



November 2, 2016

State of Washington  
Utilities and Transportation Commission  
1300 S. Evergreen Park Dr. SW  
P.O. Box 47250  
Olympia, Washington

RE: Rulemaking for Integrated Resource Planning, WAC 480-100-238, WAC 480-90-238, and  
WAC 480-107  
Docket UE-161024

Dear Commissioners,

Thank you for the opportunity to submit comments on the docket UE-161024 regarding updated rules for Integrated Resource Planning (IRP). UniEnergy Technologies (UET) is an energy storage solutions provider with its headquarters and manufacturing facility located in Mukilteo, WA. UET is a participant in Puget Sound Energy's current IRP process, and looks forward to participating in future IRP processes of the electric utilities regulated by the Commission. We would like to offer our insights and suggestions regarding updates to the IRP process.

### **Section B: Energy Storage**

As noted in the Notice of Workshop and the Notice of Opportunity to File Written Comments, the Commission and UTC staff have engaged in an investigation regarding energy storage technologies and their treatment in IRP documents (Docket UE-151069). The work that the Commission and UTC staff has performed in this area, and the resulting white paper on energy storage modeling, is very helpful in providing an overview of the energy storage industry and its utility-scale applications. Further, we believe this work has helped accelerate adoption of energy storage technologies in Washington State.

UET supports merging that investigation with this current proceeding, in order to ensure that the Commission's work on energy storage continues. At the same time, we feel there is a risk that the benefits and advantages offered by energy storage could be blurred if Docket UE-151069 is folded into this larger IRP rulemaking process. Our primary concern is the value of energy storage should be viewed in terms of both load and generation (and in the future as energy storage scales up, transmission as well). In reality, storage offers multiple benefits across all of the traditional utility categories of load, generation, and transmission. The current IRP process and thinking can lead to utilities and other stakeholders to perceive one benefit (for example, capacity) to the exclusion of another (for example, frequency regulation), when a capable energy storage solution could offer these benefits concurrently.

The Commission has also asked for comment on information relative to energy storage that was not presented in the existing docket (UE-151069). While the staff report focused a great deal on price, one area in particular that needs more attention in modeling energy storage is degradation of capacity and efficiency over the lifetime of the storage system. Current battery technologies have significant differences. Examples include a 5-7 year life of a battery with limited cycles versus a 20 year life with unlimited cycles, and accelerated reduction in efficiency as certain storage systems age. Other examples are floor and ceiling constraints on the use of stored energy, and specific site constraints that require specific use cases and modelling. While others have suggested storage be addressed as “technology agnostic”, we believe these differences between technologies are economically significant and should be addressed explicitly.

We propose the IRP process adopt a total cost of ownership (TCO) or levelized cost of storage (LCOS) model for the IRP process. This type of financial modelling is used in other areas in the IRP and is an effective way of addressing the degradation, cycling, state of charge, and multiple use case comparisons among battery storage technologies.

### **Section C: Requests for Proposals**

We support the suggestion by the Commission for more narrowly crafted RFP solicitations that are tailored to the specific resource needs identified in the IRP. We believe more frequent attention to specific needs would be valuable, and allow for focus and a deep dive on specific issues presented at the time of the more narrowly crafted RFP solicitation.

### **Section D: Avoided Costs**

We support additional transparency in the reporting by utilities of avoided costs. As the Commission recognizes through its questions, transparency in reporting these costs will be complicated for utilities. However if a standard costs calculator is presented, as the Commission has suggested, it would allow stakeholders a basic model and standard definition to use when comparing energy resources and among different utilities in the region. This would be consistent with our suggestion above of a TCO/LCOS model for energy storage.

### **Section E: Transmission and distribution modeling**

It is our observation that the models and modeling software currently used by utilities are having difficulty keeping pace with the rapid introduction of new technologies and the methods of delivering electricity, such as distributed generation and energy storage. One way to address this challenge is the renewal of the Commission rule requiring smart grid reports. Such renewal would encourage utilities to investigate and educate their staff on better models and modeling software.

## **Section F: Flexible resource modeling**

We support the use of sub-hour modeling to better reflect the benefits of flexibility, renewable resources, and energy storage. Studies have demonstrated that a more fine-grained approach to modeling reveals more realistic estimates of generation costs and system costs. There are models and software commercially available today and being used by utilities and researchers to produce sub-hour models.

## **Section G: Procedural improvements**

We support greater transparency in the IRP process in terms of specific meeting dates and scheduling. However, it should be noted the schedule set for the IRP process should not dictate the content or the amount of time a utility should spend on its IRP process. Our observation is that on occasion, significant issues are not discussed or not given sufficient time in the interest of sticking to an agenda and meeting schedule. The schedule and deadline draft timetable should be published so those who are interested in contributing have a reasonable expectation of when the meetings occur, but it should not be used as a tool to discourage or limit further discussion on a topic that could be perceived as controversial by any party.

Finally, we would welcome a mechanism for both UTC staff and utilities to collect current market pricing for technology in a way that protects proprietary information. UET has been open in sharing our current pricing with UTC staff and Puget Sound Energy, in order to demonstrate the benefits that deployments of battery storage technologies have allowed to utilities and thus the ratepayers. However, not all companies are willing to do this. We would encourage allowing a trusted, non-profit third-party to collect and aggregate pricing information in order to provide accurate ranges of technology pricing in this dynamic industry.

Again, thank you for the opportunity to submit our comments to the Commission on beneficial updates to the IRP process in Washington. We are glad to be available to answer any questions you have about the above suggestions.

Sincerely,



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