Executive Secretary
Washington Utilities and Transportation Commission
1300 South Evergreen Park Drive SW
P.O. Box 47250
Olympia, WA 98504-7250

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COMMENTS OF THE VOTE SOLAR INITATIVE

RE: Docket Number UE-060649
Standards for Interconnection to Electric Power Systems for Systems Greater than 25 kilowatts

The Vote Solar Initiative appreciates the opportunity to submit comments in response to the Commission's solicitation for public input. Vote Solar is a 501(c)(3) non-profit organization working to bring solar energy into the mainstream. Solar energy can play an important role in making our country energy independent and strengthening our economy. While solar photovoltaics (PV) is currently the fastest growing energy industry in the world (40% annual growth over the last few years), to date market penetration has just scratched the surface of its potential. Key policy changes are needed to bring this emission-free, extremely reliable, and widely popular technology into the mainstream. Interconnection standards play a critical role to the success of solar and other renewable energy resources and we encourage the Commission to join dozens of other states interested in these technologies in adopting standards for distributed generation (DG) systems greater than 25 kilowatts (kW) in capacity. In summary, we offer the following recommendations:

1. Technical screens and separate interconnection procedures should be employed to evaluate DG according to system size and type.

2. Simplified rules and agreements should be adopted for certain net metered systems, inverter-based systems up to 10 kW, and for other DG systems up to 2 MW.

3. The Small Generator Interconnection Rules promulgated under FERC Order 2006 provides an appropriate technical framework for DG systems up to 20 MW, and reflect the outcome of a consensus process involving utility, public interest, and small generation stakeholders. (Colorado Rule 3665 is an example of a successful adaptation of FERC's interconnection framework to the state regulatory context.)

Rationale.
Legislative activity over the past two years, particularly the passage of SB 5101 in 2005 to create incentives for producing electricity with renewable energy sources, and ESHB 2352 in 2006 to increase the cap for net metered systems, demonstrates a firm commitment by the state to develop a

regional renewable energy market. We commend the Commission for responding in-kind with swift adoption of interconnection rules that allow customer-generators with systems up to 25 kilowatts (kW) in capacity to take advantage of the production incentives.

More broadly, a survey of recent federal activity indicates support for uniform interconnection standards nationwide. Both FERC and U.S. Congress (through FERC Order 2006 and the Energy Policy Act of 2005, respectively) promote interconnection standards based on IEEE 1547 and encourage state regulatory bodies to adopt "current best practices". Under the President's Advanced Energy Initiative, the Solar America Initiative (SAI) plans to promote national standardization of codes and standards in order to achieve its goals of making the PV market competitive by 2015.

The overarching goal of developing small generator interconnection standards is to reduce interconnection costs, prevent undue discrimination on access to the grid, and facilitate the development of non-polluting alternative energy sources. Low-cost expedited procedures and standard, objective interconnection rules are critical to the viability of small resources in regional energy markets. When well-designed and fairly applied, standards remove unnecessary roadblocks while ensuring grid safety and reliability. To achieve the balance required of an interconnection standard, every effort should be made to solicit participation by a variety of stakeholders, including small customer-generators. The process should also draw from the common experience of other state regulatory commissions that have already addressed small generator interconnection issues.

Response to Commission Questions.
1) Should WAC 480-108 be amended to include customer-owned facilities up to 100 kW? If so, would the increase to facility size necessitate any other changes to the rule?

If the Commission is interested in simply raising the cap for eligible system sizes to 100 kW, the current rules would be sufficient from a technical standpoint. WAC 480-108 provides that systems meet all of the appropriate technical requirements for power quality and system impacts, including IEEE 1547, IEEE 929, UL 1741 and NEC 690.

The Commission may, however, want to take this opportunity to consider additional procedural and legal changes reflecting the development of updated best practices nationwide over the past several years.

There are a number of model agreements and procedures that would be useful for the Commission to review. The Interstate Renewable Energy Council (IREC) developed excellent guidelines that incorporate the best practices from interconnection models - including the New Jersey and Colorado state rules and the model rule promulgated by the National Association of Regulatory Commissioners (NARUC).

IREC's Model Interconnection Standard can be found online at
http://www.irecusa.org/connect/modelrules.pdf

Recommendation: Implement Technically-Screened Interconnection Pathways According to Generator Characteristics.

As part of any effort to update the state's interconnection standards, we recommend that the Commission reflect in its procedures the marked difference in different sizes and types of distributed generators.

Many states have done so through the use of technical screens that determines the path to interconnection. Technical screens help to determine the appropriate interconnection procedure for a particular system process depending on its capacity and electrical characteristics. The technical screening process is generally designed to produce one of three outcomes for an applicant:

1) Simplified interconnection, (as for small, customer-sited inverter-based generators with standardized integrated power control equipment)

2) Interconnection with system modifications after supplemental review, or

3) A full interconnection study for larger generators, or generators with potentially challenging electrical characteristics or location.

The procedures are designed to provide ample safeguards to ensure that the proposed interconnection will not endanger the safety and reliability of the utility's distribution system, while removing unnecessary barriers for the most technically simple generators.

Recommendation: Develop standard interconnection agreements.

By adopting standard agreements, the Commission ensures equal legal treatment across utility territories in the state, making the process easier for utilities and system developers and enabling increased investment and large scale deployment. IREC's model interconnection guidelines incorporate a model application/agreement for < 25 kW net metered systems, and a model agreement for all other DG.

2) Is there another "break-point" to which it would be appropriate for practical reasons to increase the scope of WAC 480-108 (e.g., 300 kW, 500 kW)? If so, would the increase in facility size necessitate any other changes to the rule?

We recommend that the Commission adopt rules for small generator interconnection up to 20 MW, with simplified procedures as above for DG systems below 2 MW. Raising the interconnection process threshold to 20 MW, as other states have done, will give Washington a comprehensive legal regime for all types of new distributed generation technologies, while developing separate procedures with defined technical screens (and a known increase in complexity according to generator size and characteristics) will allow utilities to treat interconnection applications appropriately.

By way of example, the current upper limit under California's "Rule 21" process is 10MW, with simplified interconnection procedures for systems < 1 MW. California currently has the greatest

amount of grid-connected distributed generation in the U.S.; an indication that its interconnection rule is highly functional. Following the completion of IEEE 1547, New Jersey adopted standards with a limit of 20 MW and simplified procedures for < 2 MW. The New Jersey rule is also proving very successful; over 1,200 systems have been installed under the rule to date. FERC and IREC both recommend the 20 MW limit.

3) Should interconnection of facilities larger than those covered currently by WAC 480-108 be governed by a standard rule? If so, would the Federal Energy Regulatory Commission's (FERC) Small Generator Interconnection Rule serve as a good model? If so, how should the FERC rule be adapted to Washington circumstances?

We urge the Commission to rely on FERC Order 2006 as the appropriate technical and procedural framework for small generators up to 20 MW. As noted in Order 2006 (pg 4), one of FERC's specific aims was to "minimize the federal-state division and promote consistent, nationwide interconnection rules." To this end, FERC expressly sought to harmonize state and federal practices by adopting many of the best practices recommended by the National Association of Regulatory Utility Commissioners (NARUC) as well as the consensus positions submitted by the Edison Electric Institute, the Small Generator Coalition (representing fuel cell, small gas generator, and solar interests), and NRECA (representing electric cooperatives). Moreover, the Commission can be assured that there are no major issues regarding safety or reliability that have gone unaddressed in the FERC rules. FERC's final rules have struck the most appropriate balance between removing barriers to the use of small and distributed generation and maintaining the highest levels of safety and reliability in the grid.

The state of Colorado provides an excellent example of how the FERC rule can be adapted to fit the state regulatory context. Colorado's Rule 3665 closely tracks FERC Order 2006, with the necessary modifications to account for state jurisdictional concerns. The Colorado Public Utilities Commission adopted their rules in October 2005. The process enjoyed participation from a variety of stakeholders, including independent power producers, rural cooperatives, customer-generators and utilities, all of whom were in consensus on the Small Generator Interconnection Procedures (SGIP). Furthermore, the Colorado rule improves on FERC's rules by clarifying the procedures for interconnections to area and spot networks, removing ambiguity regarding insurance, and stipulating that owners of distributed generation must carry only a reasonable amount of general liability insurance.

The Colorado Rules 4 CCR 723-3 3665 can be found online at:
http://www.dora.state.co.us/PUC/rules/723-3.pdf

4) If interconnection of facilities larger than those covered currently under WAC 480-108 should not be governed by a standard rule, what principles should apply to such interconnections?

We strongly urge the Commission to develop a standard rule. Absent the appropriate rules for evaluating interconnection applications, non-standard procedures and business practices tend to introduce substantial barriers to small generators seeking interconnection. It vastly increases the difficulty of financing or implementing small generator projects when potential buyers or investors

can only be presented with a set of "principles" presumably subject to resource – intensive and inherently uncertain case-by-case interpretation on the part of either the Commission or the discretion of utilities with a potential conflict of interest.

As the overarching goals of developing small generator interconnection standards are ultimately to reduce interconnection costs, prevent undue discrimination, and facilitate the development of non-polluting alternative energy sources, the need for low-cost expedited procedures and standard, objective interconnection rules is paramount.

Additional Recommendations for Revisions to WAC RM 408-180

Small generators seeking to interconnect in the state would benefit from modifications to certain technical requirements and procedures set forth in WAC RM 408-180. These include:

Technical Requirements:

- *Studies for non-inverter based systems.* Non-inverter-based systems currently require more detailed utility review, testing and approval to ensure compliance. Implementing the appropriate technical screens, such as those adopted by Colorado, would effectively determine when additional studies are necessary.

- *Manual external disconnect switch.* While a number of states require this switch, Arizona, Colorado and New Jersey do not. One survey of in-field experience[1] with external disconnect switches concludes that these switches have rarely been used, safety incidents have not been reported despite a lack of use, and that following standard utility operating procedures (including treating all lines as live) enhance safety more than having an external disconnect switch. Existing power control equipment designed to the IEEE 1547 standard for grid-interconnected operation will disconnect from the grid in milliseconds – not the several hours generally required for crews to locate and disable a small generator system.

  Given that customer uncertainty regarding the reliability of electric supply has driven the growing prevalence of small, portable, and highly inexpensive gasoline or propane generators on the customer side of the grid, it is unwise and counter to good utility practice to operate on any section of the grid as though it were unenergized; this practice should add a second layer of redundancy to that already established by IEEE standards.

  The consideration is a nontrivial one, as the installation of such a disconnect switch may require extensive trenching, wall cutting, wiring, or the like that can add substantially to the cost and complexity of an otherwise simple small system; the industry and renewable energy advocates are unaware of any case of an external disconnect switch to a solar system actually being used in practice.

- *Dedicated distribution transformer.* Currently, Washington utilities may require customer-generators to pay for the cost of a dedicated distribution transformer if the utility determines a

[1] Overcoming Net-Metering and Interconnection Objectives, New Jersey MSR Partnership. Million Solar Roofs Case Study. DOE/GO-102005-2192. September 2005. http://www.nrel.gov/docs/fy05osti/38666.pdf

transformer is necessary. This is not a requirement typically found in other interconnection rules that have been established.

Procedures:

- *Dispute resolution.* FERC Rule 2006 and the other models laid out herein provide an additional means of ensuring equitable and transparent interactions between installers of small generation by codifying the process by which any dispute in the process can be resolved, and the burdens of proof in any case. This provides a critical degree of certainty to the process and places limits on the discretion enjoyed by the utility in any such situation.
- *Timing.* Similarly, placing known and enforceable time limits on both parties, for each step of the interconnection process, is equally critical to making the interconnection process a transparent, equitable, and effective regime.

Conclusion.

By adopting the best practices of IREC's Model Interconnection Rule, Colorado Rule 3665 and FERC Order 2006, the Commission will have an interconnection standard that successfully balances the need to remove unnecessary roadblocks to small and distributed generation while ensuring grid safety and reliability. We appreciate the opportunity to provide comments and look forward to the Commission's continued efforts to create interconnection standards for small and distributed generation.

Respectfully Submitted,

Gwen Johnson Rose
The Vote Solar Initiative
(415) 874-7435
gwen@votesolar.org