



March 9, 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
Updated Response to Commission Information Request No. 1: IRs 2.1, 7.1,
7.8, 8.3, 15.1, 20.1
Project No. 1599046**

Dear Mr. Wruck,

Enclosed for filing with the Commission are Boralex LP's updated responses to Commission Information Request Nos. 2.1, 7.1, 7.8, 8.3, 15.1 and 20.1.

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



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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

**UPDATED RESPONSE OF BORALEX LP TO BCUC INFORMATION REQUEST NO. 1
(RESPONSES TO BCUC IRs 2.1, 7.1, 7.8, 8.3, 15.1 and 20.1)**

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 an update to Table 3 of the Application that now reflects (i) the update to Table 11 of the Application set out in Boralex LP’s updated response to IR BCUC IR 7.1, (ii) the update to Table 27 of the Application set out in Boralex LP’s updated response to BCUC IRs 15.1 and 20.1, and (iii) actual Q3-Q4 2019 data.

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

	2019	2020	2021	2022
Rate Base	\$13,507	\$15,034	\$18,253	\$21,342
Deemed Equity	\$6,754	\$7,517	\$9,126	\$10,671
Deemed Debt	\$6,754	\$7,517	\$9,126	\$10,671

	2019 Q3-Q4	2020	2021	2022
Return on Equity	\$331	\$706	\$824	\$980
Return on Debt	\$182	\$388	\$453	\$539
Depreciation Expense	\$134	\$289	\$334	\$395
Income Taxes	\$0	\$0	\$0	\$0
Property and School Taxes	\$177	\$362	\$373	\$384
Water Rentals	\$33	\$66	\$68	\$69
O&M	\$962	\$1,988	\$2,153	\$2,144
Gross Revenue Requirement	\$1,819	\$3,800	\$4,204	\$4,511

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

Net Revenue Requirement	\$1,463	\$3,220	\$3,613	\$3,909
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The following is an update to paragraph 10(a) and Table 30 of the Application to reflect the updated applied-for BC Hydro rates based on the update to Table 3 above. The rates have been calculated on the basis set out in paragraphs 158 to 164 of the Application.

(\$/MWh)

	2019*	2020	2021	2022
Tier 1 (up to 11.63 GWh/year)	\$285.29	\$291.0	\$296.82	\$302.75
Tier 2 (greater than 11.63 GWh/year)	\$50.00	\$51.00	\$52.02	\$53.06

*July 1 to December 31 for rate and energy amount.

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:

In Boralex LP’s response to BCUC IR 7.1, Boralex LP indicated that it 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, and that it would provide a cost estimate for the revised penstock rehabilitation project. Boralex LP also indicated that it would update the capital cost estimate for the turbine rehabilitation work based on the change in the turbine work schedule described in Boralex LP’s response to BCUC IR 7.1.

The following is an update to Table 11 of the Application that now reflects (i) the cost estimate for the revised penstock rehabilitation project, (ii) the change in the turbine work schedule described in Boralex LP’s response to BCUC IR 7.1, (iii) the capitalization of the forecast cost of purchasing electricity from BC Hydro as part of the penstock rehabilitation project, as discussed in Boralex LP’s response to BCUC IR 20.1, and (iv) actual 2019 capital additions (both for the full year and for Q3-Q4 2019).

Updated Table 11: Forecast Capital Additions (2020 to 2022) (\$000)

Project #	Project	2019 (Q3-Q4)	2019 (Full Year)	2020	2021	2022	Total
1	Penstock Rehabilitation	\$137	\$407	\$1,137	\$2,311	\$1,833	\$5,688
2	Turbine Rehabilitation	-	-	\$313	\$268	\$244	\$824
3	Powerhouse Electrical	-	-	\$67	\$362	\$371	\$800
4	Ocean Falls Switchyard	-	-	\$53	-	\$215	\$268
5	Shearwater Substation	-	-	\$104	\$288	\$262	\$654
6	Interconnection Line	-	-	\$15	\$200	\$205	\$420
7	General Plant	\$37	\$135	\$125	\$125	\$354	\$739
	Total	\$174	\$542	\$1,816	\$3,553	\$3,483	\$9,393

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:

Boralex LP considered two alternatives to rehabilitate Penstock 2. The first alternative was the project described in the Application, namely, 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 project had a life expectancy of 25 years, which could have been extended with routine inspection and maintenance.

The second alternative is the revised project described in Boralex LP's response to BCUC IR 7.1 that Boralex LP will be undertaking. As discussed in that response, based on further advice and discussions with BBA Engineering and improved pricing information, Boralex LP has decided to rehabilitate Penstock 2 by replacing penstock sections with new sections on a staged basis. Rehabilitating Penstock 2 with new sections will result in a penstock that is fully up to design codes and will require less ongoing maintenance and associated costs than the first alternative. The revised project also has a longer life expectancy of 50 years, which can be extended with routine inspection and maintenance. The revised project will continue to be staged over several years to minimize the required shutdown window in any year, thereby reducing the period that BC Hydro will need to operate its Shearwater diesel generation station. Work requiring plant shutdowns will, like the initially proposed project, be conducted during a six week window in the spring of each year (mid-April to the end of May) to align with the lightest seasonal loads in the Bella Bella NIA and Ocean Falls.

In addition, Boralex LP also considered a project option that would have involved installing a structural liner within the existing penstock. However, that option proved to

be technically impractical to implement and was dropped from consideration without developing a refined cost estimate.

The forecast cost by year and in total for the two alternatives considered by Boralex LP is set out in the table below.

Project Alternative	\$000				\$000			Total
	2019	2020	2021	2022	2023	2024	2025	
Original Rehabilitation Project - Repairing Penstock Sections	\$407	\$838	\$2,983	\$2,222	\$1,620	-	\$1,410	\$9,480
Revised Rehabilitation Project - Replacing Penstock Sections	\$407	\$1,137	\$2,311	\$1,833	\$1,738	\$1,584	-	\$9,010

The work required for both alternatives extends beyond the period covered by the Application.

The estimated 2023 and 2025 expenditures shown in the table for the original rehabilitation project involve repair work on the uppermost penstock section (2023) and seismic reinforcements of the penstock saddles and anchor blocks (2025).

The estimated 2023 and 2024 expenditures for the revised rehabilitation project involve completion of replacement of the uppermost penstock sections. An additional engineering study will also be undertaken in 2021 to determine whether head gate closure improvements or a second point of closure will be required for the penstock and the associated costs of the alternatives (which include replacement of the existing gate with roller gates, or the installation of a wedge gate or butterfly valve and surge tower in the uppermost penstock section downstream of the dam). If required, this additional work would be undertaken in 2024 or 2025.

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

RESPONSE:

Please see Boralex LP's updated response to BCUC IR 7.1. The updated Table 11 in Boralex LP's updated response to BCUC IR 7.1 now includes actual 2019 capital additions (both for the full year and for Q3-Q4 2019).

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:

In Boralex LP’s response to BCUC IR 15.1, Boralex LP indicated that since the filing of the Application the retirement of two full-time employees has been delayed from 2020 to 2021 (maintenance employee) and from 2022 to 2023 (operator).

The following update to Table 27 of the Application now reflects (i) the delay in the retirement of these two full-time employees, (ii) the capitalization of the forecast cost of purchasing electricity from BC Hydro as part of the penstock rehabilitation project, as discussed in Boralex LP’s response to BCUC IR 20.1, and (iii) actual 2019 Q3-Q4 O&M expenses.

Updated Table 27: Forecast O&M Expenses (\$000’s)

O&M Line Item	2019 (Q3-Q4)	2019 (Full Year)	2020	2021	2022
Employee Costs					
<i>Salaries and Benefits</i>	\$303	\$605	\$606	\$749	\$776
<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>	\$166	\$332	\$138	\$140	\$143
<i>Machinery</i>	\$49	\$99	\$35	\$35	\$36
<i>Turbines-Generators</i>	\$1	\$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

O&M Line Item	2019 (Q3-Q4)	2019 (Full Year)	2020	2021	2022
<i>Oil, Fuel and BC Hydro Power</i>	\$18	\$36	\$25	\$26	\$26
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	\$43	\$43	\$87	\$88	\$88
Total O&M Expenses	\$962	\$1,881	\$1,988	\$2,153	\$2,144

Please note that in Boralex LP's response to BCUC IR 15.2, Boralex LP incorrectly indicated that two full-time employee retirements will occur in 2022. As indicated in Boralex LP's response to BCUC IR 15.2, with the delayed retirements the retirement years are now January 2021 (maintenance employee), March 2022 (operator) and March 2023 (operator).

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:

In Boralex LP’s response to BCUC IR 20.1, Boralex LP indicated the forecast cost of purchasing electricity from BC Hydro would be capitalized as part of the penstock rehabilitation project and not expensed as initially set out in the Application.

The update to Table 11 (Forecast Capital Additions) set out in Boralex LP’s updated response to BCUC IR 7.1 and the update to Table 27 (Forecast O&M Expenses) set out in Boralex LP’s updated response to BCUC IR 15.1, now reflects the capitalization of the forecast cost of purchasing electricity from BC Hydro as part of the penstock rehabilitation project.