Good Morning,

Plesae find my responses to the questionnaire below.

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. The factor that impacts the utility is the flow of electricity, not the annual quantity. Local capacity limits related to flow are already enforced by the utilities as part of their standard application review process and therefore, we do not need a secondary system at this very micro scale to address capacity concerns. Since current systems are additionally inherently limited by their grid connection, enabling unlimited self-supply and export without mandating detailed output projections would significantly reduce the administrative burden for all parties without materially impacting the grid. This change 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.

Beyond this adjustment, yes, 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.

Most solar installers operate in multiple jurisdictions around Alberta and it is very difficult for them to learn the methodology and information requirements in each of the different jurisdictions. These differences drive up the costs to operate a solar business, and therefore drive up the cost of solar for Albertans. These differences also lead to challenges in managing micro-generator expectations from one jurisdiction to the next, since Albertans talk to one another and may not realize that their utilities are managing these processes differently.

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

For micro-generators on a 200-amp service or less, we recommend not assessing historical energy use and instead enabling unlimited self supply and export within the maximum

generation rates that their grid connection can support, which 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.

Customers should also be allowed to justify additional generation to offset new electricity demands such as heat pumps and electric vehicle chargers at the time of purchase rather than having to wait a year or more. 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.

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

For micro-generators on a 200-amp service or less, we recommend *not* assessing future energy use and instead enabling unlimited self supply and export.

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.

- **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).

- **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, we recommend *not* requiring calculations for yearly energy output, and instead enabling 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):

5.6.1. Depending on the installation, Material Factors for production calculations of the system should include: ● Equipment and hardware specifications; ● Tilt; ● Azimuth; ● Size; ● Roof layout; ● Geographic location; ● Shading; and ● Any other reasonably evident or anticipated factors impacting system performance.

5.6.2. In the event a performance calculation is unable to include the Material Factors, production projections should clearly identify the omitted factors, the reason for any such omission and the potential impact of the omission.

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.

The introduction of post-approval compliance protocols would add additional and unnecessary burden for both micro-generators and the utilities. This would fundamentally undermine the purpose of Alberta's Micro-Generation Regulation, which the AUC has stated is "in part, to promote self-supply by renewable energy resources and to simplify the regulatory process for micro-generators" (Decision 23412-D01-2018 & reiterated in 2023). Post-approval compliance protocols would also undermine one of the primary current incentives for Albertans to become more energy efficient (reducing their electricity consumption currently enables them to generate additional credit).

Post-approval compliance protocols 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. An analogous example is that 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.

Additionally, the benefits of encouraging distributed generation far outweigh the risks of minor overproduction as excess generation helps reduce the need for other power plants and reduces electricity costs for neighbouring consumers (see M.Cubed's recent analysis about how California's rooftop solar customers financially benefits other ratepayers: https://mcubedecon.com/2024/11/14/how-californias-rooftop-solar-customers-benefit-other-ratepayers-financially-to-the-tune-of-1-5-billion). 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.

- **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. To reiterate, the introduction of post-approval compliance protocols would create an additional and unnecessary burden on both micro-generators and the utilities (who would almost certainly have to manage this), would fundamentally undermine the goal of Alberta's Micro-Generation Regulation, and would undermine one of the primary incentives for Albertans to become more energy efficient (generating additional credit by reducing their electricity consumption).

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. Again, 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.

Ultimately, regardless of the evidence provided for derating, whether from an installer or manufacturer, it is still physically possible to set the inverter back to where it was. Therefore, some level of trust needs to be applied through the interconnection agreement and a future request for increased capacity at the site requires the same approval process.

To reiterate, the introduction of post-approval compliance protocols such as this would create an additional and unnecessary burden on both micro-generators and the utilities (who would almost certainly have to manage this), would fundamentally undermine the goal of Alberta's Micro-Generation Regulation, and would undermine one of the primary current incentives for Albertans to become more energy efficient (generating additional credit by reducing their electricity consumption).

- **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.

To reiterate, the introduction of post-approval compliance protocols would add additional and unnecessary burden on both micro-generators and the utilities (who would almost certainly have to manage this), would fundamentally undermine the goal of Alberta's Micro-Generation Regulation, and would undermine one of the primary current incentives for Albertans to become more energy efficient (generating additional credit by reducing their electricity consumption).

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. **The goal of the Micro-Generation Regulation and the AUC should not be, as stated in this question, "to reduce the number of (micro-generation) applications received."**

Micro-generators with a 200-amp service or less should be enabled to have unlimited self supply and export to the grid within the maximum size that their connection can accommodate. This change would not only give homeowners the same opportunity as industry in Alberta, but it would also significantly reduce the burden of system sizing calculations that is contributing significantly to the backlogs that the AUC has identified.

If the AUC is looking for ways to simplify processes while still implementing size limitations, then they should look at the City of Lethbridge. Rather than adding an additional step, as Medicine Hat has done, they have 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.

If the AUC is concerned about consumer protection with respect to system size calculations, they should require all installers in Alberta to become members of Solar Alberta so that they can be held accountable to the Alberta Solar Business Code of Conduct. Solar Alberta routinely engages in consumer advocacy to industry.

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.

Given that the utilities are essentially the face of the AUC in the community, we find it confusing that the AUC doesn't routinely bring the utilities together to ensure better alignment on all matters. If the AUC does not want to routinely bring the utilities together on these sorts of matters, they could always subcontract to Solar Alberta to make this happen. As a trusted non-profit society in operation for more than 34 years, we have demonstrated the ability to successfully bring together most utilities on a number of occasions. The main limitation to Solar Alberta facilitating more regular utility collaboration has been a lack of dedicated resources, which could be easily addressed through a formal

partnership with the AUC. With Solar Alberta as a neutral convenor, the AUC could reduce confusion amongst micro-generation applicants, streamline approval processes, and promote clearer, more consistent guidance across the province.

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.

- **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.**

The working group should meet once or twice a year.

An example of a technical requirement, other than inverters, that should be included in this discussion is system sizing for heat pumps. The utilities across Alberta are sizing for heat pumps differently so this would be a good topic for discussion.

If the AUC does not want to routinely bring the utilities together on these sorts of matters, they could always subcontract to Solar Alberta to make this happen. We have managed to bring most of the utilities together on a number of occasions. As stated above, the only reason we don't routinely do this is because as a non-profit, we lack the dedicated resources to do so. This could be easily remedied by a sub-contract with the AUC.

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.

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:

1. **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.
2. **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.

3. **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.