



**BRITISH COLUMBIA
UTILITIES COMMISSION**

**ORDER
NUMBER** G-26-04

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**IN THE MATTER OF
the Utilities Commission Act, R.S.B.C. 1996, Chapter 473**

and

**British Columbia Hydro and Power Authority
Application for a Net Metering Rate
Rate Schedule 1289**

BEFORE: R.J. Milbourne, Commissioner)
 and Panel Chair)
 N.F. Nicholls, Commissioner)
 P. Vivian, Commissioner) March 10, 2004

O R D E R

WHEREAS:

- A. On July 22, 2003, the Commission issued Letter No. L-37-03 directing British Columbia Hydro and Power Authority (“BC Hydro”) to file a net metering tariff application by November 3, 2003; and
- B. The Commission directed BC Hydro in Letter No. L-37-03 to consult with other agencies and interest groups as appropriate to develop its net metering tariff application; and
- C. On November 3, 2003, BC Hydro applied to the Commission for approval of Rate Schedule 1289 – Net Metering (“the Application”); and
- D. On November, 27, 2003, the Commission issued Order No. G-78-03 establishing a written hearing process to review the Application; and
- E. In accordance with Order No. G-78-03, a written hearing process was conducted from December 5, 2003 through January 30, 2004. Written submissions were received from Intervenors by January 23, 2004 and BC Hydro’s Reply Submission was received on January 30, 2004.

NOW THEREFORE the Commission orders as follows:

- 1. The Commission approves for BC Hydro the Net Metering Tariff – Rate Schedule 1289, as per the Reasons for Decision attached as Appendix A to this Order.

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2. BC Hydro is to file a permanent Net Metering Tariff Rate Schedule 1289 in accordance with the terms of this Order and the Reasons for Decision.
3. BC Hydro is to file a Net Metering Tariff - Monitoring and Evaluation Report one year after the filing of the permanent tariff pages. The Report should account for the specific directions articulated in the Commission's Reasons for Decision (see Section 2.6). Based on its evaluation, BC Hydro should recommend any amendments to the net metering tariff, as necessary.

DATED at the City of Vancouver, in the Province of British Columbia, this 12th day of March 2004.

BY ORDER

Original signed by:

R.J. Milbourne
Commissioner and Panel Chair

Attachment

**BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
Net Metering Application – Rate Schedule 1289**

REASONS FOR DECISION

1.0 BACKGROUND

BC Hydro's Application for Net Metering Tariff – Rate Schedule 1289 ("Application") is the culmination of a process initiated by stakeholders who desire net metering and driven by provincial energy policy that encourages the development of initiatives like net metering to achieve a clean energy supply goal.

On December 10, 2002, interested stakeholders applied to the Commission for a change to BC Hydro's standard metering practices to include a "limited and simple form of net metering", citing Policy Action No. 20 of the B.C. Government's energy policy, *Energy For Our Future, A Plan For BC* ("Energy Plan"), released in late 2002. Stakeholders had proposed a similar change in October 2001, but the Commission, with input from BC Hydro, deferred consideration of net metering until after the release of the Energy Plan. The Commission agreed that Policy Action No. 20 makes a clear directive for utilities to develop policies such as net metering to support the voluntary goal of acquiring 50 percent of new supply from *BC Clean Electricity* over the next 10 years. In Letter No. L-3-03, the Commission requested that BC Hydro prepare, in consultation with customer groups and other utilities such as Aquila Networks, a report to assess the potential for net metering in B.C., including a discussion of policy considerations for successful development and implementation. BC Hydro submitted a consultant's report on net metering and written comment from various interest groups and individuals.

Based on the report, BC Hydro concluded that although net metering of small generators is unlikely to produce significant quantities of clean energy in a cost-effective way, there are reasons to consider its implementation since it provides customers with the means to take responsibility for their own power production and to lower their environmental impact. BC Hydro recommended that a net metering policy for small generators be supported by the following high-level parameters:

- The net metering tariff should be available to all BC Hydro customer classes;
- It should be applicable only to small generation, 50 kW or less;
- There should be a program cap at 5 MW or 100 customers, at least initially, to assess the long-term impact on non-participating customers;
- It should be available only in cases where renewable technologies are used; and
- Customers' generation should be limited to their own annual use. Where the meter reading indicates net excess generation, a credit should go to the customer's account that can be applied against future

consumption charges. At an anniversary date of the customer's choice, any net excess generation should be granted to the utility.

BC Hydro indicated that these parameters would provide administrative simplicity and minimize cost-shifting to non-participating customers.

In response, Commission Letter No. L-37-03 directed BC Hydro to file an application for a simple net metering tariff guided by the following parameters:

- It should be available to the residential and commercial customer classes;
- It should be applicable only to clean energy projects, as defined by the B.C. Government's energy policy;
- It should be applicable to generation of 50 kW or less;
- Interconnection must be safe, but the rules governing interconnection should not be extensive, or burdensome in administrative process;
- BC Hydro should consult with other agencies and interest groups as appropriate; and
- Customer generation should be limited to own use only at the registered location of the net metering installation. In determining consumption charges, net excess generation may be banked as a credit to the customer's account to be applied against future net consumption. The Commission recommended that BC Hydro propose a rate for purchase of net excess generation on a given anniversary date and consult further with interested groups as necessary to develop its proposal in this regard.

These parameters reflect that the Commission's support for a net metering tariff is conditional on development and implementation that does not incur any substantial cost on the utility, and that does not impose any inordinate barrier to ratepayers seeking to net meter. The Commission agreed with BC Hydro, and the conclusions of its consultant's report, that net metering is not likely to be developed to a great extent in B.C. given our low electricity rates currently and the high expected premiums for customer participation in a net metering program. The Commission believed that the potential for cost-shifting would be limited by low expected participation and the 50 kW limit on generation capacity. However, given the expected low uptake and a 50 kW capacity limit, the Commission believed that it was a fair and acceptable trade-off against potential cost-shifting for BC Hydro to propose a rate for purchase of net excess generation at an anniversary date of net metering service interconnection. The Commission considered that it would be fair if net metering customers were compensated for the value BC Hydro receives from net excess generation. Further, in light of the current economics of small-scale renewable generation in B.C., this requirement could be expected to encourage participation in net metering, all else equal. The Commission indicated that it would establish a process to monitor and evaluate the success of a net metering tariff, including an assessment of the impacts of net metering on non-participating customers.

BC Hydro filed its application as directed on November 3, 2003. The Application adheres in most respects to the parameters outlined by the Commission in Letter No. L-37-03. BC Hydro proposes a net metering tariff available to residential and commercial customers in Rate Zones I and II who own and operate a distributed generation facility, not exceeding 50 kW of total capacity, that utilizes water, wind, solar, fuel cell, geothermal, biomass, or other inherently self-renewing energy source to generate electricity. Net metering customers under BC Hydro's tariff would only be billed for their net consumption, which would allow participating customers to offset their own consumption billed at BC Hydro's retail rates. BC Hydro proposes to set up a generation account that will bank a customer's excess energy in one billing period and apply such energy to the customer's net consumption in later billing periods, until a 12-month anniversary date of service interconnection is reached. BC Hydro proposes to purchase net excess generation at a 12-month anniversary date for a price equal to its avoided cost for green energy, calculated as the weighted average energy cost of its most recent comparable Call for Tender for green power generation; a price currently equal to 5.4 cents/kWh. BC Hydro proposes to install four-quadrant meters for net metering interconnection, with the utility enforcing technical standards of interconnection as set out in its "Net Metering Interconnection Requirements, 50 kW and Below, Rate Schedule 1289", attached to the Application. BC Hydro proposes to pay all incremental costs associated with meter equipment, installation, reading and billing. BC Hydro also proposes to incur all costs for review, processing, and approval of individual customer applications other than the cost of on-site acceptance checks for facilities greater than 5kW. BC Hydro proposes to charge residential and commercial applicants \$600 for an on-site acceptance check of facilities greater than 5 kW. BC Hydro proposes to monitor its incremental costs, customer participation, and the net excess generation provided by participants. It proposes to submit an evaluation report to the Commission one year after there are ten or more customers on the net metering tariff.

On November 27, 2003, the Commission issued Order No. G-78-03 establishing a written hearing process to review the Application. The process was completed over the period December 5, 2003 through January 30, 2004. Written submissions were received from Intervenor by January 23, 2004, and BC Hydro's Reply Submission was received on January 30, 2004.

The Commission Panel notes that sufficient opportunity was provided for stakeholders to comment on BC Hydro's draft application, as per the Commission's direction in Letter No. L-37-03, and as a matter of course during the written hearing process to review BC Hydro's final Application. One intervenor in the proceeding, Mr. Michael Wheatley ("Mr. Wheatley"), presented an alternative net metering tariff as part of his submission. Commission review of Mr. Wheatley's alternative tariff is outside the regulatory scope of its direction for, and ultimate review of, BC Hydro's Application. Although the Commission Panel has declined to review Mr. Wheatley's alternative tariff, it has considered his submissions with respect to BC Hydro's Application.

The following sections outline the key issues under debate in the review of BC Hydro's Application, and the Commission Panel's determinations in respect of these issues and its overall decision.

2.0 ISSUES

2.1 Eligibility

The Commission directed BC Hydro to file an application for a net metering tariff that was applicable to clean energy projects, as defined by the BC Government's energy policy. Policy Action No. 20 of the Energy Plan articulates a voluntary goal for electricity distributors to acquire 50 percent of new supply from *BC Clean Electricity* over the next 10 years, supported by policies such as net metering. Policy Action No. 20 broadly defines BC Clean electricity as "alternative energy technologies that result in a net environmental improvement relative to existing energy production." Examples listed include small micro hydro, wind, solar and biomass energy, as well as cogeneration of heat and power. The broad definition is intended to "allow for the development of a diverse range of cost-effective and environmentally responsible resources across the province". Notwithstanding Policy Action No. 20, the BC Government has not finalized its definition of BC Clean electricity.

BC Hydro proposes that "eligible customers are those that own and operate a distributed generator that utilizes water, wind, solar, fuel cell, geothermal, biomass, or other inherently self-renewing energy source to generate electricity" (BC Hydro Application, Tab A, p. A-3). The proposed eligible energy sources are listed in the Rate Schedule 1289 tariff pages filed under Tab B of the Application. BC Hydro intends to rely on its green criteria or other third party certification criteria to select green energy projects that would be eligible for the net metering program until such time as the definition of BC Clean electricity is finalized (BC Hydro Response to BCUC IR No.1: 1.1). BC Hydro states that once the definition of BC Clean electricity is finalized, it will be used to determine eligible forms of generation for the net metering tariff (BC Hydro Response to BCUC IR No.1: 1.2).

The Commission Panel accepts BC Hydro's proposed green criteria for eligible energy sources for the interim period until the BC Government's definition of BC Clean electricity is finalized. As a component of BC Hydro's monitoring and evaluation report (see section 2.6), the Commission Panel directs BC Hydro to recommend amendments to the Availability provisions in the net metering tariff pages in order that they reflect the final BC Clean electricity definition. BC Hydro should submit these revisions to the Commission for final approval at the time that it files its report. As part of this effort, BC Hydro should indicate what

changes to its avoided cost energy price, if any, would be required if the definition of BC Clean electricity were finalized to include the cogeneration of heat and power, for example.

The Commission directed BC Hydro to file a net metering tariff that was applicable only to generation capacity of 50 kW or less. BC Hydro's Application complies with this tariff parameter. A number of intervenors question this constraint as potentially limiting the uptake of net metering or causing other practical problems.

Mr. Wheatley notes that various jurisdictions have widely differing limitations on power production by customers, including limits based on the voltage of a net metering facility (Mr. Wheatley's Submission, paragraph 2.5).

The Commission Panel is satisfied that the 50 kW capacity limit in the net metering tariff is appropriate at this time. A 50 kW system size is consistent with the intent of net metering to allow individual customers to meet all or part of their electricity demand. BC Hydro notes that the 50 kW capacity limit is consistent with the maximum amperage and voltage at which most residential customers and many commercial customers take electric service (BC Hydro Reply Submissions, paragraph 17). Further, and more importantly to net metering tariff design from a regulatory perspective, limits to system size are intended to reduce the potential magnitude of cost-shifting to non-participating customers.

The Commission Panel directs BC Hydro, as a component of its monitoring and evaluation report, to assess the practical experience associated with whether the capacity constraint limited any potential customer applications or available technologies. As a component of this report, BC Hydro should discuss the merits associated with an increased capacity limit or a limit based on voltage. For example, BC Hydro should assess the tradeoffs between expected participation rates and cost-shifting, in so far as those issues may be affected by a higher limit for capacity, or a limit based on voltage. The Commission Panel directs BC Hydro to recommend, as necessary, any amendments to the tariff based on its assessment.

2.2 Treatment of Excess Generation

BC Hydro proposes to set up a generation account that will bank a customer's excess energy in one billing period and apply such energy to the customer's net consumption in later billing periods, until a 12-month anniversary date of service interconnection is reached. BC Hydro's proposed generation account and anniversary date have not been the focus of any substantive debate in this hearing.

The Commission Panel accepts as appropriate BC Hydro's proposed administration of net excess energy with the generation account, including clearing the account at the 12-month anniversary date of service

interconnection. The Commission Panel requests that BC Hydro provide, as part of its monitoring and evaluation report, a summary that tracks the administration of the generation account, including data on the amounts of net excess generation by customer and by billing interval over the period of service interconnection.

BC Hydro proposes to purchase net excess generation at a 12-month anniversary date for a price equal to its avoided cost for green energy, calculated as the weighted average energy cost of its most recent comparable Call for Tender for green power generation; a price currently equal to 5.4 cents/kWh. This “Energy price” is set out in the Rate provision of the Rate Schedule 1289 tariff pages, attached as Tab B to the Application.

Mr. Wheatley submits that BC Hydro should pay the highest possible avoided cost for net excess generation based on the highest price paid to any other supplier during any given billing period over the 12-month billing cycle. Mr. Wheatley contends that the highest avoided cost approach is justified because, among other reasons, it would lower BC Hydro’s administration costs, it would be consistent with his submission that BC Hydro’s avoided cost is determined by the most expensive alternative source, it would be perceived as fair to compensate net metering customers for their high-cost of power production, and it would encourage BC Clean electricity production, as per Policy Action No. 20 (see Mr. Wheatley Submission, paragraphs 15.0 – 17.2). BC Hydro responds that Mr. Wheatley’s approach does not conform to the use of avoided cost to value excess generation, as is practiced in other jurisdictions, nor does he appreciate that his proposed approach would entail cost-shifting to other non-participating customers. BC Hydro states that Mr. Wheatley has not shown that its proposal for the Energy price is either unjust or unreasonable (BC Hydro Reply Submissions, pp. 13-14).

Sustainable Communities Consultancy (“SCC”) states that the rate which net-metered customers are paid for net excess generation “should reflect the cost of new Call-For-Tender (“CFT”) energy, not the current rate charge.” SCC suggests that “In commercial terms, it may be more rational to offer the price which BC Hydro receives for selling power to the USA” (SCC Submission, p. 3). BC Hydro dismisses this latter suggestion on the basis that SCC does not explain the link to export prices; rather, it notes that such export prices are tied to factors other than avoided costs, such as market conditions and exchange rates. On SCC’s first point, BC Hydro points to the fact that the Energy price is based on the most comparable CFT for green energy sources (BC Hydro Reply Submissions, p. 7).

The BC Old Age Pensioners Organization et al. (“BCOAPO et al.”)¹ argues that it is unfair for BC Hydro to pay an Energy price that is less than what BC Hydro is willing to pay for other resources in specific areas, such as Vancouver Island (BCOAPO et al. Final Argument, p. 2). BC Hydro responds that varying the Energy price by region would not accord with offering a simple net metering tariff, but would rather increase the complexity and cost of administering the tariff, with little consequent benefit to ratepayers. Moreover, it would be inconsistent with postage-stamp rate-setting, as currently practiced in BC (BC Hydro Reply Submissions, pp. 5-6).

Energy Solutions for Vancouver Island (“ESVI”) suggests that the wording in the Application should reflect first how the pricing will be calculated; for example, “The Energy price is based on the weighted average energy cost of the most recent comparable Call for Tender, which will be updated on an annual basis.” Then, ESVI argues, it may be appropriate to include the specifics for the first year calculation of 5.4 cents/kWh (ESVI Submission, paragraph 1.0).

The Commission Panel accepts BC Hydro’s proposed methodology to calculate an Energy price for purchase of annual net excess generation based on the avoided cost of comparable green power generation.

The Commission Panel considers this to be a fair and reasonable approach for valuing the excess generation from qualifying net metering facilities under BC Hydro’s eligibility criteria, from the perspective of both participating and non-participating customers.

The Commission Panel requests that when BC Hydro files its monitoring and evaluation report, it also propose revisions to its tariff pages to include the terms of the Energy price methodology, and a description of the provisions for updates to the Energy price based on the most recent CFT for comparable green power generation. The Commission Panel requested above that BC Hydro should also include a discussion of what changes to its avoided cost energy price, if any, would be required if the definition of BC Clean electricity were finalized to include the cogeneration of heat and power, for example.

2.3 Metering

BC Hydro proposes to install a “four-quadrant meter” that will record both the net kWh taken from the BC Hydro system by the customer and the net kWh generated into the BC Hydro system by the customer. BC Hydro noted that net metering could be accommodated more simply with the standard electro-mechanical customer meter, but that it is unable to use these meters for net metering because they are not approved by Measurement Canada for this purpose, and these meters are not currently calibrated to measure net generation (i.e. meter running

¹ The GSX Concerned Citizens Coalition (“GSXCCC”) adopts the BCOAPO et al Final Argument.

backwards). BC Hydro proposes to incur all the incremental costs associated with four-quadrant meters (equipment, install and reading).

All intervenors made submissions concerning BC Hydro's metering proposal. BCOAPO et al. recommends that the Commission direct BC Hydro to ask Measurement Canada to approve existing standard electro-mechanical meters for net metering, since this would save the incremental cost associated with installing other approved meters. BCOAPO et al. is also concerned that four-quadrant meters could become white elephants if they are not part of a BC Hydro meter replacement strategy structured to accommodate other innovative rates and programs, such as time-of-use metering, where more sophisticated meters would be required (BCOAPO et al. Final Argument, pp. 2-3).

Mr. Wheatley submits that it is inappropriate for BC Hydro to fix the metering requirements in the tariff. Mr. Wheatley submits that the issue of approved metering could be resolved through consultation with Measurement Canada and the BCUC (Mr. Wheatley Submission, paragraphs 13.0-14.4). SCC questions the need to specify the kind of meter to install when all that is called for is a list of approved meters (SCC Submission, p. 3). ESVI submits that since this is primarily a regulatory issue, a list of approved meters should be referenced, rather than a particular type (ESVI Submission, paragraph 2.0). Friends of Renewable Energy BC ("FORE BC") states that BC Hydro has proposed an engineering solution to a legal problem. It recommends that existing meters should be licensed in cooperation with other stakeholders (FORE BC Submission, pp. 1-2).

A number of intervenors submitted a communiqué prepared by Measurement Canada in response to stakeholder inquiries. The communiqué identifies Measurement Canada's policy and undertakings with respect to net metering and the requirements applicable to net metering installations. Measurement Canada recognizes that its current metering requirements are perceived as a barrier to implementation of renewable energy generation at the residential level. It intends to meet with industry associations and government departments to review the metering requirements of concern and to explore options to reduce associated impediments to successful implementation of net metering. Where required, Measurement Canada will develop and publish specifications to support any design, performance, installation, or use requirements for net metering approval recognition. To this end, Measurement Canada invites electricity meter manufacturers to evaluate and report on the designs of their electro-mechanical and single-register electronic meters, giving specific consideration to the capabilities and limitations of such meters in a net metering installation (see attachment to the GSXCCC Submission).

In response to BCOAPO et al., BC Hydro notes that its meter replacement strategy is simply to replace electro-mechanical meters with electronic meters when it makes economic sense to do so. Further, BC Hydro is

confident that four-quadrant meters will not become white elephants given its expectation for limited uptake of net metering (BC Hydro Reply Submissions, p. 6).

In response to ESVI, BC Hydro emphasizes that net metering customers would have their standard electro-mechanical meters replaced by four-quadrant meters at no cost to them. BC Hydro highlights that its approach is consistent with Measurement Canada specifications and avoids customers having to rewire their premises for a second meter base (BC Hydro Reply Submissions, p. 9). BC Hydro states that the additional costs of its single meter solution (compared to an alternative of installing two detented meters back-to-back) are small in an absolute sense, and small compared to what the customer saves by not having to install a second meter base. For this reason, BC Hydro asserts that its single (four-quadrant) meter proposal removes metering as an impediment to customer generation (BC Hydro Response to BCUC IR 12.1).

Through its response to GSXCCC, BC Hydro notes that Measurement Canada is seeking input from industry associations and government departments specifically, while other aspects of Measurement Canada's communiqué are directed at meter manufacturers. BC Hydro states that it does not have the kind of detailed knowledge that Measurement Canada is seeking about meter performance capabilities and limitations in a net metering context. BC Hydro states that manufacturers should supply this information (BC Hydro Reply Submissions, p. 10).

The Commission Panel reiterates that all BC Hydro ratepayers, not just net metering customers, will pay for the incremental costs of metering (equipment, install and reading). The Commission Panel agrees that such costs are anticipated to be small relative to overall BC Hydro operations, and small in an absolute sense, given expectations for limited uptake of net metering. The Commission Panel believes that the limited cost-shifting to non-participating customers is warranted to support the implementation of net metering for distributed renewable generation. The Commission Panel supports BC Hydro's assessment of the cost-effectiveness of its metering proposal from the perspective of participating customers, in so far as a second meter base would not be required with a four-quadrant meter.

The Commission Panel agrees with intervenors that the net metering tariff should not prescribe the type of meters to be installed to support net metering installations. The Commission Panel notes that, notwithstanding BC Hydro's proposal on meter type, BC Hydro does not prescribe the use of the four-quadrant meter in the Metering provisions of its proposed tariff pages (Tab B of the Application).

The Commission Panel accepts BC Hydro's proposed Metering provisions as specified in its tariff pages in Tab B of the Application. The Commission Panel accepts BC Hydro's proposal to use four-quadrant

meters as an appropriate and cost-effective solution to implement the tariff. The Commission directs BC Hydro to use the most cost-effective meter or meters approved by Measurement Canada for net metering.

Despite BC Hydro's suggestion that Measurement Canada's bulletin in no way applies to the utility, the Commission Panel considers that it would be valuable for BC Hydro to solicit feedback from Measurement Canada on the process and action steps that would be required to approve and implement standard electro-mechanical meters for net metering use. Through this effort, BC Hydro could assess the cost-effectiveness of working with Measurement Canada to approve such meters relative to BC Hydro's proposal to use four-quadrant meters. **Therefore, the Commission Panel directs BC Hydro to discuss this issue with Measurement Canada and to report on these discussions as part of its monitoring and evaluation efforts.**

2.4 Interconnection Requirements

BC Hydro proposes that Customers on the net metering tariff are required to enter a Net Metering Interconnection Agreement, which requires the customer to comply with BC Hydro's Net Metering Interconnection Requirements, 50 kW & below ("NMIR/50"). The NMIR/50 standard sets out certain requirements to protect the BC Hydro system and control the power quality delivered by the generator, and to protect the safety of BC Hydro personnel. The power quality criteria and system protection requirements follow typical industry standards and standards defined by the Canadian Standards Association (CSA) and the Institute of Electronic and Electrical Engineers (IEEE). Safety requirements for the disconnection, grounding and isolation of the system follow the requirements of the Canadian Electrical Code ("CE Code") and BC Hydro's Safety Practice Regulations. BC Hydro specifies that Local Operating Orders are required for the safe isolation of the equipment in compliance with BC Hydro's Safety practice regulations. As part of these regulations, BC Hydro requires a customer to install an accessible, load break disconnect switch, lockable in the open position with a visible break, near the utility meter.

Mr. Wheatley argued that the requirement to install an accessible load break disconnect switch near the utility meter could be a significant and unnecessary cost for some installations. Further, he suggested that the CE Code is sufficient and that any dispute regarding the location of the switch could be resolved through a process of discussion with BC Hydro and regulatory authorities (Mr. Wheatley Submission, paragraphs 11.0-12.0). BC Hydro replied that the location of the disconnect switch is a practical application of the CE Code rule that requires the disconnect switch to be readily accessible. BC Hydro notes that where it has key access to a customer service entrance main switch room, no additional disconnect switch would be required. BC Hydro provides excerpts of the CE code and CE code handbook relevant to its requirements (BC Hydro Reply Submissions, p. 13 and Schedule A).

Mr. Wheatley notes that a special condition in BC Hydro's proposed tariff pages requires a generating facility to conform to NMIR/50. Mr. Wheatley argues that BC Hydro could amend the terms of the tariff without reference to the BCUC by amending NMIR/50. Mr. Wheatley argues further that BC Hydro could "ignore changes to legitimate regulations which it has used as justification for the present content of its interconnection requirements. (Mr. Wheatley Submission, paragraph 10.0). BC Hydro submits that "In fact, it is common practice to incorporate a standard or other document by reference, especially with subordinate legislation like regulations and tariff, and...BC Hydro is not free to ignore changes to legitimate regulations" (BC Hydro Reply Submissions, p. 13).

The Commission Panel accepts BC Hydro's requirements for the Interconnection Agreement Tariff supplement No. 63 and the requirements of BC Hydro's NMIR/50 standard. In doing so, the Commission Panel notes the importance of protecting the BC Hydro system and the safety of its personnel, and the importance of controlling the quality of power, which could impact other BC Hydro customers. The Commission Panel also notes that the CE Code Handbook stresses that the "disconnecting means" of a generator is for the protection of the supply authority personnel and must be acceptable to the supply authority. The Commission Panel believes that BC Hydro's interconnection requirements meet the intent of the CE code and the safety requirements of the utility. The Commission Panel encourages BC Hydro to work with net metering applicants to find accessible and cost-effective locations for disconnect switches. The Commission Panel recognizes that BC Hydro may change its interconnection requirements without approval by the Commission. However, the Commission Panel notes that it has the jurisdiction to respond to any customer complaints that utility requirements are unreasonable or unjustified.

BC Hydro attached a *Net Metering Interconnection Agreement* in Tab D of the Application, labeled “BC Hydro Electric Tariff Supplement No. 63” (“Supplement No. 63”). Paragraph 5.4 of Supplement No. 63 states, in part:

If B.C. Hydro in its discretion deems it necessary to require the customer to interrupt or disconnect its Generating Facility from B.C. Hydro’s system, or for B.C. Hydro to itself effect the interruption or disconnection of the Generating Facility from its system...then except to the extent caused by the wilful misconduct or gross negligence of B.C. Hydro, its servants or agents, B.C. Hydro and its servants or agents shall not be liable to the customer for any loss or damage whatsoever resulting from the exercise of such rights by B.C. Hydro.²

In his Information Requests, Mr. Wheatley raised the issue that this clause represents an attempt to obtain immunity or exemption from legal action in cases of fraud, simple negligence, or other misconduct by BC Hydro. BC Hydro responded that the proposed language tracks that used elsewhere in BC Hydro’s Electric Tariff, approved by the Commission pursuant to the *Utilities Commission Act*, and is comparable to language used in other electric utility tariffs (see BC Hydro Response to Mr. Wheatley IR 31.0).

The Commission Panel supports BC Hydro’s assessment that the language tracks that used elsewhere in its Electric Tariff. Page B-27-1 of BC Hydro’s Electric Tariff states, in part, that BC Hydro:

...shall not be responsible or liable for any loss, injury, damage, or expense caused by or resulting from any interruption, termination, failure or defect in the supply of electricity, whether caused by the negligence of B.C. Hydro, its servants or agents, or otherwise unless the loss, injury, damage or expense is directly resulting from the wilful misconduct of B.C. Hydro, its servants or agents provided, however, that BC Hydro, its servants or agents are not responsible for any loss of profit, loss of revenues or other economic loss even if the loss is directly resulting from the wilful misconduct of BC Hydro, its servants or agents.

The Commission Panel notes that the provisions in the net metering tariff differ from the BC Hydro’s Electric Tariff by including “gross negligence”, in addition to “wilful misconduct”, as a principle for liability for loss or damage. Further, the provisions in the net metering tariff do not list “injury” or “expense”, as provided in the Electric Tariff. The Commission Panel notes that the liability provisions in the net metering tariff pages and in BC Hydro’s Electric Tariff are the same in the principle that BC Hydro is liable for loss or damage caused by the wilful misconduct of BC Hydro, its servants or agents.

² This clause is also included as Paragraph 6 in the *Special Conditions* of BC Hydro’s proposed Rate Schedule 1289 tariff pages (Tab B of the Application).

The Commission Panel directs BC Hydro to amend its net metering liability provisions if the principles on which they are based (that is, the principles of the liability provisions contained in BC Hydro's Electric Tariff) are amended, as a matter of course through the public hearing into BC Hydro's 2004/05 – 2005/06 Revenue Requirements Application or through any other BC Hydro hearing. BC Hydro should submit for Commission approval any amendments to the net metering liability provisions, as necessary.

2.5 Customer Fee

BC Hydro proposes to charge a customer fee of \$600 for an on-site inspection test of distributed generating facilities with capacity above 5 kW. The cost estimate is based on the labour for a BC Hydro Protection and Control Technician to drive to a customer site, complete the acceptance check, and return to the office (\$450); vehicle related costs (\$100); and administration costs (\$50). The customer fee is the only program cost that BC Hydro proposes to recover from net metering customers. BC Hydro notes that for projects above 5 kW, this cost will likely be a small percentage of overall project costs. Therefore, it does not expect this cost to influence a customer's decision to install a generator of 5 kW or greater (BC Hydro Response to BCUC IR 18.0).

It was a general theme among most intervenors that the on-site inspection fee seems excessive, and should be reduced, or paid entirely by BC Hydro. BCOAPO et al. submits that the site inspection fee seems likely to be excessive, when the labour cost alone would be equivalent to a 7.5 hour site inspection at \$60 per hour. BCOAPO et al. submit that it may be the case that the site inspection fee is based on an estimate of serving customers in remote, rural areas. BCOAPO et al. suggest that either BC Hydro absorb the costs of site inspection, or that a more fair site inspection fee be determined, one that varies depending on the time required to complete the site inspection, for example (BCOAPO et al. Final Argument, p. 4).

Mr. Wheatley notes that BC Hydro's rationale for inspecting installations greater than 5 kW is based on its notion that installations greater than 5 kW are more likely to have user-adjustable settings and have a greater potential to affect the grid. Mr. Wheatley argues that installations over 5 kW are more likely to use inverters without user-adjustable settings. Mr. Wheatley questions the validity of the labour cost estimate for inspecting systems without user-adjustable settings. Further, Mr. Wheatley highlights examples of systems that would require on-site inspections and alternative examples of operationally and functionally identical systems that would not. Thus, Mr. Wheatley argues that BC Hydro's criteria for on-site inspection is unreasonable and must be seen to be an arbitrary penalty on systems over 5 kW. Mr. Wheatley submits that if the purpose of the BC Hydro Application is to provide for inspection of user-adjustable inverters, then that is what the Application should state and provide for (Mr. Wheatley Submission, paragraphs 6.0-9.2).

BC Hydro acknowledges that the 5 kW criterion may not take all models of inverters into account. BC Hydro states that the 5 kW criterion was based on capacity rating, rather than technical specifications, since few residential customers would have systems exceeding 5 kW. It argues, therefore, that the criterion is practical and reasonably representative. BC Hydro proposes to monitor whether the 5 kW criterion is a hurdle to net metering uptake (BC Hydro Reply Submissions, p. 12).

BC Hydro states that the amount of \$600 was set as a standard fee based on its estimate of how the site-inspection costs for rural or urban customers would average out over time. BC Hydro notes that customers who can take advantage of the net metering tariff receive a benefit for doing so. Therefore, BC Hydro submits that it is appropriate that some of the direct costs caused by net metering, such as on-site inspection tests, be borne by net metering participants rather than by ratepayers as a whole (BC Hydro Reply Submissions, pp. 6, 8, 12-13).

The Commission Panel agrees that it is appropriate for net metering customers to incur some of BC Hydro's direct costs for service interconnection. The Commission Panel accepts that BC Hydro's 5 kW criterion for on-site acceptance checks is appropriate at this time. Accordingly, the Commission Panel accepts BC Hydro's proposal to charge a customer fee for on-site inspection of facilities with generating capacity above 5 kW. However, the Commission Panel finds that BC Hydro has not established an adequate basis for the \$600 amount of the customer fee, and the Commission Panel agrees with the submissions of intervenors that the amount is potentially excessive. Therefore, the Commission Panel directs BC Hydro to charge a variable fee for on-site inspection supported by an invoice itemizing the costs incurred by BC Hydro for the inspection, a total amount not to exceed \$600 per inspection.

The Commission Panel supports BC Hydro's intention to monitor whether the 5 kW criterion is a hurdle to net metering uptake and directs it to undertake this effort. Further, the Commission Panel directs BC Hydro as part of its program evaluation, to monitor and report on the actual and billed costs for on-site inspections, and to comment on the reasonableness of the Commission Panel's directive regarding the recovery of these costs.

2.6 Monitoring and Evaluation

BC Hydro proposes to monitor its incremental costs, customer participation, and the net excess generation provided by participants. It proposes to submit an evaluation report to the Commission one year after there are ten or more customers on the net metering tariff. BC Hydro proposes to wait until there are at least ten customers on the tariff in order to have a broader base of information, and thus a more useful report. However, BC Hydro

would prepare an evaluation report after one year if directed by the Commission (BC Hydro Response to BCUC IR 19.0).

BC Hydro notes that the factors it would assess in an evaluation report of the net metering tariff may include (BC Hydro Response to BCUC IR 2.0, 19.0):

- Number of net metering facilities;
- Generator rating and amount of energy delivered to BC Hydro from the net metering generation facilities;
- Performance of net metering participants by type, size, and location;
- Power quality and reliability of supply and how it affects other customers;
- The impact of net metering, including the impact on energy portfolio planning;
- Other utilities' experiences;
- Technological advances in distributed generation;
- Changes in regulatory and code requirements;
- Incremental cost of Rate Schedule 1289;
- BC Hydro costs recovered from customers on Rate Schedule 1289;
- Cost of energy to BC Hydro of energy generated by Rate Schedule 1289 customers; and
- Feedback from customers on the merits and problems with Rate Schedule 1289.

The Commission Panel directs BC Hydro to file a monitoring and evaluation report of the net metering program one year after the final net metering tariff is approved. The Commission Panel directed BC Hydro to report on specific issues in previous sections of these Reasons for Decision. The Commission Panel directs BC Hydro to consider also the factors listed above, and any other factors it deems appropriate, in its monitoring and evaluation report. The report should include a summary of all inquiries into net metering, the number of applications filed, and the number of executed agreements. BC Hydro should actively solicit and record feedback at all levels of the net metering application process.

Consistent with the Commission Panel's earlier directives, BC Hydro should submit any proposed revisions to the net metering tariff based on its evaluation. The Commission will review any proposed tariff revisions, as necessary, and provide direction for future reports if required.