Responses by Gary R Maier – Edmonton, AB

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.

Yes, there should be a standardized methodology or minimum information requirements for these calculations—but with an important exception for small-scale micro-generators.

Exception for Small Micro-Generators:
Micro-generators with 200-amp service or less should be allowed to engage in unrestricted self-supply and export to the grid, consistent with current practices in Alberta's industrial sector. The primary concern for utilities is not the total annual energy generated, but rather the real-time flow of electricity through the system. Flow-related local capacity limits are already addressed through utilities' standard application review processes. Therefore, imposing an additional layer of calculation or oversight on these small systems is unnecessary and overly burdensome.

Because these systems are inherently limited by their grid connection size, allowing unrestricted self-supply and export—without requiring detailed output projections—would reduce administrative overhead for both solar installers and utilities, without materially affecting grid reliability. This change would streamline the process for most residential and smaller commercial micro-generation systems, freeing up utility and regulator resources to focus on systems with greater potential impact on the grid.

Support for Standardization Beyond This Exception:
Outside of this micro-scale exception, a standardized methodology or minimum information requirements would offer significant benefits. A clear, consistent approach to estimating site consumption and generation output would enhance efficiency, promote fairness across jurisdictions, and reduce application delays.

Currently, solar installers often work across multiple Alberta jurisdictions, each with its own processes and requirements. This lack of consistency increases business complexity and costs, which are ultimately passed on to consumers. It also creates confusion for customers, who may hear conflicting information based on the jurisdiction they are in.

In summary, a targeted exemption for small micro-generators combined with standardized practices for larger systems would strike the right balance—ensuring efficient and equitable processes while supporting continued growth of distributed generation in Alberta.

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 that historical energy usage not be assessed. Instead, these customers should be permitted **unrestricted self-supply and export**, constrained only by the **technical capacity of their grid connection**—a factor that is already considered during the standard micro-generation approval process. Given the limited impact of these small systems on the broader grid and the natural constraint imposed by connection size, additional consumption analysis is unnecessary and would only create administrative burden without tangible benefit.

  For **micro-generators on services over 200 amps**, we recommend allowing customers to choose between:

  - Their **most recent full year** of consumption data, or
  - An **average of the past 3 to 5 years** of historical consumption.

  This flexible approach balances accuracy with practicality. A single year may reflect recent usage patterns more accurately in cases where consumption has changed significantly, while a 3–5 year average can help normalize unusual conditions (e.g., extreme weather or temporary absences). Importantly, this approach also accommodates customers who may not have extensive historical data, such as those who have recently purchased a property.

  Additionally, **customers should be able to justify larger system sizes to account for anticipated new loads**, such as electric vehicle (EV) chargers or heat pumps, **at the time of application**—rather than being required to wait for these loads to appear in future consumption records. In such cases, **standardized load estimates** or **manufacturer specifications** can be used to reasonably project expected increases in demand. Publicly available data on average consumption for common technologies can support this process, ensuring fairness and consistency.

  This approach reduces barriers to electrification, supports customer investment in clean technologies, and ensures utilities have a clear and consistent basis for assessing system size and usage expectations.

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

For **micro-generators on a 200-amp service or less**, we recommend that future energy usage projections **not be required**. These systems should be permitted **unrestricted self-supply and export**, subject only to the technical limitations of their grid connection—constraints already assessed during the micro-generation approval process. Given their minimal impact on the grid and the natural cap imposed by their connection size, requiring detailed energy projections would impose unnecessary administrative burden without improving system reliability.

For **micro-generators on services over 200 amps**, future energy use projections should be based on a combination of:

- **Historical energy usage** (using 1, 3, or 5 years of data, depending on availability and appropriateness), and
- **Documented evidence of anticipated new electrical loads** expected to come online within one year of system installation.

In these cases, **standardized load estimates** or **manufacturer specifications** should be accepted to project future consumption from technologies such as **electric vehicle chargers, heat pumps, or other major appliances**. Reliable, publicly available data on average usage for these technologies can support consistent and transparent evaluations across jurisdictions.

This approach ensures flexibility, supports customers planning for increased electrification, and reduces unnecessary delays or redesigns. It also provides utilities with a reasonable and standardized method for evaluating system sizing and grid impact without imposing a one-size-fits-all rule that may not reflect real-world energy use.

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 (e.g., electric vehicle proof of purchase).

For **micro-generators on a 200-amp service or less**, we recommend that **no proof be required** for anticipated increases in electricity consumption. These customers should be permitted **unrestricted self-supply and export**, with system limits naturally constrained by their grid connection size. Imposing documentation requirements at this scale adds unnecessary complexity without providing meaningful benefit to utilities or the grid.

For **micro-generators on services over 200 amps**, utilities should accept **a reasonable and flexible range of documentation** to support future consumption increases. Acceptable forms of proof should include, but not be limited to:

- Bill of sale or paid invoice
- Order confirmation
- Registration or delivery confirmation
- Contract deposit or signed agreement for larger renovations
- Issued electrical or development permits

These forms of documentation should apply to anticipated new loads such as:

- Electric vehicles and charging stations
- Heat pumps and air conditioning units
- Electric stoves or ovens
- Other major energy-intensive appliances or systems

This level of proof is sufficient to demonstrate customer intent and investment, without being unduly burdensome. Currently, some jurisdictions require excessive documentation—such as both insurance and registration for an EV in addition to a bill of sale—which creates unnecessary barriers and delays.

A more streamlined, consistent approach will reduce administrative friction, support customer electrification goals, and maintain fairness across jurisdictions, while still providing utilities with credible evidence of expected load growth.

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 systems.

For **micro-generators on a 200-amp service or less**, we recommend **not requiring formal calculations** of yearly energy output. Instead, these systems should be allowed **unrestricted self-supply and export**, constrained only by the capacity of their grid connection. Given the small scale and limited grid impact of these systems, detailed output projections add unnecessary complexity and administrative burden without significant benefit.

For **micro-generators on services over 200 amps**, we recommend adopting a calculation approach aligned with **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), which provides a clear and practical framework:

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. How important is post-approval compliance monitoring to ensure micro-generators remain aligned with the Micro-Generation Regulation?

Post-approval compliance monitoring would create unnecessary burdens for both micro-generators and utilities, undermining the core goal of Alberta's Micro-Generation Regulation—to promote self-supply and simplify the process for small renewable generators (AUC Decision 23412-D01-2018, reiterated 2023).

Such monitoring could discourage adoption by adding paperwork, potential costs, and uncertainty, especially for home and business buyers. Similar regulations do not require ongoing monitoring of electrical panels after installation; changes are managed through permitting.

Moreover, minor overproduction poses minimal risk. Excess generation benefits the grid by reducing demand on other power plants and lowering costs for neighboring customers, as supported by recent analyses (e.g., M.Cubed's study on California rooftop solar benefits).

Importantly, the Regulation does not limit generation to "not more than" annual consumption—the question's wording is misleading. Concerns about grid oversupply are better addressed through upcoming demand-side management initiatives led by the Government of Alberta, which the AUC should not duplicate.

The focus should remain on sound upfront approvals, especially for systems over 200 amps, rather than adding burdensome post-installation compliance requirements.

Please identify and justify the best way to structure mechanisms for post-approval compliance monitoring, particularly regarding which party should assume primary responsibility.

There is no need to structure post-approval compliance monitoring mechanisms. Introducing such protocols would impose unnecessary burdens on both micro-generators and utilities, contradict the intent of Alberta's Micro-Generation Regulation to simplify the process, and weaken incentives for energy efficiency.

Policing homeowners who reduce their consumption for personal or seasonal reasons—such as empty-nesters—is not a good use of utilities' time and would have no meaningful impact on the overall health of Alberta's grid. Distributed micro-generation, in fact, helps reduce grid demand and contributes to lowering the capital costs associated with building or expanding utility-scale power plants. A more effective and less intrusive approach would be to improve the **upfront system sizing process** and provide **clearer utility guidelines**, rather than implementing post-approval monitoring mechanisms. This would better address concerns about larger micro-generators potentially exporting too much electricity to specific sections of the grid.

3. What type of inverter de-rating, and associated evidence, would ensure a micro-generation facility does not later exceed its approved system size?

Inverter de-rating should be viewed as a **safeguard**, not a compliance tool. Utilities should continue to rely on **service size limits** and the **initial interconnection approval** to manage grid impacts effectively. Improvements to upfront system sizing and clearer utility guidelines are more practical and efficient than post-installation monitoring.

While installers or manufacturers can provide documentation of de-rating, inverters can be reset—making enforcement impractical. Though Solar Alberta is unaware of any misuse, **trust and interconnection agreements** must play a role, with any future capacity increases subject to the existing approval process.

Post-approval protocols like this would impose unnecessary burdens, contradict the purpose of the Micro-Generation Regulation, and discourage energy efficiency by penalizing consumers for reducing consumption.

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

Yes, micro-generators should be permitted to de-rate their inverters. This enables future-proofing, allowing customers to increase system capacity later—such as when new loads like electric vehicles are added—without requiring a costly inverter replacement. Additionally, product availability can be limited, and de-rating is often the most practical way to optimize system performance or meet on-site electrical constraints.

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 unrestricted 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.

Another way of addressing the commissioning backlogs that the AUC has identified would be for the AUC to issue an interpretation including a commissioning timeline. This addition would

enable the utilities to add sufficient staff resources to better meet the needs of micro-generators. Currently, some utilities have explained to Solar Alberta that the lack of explicit commissioning timeline requirements is an impediment to recruiting enough staff .

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. Would it be helpful for the AUC to facilitate a working group to review technical standards (e.g., for inverters)? Please provide an explanation.

Yes, it would be helpful for the AUC to facilitate a working group that brings together relevant parties to review and align on technical standards. Since utilities serve as the public-facing arm of the AUC, it makes sense for the AUC to regularly convene them to ensure consistent interpretation and implementation of standards.

If the AUC prefers not to lead this effort directly, it could subcontract this role to Solar Alberta. As a trusted non-profit with over 34 years of experience, Solar Alberta has successfully brought together most of Alberta's utilities in the past. The only barrier to more regular collaboration has been a lack of dedicated resources, which could easily be resolved through a formal partnership with the AUC.

Having a neutral convener would help reduce confusion among micro-generation applicants, streamline approval processes, and promote clearer, more consistent guidance province-wide.

Specifically regarding inverter standards, it would be ideal to have one accepted standard—such as CEC (Canadian Electrical Code) approval—that is clearly communicated to utilities and inspection authorities across jurisdictions.

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.

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.

Aggregating sites that are on different feeders or with different retailers would be advantageous. In addition to these ideas and **enabling unrestricted 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.