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Attn: Dick Byers
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General comments on the proposed rulemaking:

The author of these comments applauds the State of Washington for moving forward with defining the rules for "interconnection with electric generators". I believe, in general, that rules and laws should be created in an attempt to *define* and *apply* the law equally to all parties, and should – at times – seek to amend procedural discrepancies existent under current conditions. My comments are not in opposition to this rulemaking, the WUTC, independent power producers, utility companies, or their customers. They are simply a review of the current proposed rulemaking, and how it seeks to address the real-world challenges present in the electric power industry today.

The basic components of any generator interconnection guideline should, at a minimum, define the *technical* and *procedural* requirements for connecting generators with the electric grid. While various components of WAC 480-108 do a good job of outlining the *technical requirements* for interconnection, the necessary *procedural requirements* are written in a way that is too vague and potentially left open to interpretation. Because minimum technical requirements for interconnection are, for the most part, already established either by other States (California, New York) or by accredited industry organizations (IEEE, ANSI, etc), the WUTC is wise to point to them as examples – instead of re-creating the necessary definitions for those requirements. Unfortunately, this same judgment is not used to define the procedural requirements for interconnection. Instead, the WUTC makes a more general attempt at defining these procedures, one that could be open to too much interpretation on the part of the utility companies, giving them an unfair advantage during the application and negotiation process. Because this lack of prescription for procedural requirements could give leverage to one party (in this case, the utility companies) the proposed rulemaking does not sufficiently amend the procedural discrepancies that exist in today's market conditions. It is because of this deficiency that the author chooses to submit these comments.

There are, in general, two types of electric distribution grids in this State – radial and network grids. Radial grids are generally found in suburban and rural areas, while network grids are found generally in downtown or high-reliability environments. The proposed rulemaking essentially creates an outright ban on interconnections with network grids, and only allows radial grid interconnections at the sole discretion of the utility companies. The proposed rule offers little recourse to the applicant, especially not to the degree that remedies the deficiencies in the present system. In addition, the rule allows the utility companies too much variance for their methodology during the application review process, and does not provide enough leverage for the applicant to safely and responsibly become an independent power producer. While this rulemaking is certainly necessary, it is not sufficient to fix the existing problems with generator interconnections.

Specific comments on proposed rulemaking:

WAC 480-108-020, section 2, part (g)

> "Interconnection to grid network distribution systems is not allowed."

On what grounds should interconnection to network grids be outright banned? The engineering requirements of a network grid interconnection are a bit more complicated, but this type of interconnection is completely feasible and has been done many times across the U.S. One of the most important values of distributed generation is the added benefit of reliability to 'high-value' operations, and so to create and outright ban on network grid interconnections completely takes away the ability for anyone in Washington to demonstrate the value of DG in this type of environment. The utility company's responsibility is to deliver electric power in a safe and reliable manner and, as long as a generator can meet technical requirements for interconnection, an applicant should be allowed the opportunity to interconnect. The outright ban on network grid interconnections is somewhat discriminatory to certain businesses in Washington State that work to interconnect distributed generation applications in network grid applications, and does not demonstrate the forward-thinking nature of the WUTC that the State has seen in the past. As DG has value for radial grids, so does it hold value for a network grid. To create a legal 'blanket' that discriminates toward network grid interconnections does not assist in future development of DG applications, and does not advance the technical engineering capabilities of professionals in the electric power industry. The absence of next-generation DG projects will create an absence of their benefits in critical areas of this State.

There are a number of relevant studies (see appendix) that point out the intrinsic value and benefits of generation interconnections in network grids. The central point lies in the notion that peak system demand can be lowered by supplying some of one's own power needs through onsite generation. By lowering the peak demand for a facility, a number of overall system benefits would arise – including lower line losses, deferred replacement of capital equipment, local area voltage stability, and reduced risk of market price

volatility. When one examines these (and other) overall system benefits delivered by distributed generation in a network grid, it becomes clear that – while complicated – network grid interconnections can be a positive asset to the system and, therefore, its customers. To hold back these benefits from the customers because of the complicated nature of network grid interconnections is a very risk averse approach to revolutionizing the electric grid, and will have impacts on economic development, life support systems and emergency response, in years to come. Limiting network grid interconnections (to a percentage of peak system demand, to a certain number of customers, etc) would be more favorable than an outright ban.

When a customer embarks on a significant energy conservation measure, they are not left with the burden of proof to show how their measures will impact the electric grid – so why should a prospective generator? If reducing load on the grid has benefits that transcend those who create the load reduction, why does the utility company go so far as to offer a rebate for that load reduction if there are no other benefactors than the project owner? Presume that a certain building's electric load is 500kW and a building owner seeks to satisfy half (250kW) of the building's load. From a whole-system perspective, what makes this any different from a conservation measure that seeks to cut back half of the electricity use in that building? Would the building owners have to go through the same stringent cost/benefit analysis that is required by an interconnected generation project? For cost-sharing, does the conservation project owner have to embark on a research initiative to uncover the array of system benefits that go beyond a single customer? The answer is no, and from a whole-system perspective, the answer should be no on both sides of the argument. It is completely understood by this author that generation and conservation act very differently on the grid, however from a whole-system (ie, grid operator) perspective they do not look to be as different. As long as generator interconnections are made safely using modern engineering expertise, there should be no reason why network grid interconnections cannot happen. The proposed rulemaking appears to discriminate against this type of interconnection without a valid purpose. To blindly reject network interconnections does disservice to the IPP community on a whole, and outlaws the some of the more forward-thinking aspects in the electric power industry. Taken in part, and on a whole, the proposed rulemaking does little to satisfy the independent power producer's faith that the WUTC sees value in the interconnection of distributed energy resources to the electric grid. The author of these comments feels it is the responsibility of the WUTC to delicately balance the interests of the customers and the utility companies, and to add emphasis on areas that need to be fixed.

<u>WAC 480-108-030, section 3</u>

> "All generation interconnection requests pursuant to this chapter will be prioritized by the electric company in the same manner as any new load requests. Preference will not be given to either request type. The electrical company will process the application and provide interconnection in a time frame consistent with the average of other service connections."

First, what exactly is the "average time" of other service connections and how to I find that information? Will I have to contact the utility company to request this information? Is there potential for an inaccurate or incomplete result to my inquiry? What exactly is the basis and methodology used to determine "average time", and how would one know if that "average time" is too much, too little, or just right? These vague terms and definitions only serve to add cloudiness to the application process, and vagueness is what the industry needs to prevent – not recreate through rulemaking. Again, this rulemaking should facilitate the interconnections by making this process easier and more transparent to the applicant.

Second, while the purpose of this statement is somewhat clear in that the WUTC is trying to prevent new applications from 'bumping' (either up or down) prior applications, this could also mean that a utility company does not have the latitude it needs to bring new resources online when they need it most, and in areas that are in need of new generation sources. This 'first come, first serve' prioritization could not only hurt the applicant, but it could hurt the utility company as well. The author suggests that the WUTC should change this reference to more accurately reflect a utility company's needs for a particular distribution system, and for streamlining certain new load requests that are not new to the utility company's operations (e.g. electric power inverters, solar pv modules, etc). In the same way that Integrated Resource Planning (IRP) uses a priority ranking system for new load requests, so should it be used to prioritize a generator interconnection application. If there is a need for resources in a certain geographic area, or in a particular part of a distribution grid, the utility and applicant alike should have expedited tools available for their use to remedy the problem. By not giving preference to needed resources, reliability of that area will be compromised because of the inability to 'pre-certify' or 'fast-track' certain resources and equipment that can help remedy the problem.

WAC 480-108-035, section 2

> "If the utility determines that additional studies are required, the utility will provide to the applicant a form of agreement that includes a description of what is required and a good faith estimate of the cost to perform these studies. The applicant must execute and return the completed agreement along with any deposit required by the utility against the estimated costs within 30 days."

Deposit appears for the first time in the rulemaking, and is largely undefined. In the past, utility companies have required a large 'deposit' for the project to happen. Sometimes this deposit is non-refundable, other times the deposit is held for months while certain other aspects of the application are sorted out. The actual value of the deposit should be included in this rulemaking (whether fee-based, a percentage of application costs, etc), as well as the procedural requirements for submission, holding, and refund of this deposit. This topic is completely undefined in this proposed rulemaking, and only adds to the vagueness of the procedural requirements in it. Other States, especially Massachusetts, has developed a very good way of assigning applications fees and should be given serious consideration for this proposed rulemaking.

WAC 480-108-070, section 6

> "Unless an interconnection that is not a PURPA qualifying facility is shown to provide quantifiable benefits to an electrical company's other customers, an interconnecting customer must pay all costs made necessary by the requested interconnection service. Such costs include, but are not limited to, the cost of engineering studies, upgrades to utility facilities made necessary by the interconnection, metering, and insurance."

It is agreed, in general terms, that a utility company should serve in an oversight role during the application for interconnection process. They are, after all, protecting the safety and reliability of the electric grid and its users. However, any independent power producer that wishes to interconnect to the utility's grid must essentially embark on a research initiative to determine all or any values to the utility's grid or its customers. This is an unnecessary requirement that places undue burden on the applicant. Assessing system benefits of new resources is the role and responsibility of the utility company alone, and should not be placed on the applicant that is not privy to the same information as the utility company. Do potential conservation measures require the same sort of system cost-benefit analysis that is required for generator interconnections? When conservation measures may impact the grid in a negative way (avoided cost, stranded assets, etc), is the applicant required to pay the additional costs for these impacts? Part of the role of the WUTC is to balance the interests of the customers and the regulated utility companies, and the proposed rulemaking does not appear to offer this consideration.

Here's an example of how this section plays out in two separate cases.
In the conservation measure, building A has an average load of 1MW. The owners decide to engage in conservation measures that will result in a load reduction of 300kW. As a result of this, the average building load is now 700kW.
In the generation measure, building B also has an average load of 1MW. The owners decide to install a 300kW hydrogen fuel cell in their basement. While the total building load remains at 1MW, the amount needed by the distribution grid to satisfy this load is, again, only 700kW.
For argument's sake, let's assume the night-setback building load is 400kW, and therefore no power will ever be exported into the distribution grid.
Should both projects (conservation and generation) require the same level of engineering analysis? Should the applicant have to pay for all sides of the projects, regardless of if we are conserving or generating load? There are numerous, proven impacts that load reduction and demand response techniques have on the distribution grid, and to negate these studies does not do justice to the many people who have worked on this important topic. DG capacity credits are proven (see appendix below), so why should each prospective generator have to prove these benefits to the utility companies again and again, without any help from them? A tiered payment system of cost should be developed to not only recognize the added value of distributed generation on the grid, but also to assess fair payments needed by both parties to ensure an equitable process. The

lack of cost-sharing requirement by the utility company shows that distributed generation is still not a preferred resource in this State – it is almost seen as a nuisance.

Conclusion:
Despite the efforts of the WUTC to create a necessary and sufficient rulemaking to address the market deficiencies of generator interconnection, utility companies still have an enormous amount of discretion to block a request to interconnect. Beyond the specific technical details of this rulemaking, there is little to guarantee a generator a right to interconnect. However, the author recognizes the complexity of this issue and has been working on it for a number of years. It is safe to say that no State has achieved a perfect interconnection rule, and it could be something that will never be completely possible. The author, again, applauds the efforts of the WUTC to tackle this important issue, and believes that generator interconnections are a much needed resource on the path to revolutionizing the electric power grid.

Sincerely,

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cc: Dick Byers

Appendix:

"Report of the Rhode Island Office of Energy Resources to the Rhode Island General Assembly on the Distributed Generation Stakeholders Working Group." February 1, 2007

"Quantifying Demand Response Benefits in PJM." Prepared for PJM Interconnection, LLC and the Mid-Atlantic Distributed Resources Initiative (MADRI) by The Brattle Group, Cambridge, MA. January 29, 2007

"Interconnection of Distributed Power to the Distribution Grid." Enslin, J., November 2006.

"Integration of PV in Demand Response Programs." Perez, R. et al., 2006

"Build Up of PV Value in California – Methodology." Americans for Solar Power, April 13, 2005

"Generation Monitoring at GSA Williams Building and Modeling of Feeder Fault Cases Recorded." Massachusetts Technology Collaborative, May 18, 2005

"Case Study on DG Interconnection for Network Systems: Project – 595 Market Street, San Francisco, California." Navigant Consulting (submitted to Massachusetts DG Collaborative), June 2004

"The Value of Distributed Generation from the Customer's Perspective: Power Quality and Reliability." Capitol Hill Briefing to U.S. House of Representatives - Energy Committee staff, September 18, 2002

"A Model for Capacity Credit Evaluation of Grid-Connected PV Systems with Fuel Cell Support." IEEE Transactions on Power Systems, Khallat, M.A., Rahman, S., August 1988