

REQUESTOR NAME: **BC Sustainable Energy Association and Sierra Club BC**

INFORMATION REQUEST ROUND NO: 2

TO: **Andy Shadrack**

DATE: **July 17, 2017**

PROJECT NO: **3698896**

APPLICATION NAME: **FortisBC Inc. 2016 Long Term Electric Resource Plan (LTERP) and Long Term Demand Side Management Plan (LT DSM Plan)**

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**1.0 Topic: CEA Report context**

**Reference: Exhibit C10-9, Mr. Shadrack July 7, 2017 email to BCUC, Regional District of Central Kootenay Area 'D' and Kaslo Green Energy Opportunities Scan, Community Energy Association, December 2016 ("Report")**

- 1.1 Please explain how the Report came about. Who commissioned it? What is the purpose of the report? Who paid for it? Who wrote it? Who was it delivered to?
- 1.2 The Report refers to "several projects already short listed." [p.8] Who has short listed these projects? Is this who the Report was prepared for?
- 1.3 What is "CEEP -- Community Energy and Emissions Plan," "SCEEP -- Strategic Community Energy and Emissions Plan (see CEEP)," and "Kaslo SCEEP"?
- 1.4 Please indicate whether it is Mr. Shadrack or the Community Energy Association answering the information requests about the Report.
- 1.5 Please confirm that the Report concludes that local government can have the most impact in the near term by supporting energy efficiency upgrades within the study area [p.30] and the Report recommends engagement with BC Hydro and FBC to encourage energy efficiency in Area D and Kaslo [p.32].
- 1.6 Please confirm that none of the distributed clean or renewable generation opportunities examined in the Area D and Kaslo study area was found to be economically viable for the customer/proponent without grants and/or substantial volunteer contributions.

**2.0 Topic: Village of Kaslo microhydro opportunities**

**Reference: Exhibit C10-9, Mr. Shadrack July 7, 2017 email to BCUC, Regional District of Central Kootenay Area 'D' and Kaslo Green Energy Opportunities Scan, Community Energy Association, December 2016**

Mr. Shadrack quotes the Report as follows:

"The village of Kaslo has an excellent opportunity to reduce their electricity costs at their water reservoir by installing a micro hydro system at the inlet to the reservoir as well as on their main PRV prior to the treatment plant. ... The challenge is that both systems are located in the Fortis Electric territory. The Fortis Electric net metering system is

designed only to reduce electricity consumption and not revenue generation.” [p.4]

- 2.1 When the Report says it is a “challenge” that the two Kaslo potential micro hydro projects are located in FBC territory is the point that the projects would be less of a challenge if the FBC NM program allowed systems designed to produce annual net excess generation and paid about \$10/MWh for annual NEG, like the BC Hydro NM program?
- 2.2 Please confirm, or otherwise explain, that the Report does not give an opinion on what price for annual net excess generation would be necessary for either or both of the two Village of Kaslo microhydro opportunities to be economically viable for the customer/proponent.
- 2.3 Please confirm that the Report does not say that either or both of the Village of Kaslo microhydro opportunities would be economically viable if, hypothetically, they were located in the BC Hydro service territory.
- 2.4 Please confirm, or otherwise explain, that if, hypothetically, the Kaslo Water Reservoir project, the Kaslo Water Pressure Reducing project, and the Kaslo Aggregated Hydro project were in the BC Hydro service territory they would each be ineligible for the BC Hydro Micro-Standing Offer Program because they are less than 100 kW.

**3.0 Topic: Village of Kaslo water reservoir microhydro opportunity  
Reference: Exhibit C10-9, Mr. Shadrack July 7, 2017 email to BCUC,  
Regional District of Central Kootenay Area ‘D’ and Kaslo Green Energy  
Opportunities Scan, Community Energy Association, December 2016, p.20.**

On page 20, the Report describes the Kaslo water reservoir microhydro concept. It says there is no existing electrical demand or infrastructure at the site and that the cost of interconnection with the grid is outside the scope of the Report.

- 3.1 Please confirm that the interconnection for the Kaslo water reservoir microhydro concept would be connected directly to an FBC distribution line and would not be behind the customer’s meter.
  - 3.2 Please confirm that a generating facility attached directly to the utility’s distribution system and not behind the customer’s meter would not be eligible for either the FBC NM program or the BC Hydro NM program. Alternatively, please explain.
  - 3.3 Please confirm, or otherwise explain, that in the absence of an estimate of interconnection costs the CEA would be unable to provide an estimated levelized unit energy cost for the Village of Kaslo water reservoir microhydro opportunity.
- 4.0 Topic: Village of Kaslo pressure reduction microhydro opportunity  
Reference: Exhibit C10-9, Mr. Shadrack July 7, 2017 email to BCUC,  
Regional District of Central Kootenay Area ‘D’ and Kaslo Green Energy  
Opportunities Scan, Community Energy Association, December 2016, p.21.**

On page 21, the Report describes the Village of Kaslo pressure reducing system microhydro concept. It implies that there is electrical service at this location and notes that demand behind the meter is low at this location. The Report estimates that “the system would cost approximately \$50-60,000 and generate similar amounts of electricity and revenue as the system at the reservoir,” which is \$6,500/y at a price of \$4.4/MWh ( $\$6,500 / 149 \text{ MWh} = \$4.4/\text{MWh}$ ). The report concludes that “The local (behind the meter) demand is low at this location which would have a significant impact on the economic viability based on net metering offered by Fortis Electric.”

- 4.1 Please confirm, or otherwise explain, that the point CEA is making is: even if the Village of Kaslo Water Pressure Reducing project was eligible for the FBC NM program despite being sized larger than the load behind the meter, the economic viability of the project would be negatively impacted by the FBC NM price for annual net excess generation (assumed to be equivalent to FBC’s cost of power from BC Hydro) being significantly lower than the BC Hydro NM price for annual NEG (i.e., roughly \$10/MWh based on the BC Hydro SOP price).
- 4.2 Please confirm that the Report does not give an opinion on whether the Village of Kaslo Water Pressure Reducing project would be economically viable if, hypothetically, it was located in the BC Hydro service territory.

**5.0 Topic: Economic Impact of Village of Kaslo microhydro projects  
Reference: Exhibit C10-9, Mr. Shadrack July 7, 2017 email to BCUC,  
Regional District of Central Kootenay Area ‘D’ and Kaslo Green Energy  
Opportunities Scan, Community Energy Association, December 2016, p.21.**

The Report describes the “Kaslo Aggregated Hydro” project as combining together the Kaslo water reservoir project and the Kaslo pressure reduction project and developing “a partnership to potentially own, operate, and maintain” the aggregated project. This may help address some of the concerns of the Village of Kaslo administration about the Village’s ability to operate and maintain other renewable resource systems. [pp.21-22.]

The Report defines the criterion “Economic Impact” as “What is the value of the anticipated financial rewards within the community (or members)?” Positive (green) is “Significant Revenue or savings in the area economy.” Neutral (yellow) is “Some savings or revenue in the area economy.” Negative (red) is “Little saving or revenue in the area economy.”

In Table 5, Scan Results, for Economic Impact the Report rates Kaslo Water Reservoir and Kaslo Pressure Reducing System as Neutral (yellow), and Kaslo Aggregated Hydro as Positive (green).

- 5.1 How is the Report able to rate the Economic Impact of the Village of Kaslo Water Reservoir project as Neutral, not Negative, when there is no customer load behind-the-meter to displace, there is no apparent buyer for the power (project not eligible for FBC NM program because it is not behind customer meter) and there is no estimate of interconnection costs?

- 5.2 How is the Report able to rate the Economic Impact of the Village of Kaslo Pressure Reducing System project as Neutral, not Negative, when there is no apparent buyer for the annual net excess generation (project not eligible for FBC NM program because it is designed to produce annual net excess generation)?
- 5.3 How is the Report able to rate the Economic Impact of the Kaslo Aggregated Hydro project as Positive, not Negative, when neither the Kaslo Water Reservoir project nor the Kaslo Pressure Reduction System project is rated Positive, neither project is eligible for the FBC NM program, and there is no apparent buyer for the annual net excess generation?
- 5.4 Why does the Report recommend: "Village of Kaslo should identify partners and models to develop the micro Hydro projects on the reservoir and PRV system"? [p.32]
- 6.0 Topic: Lardeau Valley solar opportunities**  
**Reference: Exhibit C10-9, Mr. Shadrack July 7, 2017 email to BCUC, Regional District of Central Kootenay Area 'D' and Kaslo Green Energy Opportunities Scan, Community Energy Association, December 2016.**

Mr. Shadrack quotes the Report as follows:

"There is the potential for two solar projects in the Lardeau Valley. One at Jewett school and the other at Meadow Creek Hall. Both buildings are BC Hydro customers and would qualify for their net metering program. The most likely scenarios is that the projects would be some form of cooperative community project similar in nature to Nelson's Solar Garden. It is estimated that both locations could support a ground based 20 kW fixed solar array. The electricity would be used to reduce the electricity required to operate both facilities and potentially generate some revenue. The cost of each project would be approximately \$20,000 for the solar panels plus an additional \$10,000 each to install them. This is based on leveraging local skills and resources to reduce the installation costs. Each system could have the potential to generate \$3500 a year in revenue assuming all of the electricity was sold to the grid but it is expected that a significant portion of the energy produced would be used to displace BC Hydro electricity. The result is lower operations costs for both facilities..."  
[underline added]

- 6.1 Given that the Nelson Solar Garden is a project of the City of Nelson public utility and that the basic mechanism involves customer-investors in the solar facility receiving a credit on their City of Nelson electricity bills, in what way(s) could solar projects in the BC Hydro NM program be similar to the Nelson Solar Garden?
- 6.2 Please confirm that the Report estimates an 8 or 9 year simple payback at roughly \$10/MWh for a 20 kW project at \$1500/kW utilizing contributions of local expertise and products for installation, compared to \$5000/kW all-in for the City of Nelson's utility grade 60 kW solar facility [p.24].

- 6.3 Is Mr. Shadrack's point that with a sufficient volunteer contribution of local services and products the two Lardeau Valley solar array opportunities could have an 8 to 9 year payback in the BC Hydro NM program, based on offsetting BC Hydro rates and roughly \$10/MWh for annual NEG?
- 6.3.1 If so, what problem does this show with the FBC NM program? If similar solar arrays were in the FBC service territory and were scaled down to meet the customer's average annual consumption to be eligible for the FBC NM program, and if there was a proportionally similar volunteer contribution, would there be a similar payback period given that the value of offsetting FBC rates is at least \$10/MWh?
- 7.0 Topic: Kaslo Aerodrome solar opportunity**  
**Reference: Exhibit C10-9, Mr. Shadrack July 7, 2017 email to BCUC, Regional District of Central Kootenay Area 'D' and Kaslo Green Energy Opportunities Scan, Community Energy Association, December 2016.**
- Mr. Shadrack quotes the Report as follows:
- "The Kaslo Aerodrome was also evaluated and discounted. The aerodrome has good solar potential but the potential business model was poor. The aerodrome is located in the Fortis Electric area and Fortis' net metering program is designed to reduce electric demand and not generate revenue. There is no customer identified on site that could benefit from the solar electricity produced it was deemed not appropriate at this time..." [pp.4-5]
- 7.1 For clarification, is there no electric utility customer at the Kaslo Aerodrome site, or is there a customer but the customer does not have sufficient load to benefit from the solar electricity produced?
- 7.2 What conclusion does Mr. Shadrack say the Commission panel should draw from the Report's comments about the Kaslo Aerodrome project? If there is no electric utility customer with consumption to be offset by a solar array at the site, then would a solar array at the site connected to the FBC grid be any different than a commercial solar generation facility that FBC says it doesn't need the power from and would cost more than clean or renewable alternatives?