**BEFORE THE WASHINGTON**
**UTILITIES AND TRANSPORTATION COMMISSION**

**Docket UE-112133**

**COMMENTS OF THE INTERSTATE RENEWABLE ENERGY COUNCIL, INC. RESPONDING TO NOTICE OF OPPORTUNITY TO COMMENT ON DRAFT INTERCONNECTION RULES ISSUED NOVEMBER 21, 2012**

**December 21, 2012**

## I. Introduction

On November 21, 2012, the Utilities and Transportation Commission ("UTC" or "Commission") issued a Notice of Opportunity to Submit Written Comments ("Notice") regarding an additional seven questions on the draft interconnection rules for generating facilities up to 20 megawatts ("MW"). The Interstate Renewable Energy Council, Inc. ("IREC") has been an active participant throughout this proceeding, participating in the working group and submitting comments to the UTC on September 7 of this year, and appreciates this opportunity to address additional areas to improve the current draft rules.

In Section II, IREC addresses the seven questions prompted for discussion by the Commission's Notice. IREC again emphasizes the importance of recognizing third-party ownership of net-metering facilities within these rules. In Section III, IREC raises an additional concern regarding the need for changing voltage regulation practices to accommodate increasing amounts of distributed generation. Lastly, in Section IV, IREC proposes several miscellaneous minor revisions to further clarify the draft rules.

## II. IREC's Response to the Commission's Seven Questions on the Draft Rules

The Commission's November 21, 2012 Notice was issued to seek comments on the draft rules, as those rules were modified to incorporate stakeholders' September 7, 2012 comments. The Notice includes seven questions with a specific emphasis on areas of the draft rules that are still under consideration (Questions 3 through 7) and on ensuring that critical components of the existing rules have not been overlooked in drafting the new rules (Questions 1 and 2). IREC supports the new draft rules as a significant improvement from existing interconnection procedures and does not see any critical omissions from the old rules. Accordingly, IREC has no further comment on the issues raised in Notice Questions 1 and 2 and reserves its comments here to address Questions 3 through 7.

### A. Nameplate rating should be based on inverter AC output (Question 3)

IREC suggests that the Commission should modify the definition of "Nameplate rating" to make it consistent with industry practice and the net metering program rules. Under the draft rules, which determine nameplate rating based on the manufacturer's direct current ("DC") output rating for inverter-based systems, a generator with an output rating of 28 kW DC could be eligible for a Tier 1 interconnection. That is, the nameplate rating of the solar modules feeding the inverter might be 28 kW DC while the output of the inverter might be 25 kW, as measured in alternating current ("AC"). It is the inverter output rating that is most significant, since it represents the actual output capability of a system to the grid. The AC output rating from the inverter is a more accurate reflection of the size of the generator.

IREC made the point within the working group that most states use the AC rating of the inverter as the basis for the tiers, and IREC regrets that this issue was not addressed in any depth. There are three persuasive reasons to rely on AC output of the generator, which presumably

would have influenced the working group's decision had they been raised. First, utilities determine the net metering cap based on a percentage of peak demand, which is measured in AC. It is logical, therefore, to define the nameplate rating of generators, which includes net-metered systems, by the same metric that is relevant to the net metering cap and to other grid equipment ratings. Second, a growing percentage of solar arrays are using microinverters – a small DC to AC device on the back of each solar module, negating the need for a single inverter. Such modules are rated in AC output, and there would be no effective way to establish the DC rating of such systems. And third, for traditional systems without microinverters, it is easier to look to a single number (the AC nameplate of the inverter) than to add up the DC nameplate of the modules. While there may be only a dozen modules in a residential system, there can be hundreds feeding into a large inverter in a commercial system.

Accordingly, IREC proposes that the Commission use the following definition:

> **"Nameplate rating"** means the manufacturers output rating of the generating facility. For a system that uses an inverter to change DC energy supplied to an AC quantity, the nameplate rating will be the manufacturer's AC output rating for that inverter."

**B. Provisions to improve installation and operation (Question 4)**

One shortcoming of the draft rules is the lack of defined timelines and provisions for cost responsibility for Tier 3 interconnection review. While new WAC 480-108-DDD requires interconnection service tariffs to match the "procedural and technical requirements" of the FERC's SGIP, it is unclear whether this mandates the FERC's study timelines and cost-responsibility provisions. IREC suggests adding the phrase, "including SGIP Level 3 customer cost-responsibility and timeline provisions" to the end of the first sentence in subsection (3). For alternative interconnection service tariffs—filed pursuant to new WAC 480-108-EEE—IREC suggest that the timelines and cost responsibility provisions referenced in subsection (f) be

consistent with the SGIP, with the timelines not exceeding those in the FERC's procedures.

Additionally, IREC suggests that the rules could provide greater certainty for developers by modifying the open-ended nature of interconnection study and facility costs. As in many states and the SGIP, the developer is ultimately responsible for whatever expenses are incurred by the utility in the study process, and there are not firm timelines. Not surprisingly, this deters developers. No one would have major work done on their home on the basis of a "good faith estimate" of time to complete and budget, blindly accepting whatever costs the contractor ultimately incurs and whatever time it takes. Making utility estimates binding, or requiring revised estimates if they are going higher, would help address this issue.

### C. A 25 kW threshold for Tier 1 interconnections is reasonable (Question 5)

IREC agrees with the Commission that 25 kW or less is an appropriate system size cutoff for Tier 1 interconnection. As IREC noted in its January 30, 2012 comments in response to the Preproposal Statement of Inquiry, its own model interconnection rules feature a simplified interconnection process (Tier 1) for inverter-based generators 25 kW or less. Additionally, Oregon, New York, Utah, Massachusetts, and West Virginia feature a similar Tier 1 process for generators 25 kW or less. IREC recognizes this as a best practice and notes that many utilities around the country are comfortable with simplified interconnection for this size class of generators. Setting the draft rule Tier 1 eligibility at 25 kW or less is an important advance because it provides a simple, expedited process that is superior to the current 10 kW or less inverter-based process used in the Federal Energy Regulatory Commission's ("FERC") *pro forma* Small Generator Interconnection Procedures ("SGIP"), adopted in 2005. That cutoff reflects a time when few systems exceeded 10 kW and, indeed, few systems existed at all. Total installed capacity of photovoltaic solar generation has increased by a factor of ten from

approximately 400 MW in 2005 to over 4,000 MW in 2011 (and is expected to top 7,200 MW in 2012).[1] Average system size of distributed solar energy facilities (i.e., not including large utility projects), has increased over that period from 10 kW to 18 kW.[2] The new standard, adopted in IREC's model rules and the states noted above, is 25 kW. As noted previously, for inverter-based systems, this is an AC measurement based on the inverter's nameplate capacity rating.

**D. Insurance requirements are properly considered in this proceeding (Question 6)**

IREC supports the draft rule's prohibition on additional insurance for generators 100 kW or less and maintains that consideration of this issue in this proceeding is appropriate. Significantly, Washington law already provides an exemption from additional insurance for net-metered systems (i.e., up to 100 kW).[3] Given the fact that the net metering system size eligibility is relatively low, in comparison to the rest of the country, it is reasonable to expect that the net metering system limit might be raised in coming years. Given that expansion of net metering may include an insurance exemption for systems above 100 kW, it makes sense to include reference to governing state law within the draft rule to avoid confusion if the net metering system size limit is ever raised beyond 100 kW. IREC proposes that the Commission modify new WAC 480-108-FFF(12) (proposed language underlined):

> "(12) No additional insurance is necessary for a generating facility under 100 kW <u>or for any facility that is a net metering facility and exempt from an insurance requirement pursuant to Chapter 80.60 RCW</u>.

**E. Interconnection rules should permit third-party owners of net-metered systems (Question 7)**

IREC appreciates the Commission's consideration of third-party ownership in this

[1] Fig 1 – p. 4 of IREC 2011 solar market trends (set citation)
[2] Same – fig 5, p. 7
[3] Wash. Rev. Code § 80.60.040(3).

proceeding. As IREC has consistently presented the issue to the Commission, permitting third-party ownership of net-metering systems is a best practice and it represents low hanging fruit in that clarifying the policy will cost nothing and will likely provide tremendous market growth.[4] In the context of defining "interconnection customer," there is an appropriate opportunity to clarify that third-party ownership of net-metered systems is allowed in Washington. As the notice recognizes, IREC proposed that the definition of "interconnection customer" include the clarification that "[a] net-metered Interconnection Customer may lease from, or purchase power from, a third party owner of an on-site generating facility." Such a clarification would comport with other relevant provisions of Washington law that appear to directly contemplate and allow third-party ownership of generation.[5] The Commission's proposed clarification will send a signal to the marketplace that Washington is ready to join the many states that explicitly recognize third-party ownership of net-metered systems and have thriving distributed generation markets to show for it. IREC and members of the solar industry suggested to the Commission that this clarification, standing alone, could unlock exponential growth in Washington's distributed generation market.[6]

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[4] Recently, IREC addressed the benefits and best practice virtues of third-party ownership of net-metered systems in its July 11, 2011 comments on the Notice of Opportunity to File Written Comments and Notice of Work Session (issued June 24, 2011 in docket UE-110667 ) and in its September 7, 2012 response to the Commission's Notice of Opportunity to Comment (issued July 26, 2012 in docket UE-112133).

[5] For example, the definition of "customer-generator" makes no reference to system ownership and instead refers to the customer-generator as the "user" of a system. *See* Wash. Rev. Code § 80-10-020(2). In the tax code, the definition of a community solar appears to allow third-party ownership. *See* RCW 82.16.110 ("Community solar project means… a solar energy system owned by local individuals, households, nonprofit organizations, or *nonutility businesses* that is placed on the property owned by a cooperating local governmental entity that is not in the light and power business or in the gas distribution business.") IREC refers the Commission to its July 11, 2011 comments in docket UE-110667 for a more complete explanation of these policies.

[6] *See, e.g.,* IREC's September 7, 2012 Comments at 3; SolarCity Corporation's September 7, 2012 Comments at 1-2.

## III. It Is Reasonable for the Commission to Address Voltage Regulation Issues Related to Solar PV by Requiring Conservation Voltage Reduction

As states began reaching higher levels of penetration of solar and other distributed generation resources, the issue of voltage regulation is taking on increasing importance. Under ANSI Standard C84.1, there is a tolerance of plus or minus five percent from nominal voltage (120 V). In other words, utilities need to maintain voltage within a band of 114V to 126V. As electricity leaves a substation and transmits down a radial feeder, voltage tends to drop as a function of distance without additional regulation measures such as capacitor banks and load tap changers ("LTC").

Generally, voltage increase is the most critical issue at the point of common coupling ("PCC") for distributed generating units. Voltage increase is caused by the injected power of generating units. The power transmission over the network impedance causes a voltage drop from the feeder to the receiving end of that line. Photovoltaic ("PV") systems are often sited at the end of the secondary, a scenario that results in a voltage rise. The magnitude of this voltage rise relates to the size of the impedance, meaning that voltage deviations in the grid vary depending on the size of the PV system.

A problem is likely to occur when a PV system is exporting on a feeder that is already using the maximum allowable voltage. Such a scenario can cause a voltage rise that will more than likely violate the allowable ANSI C84.1 range. To address this problem, IREC proposes that electrical companies could address the expected voltage rise of distributed PV systems by maintaining a conservation voltage level (typically below 122 volts). In other words, if the voltage level is held at a lower level, it creates head-room within the allowable ANSI C84.1 range to accommodate exports from PV or other distributed generation resources. IREC encourages the Commission to require electrical companies to utilize conservation regulation to

address the problem of voltage rise on feeders with exporting generators.

## IV. Miscellaneous Minor Changes to or Comments on the Draft Rules

IREC suggests that the following changes or corrections be made to the draft rules to clarify and improve the real-world application of the rules:

- In new WAC 480-108-BBB(1)(b)(xvi), the term "effectively grounded" should be removed. The term "effectively grounded" is unnecessary here and could create confusion, as it is based on a calculated value. IREC proposes the following modification: "(xvi) For primary-voltage connections to three-phase, four-wire systems, the transformer primary windings must be connected ~~effectively grounded,~~ phase to neutral."
- In new WAC 480-108-BBB(2), several subsections provide that the electrical company may "test, or cause to be tested, the inverter to ensure its continued operating and protection capability." IREC suggests that the draft rules should be modified to require the electric company to give five business days notice before performing this test. This modification is necessary to subsections:
    - WAC 480-108-BBB(2)(a)(v)(E);
    - WAC 480-108-BBB(2)(b)(vi); and
    - WAC 480-108-BBB(2)(b)(vii)(C).
- Additionally in new WAC 480-108-BBB(2)(a)(v)(E), the draft rules require an interconnection customer—that is allowed to opt not to install a disconnect switch—to obtain agreements from other customers that would be effected by a meter pull for disconnection, if the interconnection customer is a different entity "than the electrical company customer receiving service through the meter that may be used for disconnection or may have a loss of electric service due to a need to disconnect the generating facility." IREC suggests that the entirety of this last sentence in subsection (E) should be deleted. IREC is not aware of any instances where a utility has had to pull the meter of a generating facility or to disconnect a transformer on a shared secondary as a

result of a customer not installing a disconnect switch. This is well after a hundred thousand grid-tied solar PV systems have been installed and operating. IREC suggests that this provision injects unnecessary complexity into the process for customers opting not to install a disconnect switch. As well, it is unclear who needs to be contacted other than the customer.

- New WAC 480-108-DDD(1) should be corrected to replace "300 kW" with "500 kW" to reflect the proposed Tier 2 eligibility limits. As well, IREC continues to urge the Commission to adopt a 1 MW upper-bound for Tier 2. Most states and FERC use an upper-bound of 2 MW; Washington is uniquely conservative with its use of 500 kW. While this number was selected by the working group at the request of the public utilities, it is unnecessarily low for the state's three large investor-owned utilities. Systems over 500 kW that could interconnect in other states quickly and with minimal cost will be thrown into a study process in Washington. In practice, this means that Washington will see far fewer of these now-commonplace systems than it would if it adopted a higher upper-bound for Tier 2. Please see IREC's September 7, 2012 comments on this issue.
- New WAC 480-108-FFF(4)(c) requires that "[i]nstallations will be in compliance with all applicable standards including IEEE Standard Harmonics Limits, or more stringent harmonic requirements of the electrical company." IREC is concerned that this provides too much discretion and suggests that electrical companies should provide substantial and valid reasons for why more stringent harmonic requirements are necessary. Accordingly, the phrase "<u>that have been approved by the Commission</u>" should be added to the end of this sentence.
- New subsection (2) to WAC 480-108-015 is confusing and its intent is unclear. This subsection provides that "Generating facilities must obtain the electric company's permission to operate in an "islanded" condition (generating energy that flows onto the electrical company's system) when the electrical company's system serving the generating facility is de-energized." IREC is unsure why this provision is necessary or desirable, since utilities would never want a generator islanding and delivering electricity onto the grid during a power outage, with the possible exception of near-instantaneous events where voltage ride-through can help stabilize the grid. Presumably, the intent of

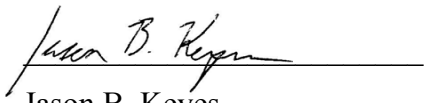
this section is to address facilities that disconnect during an outage and serve on-site load, but the language needs to change to reflect that energy would not be flowing onto the grid.

- The Commission should modify subsection (7) of new WAC 480-108-AAA by adding the following sentence to clarify that applications submitted through an online platform will have a date and time stamp "affixed" by automated means and will not require manual processing: "The electrical company shall cause a date and time stamp to be automatically affixed to an interconnection request when it is submitted by electronic means."
- In new WAC 480-108-AAA, IREC suggests that the Commission delete subsection (4), which provides that "[t]he electrical company must respond within fifteen business days." In light of the separate requirement in subsection (8) that the "electrical company must notify the interconnection customer within ten business days of receipt whether the interconnection request is complete", subsection (4) conflicts with the given notice of completion. IREC would prefer a period of five business days to give notice of completion, but accepts ten business days as a reasonable period that is consistent with SGIP and many other states' practices.

## V. Conclusion

IREC appreciates the opportunity to submit these comments.

Respectfully submitted on December 21, 2012.

By: 

Jason B. Keyes
Keyes, Fox & Wiedman LLP
436 14th Street, Suite 1305
Oakland, CA 94612
jkeyes@kfwlaw.com
(206) 919-4960

Attorney for the Interstate Renewable Energy Council, Inc.