact its ability to achieve its allowed return on common equity, including from (i) the loss of one or more of its two industrial customers, (ii) lower than forecast sales to BC Hydro, (iii) loss of sales to BC Hydro due to an outage on the Ocean Falls Facilities, and (iv) higher than forecast operating costs.

⁴ Exhibit B-1, pp. 1, 8.

F. OPERATING AND MAINTENANCE AND OTHER EXPENSES

**12.0 Reference: OPERATING AND MAINTENANCE AND OTHER EXPENSES
Exhibit B-1, pp. 39–40
Operating & Maintenance Expenses**

Table 27 includes the forecast Operating & Maintenance (O&M) expenses for the test period, including Q3 and Q4 2019.

12.1 Please provide an updated Table 27 to include a column for actual 2019 and actual Q3–Q4 2019.

RESPONSE:

Please see the following updated Table 27 with 2019 and Q3–Q4 2019 actuals.

O&M Line Item	2019 (Q3-4)	2019 (Full Year)	2020	2021	2022
Employee Costs					
<i>Salaries and Benefits</i>	\$303	\$605	\$838	\$769	\$781
<i>Expenses</i>	\$77	\$155	\$224	\$225	\$164
<i>Recruitment</i>	-	-	\$13	-	-
<i>Training</i>	\$2	\$5	\$38	\$46	\$46
Corporate Services	-	-			
<i>Corporate Services</i>	\$61	\$121	\$263	\$271	\$279
<i>Engineering and Environment</i>	\$25	\$50	\$59	\$61	\$63
<i>Operations Senior Management</i>	\$9	\$18	\$18	\$19	\$19
<i>Operations Site Management</i>	\$48	\$97	\$182	\$188	\$193
Maintenance and Repairs	-	-			
<i>Control Systems</i>	\$171	\$343	\$138	\$140	\$143
<i>Machinery</i>	\$49	\$99	\$35	\$35	\$36
<i>Turbines-Generators</i>	\$21	\$42	\$50	\$51	\$52
<i>Heavy Machinery & Mobile Equipment</i>	\$17	\$33	\$28	\$28	\$29
<i>Dam, Buildings and Land</i>	\$44	\$88	\$73	\$74	\$76
<i>Oil, Fuel and BC Hydro Power</i>	\$18	\$36	\$75	\$77	\$78
Health, Safety and Environment	\$24	\$49	\$23	\$23	\$23
Insurance	\$52	\$105	\$105	\$107	\$109
Permits and Land Rights	\$1	\$3	\$6	\$6	\$6
Third Party Services	\$21	\$42	\$15	\$15	\$15
Regulatory Costs	\$1	\$2	\$87	\$88	\$88
Total O&M Expenses	\$945	\$1,891	\$2,271	\$2,224	\$2,202

**13.0 Reference: OPERATING AND MAINTENANCE AND OTHER EXPENSES
Exhibit B-1, p. 37 and Appendix C, p. 7
Income Taxes**

On page 37 of its Application, Boralex LP submits:

Boralex has adopted the “flow-through” methodology for calculating income tax expense. Sufficient Capital Cost Allowance (CCA) is available to reduce utility income taxes payable over the 2019 to 2022 period to zero.

Page 7 of the 2018 Boralex LP Financial Statements states that “The Partnership is not liable for any income taxes as this is the responsibility of the Partners.”

13.1 Please reconcile the statement on page 37 of the Application that utility income taxes are reduced to zero over the test period with the statement on page 7 of the 2018 Financial Statements that income taxes are the responsibility of the Partners.

RESPONSE:

Boralex LP does not believe that the two statements are inconsistent. The statement on page 37 of the Application advises that Boralex LP has adopted the “flow-through” method for calculating income tax expense, and that Boralex LP has sufficient capital cost allowance (CCA) to reduce actual cash income tax expense to zero over the 2019 to 2022 period. The statement on page 7 of the 2018 Boralex LP Financial Statements reflects the state of Canadian income tax law, which provides that partnerships are required to calculate their net income for tax purposes (and in doing so are entitled to claim all allowable deductions, including CCA). The partnership’s net income is then allocated out to the partners who are then responsible for any income taxes (which in this case is zero because of the availability of sufficient CCA) that may be payable on their share of the partnership’s net income.

**14.0 Reference: OPERATING AND MAINTENANCE AND OTHER EXPENSES
Exhibit B-1, p. 38
Property and School Taxes**

On page 38 of its Application, Boralex LP submits:

Boralex LP’s property and school taxes increased significantly starting in 2016. The property and school taxes for 2018 were \$337,000 and water rentals were \$64,000, for a total of \$401,000. Boralex LP successfully appealed the 2016, 2017 and 2018 property tax assessments, resulting in a credit in 2018 of \$252,000 (the 2018 amount shown in Table 24 reflects this credit).

14.1 Please provide the actual 2019 and actual Q3–Q4 2019 property and school tax expense.

RESPONSE:

Actual property and school taxes were \$352,000 in 2019. Half of this amount (\$176,000) has been assigned to Q3-Q4 2019.

14.1.1 Please discuss if Boralex intends on pursuing any appeals related to 2019 property and school taxes.

RESPONSE:

Boralex LP is not pursuing an appeal related to 2019 property and school taxes. The 2019 assessed value of the Ocean Falls Facilities is similar to the lower assessed value of the facilities that Boralex LP was able to obtain through its appeal of the 2016, 2017 and 2018 assessments. Increases beyond 2018 are now being driven by increases in the tax rate charged by the Ocean Falls Improvement District to Boralex LP (due to increases in the Improvement District's operating budget) and increases in the rate are not appealable through the standard property tax assessment process.

14.2 Please clarify if the 2018 property tax credit of \$252,000 relates to the 2016, 2017 and 2018 property and school tax expense. If so, please provide the amount applicable to each year.

RESPONSE:

The tax credit of \$252,000 relates to 2016, 2017 and 2018 property and school tax expenses. For 2016 the credit was \$80,000, for 2017 the credit was \$82,000, and for 2017 the credit was \$85,000, totaling \$247,000 for the three years. The difference (between \$252,000 and \$247,000) consists of accrued interest paid to Boralex LP.

**15.0 Reference: OPERATING AND MAINTENANCE AND OTHER EXPENSES
Exhibit B-1, pp. 38–40
Employee Costs**

On page 39 of its Application, Boralex LP submits:

Due to the impending retirement of three operators, Boralex LP needs to recruit and hire new replacement operators well ahead of the planned retirement dates (resulting in overlapping tenures) to ensure ongoing safe and reliable operation of the Ocean Falls Facilities. In addition, while the retiring employees do not have pension entitlements, each of the retiring employees is entitled to a one-time retiring allowance, the total of which exceeds \$200,000.

15.1 Please provide the following information related to Employee Costs: the retirement year for each of the three operators, the length of the overlapping tenure for each position and the year in which the one-time retiring allowance will be paid for each position.

RESPONSE:

To clarify, of the five full-time employees at Ocean Falls four of these employees are operators and one is responsible for maintenance. Since the filing of the Application the retirement of two of the full-time employees has been delayed from 2020 to 2021 (maintenance employee) and from 2022 to 2023 (operator). The retirement year for each of the three full time employees is now January 2021 (maintenance employee), March 2022 (operator) and March 2023 (operator). A new employee was hired in January 2019 (operator), and additional hires are planned for January 2021 (maintenance employee) and March 2021 (operator). The overlap period for the operators is approximately 2 years. The one-time retiring allowances are paid at retirement (i.e., in 2021, 2022 and 2023, respectively).

The change in Employee Costs as a result this change in the timing of retirement and hiring will be reflected in the updated version of Table 3 to be filed by Boralex LP, as discussed in Boralex LP's

response to BCUC IR 2.1. Boralex LP will also update Table 27 of the Application to reflect this change.

15.2 Please discuss if the employee costs are expected to decrease in the future to levels more comparable to historic actuals once the current operators have retired and there are no longer overlapping tenures. If so, please explain when any cost decreases are expected and if not, please explain why not.

RESPONSE:

Employee costs will be lower in 2023 than comparable costs in 2021 because the number of full-time employees is forecast to be lower after March 2023 compared to 2021 due to the employee retirements (two of which will occur in 2022). The cost per employee will however be higher than similar employment costs from, say, 2018, because the costs of employment are higher today than in the past, and the set of skills required to operate a remote, islanded facility like Ocean Falls are more scarce today than was the case a decade or more ago (when the retiring employees were recruited).

15.3 Please provide a breakdown of the 2016, 2017, 2018, 2019 and Q3–Q4 2019 historic actuals and the Q3–Q4 2019, 2020, 2021, 2022 forecast Salaries and Benefits expense for each retiring operator, each new operator and any retirement allowances paid.

RESPONSE:

The requested information for each employee contains confidential personal information. Accordingly, Boralex LP has filed this information confidentially with the Commission by separate letter.

15.4 Please describe the nature of the activities that are the source of the Expenses and Training line items for the 2019 to 2022 forecast Employee Costs.

RESPONSE:

The employee expenses that are included in the referenced employee Expenses line item include accommodation costs, airfare and other travel expenses, food and other out-of-pocket expenses.

The employee training costs that are included in the referenced employee Training line item include the cost of training and certification (where applicable) of employees in the following areas:

- Air Brake
- Class 3 drivers license
- Manlift
- Forklift (certification required every 3 years)
- Level 3 First Aid (certification required every 3 years)
- Propane safety and handling (certification required every 3 years)
- Chainsaw
- Electrician (certification required every 3 years)
- Transportation of dangerous goods
- WHIMIS
- Site Safety training including fall arrest, lockout and tag out procedures, confined spaces, arc flash 1 & 2, Scott Pack training, pole climbing, marine first aid, egress training
- Site operations including high voltage, radio operations, small boat license, PLC operations, power system safety protection (PSSP) and safety practice regulations (SPR) training

- Heavy equipment operations including crane operations, Cat 235 / 425 / 920, Hitachi EX135

**16.0 Reference: OPERATING AND MAINTENANCE AND OTHER EXPENSES
Exhibit B-1, pp. 38–40; Exhibit B-4, p. A-1–A-3
Corporate Services Costs Methodology**

On pages A-2 and A-3 of Exhibit B-4 Boralex LP provides a description of the methodology used to allocate costs from Boralex Inc. to Boralex LP.

- 16.1 Please explain if there is a code of conduct and transfer pricing policy in place for the corporate services provided by Boralex Inc. to Boralex LP and the associated cost allocation methodology. If yes, please provide a copy of the policy. If not, please explain why not.

RESPONSE:

Boralex does not have a code of conduct or transfer pricing policy in place for corporate services provided by Boralex Inc. to Boralex LP. Boralex LP is wholly-owned by Boralex Inc. and there are no outside partners with whom to share the costs of providing corporate services. As such, Boralex Inc. has had no commercial, financial or other business reason to establish a code of conduct or transfer pricing policy.

- 16.2 Please discuss if there are any specific underlying principles that have been applied in determining the appropriate cost allocation methodology for allocating costs from Boralex Inc. to Boralex LP.

RESPONSE:

The principles underlying the selected cost allocation methodology are: (i) the time spent by corporate services employees on the provision of services to Boralex LP and the Ocean Falls Facilities, and (ii) the hourly rate applicable to the level of service provided. This methodology ensures that Boralex LP only bears the appropriate cost of corporate services commensurate with the level of service provided.

**17.0 Reference: OPERATING AND MAINTENANCE AND OTHER EXPENSES
Exhibit B-1, pp. 38–40; Exhibit B-4, p. A-1–A-3; Exhibit B-5, p. 2
Historic Corporate Services Costs**

On page A-2 of Exhibit B-4, Boralex LP submits that the “...historic amounts for Corporate Services costs shown in Table 26 reflects only a small general fee for corporate services (approximately \$35,000 per annum) and an allocation of certain engineering costs.”

On page 2 of Exhibit B-5, Boralex LP provides an estimate of the annual historic Corporate Services costs for 2016 to 2018 that would have been applicable to Boralex LP if the same methodology used to forecast the Corporate Services costs for the period of July 1, 2019 to December 31, 2022 had been applied. Boralex LP identifies the assumptions used in preparing the estimate, including the following:

- The number of hours required by each department to provide support or services to Boralex LP in 2016, 2017 and 2018 are assumed to be consistent with the estimate provided by each department for purposes of preparing the forecast, except for an approximately 10% reduction in the Accounting and Human Resources department hours and a 25% reduction in the Legal and Development department hours to account for the lower level of capital work in the 2016 to 2018 period compared to the 2019 to 2022 period.

- Hourly departmental labour costs in the forecast increase by 3% per year commencing in 2020. Therefore, hourly labour costs are assumed to be deflated by the same amount (i.e. 3%) from the 2019 base rates for purposes of preparing the estimates for each of 2018, 2017 and 2016.
- 17.1 Please provide the actual corporate services costs allocated to Boralex LP in each of 2016 to 2018 with a breakdown between the \$35,000 general fee and the engineering costs.

RESPONSE:

The following table allocates the 2016, 2017 and 2018 corporate services costs into the same categories used on page 2 of Exhibit B-5.

Corporate Services by Department	2016	2017	2018
Accounting			
Finance & Tax			
Communications	\$0	\$0	\$96
Human Resources			
Legal	\$5,395	\$0	\$0
Information Technology	\$2,697	\$4,009	\$3,518
Development	\$0	\$0	\$5,467
Regulatory Affairs			
Engineering and Technical Support	\$85,337	\$57,121	\$62,211
General Fee for Corporate Services	\$36,012	\$35,856	\$38,240
TOTAL	\$129,441	\$96,986	\$109,531

- 17.2 Please reconcile the differences between the 2016 to 2018 corporate services provided on page 2 of Exhibit B-5 and those provided in Table 26 of Exhibit B-1.

RESPONSE:

The figures listed in Table 26 of the Application (Exhibit B-1) for 2016 to 2018 correspond to the amounts recorded in Boralex LPs financial statements. The figures listed on page 2 of Exhibit B-5 were estimates of the annual historic Corporate Services costs for 2016 to 2018 that would have been applicable to Boralex if the same methodology used to forecast the Corporate Services costs for the period of July 1, 2019 to December 31, 2022 had been applied. The figures from the two sources cannot be reconciled because it is comparing the actual recorded amounts against estimates based upon the methodology Boralex LP has used to forecast Corporate Services costs.

- 17.3 Please discuss if any time studies have been conducted to assess the actual time spent by Boralex Inc. employees on activities related to Boralex LP in 2016, 2017 and/or 2018. If yes, please provide the results and an estimate of the 2016 to 2018 corporate services costs based on actual time spent. If not, please explain why not.

RESPONSE:

No time studies were conducted to assess the actual time spent by Boralex Inc. employees on activities related to Boralex LP in 2016, 2017 and/or 2018. The estimate of the annual historic Corporate Services costs for 2016 to 2018 was prepared based on the assumptions set out on page 2

of Exhibit B-5.

17.4 Please clarify if Boralex Inc. prepared a Corporate Services cost allocation for 2016, 2017 and/or 2018 at that time, regardless of whether the full amount was charged to Boralex LP or not. If yes, please provide the available results for 2016, 2017 and 2018. If not, please explain why not.

RESPONSE:

Boralex Inc. did not prepare Corporate Services cost allocation for 2016, 2017 and/or 2018. Boralex LP is wholly owned by Boralex Inc. so on a consolidated basis charging the expenses to Boralex LP, when Boralex LP could not recover these costs under the 1986 EPA with BC Hydro, would have had no net financial impact to Boralex Inc.

17.5 Please expand the table provided on page 2 of Exhibit B-5 to include a column for 2019 (total) and rows with the following Corporate Services categories: engineering and environment, operations senior management and operations site management.

RESPONSE:

Please see the following table:

Corporate Services by Department				
Department	2016	2017	2018	2019
Accounting	\$79,893	\$82,290	\$84,759	\$94,595
Finance & Tax	\$2,837	\$2,922	\$3,010	\$3,100
Communications	\$1,939	\$1,997	\$2,057	\$2,119
Human Resources	\$7,730	\$7,961	\$8,200	\$9,422
Legal	\$2,038	\$2,100	\$2,163	\$2,970
Information Technology	\$3,352	\$3,453	\$3,556	\$3,663
Development	\$3,624	\$3,733	\$3,845	\$5,280
Regulatory Affairs	\$0	\$0	\$0	\$0
Engineering and Environment	\$45,305	\$46,664	\$48,064	\$49,505
Operations Senior Management	\$16,181	\$16,666	\$17,166	\$17,681
Operations Site Management	\$88,352	\$91,003	\$93,733	\$96,545
TOTAL	\$251,251	\$258,789	\$266,553	\$284,880

**18.0 Reference: OPERATING AND MAINTENANCE AND OTHER EXPENSES
Exhibit B-1, pp. 38–40; Exhibit B-4, p. A-1–A-3
Corporate Services Costs**

On page 40 of the Application, Boralex LP submits that:

...in the past most of the [corporate services costs were] not charged to Boralex LP. The main reason for this was to adhere to the terms of Boralex LP's credit agreement, which limited the amount of costs that could be absorbed by Boralex LP, recognizing that Boralex LP's revenue from sales to BC Hydro was determined based on a negotiated

price for electricity under the 1986 EPA, and not on a cost of service basis.

- 18.1 Please clarify if there are any current credit agreement terms that may prevent Boralex LP from recovering all allocated corporate services costs from ratepayers. If so, please identify the specific terms.

RESPONSE:

There are no current credit agreement terms that may prevent Boralex LP from recovering all allocated corporate services costs from ratepayers.

Boralex LP provides a more detailed breakdown of the Corporate Services sub-component of Corporate Services costs on page A-1 of Exhibit B-4, including a line item for Regulatory Affairs. Boralex LP submits that:

With the shift to cost of service regulation, the [Corporate Services] costs also include the cost of providing utility regulatory support, including tracking and reporting of information, allocation of the cost of corporate services, preparation of reports required by the Commission and liaising with Commission staff.

The Regulatory Affairs costs included in Corporate Services costs are \$0 in Q3 and Q4 2019, \$137,863 in 2020, \$141,999 in 2021 and \$146,259.

Table 26 and Table 27 of the Application present the historic and forecast O&M costs, respectively, and include a line item for Regulatory Costs. Boralex LP submits that Regulatory Costs “include third party consulting and legal costs associated with this Application. These costs, estimated at \$300,000, are being amortized evenly over the forecast period.”

- 18.2 Please elaborate on the differences in the activities that are the source of the Corporate Services - Regulatory Affairs costs and the activities that are the source of the O&M Regulatory Costs.

RESPONSE:

The amount shown for Corporate Services – Regulatory Affairs is the cost of an additional person responsible for providing utility regulatory support to Boralex LP, including tracking and reporting of information, maintaining utility accounting records, ensuring that corporate services provided by Boralex Inc. to Ocean Falls are accurately estimated, liaising with other departments within Boralex Inc. to ensure all reporting to, and communication with, the Commission are handled in an effective and efficient manner, preparing reports required by the Commission, liaising with Commission staff, and keeping abreast of regulatory developments in British Columbia.

The amount shown for O&M Regulatory Costs in Table 27 of Exhibit B-1 is the cost of third party consulting and legal services associated with the Application and Boralex LP’s participation in this hearing, including preparation of the Application (Boralex LP’s first rate application) and the financial model, submissions to the Commission regarding the Application and process, and providing supplemental information required by the Commission and Interveners.

- 18.3 Please discuss why the Corporate Services - Regulatory Affairs costs are forecast to increase in each year during the test period. Specifically, does Boralex LP expect that it will have any ongoing Applications with the BCUC during this time?

RESPONSE:

Please see Boralex LP's response to BCUC IR 18.2. These costs increase in 2021 and 2022 due to salary inflation. Boralex LP does not anticipate that it will have any ongoing applications with the BCUC during this time.

On page 41 of the Application, Boralex LP submits that “[d]ue to the significant capital program that needs to be implemented, the forecast costs of onsite management provided by Boralex Inc. include the cost of an additional supervisor.”

The Q3/Q4 2019 Corporate Services costs for Operations Site Management are \$48,000 compared to \$182,000, \$188,000 and \$193,000 for 2020, 2021 and 2022 respectively.

18.4 Please clarify if the increase in Operations Site Management costs to \$182,000 in 2020 relate to the additional supervisor. If not, please explain the reason for the forecast cost increase as compared to the annualized Q3/Q4 2019 costs.

RESPONSE:

The \$48,000 costs associated with the Operations Site Management for 2019 are for only half of 2019 (the annualized 2019 costs are approximately \$96,000) and represent an allocation of 56% of the operations site manager's time.

18.5 Please explain if the additional supervisor is already employed at the Ocean Falls site location. If not, please provide details as to the start date and explain why the 2020 forecast is similar to the 2021 and 2022 forecast.

RESPONSE:

The additional supervisor is not yet employed at the Ocean Falls site location. The additional supervisor is expected to be hired in Q1 2020. The additional supervisor will replace the current supervisor, when the latter retires in 2024. The overlapping tenure of the two supervisors is needed to ensure proper training of this critical function and the supervision and management of the Ocean Falls Facilities and the capital program. This explains why the 2020 forecast is similar to the 2021 and 2022 forecasts.

**19.0 Reference: OPERATING AND MAINTENANCE AND OTHER EXPENSES
Exhibit B-1, pp. 38–40
Maintenance and Repairs – Control System**

Tables 26 and 27 include line items for Maintenance and Repairs – Control Systems costs.

19.1 Please provide the reasons for the decrease in the forecast Control Systems costs in 2020 to 2022 as compared to previous years.

RESPONSE:

Historically, the Control System costs category was used a general accounting category where otherwise unallocated time and costs (e.g. miscellaneous items) were charged. As a result, the historic values represent both Control System costs and other miscellaneous operating costs. On a go forward basis, this accounting category will only include Control System costs.

**20.0 Reference: OPERATING AND MAINTENANCE AND OTHER EXPENSES
Exhibit B-1, pp. 7–8, 38–40
Electricity Purchased from BC Hydro**

On page 7 of the Application, Boralex LP states that BC Hydro can supply electricity to Boralex LP from its diesel generating station when the Ocean Falls generating facilities are not operating. BC Hydro provides this service on an interruptible basis under BC Hydro Tariff Supplement No. 7.

Table 26 and Table 27 of the Application present the historic and forecast O&M costs, respectively, and include a line item for Oil, Fuel and BC Hydro Power.

20.1 Please confirm or explain otherwise if the cost of purchasing electricity from BC Hydro under Tariff Supplement No. 7 is included in the line item “Oil, Fuel and BC Hydro Power” in Tables 26 and 27 of the Application.

RESPONSE:

The cost incurred by Boralex LP to purchase electricity from BC Hydro under Tariff Supplement No. 7 in 2018 and 2019 was capitalized as part of the projects undertaken in those years that required shut-downs of the Ocean Falls Facilities to complete. The forecast cost of purchasing electricity from BC Hydro under Tariff Supplement No. 7 in 2020, 2021 and 2022 in connection with the shutdowns required for the penstock rehabilitation project is included in the line item “Oil, Fuel and BC Hydro Power” in Table 27 of the Application. These forecast costs, like the cost of purchasing power in 2018 and 2019, should also be capitalized as part of the penstock rehabilitation project. This change in the treatment of power costs will be reflected in the updated version of Table 3 to be filed by Boralex LP (as discussed in Boralex LP’s response to BCUC IR 2.1) and in the update to Table 27 (as discussed in Boralex LP’s response to BCUC IR 15.1).

20.2 Please provide the cost of purchasing electricity from BC Hydro under Tariff Supplement No. 7 for 2016 to 2019 actual, Q3–Q4 2019 actual, and Q3–Q4 2019, 2020, 2021 and 2022 forecast.

RESPONSE:

The historic cost of purchasing electricity from BC Hydro under Tariff Supplement No. 7 was \$0 for 2016, \$0 for 2017, \$28,533 for 2018, \$ 25,209 for 2019 Q1/Q2, and \$0 for 2019 Q3/Q4.

The forecast cost of purchasing electricity from BC Hydro under Tariff Supplement No. 7 is \$50,028 for 2020, \$51,028 for 2021, and \$52,049 for 2022.

20.2.1 Are the changes in rates charged by Boralex LP to BC Hydro, as requested in the Application, factored into the forecast cost of purchasing electricity from BC Hydro under Tariff Supplement No. 7 during the test period? Please discuss.

RESPONSE:

Pursuant to Tariff Supplement No. 7, the rate charged by BC Hydro to Boralex LP is the greater of (i) the unit price paid by BC Hydro to Boralex LP for the most recent purchase of electricity from Boralex LP and (ii) the average unit cost incurred by BC Hydro to generate electricity at all of BC Hydro’s diesel generating stations in Rate Zone IB and Rate Zone II, plus a 10 percent profit margin, where the average unit cost is calculated by summing all costs to BC Hydro in Rate Zone IB and Rate Zone II of fuel, oil, operation and maintenance for such diesel generating stations divided by the total kilowatt hours generated by all such diesel generating stations during BC Hydro’s immediately prior fiscal year.

The Tariff Supplement No. 7 rate for this service is \$474.90 per MWh for the period July 1, 2019 to June 30, 2020, and Boralex LP understands that the rate may be significantly higher for the period after June 30, 2020. Accordingly, the 2020 Tariff Supplement No. 7 rate is significantly higher than the rates applied for by Boralex LP in the Application, and therefore item (i) above would not apply. Boralex LP is not in a position to determine how the rates charged by Boralex LP to BC Hydro are factored into the formula in item (ii) above, but would expect that increases in the rate charged by Boralex LP would have a relatively minor impact on the Tariff Supplement No. 7 rate calculated by BC Hydro. Accordingly, the changes in rates charged by Boralex LP to BC Hydro, as requested in the Application, have not been factored into the forecast cost of purchasing electricity from BC Hydro under Tariff Supplement No. 7 during the test period.

On page 23 of the Application, Boralex LP submits:

Work requiring plant shutdowns will be conducted during a six week window in the spring each year (mid-April to the end of May) to align with the lightest seasonal loads in the Bella Bella NIA and Ocean Falls.⁷ Project activities will also extend into 2023 and 2024 to pace the project work and minimize the annual shutdown period...

[Footnote 7] Boralex LP will require back-up power from BC Hydro under Tariff Supplement No. 7 to serve the Ocean Falls community during the six week shutdown window. If BC Hydro is unable to supply this back-up power for the full six week period (Tariff Supplement No. 7 currently provides that Boralex LP may request supply from BC Hydro for a specified period not to exceed 30 days), then Boralex LP will need to cover the short-fall period with its own back-up diesel generation likely at a higher cost than acquiring the power from BC Hydro. Boralex LP has assumed that it will be able to make arrangements to acquire power from BC Hydro over the entire shut-down period.

On page 7 of the Application in footnote 3, Boralex LP states:

According to BC Hydro, the diesel generating station is not in suitable condition to act as the primary electrical generation station for an extended or long-term basis and substantial upgrades would be required before the station could safely and reliably generate sufficient electricity to serve the Bella Bella NIA (BC Hydro's Application to the Commission dated August 29, 2017, page 16).

20.3 Please discuss the status of any arrangements being made to acquire power from BC Hydro during the shut-down period.

RESPONSE:

BC Hydro has confirmed with Boralex LP that it will be able to reliably supply Boralex LP's requirements for back-feed power for the duration of the shut-down periods.

20.3.1 Has BC Hydro provided any indication that in its current condition, the Shearwater diesel plant can provide reliable service to the Bella Bella NIA and Ocean Falls retail and industrial customers for a six-week period every year until 2024? Please discuss.

RESPONSE:

Please see Boralex LP's response to BCUC IR 20.3.

- 20.4 Please provide the forecast cost associated with both acquiring power from BC Hydro and with supplying power using Boralex LP's own back-up diesel generation during the shutdown for each year during the test period.

RESPONSE:

With regard to the forecast cost of acquiring power from BC Hydro, please see Boralex LP's response to BCUC IR 20.2.

With regard to back-up generation, Boralex LP has made arrangements to install a 311 kW emergency diesel backup generator at Ocean Falls that is required in the event there is an outage from BC Hydro or on the 45 km 25 kV transmission line between Ocean Falls and Shearwater when BC Hydro is supplying power to Boralex LP. If power supply from BC Hydro is interrupted, Boralex LP will be able to make use of this back-up generator on an emergency basis to assist in meeting its own needs and those of its Ocean Falls retail customers, albeit on a reduced basis, for the duration of the shut-down period (Mowi Canada West has its own backup generation and Ocean Falls Blockchain will not receive power during the shut-down periods). However, apart from emergency use, the back-up generator will not be able to meet the needs in Ocean Falls for the duration of the shut-down periods and therefore Boralex LP is unable to provide the requested cost comparison information.

- 20.5 Please discuss if the proposed shutdown conflicts with any of the terms and conditions of service that are applicable to BC Hydro. If so, please identify the specific term and how Boralex intends on mitigating any conflict.

RESPONSE:

The shutdowns do not conflict with any of the terms and conditions of service that are applicable to BC Hydro.

G. BC HYDRO LOAD FORECAST AND NON-BC HYDRO REVENUE FORECAST

- 21.0 Reference: BC HYDRO LOAD FORECAST AND NON-BC HYDRO REVENUE FORECAST
Exhibit B-1, Section 10.1, p. 42
BC Hydro Load Forecast**

On page 42 of the Application, Boralex LP states:

The forecast deliveries to BC Hydro have been determined as follows:

- 2019 (Q3-Q4): The average of 2014 to 2018 BC Hydro energy sales (13,072 MWh) is used, less actual BC Hydro energy sales in 2019 (Q1-Q2).
- 2020: The 2014 to 2018 average of 13,072 MWh (see Table 1) is rounded to 13,100 MWh. This amount is then reduced to account for the six week plant outage from mid-April to the end of May to accommodate the penstock rehabilitation work. The reduced amount is based on an average of energy sales to BC Hydro's from mid-April to the end of May over the 2014 to 2018 period. The resulting 2020 forecast is 11,630 MWh.
- 2021 to 2022: The forecast 2020 deliveries of 11,630 MWh are increased by 1.6% per year.

The 1.6% escalator is based on Boralex LP's understanding of what BC Hydro

believes is a reasonable growth rate for the load in the Bella Bella NIA. Boralex LP has not undertaken an independent load forecast for the Bella Bella NIA.

21.1 Please explain if Boralex LP has historically forecast its BC Hydro deliveries based on the average of the previous five years actual deliveries.

RESPONSE:

No. Forecasting BC Hydro deliveries in the past was not required because the commodity rates charged by Boralex LP to BC Hydro were fixed rates under the terms of the 1986 EPA.

21.1.1 If no, please explain what other methodologies Boralex LP uses to forecast deliveries.

RESPONSE:

Please see Boralex LP’s response to BCUC IR 21.1. For operational planning purposes, Boralex LP assumed that current year deliveries to BC Hydro would be similar to actual deliveries to BC Hydro in the prior year.

21.1.2 Please provide a comparison of the actual deliveries for each year from 2014 to 2018 vs the average of the previous 5 years (i.e., 2009 – 2013 for 2014 and so on).

RESPONSE:

Please see the following:

	Deliveries to BC Hydro	5YR AVG	Actual minus 5YR AVG
2009	12,636,000		
2010	12,828,000		
2011	12,120,000		
2012	13,747,673		
2013	13,248,660		
2014	12,880,536	12,916,067	-35,531
2015	12,661,200	12,964,974	-303,774
2016	12,919,484	12,931,614	-12,130
2017	14,192,278	13,091,511	1,100,767
2018	12,707,128	13,180,432	-473,304
Average Difference			55,206

21.2 Please explain whether BC Hydro has confirmed the 1.6% growth rate for the load for the Bella Bella NIA.

RESPONSE:

Boralex LP regularly interacts with BC Hydro at an operational level in the field. Boralex LP’s understands from these discussions, and discussions with BC Hydro during the course of the EPA renewal negotiations, that an average forecast growth rate for the Bella Bella NIA of 1.6% per year over the forecast period is reasonable.

21.3 Please explain what factors other than BC Hydro's growth rate affect the load for the Bella Bella NIA and how these can be modelled in the load forecasts for the period 2019–2022.

RESPONSE:

Borex LP does not directly serve customers in Bella Bella NIA. Accordingly, Borex LP is reliant on information provided by BC Hydro to estimate Bella Bella NIA loads.

21.4 Please provide a detailed scenario analysis of Borex LP's expectations for the mid, high and low load forecasts for the 2019–2022 period including rationale for the scenario analysis.

RESPONSE:

Borex LP has not performed scenario analysis on forecast BC Hydro loads. The load in the Bella Bella NIA has been stable since 2014 (please see Table 1 of the Application, which has been updated to include 2019 actuals in Borex LP's response to BCOAPO IR 5.1) and Borex LP has no information on which to base mid, high and low load forecasts for the 2019-2020 period.

Borex LP notes that its revenues from BC Hydro are exposed to asymmetric risk/benefit impacts should the Bella Bella NIA load grow at a different rate than forecast by Borex LP. Lower than forecast growth reduces Borex LP revenues by the product of the negative energy sales delta and the higher Tier 1 rate, whereas higher than forecast growth will increase Borex LP revenues by the product of the positive energy sales delta and the much lower Tier 2 rate.

21.5 Please provide details of the time, resources required and estimated cost to conduct an independent study for the load forecast for the Bella Bella NIA.

RESPONSE:

Borex LP does not directly serve customers in Bella Bella NIA and does not have details of the time and resources required or the estimated cost to conduct an independent study for the load forecast for the Bella Bella NIA. Borex LP believes that BC Hydro is in a better position with better resources to prepare such a forecast.

21.6 Please explain how Borex LP proposes to account for any variances in the BC Hydro forecast energy sales for the 2019–2022 period.

RESPONSE:

Any variances between the forecast and actual energy sales to BC Hydro for the 2019-2022 period would, like any variances between Borex LP's forecast and actual costs over this period, be for Borex LP's account. As noted in Borex LP's response to BCUC IR 21.4, under the two tier energy charge rate structure, if BC Hydro's actual load in any year is less than 11.63 GWh, Borex LP will lose significantly more revenue (all at the Tier 1 rate) than it would gain if the actual load is greater than the forecast load of 11.63 GWh in 2020, 11,816 GWh in 2021 and 12,005 GWh in 2022 (all at the much lower Tier 2 rate).

21.7 Please discuss whether Borex LP considered setting up deferral accounts to manage BC Hydro load and rate forecast variances, and the pros and cons associated with such an approach.

RESPONSE:

With regard to the use of deferral account mechanisms generally, Borex LP understands that the

Commission's rate setting principles encourage the use of the least deferral mechanisms possible (see, for example, Section 2.4.3 of the Commission's Thermal Energy Systems Regulatory Framework Guidelines). In the Application, Boralex LP has requested approval of only one deferral account, namely, the First Nations Deferral Account. This lack of reliance on deferral accounts by Boralex LP provides rate certainty to BC Hydro and provides Boralex LP with a very strong incentive to manage its capital and operating costs and to continue to provide highly reliable service to BC Hydro.

With regard to deferral accounts to manage BC Hydro's load and rate forecast differences, Boralex LP has not proposed such deferral accounts because it would effectively transfer all system operating risk to BC Hydro. Boralex LP believes that it is reasonable that Boralex LP be responsible for managing this risk. Under the proposed commodity charge rate structure with no deferral accounts for load and rate forecast variances, Boralex LP loses revenue anytime it fails or is unable to provide service to BC Hydro. This provides a very strong incentive to Boralex LP to continue to operate its facilities on a highly reliable basis. Highly reliable service from Boralex LP is, in turn, of significant value and benefit to BC Hydro and the communities of Shearwater and Bella Bella because it allows BC Hydro to avoid operating its costly Shearwater diesel generating station and the associated environmental impacts and risks of operating that facility (as discussed in paragraph 27 of the Application).

**22.0 Reference: BC HYDRO LOAD FORECAST AND NON-BC HYDRO REVENUE FORECAST
Exhibit B-1, Section 10.2, pp. 42–43
Non-BC Hydro Revenue Forecast**

On page 42 of the Application, Boralex states:

Table 29 shows Boralex LP's forecast revenues from its retail and industrial customers in Ocean Falls for the years 2019 (Q3 and Q4) to 2022. As this forecast revenue has been credited to Boralex LP's gross revenue requirement, Boralex LP is assuming the risk that this forecast revenue will materialize over the forecast period covered by this Application.

22.1 Please explain in detail what the risks are with respect to under and over forecasting for each customer class of the non-BC Hydro revenue for the 2019–2022 period.

RESPONSE:

With regard to Boralex LP's retail customers, the load from this customer group has been generally stable since 2014 (please see Table 1 of the Application, which has been updated to include 2019 actuals in Boralex LP's response to BCOAPO IR 5.1) and any variations in load have little impact on Boralex LP operations or revenue.

With regard to Mowi Canada West, this customer has historically had a stable load and Boralex LP has assumed that this will continue over the forecast period. Given the nature of Mowi Canada West's operations at Ocean Falls, Boralex LP sees little likelihood that this load will be higher than forecast. Given, the political/environmental issues facing the fish farming industry in the Province, Boralex LP believes that there is a greater risk that this load will be lower than higher over the forecast period.

With regard to Ocean Falls Blockchain, Boralex LP understands that the ongoing viability of the facility depends on cryptocurrency prices in the international market and the efficiency and effectiveness of the servers employed by the facility. Boralex LP sees little likelihood that this load will be higher than forecast.

- 22.2 Please explain whether Boralex LP considered setting up deferral accounts to manage Non-BC Hydro load and/or rate forecast variances and the pros and cons associated with such an approach.

RESPONSE:

Boralex LP did consider but has not proposed a deferral account to manage the non-BC Hydro load and revenue because this would effectively transfer all the revenue risk associated with these customers to BC Hydro. Boralex LP believes that it is reasonable that Boralex LP should be responsible for managing this risk. These are direct customers of Boralex LP and Boralex LP believes that it is reasonable that it have a direct incentive to do what it can to retain these customers and, although there are very limited opportunities to do so at least over the forecast period, grow its non-BC Hydro load.

- 22.3 Please provide a detailed scenario analysis of Boralex LP's expectations for the mid, high and low Non-BC Hydro deliveries and revenue forecasts for the 2019–2022 period and for each customer class including rationale for the scenario analysis.

RESPONSE:

Boralex LP has not performed a detailed scenario analysis on forecast non-BC Hydro deliveries for the following reasons.

With regard to Boralex LP's retail customers, this load represent approximately 5% of the Bella Bella NIA load and does not change from one year to the next by amounts that materially impacts either Boralex LP operations or revenue. Boralex LP's retail customers have consumed an average of 766 MWh annually between 2010 and 2019 (please see Boralex LP's response to BCUC IR 22.4.2). Maximum annual consumption was 803 MWh in 2017 and the minimum was 689 MWh in 2013. Boralex LP's retail customer base is not expected to grow measurably over the forecast period.

Boralex LP's industrial customers already operate at levels close to their power capacity limits. The industrial customers are not subject to large swings in year over year consumption unless they encounter operational problems, in which case they would consume less electricity than forecast. The industrial customers have not informed Boralex LP that they intend to expand their operations or to increase their electric loads over the forecast period. Therefore, the high consumption scenario is not materially different than the expected mid consumption scenario, whereas a lower than forecast consumption scenario is a possibility, which represents a revenue risk to Boralex LP.

On page 43 of the Application, Boralex LP states:

The forecast revenue from retail customers is based on historical loads and an assumed 2% annual increase in BC Hydro's Zone II rates (i.e., the rates charged by Boralex LP to its retail customers).

BC Hydro's Fiscal (F) 2020 to 2021 Revenue Requirements Application (RRA) includes a request for a 6.85 percent general rate increase effective April 1, 2019 and a 0.99 percent general rate decrease effective April 1, 2020. The BCUC approved the F2020 rate increase of 6.85 percent on an interim basis by Order G-45-19.

- 22.4 Please confirm if Boralex LP considered any growth rate in the historical loads for its retail customers to forecast load for its retail customers.

RESPONSE:

Please see Boralex LP's response to BCUC IR 22.3. Boralex LP's retail customer base is not expected to grow measurably over the forecast period.

22.4.1 If yes, please provide the details of the growth rate considered along with its rationale.

RESPONSE:

N/A

22.4.2 If no, please explain why not, and provide the historic annual growth rate from 2008 to 2019.

RESPONSE:

Please see the following table for the retail customer load from 2008 to 2019.

Year	Retail Customer Load (MWh)	Yr / Yr Change (%)
2010	798	
2011	825	3.5%
2012	829	0.4%
2013	689	-16.8%
2014	800	16.1%
2015	733	-8.4%
2016	720	-1.7%
2017	803	11.6%
2018	699	-13.0%

While Boralex LP has not assumed any growth in the retail load, it has assumed that the total revenue from its retail customers will increase by 2% each year.

22.5 Please explain the rationale for the assumed 2% annual increase in BC Hydro's Zone II rates.

RESPONSE:

Boralex LP had regard for the interim Zone II rate increases approved by Order G-45-19, but the rates are interim and only cover F2020 (April 1, 2019 to May 31, 2020) and F2021 (April, 2020 to May 31, 2021). Boralex LP has no ability to predict BC Hydro's actual Zone II rates over the forecast period (July, 1 2019 to December 31, 2022) and therefore chose a 2% annual increase which Boralex LP believes is generally indicative of forecast inflation over this period.

22.6 Please confirm if the rate changes proposed in BC Hydro's F2020–2021 RRA have been included in the non-BC Hydro forecast revenue in Table 29. If not, please provide a revised forecast with these proposed rate changes in the same format as the table provided in the preceding Information Request response.

RESPONSE:

Please see Boralex LP's response to BCUC IR 22.5.

Further on page 43 of the Application, Boralex LP states:

Ocean Falls Blockchain only commenced operations in July 2018. The facility has operated at a high load factor since it commenced operations and Boralex LP has assumed that this will continue to be the case over the forecast period. Boralex LP has had discussions with Ocean Falls Blockchain regarding a possible expansion of Ocean Falls Blockchain's cryptocurrency facility and an increase in electrical load, but there are no definitive agreements between the parties in this regard.

On page 42 of the Application, Boralex LP submits that "[a]s this forecast revenue has been credited to Boralex LP's gross revenue requirement, Boralex LP is assuming the risk that this forecast revenue will materialize over the forecast period covered by this Application."

22.7 Please provide details of the forecasted increase in electrical load if the possible expansion Ocean Falls Blockchain's cryptocurrency facility were to take place.

RESPONSE:

Based on recent discussions with Ocean Falls Blockchain, Boralex LP now does not expect Ocean Falls Blockchain to expand its cryptocurrency facility or to increase its electricity load over the forecast period.

22.8 Is Boralex LP currently engaged in talks with any potential, new industrial or retail customers that may take service during the test period? If yes, please provide details.

RESPONSE:

No, Boralex LP is not engaged in talks with any potential, new industrial or retail customers that may take service during the test period.

22.9 If additional load materializes during the test period, for example from either new industrial or retail customers or from increased load from Ocean Falls Blockchain, please explain if the incremental revenue will be to the account of Boralex LP's shareholder.

RESPONSE:

Any increase in industrial revenue from that forecast over the forecast period would be for the account of Boralex LP's shareholder. However, Boralex LP sees little likelihood of this occurring. Please see Boralex LP's response to BCUC IRs 21.2 and 22.2

On page 43 of the Application, Boralex LP states:

The forecast revenue shown in Table 29 also includes the forecast lease payments from Ocean Falls Blockchain to Boralex LP for its leased space in Boralex LP's workshop building.

22.10 Please provide the lease agreement between Boralex LP and Ocean Falls Blockchain for its leased space in Boralex LP's workshop building.

RESPONSE:

The lease agreement is confidential and contains commercially sensitive information. Accordingly, a copy of the lease agreement has been filed confidentially with the Commission by separate letter.

**23.0 Reference: BC HYDRO LOAD FORECAST AND NON-BC HYDRO REVENUE FORECAST
Exhibit B-1, p. 9
Electricity Sales and Revenue**

Table 1 and Table 2 on page 9 includes Boralex LP's annual electricity sales and revenue from electricity sales, respectively, for the last five years.

- 23.1 Please update Table 1 and Table 2 to include 2019 actual, Q3–Q4 2019 actual, Q3–Q4 2019 forecast, and 2020-2022 forecast data and to include a breakdown of the "Ocean Falls Retail and Industrial Customers" line item between retail customers, Mowi Canada West, Ocean Falls Blockchain and Ocean Falls lease revenue.

RESPONSE:

The requested information is confidential and contains commercially sensitive information regarding Boralex LP's two industrial customers. Accordingly, this information has been filed confidentially with the Commission by separate letter.

- 23.2 Please confirm, or explain otherwise, the following:

- The average 2014 to 2018 historic energy sales to BC Hydro of 13,072 MWh/yr represents 76 percent of the total average of 17,240 MWh/yr; and
- The 2014 to 2018 revenue from BC Hydro energy sales to of \$2,624,000 represents 90 percent of the total average of \$2,925,000.

RESPONSE:

Confirmed.

- 23.2.1 Please discuss any underlying factors that contribute to the 2014 to 2018 percentage of total energy sales revenue attributable to BC Hydro being higher than the 2014 to 2018 percentage of total energy sales attributable to BC Hydro.

RESPONSE:

The electricity price paid by BC Hydro relative to the prices paid by non-BC Hydro customers was higher, consequently the BC Hydro contribution to revenues on a pro rata basis was higher than the non-BC Hydro customers. Please see Boralex LP's response to BCUC IR 2.3 for a discussion of the basis on which the rates charged by Boralex LP to its retail and industrial customers in Ocean Falls is determined.

H. RATE STRUCTURE

24.0 Reference: RATE STRUCTURE Exhibit B-1, p. 44 Proposed Tier 1 and Tier 2 Rates

On page 44, Boralex LP states:

Boralex LP is seeking Commission approval of a two-tier energy charge rate structure for its service to BC Hydro, consisting of a Tier 1 rate per GWh for the first 11.63 GWh of electricity in any year and a lower Tier 2 rate for all electricity above 11.63 GWh for that year.

Boralex LP believes that BC Hydro is supportive of the proposed rate structure. The rate structure does not impose any minimum take or fixed charge obligations on BC Hydro and is consistent with the rate structure under the 1986 EPA between the parties that expired June 30, 2019. The rate structure allows BC Hydro to reduce its average cost of energy in years when its purchases from Boralex LP exceed 11.63 GWh. This would, for example, enable BC Hydro to implement a program to incentivize conversion of oil-fired or propane-fired space heaters to air electric heat pumps in the Bella Bella NIA at a lower incremental cost of energy. The lower incremental energy cost may also facilitate economic development initiatives in the Bella Bella NIA by minimizing both the energy cost and environmental impacts associated with providing electricity for such developments.

Regarding the Tier 2 rate, Boralex LP further states:

While the Tier 2 rate can be set higher or lower, Boralex LP is proposing a Tier 2 rate of \$50 MWh starting [sic] in 2019, and escalating at 2% per year. Boralex LP believes that BC Hydro is supportive of fixing the Tier 2 rate at this level.

Regarding the Tier 1 rate, Boralex LP states:

The Tier 1 rate is calculated to provide the balance of the net revenue requirement after deduction of the Tier 2 revenue.

24.1 Please state the rationale under the 1986 Electricity Purchase Agreement (EPA) for the two-tier declining block rate structure. By way of the two-tier rate structure, was it designed to recover certain costs, to match certain operations of the hydroelectric facilities, to incent certain behaviour from the seller and/or buyer, some combination of the above, or other? Please explain.

RESPONSE:

The 1986 EPA was negotiated between BC Hydro and Central Coast Power Corporation in 1986. Boralex LP was not part of those negotiations and is therefore not able to comment on the rationale for the two-tier declining block rate structure agreed to by BC Hydro and Central Coast Power Corporation.

24.2 What are the benefits and risks to Boralex LP under the proposed rate structure? Please explain Boralex LP's rationale to continue the two-tier declining block rate structure.

RESPONSE:

With regard to benefits, please see Boralex LP's response to BCUC IR 24.6. With regard to risks, as

noted in Boralex LP's response to BCUC IR 21.6, if BC Hydro's actual load in any year is less than 11.630 GWh, Boralex LP will lose significantly more revenue (all at the Tier 1 rate) than it would gain if the actual load is greater than the forecast load of 11.63 GWh in 2020, 11,816 GWh in 2021 and 12,005 GWh in 2022 (all at the Tier 2 rate).

24.2.1 Have circumstances changed since the commencement of the 1986 EPA? If so, what are the changes and how have they been factored into the proposed rate structure?

RESPONSE:

Boralex LP does not believe that there has been any material change in circumstances since the commencement of the 1986 EPA.

24.3 Please explain why Boralex LP proposes not to impose any minimum take or fixed charge obligation on BC Hydro. What are the pros and cons of such a proposal?

RESPONSE:

Boralex LP has not proposed any minimum take or fixed charge obligation on BC Hydro because this has not been how power sales to BC Hydro from Ocean Falls have been structured since 1986 and because this would effectively transfer system operating risk to BC Hydro. Boralex LP believes that it is reasonable that Boralex LP should be responsible for managing this risk. Under the proposed commodity charge rate structure, Boralex LP loses revenue anytime it fails or is unable to provide service to BC Hydro. This provides a very strong incentive to Boralex LP to continue to operate its facilities on a highly reliable basis. Highly reliable service from Boralex LP is of significant value and benefit to BC Hydro and the communities of Shearwater and Bella Bella because it avoids service interruptions and allows BC Hydro to avoid operating its very expensive back-up diesel generating station at Shearwater and the associated environmental impacts and risks of operating that facility (as discussed in paragraph 27 of the Application).

24.3.1 Please explain why the 1986 EPA did not impose any minimum take or fixed charge obligation on BC Hydro.

RESPONSE:

As noted in Boralex LP's response to BCUC IR 24.1, Boralex LP was not part of the 1986 EPA negotiations and is therefore not able to comment on why the 1986 EPA did not impose any minimum take or fixed charge obligations on BC Hydro.

24.4 Please confirm, or otherwise explain, that the 11.63 GWh energy consumption threshold does not adjust annually. If confirmed, please explain why.

RESPONSE:

Confirmed. The Tier 1/Tier 2 threshold under the 1986 EPA also did not adjust annually and Boralex LP has maintained this (i.e., no adjustment to the threshold) under the proposed rate structure.

24.5 Please explain why Boralex LP "believes that BC Hydro is supportive of the proposed rate structure." Is there any evidence to substantiate this submission?

RESPONSE:

Boralex LP believes that BC Hydro is supportive of the proposed two-tier rate structure based on its discussions with BC Hydro during the course of the EPA renewal negotiations.

- 24.6 Please clarify Boralex LP's interest in proposing a rate structure with a lower incremental energy cost to "enable BC Hydro to implement a [conversion] program in the Bella Bella NIA" and "facilitate economic development initiatives in the Bella Bella NIA by minimizing both the energy cost and environmental impacts."

RESPONSE:

The marginal cost to produce electricity at Ocean Falls is extremely low. Therefore, anything that Boralex LP can do to promote greater electricity production from the facilities reduces the average cost of production and BC Hydro's rates. Boralex LP believes that the lower Tier 2 rate should give BC Hydro an incentive to encourage greater use of electricity in Bella Bella since the proposed Tier 2 rate is lower than BC Hydro's Zone IB rates (pursuant to Commission Order G-45-19 dated March 1, 2019, the interim approved energy charge rate for Zone IB is 11.32 cents/kWh, or \$113.20/MWh). As noted in the paragraph cited from page 44 of the Application, Boralex LP believes that this would, as an example, enable BC Hydro to promote a space heating conversion program in the community which would be beneficial to all stakeholders.

- 24.7 Please justify the proposed Tier 2 rate of \$50. Provide a sensitivity analysis by indicating the high and low range of what the Tier 2 rate could be set at and the associated impact to the Tier 1 rate.

RESPONSE:

The \$50/MWh Tier 2 rate is a level consistent with Boralex LP's general understanding of price of electricity necessary to attract new industrial loads and thereby could facilitate economic development initiatives in the area. Please see paragraph 159 of the Application.

The rates for the two tier rate structure are adjusted to ensure recovery of Boralex LP's revenue requirement. Adjusting the Tier 2 rate higher would allow the Tier 1 rate to be lowered at the margin, and vice versa. However, revenues linked to the Tier 2 price account for less than 1% of the total revenue requirement. Therefore and change to Tier 2 price would have minimal change to the resultant Tier 1 price.

- 24.8 Please clarify what aspect of the Tier 2 rate is supported where "Boralex LP believes that BC Hydro is supportive of fixing the Tier 2 rate at this level." Is it the \$50 MWh starting in 2019 or the 2% escalation per year, or both?

RESPONSE:

Boralex LP believes that BC Hydro is supportive of fixing the Tier 2 rate at the level proposed by Boralex LP based on its discussions with BC Hydro during the course of the EPA renewal negotiations. The proposed Tier 2 rate is \$50/MWh starting in 2019 and then escalated by 2% (compounded) for 2020, 2021 and 2022.

- 24.8.1 Boralex LP did not provide a similar submission of support in its Tier 1 rate discussion. Does Boralex LP believe that BC Hydro is supportive of all aspects of the Tier 1 rate? Why or why not?

RESPONSE:

Boralex LP also believes that BC Hydro is supportive of the methodology used to fix the Tier 1 rate based on its discussions with BC Hydro during the course of the EPA renewal negotiations. Boralex LP cannot comment on BC Hydro's position regarding the applied-for level of the Tier 1 rate.

24.9 Please explain whether Boralex LP has considered any other rate structure options other than the proposed two-tier declining block rate. Please discuss the alternative methods and why they were rejected.

RESPONSE:

Boralex LP has not considered any other rate structure options other than the two-tier declining block rate structure. Boralex LP believes this structure is beneficial to BC Hydro because it does not impose any minimum take or fixed charge payment obligations on BC Hydro and it allows BC Hydro to reduce its average cost of energy in years when its load is greater than 11.63 GWh. Moreover, Boralex LP believes that BC Hydro is supportive of this proposed rate structure.

24.9.1 Please discuss whether Boralex LP has considered a rate structure other than a cost of service approach. If so, what are they? If not, why not?

RESPONSE:

Boralex LP has not considered a rate structure other than a cost of service approach for the reasons set out in Boralex LP's response to BCUC IR 2.2.

**25.0 Reference: RATE STRUCTURE
Exhibit B-1, p. 1
Test Period**

In its Application, Boralex LP requests approval of rates and terms and conditions for its service to BC Hydro covering the period July 1, 2019 to December 31, 2022. On page 1 of the Application Boralex submits:

Boralex LP believes that the period covered by this first Application is appropriate and reasonable having regard for the desire to limit the frequency and cost of Boralex LP's rate applications to the Commission for its service to BC Hydro, particularly in light of the small size of Boralex LP, but recognizing the inherent greater uncertainty in forecasting Boralex LP's costs and revenues over a longer period of time. Boralex LP's intent would be to file a subsequent rate application in 2022 to establish rates for a period beyond 2022.

25.1 Please identify alternatives, if any, to the proposed test period of July 1, 2019 to December 31, 2022 that were considered by Boralex LP for its service to BC Hydro and ultimately why these alternatives were not selected.

RESPONSE:

Boralex LP did consider a test period from July 1, 2019 to December 31, 2024 (i.e., five years and six months as opposed to the applied-for three years and six months), but determined that there were too many incremental forecasting risks and uncertainties associated with this longer period, including with regard to capital and operating costs, the load forecast (both for BC Hydro and the retail and industrial customers in Ocean Falls) and revenue from the retail and industrial customers.

25.2 Please identify and discuss any relevant considerations in determining the appropriate test period for Boralex LP's subsequent rate application in 2022.

RESPONSE:

Boralex LP expects that the most relevant consideration in determining the appropriate test period for Boralex LP's subsequent rate application in 2022 will be Boralex LP's confidence level in forecasting its cost and revenues at that time.

**26.0 Reference: RATE STRUCTURE
Exhibit B-1, pp. 2, 44, 45
Levelized Rates**

On page 44 of the Application Boralex LP states:

The Tier 1 rate has been structured to avoid large step changes from one year to the next - that is, the rate has been "levelized" or smoothed. An escalation rate of 2% per year is chosen for the levelized Tier 1 rate.

On page 45 of the Application, Boralex submits that:

Without levelization, the Tier 1 rate would fluctuate from year to year as a function of the Tier 1 revenue requirement. These "unlevelized" Tier 1 rates would be calculated by simply dividing the revenue requirement by the annual forecast Tier 1 energy sales (which will be 11.63 GWh).

26.1 Please recreate Table 30 on page 45 of the Application with the calculated rates that would be applicable in the absence of the proposed rate smoothing mechanism. Please provide supporting calculations.

RESPONSE:

The following unlevelized rates would be applicable in the absence of rate smoothing:

	2019 Q3-Q4	2020	2021	2022
Tier 1 (up to 11.63 GWh/year)	\$215.78	\$298.27	\$313.92	\$341.00
Tier 2 (above 11.63 GWh/year)	\$50.00	\$51.00	\$52.02	\$53.06

The unlevelized Tier 1 rates in the table are calculated as described in paragraphs 156 to 163 of the Application using the following net revenue requirement and forecast energy sales assumptions:

	2019 Q3-Q4	2020	2021	2022
Forecast BC Hydro Energy Sales [MWh]	6,202	11,630	11,816	12,005
Tier 1 Energy Sales [MWh]	6,202	11,630	11,630	11,630
Tier 2 Energy Sales [MWh]	0	0	186	375
Tier 2 Rate	\$50.00	\$51.00	\$52.02	\$53.06
BC Hydro Revenue Requirement (Net of Ocean Falls Retail and Industrial Customer Revenues)	\$1,338,288	\$3,468,840	\$3,660,584	\$3,985,739
Tier 2 Revenue	\$0	\$0	\$9,680	\$19,905
Tier 1 Revenue Requirement	\$1,338,288	\$3,468,840	\$3,650,905	\$3,965,834

Resulting Unlevelized Tier 1 Rate	\$215.78	\$298.27	\$313.92	\$341.00
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26.1.1 Please provide the percentage rate increase and estimated bill impact for BC Hydro from the current interim rates to those that would be applicable effective July 1, 2019 in the absence of the proposed rate smoothing mechanism.

RESPONSE:

Information pertaining to the current interim rates has previously been filed confidentially by Boralex LP with the Commission for the reasons set out Boralex LP’s letter to the Commission dated January 20, 2020 (Exhibit B-5). Accordingly, this response has also been filed confidentially with the Commission by separate letter.

On page 45 of the Application, Boralex submits that:

The levelized Tier 1 rate is calculated to generate the same net present value (“NPV”) of Tier 1 revenue over the forecast period (Q3 2019 through 2022) as would be the case if unlevelized Tier 1 rates were used.

Boralex also provides the steps of this calculation, including the following Step 3:

The Tier 1 rate is set such that (i) the NPV of the levelized Tier 1 revenue is equal to the NPV of unlevelized Tier 1 revenue, and (ii) the Tier 1 rate escalates at 2% per year.

The proposed Tier 1 rate effective July 1, 2019 is \$289.94 per MWh.

26.2 Please provide calculations to support Step 3 referenced in the preamble above, with specific reference to how the Tier 1 rate effective July 1, 2019 of \$289.94 was determined.

RESPONSE:

After the Tier 1 revenue requirement for the test years and the resulting NPV have been calculated, as described in Steps 1 and 2 on Application page 45, Microsoft Excel’s iterative “goal seek” function is run to determine the starting 2019 rate that can be escalated at 2% in each test year to achieve the same test period Tier 1 revenue NPV that was calculated using the unlevelized revenue requirement NPV in Step 2.

Once the NPVs calculated each way reach equality the iteration stops and the levelized rates for all test years are finalized.

26.3 Please provide a table for each of Q3–Q4 2019, 2020, 2021 and 2022 that shows the amount of any revenue sufficiency/deficiency moved from or added to each test year from another test year in the calculation of levelized rates.

RESPONSE:

Please see following table.

	2019 Q3-Q4	2020	2021	2022
Tier 1 Rate [\$/MWh]	\$289.94	\$295.74	\$301.65	\$307.68
Tier 1 Energy Sold to BCH [MWh]	6,202	11,630	11,630	11,630
Annual Revenue from Tier 1	\$1,798,255	\$3,439,409	\$3,508,197	\$3,578,361
Tier 2 Rate [\$/MWh]	\$50.00	\$51.00	\$52.02	\$53.06

Tier 2 Energy Sold to BCH [MWh]	-	-	186	375
Annual Revenue from Tier 2	\$0	\$0	\$9,680	\$19,905
Total Revenue	\$1,798,255	\$3,439,409	\$3,517,877	\$3,598,266
	2019 Q3-Q4	2020	2021	2022
<u>Unlevelized</u> Tier 1 Rate [\$/MWh]	\$215.78	\$298.27	\$313.92	\$341.00
Tier 1 Energy Sold to BCH [MWh]	6,202	11,630	11,630	11,630
Annual Revenue	\$1,338,288	\$3,468,840	\$3,650,905	\$3,965,834
Tier 2 Rate [\$/MWh]	\$50.00	\$51.00	\$52.02	\$53.06
Tier 2 Energy Sold to BC Hydro [MWh]	-	-	186	375
Annual Revenue from Tier 2	\$0	\$0	\$9,680	\$19,905
Total Revenue	\$1,338,288	\$3,468,840	\$3,660,584	\$3,985,739
	2019 Q3-Q4	2020	2021	2022
Difference Levelized Revenue minus Unlevelized Revenue	\$459,967	-\$29,432	-\$142,708	-\$387,473

26.4 Please discuss if Boralex LP considered the use of a rate smoothing deferral account to capture any revenue deficiency/sufficiency moved between years in the test period, including the pros and cons of such an approach as compared to the proposed approach outlined in the three steps on page 45 of the Application.

RESPONSE:

Please see Boralex LP's response to BCUC IR 21.7.

26.4.1 Please recalculate the rates outlined in Table 30 of page 45 of the Application to account for the rate smoothing proposal using a deferral account. Please include supporting calculations and a description of any amortization methodology or interest rates applied to the deferral account.

RESPONSE:

The applied-for rates outlined in Table 30 of page 45 of the Application would be the same if Boralex LP had applied-for a rate smoothing proposal using a deferral account because the forecast balance in the deferral account would be zero at the time of application for the applied-for rates.

26.5 Please explain why Boralex LP proposes that Tier 1 and Tier 2 rates will increase at 2% per year, as opposed to some other percentage increase.

RESPONSE:

Boralex LP proposes that Tier 1 and Tier 2 rates increase annually because, as noted in paragraph 162 of the Application, the rate has been structured to avoid large step changes from one year to the next – that is the rate has been “levelized” or smoothed. The value of 2% was selected because the Bank

of Canada aims to keep inflation at the 2 per cent midpoint of an inflation-control target range of 1 to 3 per cent. (Source: <https://www.bankofcanada.ca/core-functions/monetary-policy/inflation/>)

26.5.1 Does Boralex LP have a similar practice of an escalation factor for its industrial customers? If so, please explain the rationale. If not, why is the escalation only applied to serve BC Hydro as a customer.

RESPONSE:

The rates charged by Boralex LP to its two industrial customers are negotiated rates in accordance with Order G-26-10 (and as confirmed by Order G143-19), and escalation factors are part of the negotiated rates. The forecast revenue from the two industrial customers reflect these negotiated rates.

I. FIRST NATIONS DEFERRAL ACCOUNT

27.0 Reference: First Nations Deferral Account Exhibit B-1, Section 12, p. 46, BC Hydro Application Requesting the Commission set a Rate for Boralex LP's Electricity Service to BC Hydro, Exhibit B-1, p. 25; BCUC Regulatory Account Filing Checklist⁵ First Nations Deferral Account

On page 46 of the Application, Boralex LP states:

The Ocean Falls Facilities are located on the traditional territory of the Heiltsuk Nation and most of the end-users of the electricity generated by the Ocean Falls Facilities are members of the Heiltsuk Nation.

On page 25 of the BC Hydro Application Requesting the Commission set a Rate for Boralex LP's Electricity Service to BC Hydro, BC Hydro states:

The Ocean Falls Hydroelectric Project is within the consultative boundaries of the Heiltsuk Nation and Nuxalk Nation.

27.1 Please confirm or explain otherwise that Boralex LP is not contemplating a Memorandum of Understanding (MOU) with the Nuxalk Nation at this time.

RESPONSE:

Boralex LP is not contemplating a Memorandum of Understanding with the Nuxalk Nation at this time.

On page 46 of the Application, Boralex LP explains the MOU under discussion between Boralex LP and the Heiltsuk Nation:

The MOU under discussion between the parties contemplates that Boralex LP and the Heiltsuk Nation may agree to engage in specific activities that may further the parties' interests. These activities may include, for example, employment and training opportunities, contracting and other business opportunities for Heiltsuk members at or in connection with the Ocean Falls Facilities. The draft MOU also contemplates the negotiation of a benefits agreement between the parties regarding the operation of the

⁵ https://www.bcuc.com/Documents/Guidelines/2017/05-03-2017_RegulatoryAccountFilingChecklist.pdf

Ocean Falls Facilities.

The implementation of the MOU may result in Boralex LP incurring certain additional costs regarding the Ocean Falls Facilities that are not reflected in this Application. However, the nature, extent and timing of any such costs cannot be determined at this time... Any amounts recorded in the deferral account during the period covered by this Application would only be disposed of in accordance with a separate future application by Boralex LP to the Commission.

The BCUC's Regulatory Account Filing Checklist provides guidance regarding the information a regulated entity is expected to provide when applying for regulatory account treatment.

27.2 Please explain if Boralex LP has an estimated timeline for the finalization of the MOU.

RESPONSE:

Boralex LP does not have an estimated timeline for the finalization of the MOU or the specific activities to be agreed to under the MOU.

27.3 Please confirm and explain whether Boralex LP is requesting that the First Nations Deferral Account be approved for the period covered by the Application only.

RESPONSE:

Boralex LP is requesting approval of the First Nations Deferral Account for the period of the Application only. If necessary and appropriate based on the circumstances at the time, Boralex LP would seek approval to continue the deferral account in the rate application covering the period beyond 2022.

27.4 Please identify any alternate accounting treatments that were considered, including an overview of what the accounting treatment would be in the absence of approval of the request to establish a deferral account, and explain why these alternate treatments may not be appropriate.

RESPONSE:

Boralex LP is not aware of any alternative accounting treatments available to it that would permit it to recover any costs that might be recorded in the deferral account in rates approved for a period beyond 2022.

27.5 Given that a draft MOU exists, please clarify why the nature, extent and timing of costs cannot be determined at this time.

27.5.1 Please discuss if Boralex LP can provide an order of magnitude estimate for potential costs to be incurred as a result of the MOU.

RESPONSE:

The draft MOU contemplates that the parties may engage in certain activities (e.g., employment and training and contracting opportunities) and the negotiations of a benefits agreement, but at this time these activities have not been defined or a benefits agreement negotiated. Therefore Boralex LP is unable at this time to provide clarity as to the nature, extent or timing of costs or an order of magnitude of the potential costs.

27.6 Please confirm that Boralex LP is not proposing any mechanism or timeline for the recovery of costs for the First Nations Deferral Account in this application.

RESPONSE:

Confirmed. Boralex LP is not proposing any mechanism or timeline for the recovery of costs for the First Nations Deferral Account in the Application. The treatment of any amounts recorded in the deferral account during the period covered by the Application would be the subject of a separate future application to the Commission by Boralex LP. Boralex LP expects that this future application would most likely be Boralex LP's rate application to the Commission in 2022 to establish rates for the period beyond 2022.

27.7 Please clarify if Boralex LP is only intending to recover the costs of the deferral account from BC Hydro.

27.7.1 If yes, please explain the rationale for this.

27.7.2 If no, please discuss how Boralex proposes to allocate cost recovery for the deferral account.

RESPONSE:

Costs associated with the implementation of the MOU are part of Boralex LP's overall cost of service, and would have been included in Boralex LP's gross forecast revenue requirement if Boralex LP was able to forecast these costs over the period covered by the Application. While the gross revenue requirement is recovered from all customers, the net revenue requirement after deducting the revenue from Boralex LP's retail and industrial customers is recovered from BC Hydro. Similarly, Boralex LP expects that it would likely seek to recover any deferral account balance on a prospective basis under its rate application for the period beyond 2022 by including the deferral balance in the gross revenue requirement for that period.

J. TERMS AND CONDITIONS OF SERVICE

**28.0 Reference: TERMS AND CONDITIONS OF SERVICE
Exhibit B-1, Appendix B, pp. 1, 2; 5 (of the Tariff Document)
Rates, Terms and Conditions**

Page 1 of the Tariff document states:

Boralex Ocean Falls Limited Partnership ("Boralex LP") will supply electricity to British Columbia Hydro and Power Authority ("BC Hydro") in accordance with this tariff filed with and approved by the British Columbia Utilities Commission. BC Hydro, by accepting electricity from Boralex LP at the point of delivery, agrees to abide by the terms and conditions set forth in this tariff.

28.1 Please explain if BC Hydro was consulted regarding the changes between the interim terms and conditions and those proposed in the Application, including the following:

- Removal of Section 4(a)(ii) "if the growth of the Bella Bella distribution load exceeds 7% per year projected from the 31 March 1986 annual load, BC Hydro may purchase or supply from other sources the incremental load over the 7% normal growth";
- Amendments to Section 10, regarding the land lease provisions; and

- Amendments Section 17, regarding Interruptions and Defects in Service.

RESPONSE:

Borex LP did not consult with BC Hydro regarding the changes between the interim terms and conditions and those proposed in the Application, including the three referenced provisions.

28.2 Please explain if the growth of the Bella Bella distribution load exceeds 7 percent per year projected from the March 31, 1986 annual load and discuss the implications for BC Hydro of the amendments to Section 4(a)(ii) of the terms and conditions.

RESPONSE:

The Bella Bella distribution load has not increased by over 7% per year on a compounded basis since 1986, so the provision has been of no practical import. Borex LP also believes, given its existing and ongoing investment in the Ocean Falls Facilities, that it is reasonable that BC Hydro not supply the Bella Bella distribution load from sources other than its Shearwater diesel generation station.

28.3 Please describe the implications of the proposed amendments to Section 17 of the terms and conditions related to Interruptions and Defects in Service.

RESPONSE:

The amendments to Section 17 of the interim tariff make the liability provision in the tariff for interruptions or defects in service the same for Borex LP as it is for BC Hydro under BC Hydro's Electric Tariff for interruptions or defects in service to its customers. Borex LP believes that the amended provision is a more reasonable and balanced provision than the one in the interim tariff, which potentially exposed Borex LP to liability except in very narrowly defined force majeure circumstances. Borex LP notes that under the energy charge rate structure, Borex LP will continue to have a strong incentive to continue to operate at a very high level of reliability and not curtail or interrupt service to BC Hydro. The amendments to Section 17 will not change how Borex LP operates the system.

**29.0 Reference: TERMS AND CONDITIONS OF SERVICE
Exhibit B-1, Appendix B, p. 3
Metering**

Section 6 (e) of the Tariff states:

Should Borex LP's metering equipment fail to register correctly or for any reason meter readings be unobtainable, the amount of electricity supplied will be estimated by Borex LP from the best information available based on BC Hydro's operations during the month in question and such estimate, except in the case of manifest error shall for billing purposes have the same force and effect as a true meter reading;

29.1 Please explain further how the supply of electricity will be estimated from BC Hydro's operations during the month(s) in question when not meter readings are obtained.

RESPONSE:

In the event that the primary revenue meter readings are not obtained in any month, Borex LP is able to estimate the energy delivered at Shearwater using the 25F51 telemetry measured at the Ocean Falls switchyard. Note that this is a low probability event, which has not occurred since Borex LP acquired the Ocean Falls Facilities.

29.2 Please explain what would constitute a “manifest error”?

RESPONSE:

A “manifest error” is an error that is obvious or plain to the eye. For example, if the monthly energy consumption is significantly higher than the historic average without any corresponding reason (e.g. cold weather, new loads etc.), there is likely a manifest error.

29.3 What will be the process to resolve disputes that may arise due to estimating BC Hydro’s usage if meter readings are unavailable?

RESPONSE:

As set out section 18 of the Tariff (Rights and Remedies), the parties have the right “to avail itself of any remedy it may have for any breach or breaches thereof”. As such, no dispute resolution process is explicitly defined, but each party has the right to avail itself of any remedy it may have for any breach that is committed and cannot be resolved by the parties acting in good faith.

Section 6(f) of the Tariff states “Boralex LP will advise BC Hydro by letter before the beginning of each year of the time and dates which Boralex LP will read its meter. BC Hydro may have a representative present at any reading of the meter.”

29.4 What will be the frequency of meter readings?

RESPONSE:

The current and long-standing practice between Boralex LP and BC Hydro is that meter readings are conducted on the last day of the calendar month at midnight. Boralex LP has no plans to change this long-standing and successful practice.