Rule 024 and Micro-generation Application Processes Questionnaire

1. Should there be a standardized methodology or minimum information requirements for utilities' calculation of the estimated annual consumption at a customer's existing or new site and the calculation of the micro-generation unit's output? Please provide an explanation.

Introducing a standardized methodology or minimum information requirements for a utility's calculation of estimated annual consumption would improve efficiency for utilities, streamline the application process for a customer and would ensure utilities across the province are evaluating customer applications in the same manner and on the same metrics. Further, a standardized methodology or minimum information requirements should specify whether and in what amount utilities allow a threshold or "buffer" amount for customers to exceed their annual electricity consumption for their micro-generation generating unit's output and what circumstances would trigger post-compliance monitoring by the utility. A standardized methodology and minimum information requirements should also, in theory, reduce the likelihood and frequency of disputes arising pursuant to sections 2 and 2.1 of the *Micro-generation Regulation* between utilities and customers and would reduce the need for Alberta Utilities Commission (AUC)'s intervention when assessing whether a customer's generating unit qualifies as a micro-generation generating pursuant to section 1(1)(h) of the *Micro-generation Regulation*. Overall, a standardized methodology and minimum information requirements would ensure fairness for utilities and customers alike in such determinations.

(a) Please identify and justify the best historical timespan for accurately assessing a customer's historical energy usage (for existing sites).

The use of either the customer's previous year's annual consumption or an average annual consumption amount aggregated over the past three to five years, if available, would be optimal in assessing a customer's historical energy usage. For customers who do not have an aggregated average consumption amount over the past three to five years available, the customer could alternatively rely on the previous year's annual consumption amount along with the requirement by the customer to notify or supply evidence to the utility substantiating any projected increases in energy consumption that are expected. This could include evidence of a purchase of an electric vehicle or installation of charging units, installation of air conditioning units, heat pumps, hot tubs or other high-use electricity demands that are anticipated by the customer. Further, the benefits of relying on an aggregated average energy consumption amount over a longer timespan of three to five years, where available, would also mitigate the effect of short-term spikes in annual consumption relating to drastic weather events in the year prior.

(b) Please identify and justify the best way for accurately projecting a customer's future energy usage (for new sites).

Although a customer's future energy usage for new sites could be predicted using the customer's historical annual consumption for the time frame recommended above in response 1(a), some

factors could impact this assessment for entirely new sites, including whether the site has historical energy consumption available to assess. This may not be available for new rural properties or new subdivision developments that have no consumption data available to assess or in circumstances where energy consumption is anticipated to drastically change year-to-year (i.e. empty nesters, change in number of inhabitants in a property, etc.). If historical energy consumption is available to assess, then in addition to this assessment, the customer should also supply evidence to the utility of upcoming energy consumption demands within the year after installation, as applicable, and in these cases, load estimates or manufacturer specifications for new and anticipated electricity demands can be used to project expected increases in consumption.

(c) Please specify and justify the minimum level of proof that utilities should accept if a customer explains that they intend to increase their electricity consumption shortly after installing a micro-generation system (such as electric vehicle proof of purchase, etc.).

This is a threshold question that would be difficult to standardize across all utilities given varying internal policies concerning due diligence factors. This also increases administrative burden on both utilities and customers to supply, substantiate and assess on a continual or case-by-case basis whenever a desired or anticipated increase in annual electricity consumption is expected by a customer.

While proof of purchase, insurance and registration (where applicable), as well as approved permits (where applicable) could suffice in substantiating forthcoming increased electricity consumption, an alternative to the requirement of a customer needing to supply such evidence could be mitigated by introducing an industry-wide variance level or "buffer" for a utility when assessing future electricity consumption relative to historical electricity consumption. The result of this would be that nominal increases in annual electricity consumption would not render the customer off-side the requirements of section 1(1)(h) of the *Micro-generation Regulation*. Although some utilities include a tolerance for electricity consumption increases, there is no industry-standard tolerance level that currently applies in legislation or in AUC Rule 024.

(d) Please explain how a new micro-generation unit's yearly energy output should be calculated, including accommodation for any partial shading or coverage of a rooftop solar photovoltaic system.

No response.

2. There are currently no specified mechanisms for monitoring the compliance of micro-generation systems with the *Micro-Generation Regulation* (i.e., the micro-generation system generates all or a part of, but not more than, the customer's yearly electricity consumption) after the system is approved. How important is post-approval compliance monitoring to ensure micro-generators are remaining aligned with the *Micro-Generation Regulation*? Please provide an explanation.

Post-approval compliance monitoring is important to ensure that the purpose and objectives of the *Micro-Generation Regulation* are being met, namely, section 1(1)(h)(ii) of the *Micro-Generation Regulation*, which states the intention of micro-generation generating units as follows:

…

> (ii) is intended to meet ***all*** ***or*** ***a portion*** ***of the*** ***customer's total annual energy consumption*** at the customer's site or aggregated sites,…[emphasis added]

As enacted, the intent of the *Micro-generation Regulation* is to promote self-supply via renewable energy sources and to simplify regulatory approval and the interconnection process for customers. With that said, the *Micro-generation Regulation* includes a mechanism for customers to sell excess electricity generated to the power pool in instances where customers over-generate relative to their historical consumption requirements. The AUC confirmed this allowance in paragraph 35 of Decision 23412-D01-2018:

> 35. …..The Commission notes that the Micro-generation Regulation contains specific provisions that permit qualified micro-generators to sell excess electricity to the power pool. In other words, the Alberta legislature contemplated that qualified micro-generators may at times produce excess electricity, and therefore included specific provisions in the statutory scheme to enable these micro-generators to sell that excess electricity to the power pool.

Due to the framework in the *Micro-generation Regulation* that allows for customers to sell excess electricity generated, post-approval compliance is necessary to ensure that micro-generation generating units are not pursuing micro-generation for the sole intention of seeking a profit or to commercialize the micro-generation site, which is contrary to the spirit and intent of the *Micro-generation Regulation*.

(a) Please identify and justify the best way to structure mechanisms for post-approval compliance monitoring, particularly regarding which party (or parties) should assume primary responsibility (such as the AUC, the AESO, utilities, etc.).

In Decision 23412-D01-2018, the AUC has already stated that "compliance monitoring" is not within the AUC's jurisdiction relative to section 2(3) assessments in the *Micro-generation Regulation*, and thus, unless the Alberta legislature enacted changes to the *Micro-generation Regulation* which introduced regulations for the AUC to be able to monitor and administer post-approval compliance protocols, such duties currently fall to utilities to monitor and enforce through metering data available to the utility. A better alternative would be for *AUC Rule 024 to* allow for nominal variations or buffers into a customer's annual electricity consumption so that compliance monitoring or investigation by a utility would only be required in instances where a customer's electricity consumption exceeds a pre-determined and industry-wide threshold value. In these circumstances, the utility and the customer could assess the increased annual electricity consumption and make a new determination on whether the site continues to qualify as a micro-generation generating unit in accordance with the *Micro-generation Regulation*. If there are repeated instances of non-compliance

by a customer, then in addition to being able to disconnect or suspend the infringing micro-generating generating unit's site, utilities should be able to assess penalties.

3. **What type of inverter de-rating, and associated evidence of this de-rating, would ensure that a micro-generation facility will not later increase its system capacity beyond the micro-generation system size approved by the utility? Please provide an explanation.**

Inverter de-rating is generally not permitted by EQUS. The maximum allowable inverter size is determined based on the customer's total consumption from the previous calendar year, available hosting capacity, and other relevant factors. If inverter de-rating is necessary in some cases, it must be implemented through software or firmware controls. The utility should reserve the right to audit or inspect the system to ensure the de-rating remains in effect.

   (a) **Should micro-generators be permitted to de-rate their inverters, subject to the previously described limitations? Please provide an explanation.**

See response to question #3 above.

4. **The City of Medicine Hat's micro-generation application process includes an initial step to determine a potential micro-generation system's maximum permissible size, which has been found to reduce the number of full applications received. Would it be useful for the micro-generation application process to include an initial sizing determination phase, where a utility first determines a customer's maximum permissible micro-generation system size before the customer makes a decision to proceed to a full application? Please provide an explanation.**

Yes, for small micro-generation applications, an initial sizing determination phase should be included before the customer proceeds to a full application. For large micro-generations applications, this determination would remain subject to the SIA study as this must be completed for large micro-generation applications.

5. **The AUC has heard from stakeholders that inverter standards for micro-generation systems often change, creating temporary misalignment with some AUC guidance documents and contributing to some confusion among micro-generation applicants. Would it be helpful for the AUC to facilitate a working group of relevant parties that reviews technical standards (for inverters, etc.)? Please provide an explanation.**

Yes, it would be helpful for the AUC to facilitate a working group that regularly reviews and aligns technical standards.

   (a) **If yes, how often should the working group meet? (e.g. monthly, quarterly, bi-annually). Please provide examples of technical requirements, other than inverters, that should be included in the discussions.**

Working group meetings facilitated by the AUC should occur at least on an annual basis, and preferably on a bi-annual or more frequent basis wherever possible.

(b) If no, please suggest a different way that the AUC can keep abreast of changing technical standards.

Not applicable. Please see response to question 5(a) above.

6. Please identify, and provide justification and details for, any other high priority micro-generation issues that should be addressed to ensure the effective and efficient functioning of the micro-generation landscape.

For CHP-based micro-generation applications, what is the appropriate sizing methodology to ensure the system meets AUC requirements.