



January 15, 2020

BC Hydro
Attention: Fred James
Chief Regulatory Officer
bchydroregulatorygroup@bchydro.com

RE: Project No. 1599004 British Columbia Utilities Commission (BCUC or Commission) British Columbia Hydro and Power Authority (BC Hydro) Application to Amend Net Metering Service under Rate Schedule 1289 Information Request to Peace Energy A Renewable Energy Cooperative (PEC) Evidence

Dear Sir:

The proposals and opinions that PEC sets out below and has previously submitted for consideration are drawn from our experiences as a cooperative with a membership of 520 that promotes renewable energy in the northeast of this province (see www.peaceenergy.ca).

1.1 Please discuss the relative merits of a 5kW, 8kW and 10kW nameplate capacity threshold for exempting Generating Facilities from the requirement to have an estimated Annual Energy Output no greater than 110 percent of the customer's estimated Annual Load.

According to information on BC Hydro's net metering web page, "A typical home generally consumes 11,000 kWh/year." It goes on to state that, "A typical solar installation on a residential roof is 4 kilowatt (kW) in size with 16 solar panels, which in B.C., generates 4,400 kWh of electricity over a year."

Based on this information, every 1kW of rooftop solar produces roughly 1,100 kWh/yr of electricity. This would equate to the following energy production numbers:

- 5kW size system = 5,500kWh/yr of load offset
- 8kW size system = 8,800kWh/yr of load offset
- 10kW size system = 10,000kWh/yr of load offset

Accordingly, an account with the average yearly use of 11,000 kWh/year (as noted above), would require a 10kW size solar system to become net zero (100% displacement).

If one were to use BC Hydro's net metering formula for system size vs. energy production from the inverter (system size in kW AC x 10% x 365 x 24), one would have the following energy production numbers:

- 5kW size system = 4,380kWh/yr of load offset
- 8kW size system = 7,008kWh/yr of load offset
- 10kW size system = 8,760kWh/yr of load offset

Therefore, the 5kW size system proposed by BC Hydro and the 8kW size system proposed by PEC would seem to be conservative based on the average residential account energy use. And



the 10kW size system proposed by Riverside Energy would seem appropriate, and even on the conservative side based on BC Hydro's own calculations.

PEC always cautions its customers/members to carefully consider their current use and estimated future load vs estimated energy production values, and how energy overproduction may impact their return on investment over the long term.

PEC offers the observation that BC Hydro's net metering policy is sometimes viewed as a contract. There are many factors, often unforeseen, which can change the equation and tilt the outcome to over or under production.

1.2 Please discuss the relative risks of a 5kW, 8kW and 10kW nameplate capacity threshold in a scenario where a customer constructs a Generating Facility up to the threshold level but has little or no load. Specifically, please comment on the implications of each threshold with regards to cost impacts to non-participating customers and with regards to maintaining the load offset intent of the Program.

PEC does not believe that a single policy can accommodate all the potential scenarios for the BC Hydro customer base. Indeed, based on BC Hydro's own numbers and formulas, the above calculations show that.

The needs and energy production of net metering customers will change over time. Weather, occupancy, ownership and power usage will all have an effect on the net metering account credits and charges during each billing cycle and each true-up period.

The implications of a certain system size overproducing based on the account planned and actual load offset use is a moot point. No matter what system size is pre-approved or approved through a rigorous application process, any changes to the energy production or use will change the final energy credits or charges. The idea of a pre-approved system of a certain kW size is simply to streamline the process for everyone.

PEC does not agree with the argument that 'non-participating' customers bear a heavier load/cost than customers who decide to participate in the net metering program.

The net metering program was designed by BC Hydro to allow customers to displace their electricity costs by personally investing in a power generating system for their own metered account. This is an expensive personal choice requiring substantial up-front capital.

PEC's internal estimates have shown over and over that net metering customer investments will take more than 20 years to recoup their investment based on the value of power saved. Indeed BC Hydro's own net metering web page also notes this by stating, "On average, solar systems of this size can cost about \$14,500. Based on BC Hydro's step 2 of its Residential Conservation Rate, payback on your investment is about 23 years (including savings from the Rate Rider and GST)."

Net metering customers will reduce the momentary power demand from BC Hydro, as their power generation system produces electricity. This means that the energy displaced will not be



just at the more expensive Step 2 rates, but rather will be a blend of Step 2 and Step 1 rates dependant on power use and power production on a momentary and billing cycle basis. Calculating the system value and return on investment (ROI) over decades to come is very difficult and makes a large number of assumptions. But PEC does know that many net metering customers with an already low ROI, will be affected negatively with the changes proposed by BC Hydro.

It is PEC's experience that net metering customers very rarely make the decision to install a power generating system based solely on the financial ROI. Considerations such as carbon footprint, environmental/community leadership, pride in their property and long-term asset value also factor in the decision along with immediate cost savings. However, ROI is still a big factor with such a large personal investment, and substantial program changes will affect current customers investments.

By choosing to personally invest in a net metering power generation system with a low ROI over many decades, BC Hydro net metering customers actually lessen the load of the BC Hydro grid and the non-participating customers. BC Hydro uses the example of winter when everyone uses more power. However, in summer when solar energy production is the highest, these net metering customers can be a substantial benefit to BC Hydro to provide power to non-participating customers on the same local distribution network, when cooling loads are highest. This reduces transmission needs to that area. It also allows choices for hydro dam power generation timing to save the water or make more power to sell at higher prices to other jurisdictions.

Participating net metering customers have paid BC Hydro for their grid connection as have non-participating customers. Even in situations where net metering customers may be net zero during the true-up period, there may still be billing cycles (under current net metering policy), where energy fees occur - even Step 2. This would depend on when the energy is produced and used, and on the billing cycles and policy. Potential changes to the net metering anniversary, true-up date/period and price paid for true-up kWh credits will affect the ROI of systems – depending on individual account factors.

PEACE ENERGY COOPERATIVE

Al Mottishaw
Chair

c.c. Patrick Wruck, Commission Secretary
BC Utilities Commission
commission.secretary@bcuc.com