Rule 024 stakeholder comment matrix

Comments from *(company/stakeholder name)*:	Alberta Cogeneration Development Council (ACDC)	**Contact name *(for companies)*:**	Benoit Trudeau
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		Email:	[redacted]

Instructions:

1. Please download this document, save as "**Rule 024 matrix**" and fill out the demographic/contact information above.
2. Please review Bulletin 2026-10 and the blackline document for Rule 024: *Rules Respecting Micro-Generation.*
3. Please comment on the proposed information requirements below, including whether you agree that these information requirements should be included in an application under Section 4(3) or 4(3.1) of the *Micro-generation Regulation*. Please explain your position.
4. There are two open-ended questions included at the end of the document, including an opportunity to provide any additional information requirements that you believe should be included.
5. You can submit comments on as many or as few of the proposed changes as you wish. Blank boxes will be interpreted as neutral/favourable.
6. If a change from the blackline documents does not appear in the table below, it is considered administrative. You may provide comments on administrative changes in the general box at the end, if necessary.
7. While not all suggestions can be implemented, all relevant comments will be fully reviewed and considered.
8. Submit your response to engage@auc.ab.ca. In the email, please include the following subject line: **Rule 024 engagement**.

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Please review Sections 4(3) and 4(3.1) of the *Micro-generation Regulation:*

Connection and operation

4(3) Where in the opinion of the owner, concurred in by the Commission on application by the owner, the costs of connecting a particular micro-generation generating unit to the interconnected electric system are extraordinary, due to safety considerations, technological complexity or any other reason, the owner may require that the micro-generator directly reimburse the owner for the extraordinary portion of the costs.

(3.1) Where a micro-generator has changed the nameplate capacity of a micro-generation generating unit that is connected to the interconnected electric system and, in the opinion of the owner, concurred in by the Commission on application by the owner, the costs of maintaining the connection of the micro-generation generating unit to the interconnected electric system are extraordinary, due to safety considerations, technological complexity or any other reason, the owner may require that the micro-generator directly reimburse the owner for the extraordinary portion of the costs.

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Rule 024: New Section 6(2) **2) An application under Section 4(3) or 4(3.1) of the *Micro-generation Regulation* must include the following information requirements. If any of the below information is not available, the owner must explain why.**		
Category	**Proposed wording**	**Stakeholder comments**
Description of costs	c) A description of each cost, or portion of each cost, necessary to connect the micro-generation generating unit to the interconnected electric system which is, in the opinion of the owner, extraordinary. (i) Include the item or category of items associated with each cost. The item or category of items may include, for example, specific equipment, equipment upgrades, studies, or protective devices. (ii) For any equipment upgrades, please indicate if existing equipment will be salvageable. If yes, please ensure the salvage value of the existing equipment is deducted from the extraordinary costs. If there is a reason why the salvage value should not be deducted from the extraordinary costs, please explain. (iii) For any included cost that does not have a finalized cost estimate, please indicate when a finalized cost estimate is expected.	**ACDC supports the proposed requirement**, which will materially improve the Commission's ability to assess a claim. We ask that two additions be made, both directed at ensuring that what is described is in fact a cost of connecting the unit to the interconnected electric system. **(1) Confirmation that each claimed cost relates to the connection itself.** The proposed wording requires a description of each cost "necessary to connect the micro-generation generating unit to the interconnected electric system". ACDC asks that the owner be required to confirm this expressly for each item, and to identify and exclude any cost relating to equipment on the customer's side of the meter that is not connected to that system. This matters for cogeneration. A micro-combined heat and power (mCHP) unit has two outputs. Its electrical output is connected to the interconnected electric system. Its thermal output is not: the heat exchangers, circulating pumps, storage, controls and piping that recover the engine's waste heat serve that site's own heating, hot water and process loads, are not connected to the interconnected electric system or to any thermal or district heating grid or to any facility of the owner. That equipment sits behind the customer's meter, in the same category as the site's boiler, and is regulated under the Safety Codes Act and the applicable mechanical, boiler and gas codes, administered by the accredited safety codes authority. No portion of it can be a cost necessary to connect the unit to the interconnected electric system, and it should not appear in an application under Section 4(3) or 4(3.1). Our members have nonetheless had review time and cost attributed to it. An express confirmation requirement resolves this at no cost to owners with well-founded claims. **Proposed addition to (c):** "(iv) Confirm that each cost claimed forms part of, or is required by, the connection of the micro-generation generating unit to the interconnected electric system, and identify and exclude any cost relating to the customer's on-site equipment that is not connected to that system." **(2) Identification of the unit's output type where conversion equipment is claimed.** Where a claimed cost relates to equipment that would convert the unit's electrical output, the owner should state whether the unit's output is alternating or direct current, and identify the requirement relied on.

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		ACDC supports the addition of the definition of "inverter" at Section 1(d) of the proposed rule — "an electronic device that converts DC electricity into AC electricity" — and asks the Commission to apply it here. An mCHP unit is an engine or turbine directly coupled to a synchronous or induction generator. It produces alternating current at grid voltage and frequency at the generator terminals. Most mCHP units contain no photovoltaic array, no battery, no DC bus and no DC electricity, and therefore nothing an inverter could convert. Members have nonetheless been directed by distribution facility owners to rectify that AC output to DC and re-invert it through inverter equipment of the type used for solar photovoltaic installations, and the cost of doing so has appeared in connection cost estimates. The direction adds capital cost and permanent conversion losses to output already at grid voltage and frequency, inserts an additional failure point in series with the generation, and removes the fault current contribution and rotating inertia that a directly connected synchronous machine provides. Its origin appears to be procedural rather than technical: the owner's interconnection procedure was written around inverter-based solar and has no category for a directly connected rotating machine. Requiring the output type to be stated allows the Commission to consider whether such a cost is necessary at all, before considering whether it is extraordinary. **Proposed addition to (c):** "(v) Where a claimed cost relates to equipment that converts, rectifies or inverts the electrical output of the micro-generation generating unit, state whether the unit's output at the generator terminals is alternating or direct current, and identify the standard or requirement relied on in requiring the conversion equipment."
Comparative analysis	d) For each of the costs provided in (c), please provide a comparative analysis that explains why the owner considers these costs to be extraordinary, for example, due to safety considerations, technological complexity or any other reason. This analysis must include any supporting evidence that the owner considers relevant and may address the following: (i) The costs and types of costs to connect the average micro-generation generating unit; (ii) The costs and types of costs to connect the average micro-generation generating unit of the same size category (small <150 kW or large >150 kW); (iii) The costs and types of costs to connect comparable micro-	**ACDC supports the proposed comparative analysis requirement.** A claim of extraordinariness is meaningless without a comparator, and requiring the owner to supply one is the most useful element of the proposed Section 6(2). We ask that two further sub-items be added. **(1) Comparison to units of the same interconnection type, not only the same size category.** Proposed sub-items (ii) and (iii) direct the comparison to units of the same size category and to comparable units. For a cogeneration unit, size category is the wrong comparator on its own. A 100 kW inverter-based solar array and a 100 kW directly connected rotating AC machine fall in the same size category but raise entirely different protection, study and commissioning requirements. Comparing a rotating machine against a fleet of solar installations will show a cost difference in nearly every case, and that difference reflects the technology's normal interconnection requirements rather than anything extraordinary about the particular project.

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	generation generating units (i.e., similar nameplate capability, geographic area, safety, technical, or other reasons); (iv) Any specific characteristics of the micro-generation generating unit that contribute to the technological complexity of connecting the micro-generation generating unit to the interconnected electric system; (v) Any factors related to the connection of the micro-generation generating unit that may impact the safety and/or reliability of the interconnected electric system, along with any implemented or planned mitigation strategies; and (vi) Any other information the owner considers relevant to the Commission's consideration.	**Proposed addition to (d):** "(vii) Where the micro-generation generating unit is not inverter-based, the costs and types of costs to connect comparable directly connected rotating machine generating units, and an explanation of any requirement imposed on the unit that is derived from an inverter-based standard or from the owner's inverter-based interconnection procedure." **(2) Distinguishing a characteristic of the unit from the absence of an owner procedure.** Where a cost is unusual because the owner has not previously connected a unit of that type, that is a fact about the owner's procedures rather than a characteristic of the unit. It may well justify real first-time engineering cost, and ACDC does not suggest otherwise. But the Commission should be able to see which of the two it is looking at, because the two call for different treatment: a genuine site or technology characteristic will recur, while a first-of-type engineering cost should fall away once the procedure exists. Stating this openly also assists owners. An owner carrying genuine first-of-type cost is better served by saying so than by presenting the figure as an inherent characteristic of the technology, which invites a challenge on a basis the owner cannot fully support. **Proposed addition to (d):** "(viii) Whether the claimed cost arises from a characteristic of the micro-generation generating unit or its site, or from the absence of an established owner procedure for units of that type, and where the latter, the owner's estimate of the equivalent cost once such a procedure is established." **(3) A note on sub-item (v).** ACDC supports sub-item (v), on factors that may affect the safety or reliability of the interconnected electric system. We would observe only that for a cogeneration unit the analysis under this sub-item should address the electrical connection. The unit's thermal equipment is not connected to the interconnected electric system, serves on-site loads behind the customer's meter, and can have no effect on the safety or reliability of that system.
General		
Section 6(1) of Rule 024 states that "the owner shall file a completed notice of dispute…within 14 days from the date in which the owner finalizes its cost estimate". The Commission is aware that the cost estimates for each item or category of items associated with the connection of a micro-generation generating unit may be finalized at different times in the connection process. Please comment on the optimal timing for an	**Stakeholder comments:** **ACDC supports the 14-day filing requirement in Section 6(1) as drafted.** Our comments concern what should happen before the estimate is finalized, since that is where the delay our members experience actually occurs.

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owner to submit an application under Section 4(3) or 4(3.1) of the *Micro-generation Regulation*.	**(1) The potential for extraordinary costs should be disclosed at the completeness response, not at the finalized estimate.** Under Section 3(3) of Rule 024 the owner must, within 14 days of receipt of a micro-generation notice, tell the customer whether the notice and required documents are complete. ACDC asks that the owner also state at that point whether, on the information filed, extraordinary costs appear reasonably likely to be claimed, the general nature of the items concerned, and when a finalized estimate is expected. No figure need be given, and none could be. What this provides is the customer's decision point. On our members' projects the possibility of extraordinary costs presently surfaces late, after the customer has committed to design, equipment selection and in some cases deposits. A customer who learns at that stage that a substantial direct reimbursement may be required has already spent money that a two-line early disclosure would have saved. Early disclosure costs the owner nothing it does not already know. **(2) The qualification question and the cost question should be dealt with together, not in sequence.** For cogeneration these two questions are in practice the same dispute arriving twice. The permitted size of the unit is determined first; the connection cost is then estimated against whatever size results. Where the size is reopened after costing — which is common, because the sizing question for a cogeneration unit is unsettled — the cost work is done twice and the customer waits through two consecutive processes. ACDC asks that an owner who intends to dispute qualification under Section 4 of Rule 024, and who also anticipates extraordinary costs, be required to raise both in the same communication rather than sequentially. Where the size question is genuinely determinative, the cost estimate should be prepared against both the proposed and the owner's proposed alternative size, so that the customer sees the consequence of the size question in money at the time it is raised. **(3) On the timing of the finalized estimate itself.** Fourteen days from finalization is appropriate. ACDC would ask the Commission to consider, in addition, an outer limit on how long an owner may take to finalize the estimate after the completeness response — a period the owner may extend on notice to the customer with reasons. Without an outer limit, the 14-day clock in Section 6(1) starts at a moment the owner alone controls, and a customer with no filed application and no finalized estimate has nothing before the Commission and no basis on which to plan.

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Please provide any additional information requirements that should be included in an application under Section 4(3) or 4(3.1) of the *Micro-generation Regulation*. Please explain your position.	**Stakeholder comments:** ACDC proposes the following additional information requirements, and offers one general comment at the end. **1. A statement of the unit's electrical output characteristics.** The application should state whether the micro-generation generating unit's output at the generator terminals is alternating or direct current; the generator type (photovoltaic array with inverter, battery with inverter, synchronous machine, induction machine, or other); and whether the unit contains an inverter as defined in Section 1(d) of the rule. **Reason.** A substantial part of the connection cost claimed on our members' cogeneration projects has consisted of equipment to rectify the unit's AC output to DC and re-invert it through inverter equipment of the type used for solar photovoltaic installations. Most mCHP units produce alternating current directly at grid voltage and frequency and contain no DC electricity; there is nothing for an inverter to convert. Recording the output type on the face of the application lets the Commission see whether the cost being assessed is one the unit's technology actually requires. It is a single line, and it costs an owner nothing where the requirement is well founded. This is the same requirement as our proposed addition (c)(v) above, stated on the face of every application rather than only where conversion equipment is claimed. **2. Confirmation that no claimed cost relates to equipment outside the interconnected electric system.** As set out in our comment on the description of costs above, the owner should confirm that each claimed cost forms part of, or is required by, the connection to the interconnected electric system, and should identify and exclude any cost relating to on-site equipment that is not connected to that system. For a cogeneration unit, the entire thermal side — heat exchangers, pumps, storage, controls and building piping — is on-site equipment of that kind: it is not connected to the interconnected electric system or to any thermal or district heating grid, it serves the site's own loads behind the customer's meter, and it is already regulated under the Safety Codes Act and the applicable mechanical, boiler and gas codes. **3. The size determination underlying the estimate.** The application should record the customer's annual electrical consumption in kWh; the customer's annual on-site thermal energy consumption in GJ where the unit produces useful thermal energy, converted at 277.78 kWh per gigajoule; the customer's peak electrical demand in kVA, taken from the highest recorded 15-minute demand over the most recent twelve months of the owner's customer load data release in daily interval meter (DIM) format under the Settlement System Code, Rule 021, or, where the site has no interval meter, from the highest billed monthly demand over the same period; the maximum unit size the owner considers permissible and the

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	basis of that calculation; and whether the size of the unit is in dispute between the owner and the customer. **Reason.** The connection cost is a function of the size of the unit. Where the permitted size is contested, the Commission is being asked to assess a cost estimate whose principal input is itself unresolved. Recording the size determination and any dispute on the face of the application lets the Commission see the two questions together, and avoids a cost proceeding that is overtaken by a subsequent change in the size of the unit. Consistent with ACDC's response to the Rule 024 questionnaire, the basis of the calculation should be stated on the energy basis and the capacity basis taken together — annual electrical consumption in kWh plus annual on-site thermal energy consumption in GJ converted at 277.78 kWh per gigajoule, together with the site's peak electrical demand in kVA — and should be recorded as an agreed baseline on the site's documented historical consumption rather than as a ceiling, with any increment sought for documented planned new load assessed case by case on the customer's evidence, as owners deal with such requests today. **4. The owner's prior experience with comparable units.** The application should state whether the owner has previously connected a micro-generation generating unit of the same generator type in its service area, and if so the connection cost of the most recent such unit. Where the answer is no, that should be stated plainly, since it bears directly on the comparative analysis required under (d) — the subject of our proposed additions (d)(vii) and (d)(viii) above — and on whether a first-of-type engineering cost is being presented as an inherent characteristic of the technology. **GENERAL COMMENT** ACDC supports the proposed amendments to Rule 024. The information requirements in the new Section 6(2) are proportionate and will improve the transparency of extraordinary cost claims, and ACDC supports the addition of the definition of "inverter" at Section 1(d), which is technically correct and useful. We ask the Commission to draw one consequence from that new definition. An inverter converts DC electricity into AC electricity. Most micro-combined heat and power units — an engine or turbine directly coupled to a synchronous or induction generator — produce alternating current at grid voltage and frequency and contain no DC stage of any kind. Requirements framed around inverters therefore cannot apply to them. Our members have nonetheless been directed by distribution facility owners to convert such units' AC output to DC and back again through solar-type inverter equipment, at material cost, permanent conversion loss and the loss of the fault current contribution and rotating inertia that a directly connected machine provides. A statement from the Commission that inverter-based requirements apply only to units containing an inverter as defined in Section 1(d), and that units producing alternating current directly are subject to the interconnection protection, anti-islanding relaying, synchronizing and protection co-ordination

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	requirements applicable to directly connected rotating machines, would settle the question across all service areas and would remove a recurring and avoidable category of connection cost. ACDC has also filed a response to the Rule 024 questionnaire. That response addresses the same three matters raised above — the scope of what may be claimed as a connection cost, the application of the inverter definition at Section 1(d), and the timing of disclosure of extraordinary costs — and, in addition, a matter falling outside the scope of this matrix: how the sizing test in Section 1(1)(h)(ii) of the Micro-generation Regulation applies to a unit that simultaneously generates electric energy and produces useful thermal energy from the same fuel source. We note the sizing question here only because it and the cost question are connected in practice — the size of the unit determines the connection cost, and a contested size produces a contested cost. ACDC would welcome the opportunity to provide further technical detail or interconnection references to the Commission, and thanks the Commission for extending the engagement period to September 8, 2026.