August 8, 2011

On behalf of Chuck Collins, CEO of Cascade Power Group (www.cascadepowergroup.com) and Stan Gent, President and CEO of Seattle Steam Company (www.seattlesteam.com), we would like to thank the Commission for the opportunity to submit additional comments on the topic of distributed generation and Docket UE-110667. Our comments aim to further strengthen our definition and purpose of distributed energy for Washington State, so that the Legislature and UTC can facilitate a thoughtful and useful set of policies and rules to help capture the intrinsic benefits of various DE opportunities.

Answers to specific questions raised by UTC staff in the July 29, 2011 "Notice of Opportunity to File Additional Comments".

How the Commission should define distributed generation for the purpose of the study, and whether the Legislature should define distributed generation differently than in RCW 19.285.030(9):
The Commission should view "distributed generation" as a subset of the broader topic of "distributed energy". DG should be defined as *localized generation of electric and thermal resources that are produced close to the point of use*. Distributed energy, on a whole, should be defined as *distributed generation and demand-side conservation resources that are located close to the point of use*.

Energy conservation makes up a portion of every utility company's resource reserves, and yet, efficiency measures that capture and recycle otherwise wasted energy are not fully utilized by Washington State policy incentives and rulemakings. We fundamentally believe that thermal energy MUST be considered part of the energy strategy for the State. Waste energy recovery (WER) should be viewed both as an onsite conservation measure as well as a highly efficient and clean supply-side resource that can offset lower efficiency fossil-fueled energy.

The current definition of RCW 19.285.030 (9) limits DG to "renewable resources" and "not more than five megawatts". This does not describe the actual function of distributed generation and is too narrowly defined as renewable. We are not against renewables, we simply don't think the definition for "distributed generation" has anything to do with a specific fuel source.

The UTC and Legislature should NOT define a size limit (kW or MW) within a definition of distributed generation or distributed energy within the State. Instead, percentages are an easier way to account for the varying sizes of utility company energy loads in the State (example – 15 percent of a feeder's electric load; or 9 percent of a utility company's total generation portfolio, or etc).

The purpose or goal of distributed generation in Washington, particularly in areas of the state served by investor-owned utilities, and how the goal or goals should assist the Commission and the Legislature identify appropriate administrative or legislative proposals to encourage distributed generation:
The fundamental purpose behind distributed generation in Washington should be to improve system stability and reliability while reducing system wide transmission and distribution losses by:

1) Offsetting local energy demand by locating sufficiently sized distributed energy

resources close to the point where they will be used. Recent research by Carnegie Mellon[1] suggests that if 10% of the grid load was generated at load centers with generation phase, lead/lag, controlled by the local utility using smart grid technology up to 50% of transmission losses can be avoided. The same study indicates that during peak conditions a MWh generated locally might displace upwards of 2 MWh's at remote generation sites such as wind.

2) By combining thermal energy and electric energy resources, we can achieve daily and seasonal virtual electric energy storage. Create the ability to use SURPLUS electricity especially during run-off to create heat and using high efficiency CHP later in the year to create electricity and heat resulting in highly efficient virtual electric storage.

3) Ensure greater reliability by reducing our reliance on centralized generation sources that rely on vast transmission networks to deliver the resource

4) Give more control and choice to the consumer to exercise their values

5) Improve local air quality in the case of waste energy recycling and combined heat and power to offset less efficient fossil-fuel consumption

6) Equity of opportunity to invest in DG through the use of community-based clean-energy projects

7) Technology innovation and deployment, especially for efficiency and conservation improvements, through technology-neutral energy policy and rulemakings

Additional comments on behalf of Cascade Power Group and Seattle Steam Company.

1. We believe the "Least-Cost" electric-only planning models do not take fully into account the benefits of distributed energy systems, and should be changed to reflect the delivered cost of energy, electricity and heat. We believe Least Cost Planning is a significant barrier to distributed energy project development and that it encourages the squandering of renewable and fossil-fuel resources. New models that reflect *overall system performance* and *environmental quality* should be used, so that we can achieve the highest benefits from each of the various technologies and fuel sources that are commercially available.
2. We support IREC's recommendation to designate "DC" or "AC" electric power in the UTC's Generator Interconnection Rule. Without a specific designation, the rule is open to interpretation and subsequent confusion.
3. The UTC's Generator Interconnection Rule should have a "working group" consisting of project developers, utility companies, IREC staff, and technology vendors. The working group should meet no less than twice per year, and have a primary purpose of streamlining and standardizing various interconnection requests. "Fast-track" and "simplified" processes for inverter-based systems should be in place as soon as possible.
    a. Furthermore, the UTC's Generator Interconnection Rule should allow the local utility company to control generation lead/lag on DG so that transmission losses can be reduced. Local utilities should be allowed to pay for this service and recover the cost of providing this efficiency improvement.
4. We believe that waste energy (electricity and heat) recycling (WER) should be considered part of "clean energy standards", equal to wind and solar.
5. District Energy systems can help balance voltage fluctuations and varying demand by using the district energy loop as a virtual energy storage system. Excess electricity can be turned into useful thermal energy when there is 'low pricing', (less than the cost to produce the energy with gas fuel) and electricity and heat can be generated in associated CHP facilities when spot-market prices

[1] Masoud H. Nazari and Professor Marija lić. *Enhancing Efficiency and Robustness of Modern Distribution Systems.* Engineering & Public Policy and Electrical & Computer Engineering Departments: Carnegie Mellon Information and Communication Technologies Institute, Portugal.

exceed certain thresholds, i.e. the ability to create a highly efficient virtual battery that can change grid characteristics in both short and long term conditions. This is an important and often overlooked feature of district energy systems, and provides a solution to the question of 'load balancing and firming' for renewable electricity generators.

6. WER and CHP, by using fuel twice, significantly reduce greenhouse gas emissions from fossil-fuel electric sources.
7. We believe district energy systems should be profitable for the utility company, the site project host, the developer, and the general public.
8. Non-construction alternatives to load management and growth should be a labeled a 'priority resource', with energy conservation and efficiency as the leading strategies to accomplish this.
9. Some WER and CHP projects do not seek to export electricity to the grid, instead the electricity produced will be used to offset some consumption and demand by the host. Some industrial sites have a significant amount of waste heat, which could be converted to a clean electricity supply source using commercially-available technologies.
10. Avoided cost calculations should take into account the delivered cost of electricity (includes T and D losses, climate benefits, ancillary support, dispatch-ability and firming capability, infrastructure upgrade deferral).

Thank you for the opportunity to provide additional comments. Please don't hesitate to contact us with questions or comments.

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