

RULE 024 ENGAGEMENT / CONSULTATION

Alberta Utilities Commission

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Re: Bulletin 2025-05

QUESTIONNAIRE AND RESPONSES

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.

Response: Micro generators should not be limited by consumption history or consumption trends. In the case of residential (urban/suburban) micro-generators, a system's capacity should be limited only by the residence's connection to the grid capacity, or by solar-viable roof size, whichever is less. This encourages potential residential micro-generators to size their system according to their own criteria: what they can afford to install, how much capacity they need/want, and how much roof they want to cover.

With respect to connection to the grid capacity, I have insufficient knowledge to know what the capacity challenges are. Final branch to residence wire ampacity is the obvious one, but presumably Fortis and their city equivalents have to consider upstream bottlenecks too. I've been told that synchronization of alternation of the electrical current becomes more of a challenge when generation facilities become larger, but I don't know if that is an impediment to allowing residential micro-generators to exceed their nominal consumption. Logically it shouldn't because the current collective of micro-generators far exceeds their consumption in summer, which demonstrates (to me) that the grid is capable of handling point-in-time excess generation.

Balancing supply and demand is a minute-by-minute exercise, not an annual one. Technology should be able to accommodate increasing micro-generation supply.

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

Response: As explained above, historical energy usage should not be used.

Like investment, past usage patterns do not guarantee future consumption. In the case of residential installations there are many life events that can change consumption up or down. For example,

- starting a family, adult children moving out (or back in), elderly relatives moving in;
- Selling the house and the buyer having completely different usage patterns;
- buying an EV, replacing an EV with an ICE vehicle, replacing an ICE with a hybrid, replacing a hybrid with an EV;
- buying or giving up using a drier or air conditioning;
- replacing a conventional furnace with a heat pump;
- replacing an electric range with a gas one, replacing a radiant range with an induction one;
- increasing insulation, installing other temperature mitigation devices such as low "E" windows, window awnings or shutters;
- Building an addition to the property;

RULE 024 ENGAGEMENT / CONSULTATION

- changing EV driving patterns due to getting a job, losing a job, changing a job, starting or ending doing school runs, starting or ending driving kids to hockey/gym/whatever games/competitions;
 - Retiring and spending more time at home or travelling more;
 - Installing more efficient appliances;
 - Starting or closing a home business that uses electricity;
 - Health changes that necessitate more energy usage, such as stair lifts, higher indoor temperatures, air conditioning, mobility scooter;
 - Purchasing and using e-bikes;
 - Replacing large desktop computers with laptops;
 - Taking up a hobby that requires electricity, such as pottery (kiln for firing), woodwork (extensive use of power tools);
- b. Please identify and justify the best way for accurately projecting a customer's future energy usage (for new sites).

See response to "a" above.

- 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.)

See response to "a" above. If regulations require that each change in usage that results in a greater-than "X" kWh per month/year needs to be analyzed, the bureaucracy will paralyse the regulators.

- 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 rooftop solar photovoltaic system.

Response: I am not qualified to provide a response to this question. However, if we assume that capacity should be limited by grid connection ampacity or roof area, existing calculations/estimates should suffice.

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.

Response: If we disconnect system sizing from electricity usage, there should be no need whatsoever for compliance monitoring. The approvals process will ensure that systems are installed and connected to the grid safely. Any increase in generation capacity would need to be approved also. This leaves events like removing shade from panels (cutting down trees, etc.), which I would **guess** is too small a change to need to worry about.

Why introduce more regulation (and cost)?

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.

Response: De-rating would not be required if system sizing is dictated by grid connection ampacity.

RULE 024 ENGAGEMENT / CONSULTATION

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

Response: De-rating would not be required if system sizing is dictated by grid connection ampacity.

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.

Response: Not knowing the details of Medicine Hat's initial process step, I cannot comment except to say that on the surface, this sounds like they are determining the maximum potential size based on relevant physical limitations such as my suggestions above rather than protecting... who?—large-scale electricity generators?

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.

Response: I would hope that changes would allow for a great degree of backwards compatibility. But in order to accommodate changes, I would like to see a working group that includes micro retailers like UtilityNet be convened to balance the protection of micro-generators' investments with the desire of large-scale generators and distributors' need to upgrade in order to meet shareholder expectations.

- 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.

Response: I have no information with which to provide a response to this.

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.

Response: I would ask that the proverbial goalposts not be moved with respect to micro-generators receiving the anticipated return on their investment. If, for example, a new rate regime is enacted whereby micro-generators (particularly small ones like us with our residential system) are denied the freedom to change rates when it is financially advantageous to us/them, or buy and sell rates are not kept equal, then our/their payback time changes, and as that reality becomes better-known, future potential micro-generators will be discouraged from taking the plunge.

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