Rule 024 and MIcro-generation application processes questionnaire RESPONSE

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.

   Micro-generators with 200-amp service or less should be enabled to have unlimited self supply and export to the grid, like Alberta industry can now. A secondary system at this very micro scale to address capacity concerns would simply be a red tape measure.

   There should be a standardized methodology or minimum information requirements for utilities' calculation of the estimated annual consumption at a client's site and the production output. A clear, standardized process would improve efficiency, enhance fairness and reduce delays. This would reduce the need for solar installers and utilities to assess most residential and some small commercial micro-generation system sizes, and enable the AUC and utilities to focus their information specifications on the systems that are more consequential to the grid.

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

      Enabling unlimited self supply and export within the maximum generation rates that 200 amp service or less grid connection can support, is already factored into micro-generation approvals. Micro-generators on a service over 200-amps should be enabled to choose between using their previous year's usage or an average of the past 3 to 5 years of consumption. This will allow for accommodations related to changing weather conditions, but will also not be overly burdensome to those without 3 or 5 years of historical data.

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

      Projecting future energy for services under 200 amps would be capped by the service installed to the residential location so there is no need to project use at a specific customer level. Micro-generators on a service over 200 amps should be able to base this future energy use projection on historical energy usage (from the past 1, 3 or 5 years) plus any evidence of energy use that will be coming online within the year after installation. In such cases, standardized load estimates or manufacturer specifications for new technologies (e.g., EV chargers or heat pumps) can be used to project expected increases in consumption. There is publicly available data on average usage for common loads such as these.

   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.)

For micro-generators on a 200-amp service or less, we recommend not requiring proof for future energy use, and instead enabling unlimited self supply and export. Micro-generators on a service over 200 amps should be able to provide data consistent with proof of purchase (e.g., bill of sale, order confirmation, registration, or issued permits, etc.). This should apply to items such as electric vehicles, charging stations, heat pumps, AC units, electric stoves, and other energy-intensive devices. Currently, in some jurisdictions, the utilities are requiring more proof than is reasonable/manageable (e.g., insurance or registration of an EV in addition to a bill of sale).

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.

For micro-generators on a 200-amp service or less there is no need to for calculations for yearly energy output; instead enable unlimited self supply and export.

For micro-generators on a service over 200 amps, we recommend adopting expectations akin to section 5.6. of Solar Alberta's Alberta Solar Business Code of Conduct (https://solaralberta.ca/wp-content/uploads/2023/12/Alberta-Solar-Business-Code-of-Conduct-Nov2023.pdf)

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.

There are no compliance monitoring systems and processes in place for electrical panels after initial installation; any modifications or additions are captured through the electrical permit requirement process. Adding this for solar installations would simply be an addition of red tape. Post compliance regulation would also generate housing and business market uncertainty because homes and businesses with solar would increasingly be seen as a burden involving added paperwork and potentially new costs/penalties for those who are purchasing a home or business.

Focusing on sound approvals at the outset should proactively address any concerns there might be about more significant overproduction for micro-generators with as service over 200-amps.

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.)

There is no best way to structure mechanisms for post-approval compliance monitoring. Policing homeowners who reduce consumption for personal or seasonal reasons (such as empty-nesters) is not a good use of the utilities' time and would not impact the overall health of Alberta's grid. Distributed micro-generation decreases demand on the grid and contributes to reducing the capital cost requirements for additional utility-scale power plant construction or expansion. Improvements to the upfront system sizing process and clearer utility guidelines would be a more effective and less intrusive means of addressing any concerns about large micro-generators putting too much electricity onto certain sections of the grid at any one time.

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 should be treated as a safeguard rather than a compliance enforcement mechanism; utilities and regulators should continue to rely primarily on service size constraints and the upfront interconnection approval process to manage grid impacts. Improvements to the upfront system sizing process and clearer utility guidelines would be a more effective means of addressing concerns rather than potential over-generation.

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

Yes. This allows for future-proofing so that system sizes can be easily increased later when additional loads are purchased, like an EV, and would not require a costly full replacement of an inverter.

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.

Adding an initial step to determine a potential micro-generation system's maximum permissible size is redundant if a process and standardized methodology is adopted. There is no need to add additional hoops for micro-generators to go through. Rather than adding an additional step, the Lethbridge model uses a map that shows the maximum size for every home. This is helpful because systems can be designed and presented to clients knowing they will be approved. If the proposed system is going to exceed the maximum size listed, then simplifying the application

process for justifying consumption and output would solve this issue. A public database that clients and contractors can access would be a much more logical step than having to jump through yet another hoop with the utilities.

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, the AUC should routinely bring the utilities together to ensure better alignment on all matters. With respect to inverter standards specifically, it would be best to have a single accepted standard for all inverters, which would be communicated to utilities and jurisdictional inspection departments. CEC approval should be the only requirement.

   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.

      Once or twice a year as per Solar Alberta's recommendation

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.

   Encouraging micro-generation is a way for Alberta to contribute renewable energy to the interprovincial grid with minimal government investment.

   In addition to enabling unlimited self supply and export for Albertans with a 200-amp service or less, we believe that Alberta should maintain the pillars of our Micro-Generation Regulation that have enabled Alberta to be the best province for micro-generators in Canada. Those pillars are:

   - *The One-to-One Ratio: Enables Alberta micro-generators to receive a credit for the electricity that they put on the grid at a rate equivalent to the rate they pay when drawing electricity from the grid.*
   - *Solar-Specific Pricing: Enables Alberta micro-generators, like all power plants in the province, to switch from a higher electricity rate to a lower electricity rate when it is financially advantageous to them.*
   - *Year-End Credit Carry Over and/or Payout: Enables Alberta micro-generators to benefit from any credit they have earned in one calendar year or carry it into the next.*