ABOUT GREAT CANADIAN SOLAR LTD.

Great Canadian Solar Ltd. (GCS) is a 100% Alberta owned electrical contracting company specializing in the installation and engineering of grid connected and grid isolated photovoltaic (PV) power systems. GCS is based in Edmonton and services all western Canada.

The company was originally incorporated as C.T's Electrical Consulting and Construction in 2005. Until 2009, the focus was primarily on commercial/residential electrical installations and industrial electrical design services for engineering companies.

In 2009, GCS's focus switched to the engineering, procurement and construction of grid connected and grid isolated PV power systems for residential, agricultural, commercial and industrial clients.

From 2009 until the end of 2025, GCS gained valuable experience and insight into the industry by installing over 100 MW of solar PV systems in Alberta. GCS strongly feels that our commitment to community, quality, safety, and professionalism makes us a significant solar industry member here in Alberta.

Questionnaire Responses

Questions the AUC is asking for feedback on are indicated below in Black.
Responses to the AUC Questions are written in Blue 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.

    a. Our understanding is that Utilities do not calculate annual electric energy consumption data for existing or new site's but are more focused on peak electric power draw consumption to provide reliability to the electrical grid. Currently micro-generation (MG) applicants need to justify annual electric energy consumption data to the utilities by way of recent (past year only) annual consumption data on existing sites or an NRCan HOT2000 Full House Report for new sites, or for existing sites which are incorporating additional electrical energy consumption that had not been represented by previous electrical energy consumption data. We support the current system in place apart from only being able to consider the most recent year's electrical consumption, which can be inaccurate due to a temporary change in the sites operation. For

example, a sites habitant being on a recent extended vacation which is not the norm for them, or an agri-business which did not require grain drying during their most recent harvest season such as AUC Proceeding 28319 (ATCO Electric vs Sunderland)

a) Please identify and justify the best historical timespan for accurately assessing a customer's historical energy usage (for existing sites).
   - For existing sites, we believe the existing Micro-generation Regulation (MGR) when interpreted correctly provides the necessary flexibility to capture temporary changes in sites annual electrical consumption. Specifically, the MGR defines that a Micro-Generation Generating Units is "intended to meet all or a portion of the customer's total annual energy consumption at the customer's site or aggregated sites,". However, some Utilities have been incorrectly permitted to impose additional wording into this portion of the regulation to limit the "annual electrical consumption" to "**MOST RECENT YEARS** annual electrical consumption" or "**CURRENT YEARS** annual electrical consumption". We support the wording to remain as written, with the AUC clarifying that "customer's total annual electrical consumption" is defined as any historical data since the site has been energized.

b) Please identify and justify the best way for accurately projecting a customers future energy usage (for new sites).
   - Currently MG Applicants are required to provide an NRCAN Hot2000 Full House report or similar energy estimation report created by a stamping professional. We believe that this provides a responsible method to ensure that estimates are accurate with also a defined process to file complaints with APEGA and ASET against the stamping professional, if needed should the stamped reports be wildly incorrect.

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.)
   - Currently sites are required to provide proof of purchase and installation of new electrical loads that will increase the sites annual consumption. Additional documents such as paid invoices, inspection reports, pictures of the equipment are also required. We support the current structure in place.

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.
   - A MG units yearly energy output model is currently created based upon historical annual available sunlight hours for areas and assumed snow cover losses and soiling losses. Individual contractors could provide professionally stamped energy output reports which include shading analysis documents specific to the site when applying an additional loss factor for extreme shading.

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 customers 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.
   a. We believe there is little to no value in adding this additional scope of work to any of the parties involved in the MGR process for projects. The current application process which provides a "snapshot in time" when applying to become a Micro-generator is sufficient. Adding an on-going monitoring component to sites will only:
      1. Cause uncertainty to potential and existing MG site owners that their system size could be affected in the future to their disadvantage, harming the solar industry and its clients.
      2. Deter future energy efficiency upgrades
      3. Potentially harm current and future site owners that wish to sell their property. Potential buyers could be less likely to purchase homes/properties with solar systems as it represents an uncertainty how their annual consumption would be compared to the annual consumption of the current site owner
      4. Cause an unnecessary, poor interaction between site owners and the parties requiring them to reduce their solar system size.

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.).

- We strongly believe that no structure be put in place to monitor for post-approval compliance. On-going monitoring for compliance will only add uncertainty and risk to current and future MG site owners. It will also only add unnecessary workload to an organization for no real benefit to any party. Electrical sites annual consumption can fluctuate significantly depending on:
    a. who owns the site. New owners of sites can increase or decrease site electrical consumption depending on how they operate it.
    b. Future energy efficiency upgrades completed on site.
    c. Technological changes on site. For example, a new technology is developed in five years that greatly reduces the amount of electricity needed to dry clothes, cook food, provide lighting to the site, weld metal, dry grain, etc.
    d. Current annual usage of the site. If a business needs to shut down manufacturing for 3-weeks to perform maintenance on equipment, or if a homeowner travels for 4-weeks this will be out of the norm for the site but will cause a significant drop in consumption

3. What type of inverter de-rating, and associated evidence of the 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.

- A letter from the manufacturer could act as proof of an inverter being de-rated below its nameplate rating. However, there are no mechanisms that could be put in place to prevent the inverter peak output from being increased illegally in the future. There are no **physical** mechanisms currently in place preventing existing site owners from adding additional modules and micro-inverters to their current systems without applying for an updated MG agreement, or electrical permit. Adopting additional penalties or deterrents into the MG Agreement to help prevent this from occurring would be the only feasible means.

a. Should micro-generators be permitted to de-rate their inverters, subject to the previously described limitations? Please provide an explanation.
    - Yes, Inverter output ratings are sometimes required to be de-rated to match the sites existing electrical infrastructure (service equipment ratings, utility transformer ratings, cable sizing, etc.). It is very beneficial to allow inverter output to be adjusted to match these ratings to maximize solar system energy outputs

4. The City of Medicine Hat's microgeneration application process includes an initial step to determine a potential micro-generations 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 additional steps to the MGR process will only increase wait times for approvals.
    - We have encountered issues as well with output modelling completed by wire service providers that are not as familiar with solar energy, client site specific details like shading, additional loads being added to the site and the estimated electrical consumption of those loads which have only add frustration to the MG process.
    - We believe the current process is satisfactory with no additional steps

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.
    - Working groups with solar industry involvement would be an excellent opportunity for industry, the AUC, and wire service providers to better align themselves. Currently WSP's can enact any technical changes they feel are necessary without any consideration to projects or site owners. Very little to no notification is provided at times when these changes are enacted, causing uncertainty, confusion, and additional costs onto projects which are nearing completion. For example, Fortis Alberta is currently starting the process for large scale behind the meter

solar systems to have to incorporate equipment/technology to rectify grid electricity quality issues, at the solar system owners' expense with no means of compensation. System owners should not be responsible for the issues outside of their own site with no means of compensation.

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.
    - We believe bi-annual meetings would be sufficient where requirements such as Remote Trip and Monitoring, electrical isolation, MG application timelines, are discussed.

b. If no, please suggest a different way that the AUC can keep abreast of changing technical standards.

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
    - We feel that the following are great opportunities for the MGR process could be improved and simplified:
        a. Update the MGR to allow MG sites to produce more energy than just self-supply as the Alberta Government has proclaimed in *Electricity Statutes (Modernizing Alberta's Electricity Grid) Amendment Act* (the *Act*) on March 6, 2024 which would:
            i. Speed up MGR approvals as WSP's would no longer be required to compare consumption and production modelling to ensure they aligned with offsetting only annual consumption
            ii. Limit system sizing to physical space available for the solar array, available electrical capacity (electrical service and the utility transformer), and clients budget
            iii. Bring more generation directly to areas of load
        b. Move the MG application submissions from the WSP's directly to the AUC so that applications timelines are directly monitored by the AUC. Currently application timelines are dependent on individual WSP's ability/desire to consider applications in a timely manner putting some site owners in a disadvantage or advantage depending on

their location. We believe the AUC should receive applications and then direct WSP's to provide the necessary information required for the AUC to either approved or reject applications.

c. Some WSP's can delay applications by neither approving nor objecting to applications but allowing them to stagnate in their own systems. For example, one of our clients still had not received an approved or objected MGR application for almost a year, causing them to lose Government of Canada funding and cancel the project. We believe strict timelines need to be incorporated into the MGR for response times to applications with penalties and/or automatic approval of applications being in place after a given period
d. Put in place a working group comprised of the AUC, WSP's, and solar industry members to create meaningful, well-balanced solutions to Alberta's solar industry. Solutions to issues could be signalled to industry well in advance of their implementation which would greatly reduce issues where currently some WSP's simply implement changes without any warning to the solar industry.
e. Mandate WSP's consult and seek approval with AUC and the Working Group prior to making any changes to connection requirements for generation systems. This would also provide consistency between WSP requirements and avoid risk and uncertainty that some WSP's such as Fortis Alberta bring to projects when trying to complete projects in their Service Area.
f. Clarify that the definition of "annual consumption" is not limited to the most current or recent annual consumption of sites.

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