Rule 024 and Micro-Generation Application Process Questionnaire

Date: **June 26, 2025**

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Preamble:
I include this preamble to convey the clear need to simplify this entire cumbersome, slow, non-responsive, backward-looking residential solar micro-generation process, overburdened with an expensive bureaucracy that fails to meet Albertans' present and future needs. I say this as a retired Electrical Engineer, a project manager who has worked in the Alberta power industry.

In my mind, the entire process should be simplified for residential solar panels, such that:

> Albertans can cover the roofs of our residences with solar panels with the right to unlimited self-supply and export.

That should be the whole rule. This is reflected in my comments throughout.

As long as the work is both electrical, and building, code-compliant, Albertans should be free to plan our solar, electrical, and improvement projects based on our plans for our homes for our futures.
No need for us to justify our needs and plans to a bureaucracy. Indeed, no need for that bureaucracy. No red tape. No waste. No unnecessary delays.

This would obviously be different for larger multi-unit (4+) residential buildings and farms. With those, Albertans should be allowed to outline plans for electrical load changes for 5 years into the future. There should be no need for them to show receipts for items planned but not yet purchased. Albertans should be able to submit our plans and use those plans to get the projects done in an efficient and effective manner without bureaucratic burden.

There should be no need to identify nor to justify historical timespan. Past history does not predict future energy needs. We don't live or operate in the past. Albertans plan for the future we are going to live in. It is impossible for us to predict that future with any certainty.

E.g. How could I have predicted that my gas stove would fail, which led to the purchase of an electric stove? When this occurred *during* the bureaucratic delays for my solar installation, I was informed that I could only increase my panel capacity

after submitting both historical energy demand for my new stove and restarting the application process.

The following are likely to occur during the next 5 years, well within the multi-decadal life of my solar installation.

- How can I predict when my gas water heater will fail which will likely lead to purchase of a heat-pump water heater?
- How can I predict when my gas furnace will fail, likely leading to installing a heat pump?
- How can I predict failure of my gasoline automobile, likely leading to purchasing an EV?

This whole issue of historical energy demand should be redundant. The entire process should be simplified for residential solar panels, such that:

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Questions:

Question 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?

Response 1:

The Micro-Generation Regulation, as it currently stands, defines a "micro-generation generating unit" as being "intended to meet all or a portion of the customer's total annual energy consumption at the customer's site." This definition lacks clarity and imposes a bureaucratic burden on all parties. More critically, it imposes the impossible burden of foresight as to Albertans' future energy consumption. We cannot predict the future. To ask this of us is absurd.

The entire process should be simplified for residential solar panels, such that:

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Question 1(a): Please identify and justify the best historical timespan for accurately assessing a customer's historical energy usage (for existing sites).

Response 1(a):

There should be no need to identify nor to justify historical timespan. Past history does not predict future energy needs. We don't live or operate in the past. We plan for the future we are going to live in. It is impossible for anyone to predict that future with any certainty.

Many unforeseen electric power related issues will occur within the multi-decadal life of my solar installation.

This issue of historical energy demand should be redundant. The entire process should be simplified for residential solar panels, such that:

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Question 1(b): Please identify and justify the best way for accurately projecting a customer's future energy usage (for new sites).

Response 1(b)

Predicting future needs is both impossible for existing sites and impossible for new sites over the multi-decadal working life of solar panels. Many unforeseen electric power related issues will occur within the multi-decadal life of my solar installation. This question should be redundant, as should the necessity of Albertans to justify our plans, projects, and purchases. The entire process should be simplified for residential solar panels, such that:

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Question 1(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.).

Response 1(c):

This did occur during the bureaucratic process. My gas stove failed, again, which led to the purchase of an electric stove? When this occurred during the bureaucratic delay process for my solar installation, I was informed that I could only increase my panel capacity after submitting both historical energy demand for my new stove and restarting the application process. This was absurd.

This question should be redundant, as should the necessity of Albertans to justify our plans, projects, and purchases. The entire process should be simplified for residential solar panels, such that:

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Question 1(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.

Response 1(d): Calculations that include tilt, azimuth, size, geographic location, potential shading, roof aspect, and equipment specifications are provided by solar

installers as part of customer quotations, and again as part of the hand-off package at the time of system commissioning. Every customer should receive a copy of the calculations for the size of the system installed to enable cost-benefit decision-making. Every quote I received included these calculations including seasonal mountain shading.

When Albertans can cover the roofs of our residences with solar panels with the right to unlimited self-supply and export, they will be able to work with solar installers as part of the cost-benefit and design process to determine the appropriate system size.

Question 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 example.

Response 2: This question should be redundant, as should the necessity of Albertans to justify our plans, projects, and purchases. The entire process should be simplified for residential solar panels, such that:

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Obviously all installations of any size require compliance with building and electrical codes.

An example: As part of the municipal building permit process, which was conducted quickly at no charge by my municipality, a Town permit officer provided a quick visual look at my roof after the system was operational to ensure that I did have solar panels on my roof. 5 minutes, including a brief chat about the installation. This was over and above the formal electric & solar system inspections, and the building code inspections, prior to and during the work to ensure everything was built to code.

Question 2(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.).

Response 2(a): This question should be redundant, as should the necessity of Albertans to justify our plans, projects, and purchases. The entire process should be simplified for residential solar panels, such that:

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The contracted wire service providers have billing information which can be consolidated by distribution network should that information be required for transmission, distribution and energy planning purposes.

Please note: time of day pricing is a far better tool to encourage Albertans to make effective use of the grid throughout the day than individual residential unit 'compliance'.

Question 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 3: There is no necessity to de-rate. This question should be redundant, as should the necessity of Albertans to justify our plans, projects, and purchases. The entire process should be simplified for residential solar panels, such that:

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Question 3(a): Should micro-generators be permitted to de-rate their inverters, subject to the previously described limitation? Please provide an explanation.

Response 3(a): There is no necessity to de-rate. This question should be redundant, as should the necessity of Albertans to justify our plans, projects, and purchases. The entire process should be simplified for residential solar panels, such that:

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Question 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 4: This question should be redundant, as should the necessity of Albertans to justify our plans, projects, and purchases. The entire process should be simplified for residential solar panels, such that:

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The building permit process across Alberta includes information about proposed system size and capacity. This is sufficient information for the utility. Any further bureaucratic processes and cost, waste time and are burdensome on all parties.

Question 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 5: This question provides an excellent example, proving the point that nobody can predict the future. Bluntly, expecting Albertans to be able to predict future energy needs is asking for the impossible.
The issue is completely redundant. There is no need for an Alberta working group. It is impossible for Alberta to revise, modify or set standards for technologies which have global reach. Canada has national standards. Those are sufficient. The work has been done, nationally. Adding an Alberta-specific working group into the mix will add cost & time. Alberta will be best served working with other provinces at the national level, contributing expertise and time to the benefit of all Canadians.

Question 5(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 5(a): N/A

Question 5(b): If no, please suggest a different way that the AUC can keep abreast of changing technical standards.
Response 5(b): There is no need for an Alberta working group. It is impossible for Alberta to revise, modify or set standards for technologies which have global reach. Canada has national standards. Those are sufficient. The work has been done, nationally. Adding an Alberta-specific working group into the mix will add cost & time. Alberta will be best served working with other provinces at the national level, contributing expertise and time to the benefit of all Canadians.

Question 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 6: Renewable energy systems and technologies are global, not national let alone provincial. Canada is about 5% of global population. Alberta is about 10% of that. Hundreds of gigaWatts of renewable energy systems are installed globally every year. We can and must learn from the experiences of the other 99.5%. There is no reason to struggle with renewables. Let Albertans who desire solar energy

systems install those systems. There are abundant examples globally where residential solar systems have been successfully integrated into grids at all scales. There is no need for Albertans to justify our plans, projects, and purchases. The entire process should be simplified for residential solar panels, such that:

> Allow Albertans to cover the roofs of our residences with solar panels with the right to unlimited self-supply and export.

This has been proven effective in many systems. Let's do it.

Closing:

Any changes to the Micro-Generation Regulation must introduce and/or preserve two fundamental concepts:

1. The Right to Unlimited Self-Supply and Export: This principle is essential to protect customer investments, allow for future site flexibility, and minimize unnecessary administrative burdens. Unlimited self-supply and export further encourages the transition to a more electrified society without incurring additional transmission costs.

2. The Availability of Solar-Specific Retail Plans: Seasonal rate structures, such as the Solar Club's HI and LO Rates, are built around customer generation patterns and are critical to ensuring a viable return on investment. Disrupting these structures would undermine the economic case for rooftop solar in Alberta.

There is no need to require Albertans to justify our plans, projects, and purchases. The entire process should be simplified for residential solar panels, such that:

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Let's do it.