Rule 024 and micro-generation application processes questionnaire response

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Community / organization	**Paddle Prairie Metis Settlement (PPMS)**
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Project history	>100 kW of micro-generation already online across the Communiplex, Day-Care, Youth Centre, Library and Water-Treatment Plant (commissioned 2017-2018). Feasibility work shows a community need of ~2.75 GWh/yr and a planned build-out of ~2.1 MW spread over 16 community buildings.

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.

PPMS position – Yes, absolutely. The absence of clear rules forces each distributor to invent its own spreadsheet, delaying projects and producing inconsistent results. A simple, province-wide "Sizing Worksheet" embedded in Rule 024 would give customers certainty up-front, reduce back-and-forth with utilities, and free AUC staff from case-by-case disputes.

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

Use the most recent 24 consecutive months of bills (or the longest period available, minimum 12 months). The reason is that this captures two full heating seasons, smoothing anomalies such as a mild winter. Also if interval data exist, the worksheet can auto-sum those 24 months; otherwise, customers may upload scanned bills or a distributor letter confirming totals.

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

Apply a load-profile library maintained by the AUC (example lines: "school – north AB", "arena – ice plant", "community hall"), scaled for floor area and operating hours. For unique buildings, accept an engineer's Load Forecast Affidavit using CSA C380 or ASHRAE modelling.

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.)**

PPMS recommends the AUC accept any one of the following as sufficient:

- Signed purchase or lease agreement for an EV, heat-pump, or other major load (scan acceptable).
- Building or development permit showing approved square-footage expansion.
- Council resolution or capital-budget line item for new public infrastructure (common in Settlements).

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 rooftop solar photovoltaic system.

- Solar PV: PVWatts or RETScreen, 30-year typical meteorological year (TMY) data for the nearest weather station, adjusted for tilt, azimuth, and a bankable shading factor (e.g., 0.9 if <10 % shading).
- Partial shading**:** Require a Shade Report (Solar Pathfinder, Solmetric SunEye, lidar) only where >10 % shading exists; otherwise accept an installer declaration.
- Wind / other renewables: Use manufacturer power curves with 10-year average wind-speed from Environment & Climate Change Canada masts ±10 km.

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.

Moderately important – but keep it light-touch. Most rural solar owners have no incentive to oversize systems; wholesale export credits are low. Excessive policing risks higher admin costs than any rule breach would ever save. PPMS recommended mechanism would look something like this:

Task	Responsible party	Frequency	Cost impact
Export/Import audit from smart-meter data	**Utility/WSP** (already has data)	Annually	+ < $0.10 per customer
Flag sites with >120 % exports vs. imports	Utility auto-report to **AUC**	Annually	Automated
Corrective action notice (resize or re-classify as Small Power Producer)	**Customer**, overseen by **AUC**	As needed	Cost borne by non-compliant producer

With this mechanism, no additional role is needed for the AESO. Bulk-system impact from ≤5 MW micro-gen is too trivial to merit consideration.

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.

The most reliable way to prevent a micro-generation system from being upsized after approval is to require the inverter to be "factory-locked" to the approved alternating-current (AC) output and to document that lock in a verifiable way. Modern string and hybrid inverters can be de-rated through their firmware, which allows an installer (or, preferably, the manufacturer) to set a hard cap—say 32 kW rather than the unit's native 40 kW.

PPMS proposes that the lock be implemented at the factory or during commissioning by a certified technician, with the final limit embedded in a read-only Modbus/SunSpec register. Evidence would consist of (1) a manufacturer's certificate or screen-shot showing the programmed AC limit, (2) a commissioning form signed by a master electrician stating that the field settings match the approved limit, and (3) a time-stamped photo of the inverter's display taken on the day of grid-connection.

Because most inverters now offer cloud portals, utilities could spot-check compliance simply by requesting a data-snapshot that confirms the same maximum-power-point setting. Together, a permanent software cap plus easily audited electronic and photographic records give distributors confidence that the system cannot later be "turned up" without leaving a tamper trail, eliminating the need for costly post-installation inspections.

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

Yes, allow inverter de-rating with the following safeguards:

- Permanent software lock set by the manufacturer (SunSpec Modbus register or equivalent).
- Installer photo of the control screen showing de-rated kW set-point at commissioning.
- Commissioning form signed by a master electrician and uploaded with the Rule 024 Completion Notice.
- Utility spot-check via remote inverter data (most modern units are internet-enabled).

This keeps capital costs low (one larger inverter can often be cheaper than two smaller ones) while giving the utility verifiable proof the AC export is capped.

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 microgeneration 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.

Yes – we strongly endorse a 10-day electronic pre-screen. Our own solar project waited 29 days for ATCO to confirm size compliance—longer than the actual construction! A pre-screen that issues a "maximum allowable AC size" letter lets funders and engineers proceed confidently and filters out under-sized/over-sized concepts before paperwork starts.

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.

Yes, a standing working group would be helpful. Inverter firmware, rapid-shutdown protocols, ride-through functions and cybersecurity requirements evolve much faster than the cadence of formal rule changes. During PPMS's solar roll-out we encountered three separate instances where the inverters we had sourced were technically compliant with CSA and UL standards but were not yet referenced in the AUC's guidance documents; the resulting clarification e-mails added weeks to the schedule. A virtual round-table—bringing together manufacturers, utilities, the AESO, certification bodies and two Indigenous or rural community representatives—would create a real-time feedback loop so the Commission can update its approved-equipment lists or advisory bulletins before confusion arises. This forum would also let stakeholders flag emerging issues beyond inverters, such as battery-storage fire codes or smart-meter interoperability, thereby reducing red tape and ensuring that applicants receive consistent, up-to-date direction no matter which distributor's territory they are in.

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.**

Annually or semi-annually. Virtual

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 microgeneration landscape.

Issue	PPMS recommendation	Benefit
Meter change-out delays (2–3 weeks north of Peace River)	Grant *provisional export* once electrical inspection passes; utility may true-up on first billing cycle.	Saves one contractor mobilization; reduces diesel truck rolls.
5 MW community cap blocks Settlement-wide rollout	Treat 5 MW as a **per-feed-point** cap *or* allow an Indigenous-community exemption subject to load-forecast study.	Enables holistic net-zero roadmap without forcing commercial generation licensing.
Multiple overlapping forms (Rule 024, ATCO ICG-100, retailer micro-gen agreement)	Launch **single on-line portal** that auto-forwards data to the distributor and retailer via API.	One-stop shop; eliminates manual re-entry errors.
Virtual net-metering across Settlement-owned meters barred	Allow councils to deem meters "adjacent" if on the same rate class and feeder.	Lets one larger, cheaper array offset several small loads; scales faster.

Prepared for Submission
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Date: June 19, 2025