Rule 024 and micro-generation application processes questionnaire

Questions:

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

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

    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.).

    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.

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.

    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.).

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.

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

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.

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.

    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.

    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.

RULE 024 AND MICRO-GENERATION APPLICATION PROCESS QUESTIONNAIRE (RRR ANSWERS)

1. **Standardized Methodology or Minimum Information Requirements**
   - **Yes, for an existing site, the following information is understandably required to be given to the utility (WSP):**
     1. **Retailer billing information with provision of a bill for a single month that is less than 4 months old.**

     Explanation: The information contained within the electricity bill is to be used by the utility to record all information they currently require. This method will not allow the WSP to deny or return applications based on it "having errors" that can be very time consuming due to a petty keystroke mistake made by the applicant. The bill has the site ID, address, customer name and annual consumption to date graph. For the sake of efficiency and aid to the WSP, the applicant can still input the information on their microgeneration application, but since the bill has been provided, any errors can be cross referenced by the WSP and correct if needed. It is faster for the WSP to correct a misspelled name than take the time to draft an email telling the applicant about their mistake.

1a. Since we have seasons that can drastically affect energy consumption, 1 year of consumption data, being the current requirement, should remain in place.

1b. This is irrelevant in my opinion. If a customer applies for a micro-generation system, they should be allowed to build the system as large as they choose, if an important condition is met. The condition is that the inverted system has incorporated a form of export limitation metering that will be at first set to a value based on an average historical consumption value of buildings or dwellings with similar square footage characteristics. The applicant can refine the consumption value and possibly enter a higher or lower consumption category by answering questions about the sites larger loads to be installed at the time of project substantial completion where at that time, the estimated consumption value for the upcoming year can be determined and assigned. Off Grid systems are designed based on this kind of information, therefore grid tied systems can be also.

1c. The minimum proof of consumption being increased, should solely be by a signed legal affidavit type document that clearly identifies the estimated kWh consumption increase value being applied for and a detailed description of the load that will cause this increase with a product specification sheet containing load data that can be verified and placed in the applicant's file.

1d. The utility should develop a table of values that can be used by the applicant. The table of values will contain peer reviewed production data that has been derived from numerous production simulations for different inverter types, array tilt angles and azimuths which will conclude a pre-determined value of annual kWh production per kW DC installed. This will be known as the "General Production Value". Next, the "production factors" will be input. Soiling or shading variables can then be chosen and attested to by the applicant, which also allows them to reduce the "general production value", based on the value chosen from another peer reviewed table of soiling values developed by the utility.

2. **Very Important. This is because of the limitations of the utility transformer that is shared by numerous customers. If a single customer has been exporting so much energy that there is cause for costly infrastructure improvements where all customers will face the burden of increased costs, this is simply not fair to the other customers or those wishing to build a micro-generation system later.**

2a. Parties responsible for what component are:

- **Retailer – Provides proof of payment documentation that shows a rebate payment issued to the customer from energy export revenue that would be considered greater than the acceptable thresholds compared to what was listed on the Micro-Generation application.**
- **Utility (WSP) – Issues a warning letter to the customer that describes the significant export production and how it is outside the acceptable parameters of production that was anticipated from what was written on the micro-generation interconnection agreement. The letter will also state that the customer must provide some indication or proof of reasoning for the high export, or will face a fine for being in breach of the interconnection agreement and the WSP will be within it's rights to disconnect the system completely from its infrastructure if either reasonable proof or the fine remains unpaid is not received within the allotted time period.**
- **Customer – monitors their system to ensure that the anticipated exported energy remains within acceptable amounts and attest to never, under any circumstance, change de-rating or export limitation setpoints without prior permission from the installation contractor or the WSP. If the WSP suspects and accuses the customer of export limiting setpoints or parameter tampering, the customer or installation contractor must prove otherwise by way of system monitoring software. If the software proves the WSP has accused incorrectly, the customer or installation contractor may file a complaint to the AUC which will be reviewed and concluded by way determined prior and is clearly mentioned within the microgeneration interconnection agreement.**
- **AUC – Enforces and acts as an unbiased mediator between the customer and WSP so a fair result is reached. The WSP must also be willing to provide evidence of up-to-date metering calibration documentation to show that the instruments used to measure are maintained and are operating to Measurement Canada standards.**

3. **All microgeneration systems require municipal permitting. If a Microgeneration agreement is fully executed, it will be the responsibility of the WSP to coordinate with the Authority Having Jurisdiction (AHJ) to ensure the AHJ includes verification of "De-Rating" during their electrical inspection, where the permit applicant (installation contractor) has indicated clearly at a pre-determined location and with photographic evidence, what the de-rating value has been set to, and warning labels applied state the date of system energization, De-rating or export limitation value or setpoint and, that the parameters set within the equipment must not be changed under any circumstances by anyone, unless prior permission from the WSP by way of updated Micro-Generation application and signed agreement has been issued.**

3a. Yes, but any changes must be made by qualified personnel who have been named on the electrical permit application.

4. **Yes, but if the size of the system being applied for is estimated to produce more than the maximum allowed, the microgeneration applicant must state what means and setpoints or parameters will be utilized so the export is limited to the maximum allowed by the WSP.**
5. **Yes, it should be the responsibility of the WSP to maintain up to date standards documentation that remains publicly available. If the application date must be later than the latest revision date of the standards, for the specific standard revision to be enforced.**

5a. Meeting frequency should be determined by the WSP. It is their responsibility for the maintaining of safe infrastructure after all. WSP Jurisdictional limits for equipment technical standard requirements should be limited to ONLY equipment outside their jurisdiction, that controls the energy harvested by a specific source (Solar Modules, Wind Turbines etc.) and physically interacts with their electrical infrastructure (Inverters, limiter controls, shut down control (not switching) equipment.

6. **ACCOUNTABLITY ASSIGNMENT!!! Currently, there is virtually ZERO accountability measures for WSP's. They can delay, reject, and disqualify at their whim, without consequence or provision of reasoning or proof of doing so. If the WSP cannot keep up with the fast-changing renewables industry, they should step aside until a competent and willing candidate takes their place. In the interim, existing, willing and competent players within the current WSP organization or a professional and qualified nonpartisan government entity that cannot be influenced or controlled by elected parties, should be placed on standby, ready to take over during the transition period. Accountability and harsh penalties associated with lack thereof should be mandated for all willing participants who act as contributors to the lack of corrective action or resource provisions necessary to maintain not just a minor degree but a high degree of customer service and satisfaction. WSP's need to maintain a culture of staying ahead of the curve, not just making things up as they go, which costs end users countless dollars from the WSP's negligence of not staying ahead of change. Never, should there be a moment where a customer or installer, knows better than those responsible for maintaining and keeping safe, the infrastructure millions of people rely on.**