PUGET SOUND ENERGY
The Energy To Do Great Things

Puget Sound Energy
P.O. Box 97034
Bellevue, WA 98009-9734
PSE.com

April 3, 2017

***Via* Web Portal**

Steven V. King, Executive Director and Secretary
Washington Utilities and Transportation Commission
P.O. Box 47250
1300 S. Evergreen Park Drive S.W.
Olympia, Washington 98504-7250

Re: **Dockets UE-161024 and UE-151069: Comments of Puget Sound Energy in response to Notice of Opportunity to Comment on Draft Report and Policy Statement on Treatment of Energy Storage Technologies in Integrated Resource Planning and Resource Acquisition**

Dear Mr. King:

Puget Sound Energy ("PSE", "Company") appreciates the opportunity to respond to the draft report and policy statement on treatment of energy storage technologies in Integrated Resource Planning (IRP) and resource acquisition proposed in this docket and submits the following comments in response. PSE offers some general comments on the draft report and policy statement followed by specific responses to draft language included within the three policy principles proposed.

1. General

PSE commends the Commission staff for expediting a draft policy statement that seeks to provide greater guidance to utilities in modeling, planning and acquiring energy storage solutions. PSE appreciates the Commission's willingness to provide regulatory guidance so that utilities can respond to the fast-evolving market for energy storage and explore the various solutions energy storage may provide to traditional utility services such as energy delivery, grid management, outage restoration, and others. At a high level, PSE interprets the draft policy statement as encouraging utilities to prioritize the exploration of lowest reasonable cost, cost-effective commercially available energy storage solutions in providing benefits to its customers, consistent with RCW 19.280. While most energy storage solutions have not yet been selected as the most cost-effective option on PSE's system to meet energy, capacity or reliability needs, PSE remains optimistic on the long-term prospects of various utility-scale energy storage applications

and will continue to deploy significant resources to model, test and explore energy storage innovations that PSE could apply to solve various utility operational needs.

In previous comments, PSE stressed that any policy statement on energy storage should provide direction but not specific mandates, and ensure that utilities retain the flexibility to develop frameworks to incorporate these fast-evolving technologies as they become commercially available. This draft policy statement provides helpful direction to PSE in some areas such as modeling for energy storage, and PSE provides some minor edits that could make these areas even more clear and helpful. However, the policy statement also includes prescriptive language regarding resource acquisitions that PSE views as diminishing the flexibility and autonomy required to properly evaluate all resources on a technology neutral basis to ensure customers receive benefits of the lowest reasonable cost resources, consistent with RCW 19.280.. PSE discusses its areas of support and suggestions for improvement in more detail below under the three proposed policy principles: *Changing Planning Paradigms; Modeling Guidelines; and Regulatory Treatment.*

The potential for energy storage resources at the utility is vast and exciting, and the report provides some compelling information on the declining costs of one storage resource, lithium ion batteries. However, it's important that the policy statement also recognize the current state of the market so utilities are not forced to spend unnecessary time and resources evaluating solutions that are clearly neither cost-effective today nor in the near-future. Energy storage has *potential* future application in both large and small utility applications, but the best use of time and resources at this point would be to direct the utility to only evaluate storage and distributed energy resources (DERs) in IRPs and for larger scale resources that include significant lead time. Utilities should retain flexibility for resource acquisitions and smaller scale projects such as distribution upgrades that are location-specific and have shorter lead times, consistent with RCW 19.280.030. For distribution investments, the utility distribution planner should retain the flexibility to determine whether existing storage resources are feasible or cost-effective and the utility will be judged later on prudence of that decision. Directing the utility to evaluate energy storage or DERs on every small scale distribution investment would be administratively burdensome and unnecessarily extend timelines for these projects and would not be consistent with RCW 19.280.

Finally, the draft policy statement says that *it is the policy of this Commission that energy storage is a key enabling technology for utilities to comply with the state's energy policies, and that Washington's investor-owned utilities should be diligently working to identify and pursue cost-effective opportunities to incorporate energy storage into their systems.* PSE appreciates this clear direction from the Commission. PSE's record has shown its diligent work in exploring energy storage resources on its system through examples such as building and testing a battery storage demonstration project near Glacier, WA, to expanding the Company's modeling capability to include more storage technologies, value streams and granularity. It is in the best interest of PSE and its customers to continue to diligently identify and pursue cost-effective energy storage resources, consistent with WAC 480-107-015, and the Company will be better-equipped to do so with flexibility and authority to evaluate and make decisions within the solicitation process outlined in WAC 480-107-015.

2. Changing Planning Paradigms

PSE appreciates the direction in the draft policy statement encouraging utilities *to consider energy storage, when competitively procured, as an investment opportunity (p.12). Further, energy storage resources should be competitively procured (P. 15).* PSE does view energy storage as a potential future investment but it must be evaluated within the framework of RCW 19.280 (which includes an evaluation of technology-neutral alternatives noted in RCW 19.280.030(d)), and procured within the competitive procurement framework of WAC 480-107-015. These frameworks most often yield the best outcome for customers and the utility alike based on the lowest reasonable cost criterion.

PSE understands the Commission is looking to *break down the artificial barriers of traditional resource planning and develop a framework that more cohesively considers the relationship between generation, transmission and distribution, allowing for fair evaluation of hybrid resources (p.11).* PSE contends that this framework is already emerging, traditional barriers are eroding and existing planning processes are informing each other more each cycle. However, it is important that the policy statement be clear in recognizing the practical infeasibilities of creating a fully integrated/combined planning process for generation, transmission and distribution, which is not outlined in RCW 19.280. Pursuing this outcome would create a time-consuming process for every project inside the utility that would not be flexible enough to consider the various project scales, scopes, locational specifics, timelines, *etc.*, and would not be consistent with RCW 19.280. For example, a distribution feeder upgrade and a new generation resource should not be considered under the same planning regime. Further, RCW 19.280.030(d) only treats transmission and delivery as costs to be considered, it does not treat them as resources, in the context of the IRP law. The language should make clear that it's sufficient that these separate processes continue to inform each other more deeply each cycle, and the utility continually works with its stakeholders in looking for opportunities to coordinate.

PSE has several concerns regarding the language in the draft policy statement stating that *Utilities seeking a prudence determination for any new resource acquisition must be able to demonstrate that their analysis of resource options included a storage alternative. This policy applies to investments in generation and distribution projects, as well as transmission projects that have not been selected in a regional transmission planning process (p. 11).* The largest concern is that PSE views this language as overly-prescriptive and diminishing the flexibility and autonomy needed to properly evaluate all resources on a technology neutral basis to ensure customers receive the benefits of lowest reasonable cost resources. PSE goes to great lengths to maintain a technology-neutral resource acquisition process consistent with WAC 40-107-015, and spends considerable time evaluating reasonable alternatives. One concern is that this policy appears to apply to all projects regardless of scope and scale, which would create inefficiencies and unnecessary hurdles for smaller projects on the transmission or distribution system. Would PSE be required to perform an RFP for every size and scope of distribution project? At a minimum, the Commission could consider exempting smaller distribution projects and projects made for the sole purpose of transmission or distribution reliability upgrades. It would be a better use of utility time and resources to focus its energy storage analysis on IRPs, modeling, and larger projects with longer lead times. Consistent with WAC 480-107-015(3)(b) the Commission

has the authority and responsibility to approve a company's filed RFP, it can therefore order the company to make changes consistent with existing laws and rules.

3. Modeling Guidelines

Even though many of the draft modeling guidelines are prescriptive, PSE generally agrees with many of the guidelines around modeling energy storage and appreciates the Commission's direction in this area. PSE does provide some suggestions below to ensure the utilities have sufficient flexibility and time to implement many of these proposed guidelines and to make sure these guidelines are consistent with RCW 19.280 and WAC 480-107-015.

PSE generally agrees with the Commission's support for a "net-cost modeling approach" as an appropriate framework for considering energy storage resources in future IRPs. The *Commission supports a framework for evaluating storage in IRPs that generally consist of using a tool for identifying the stacked benefits of a storage project, and then deducting the net present value of those benefits from the storage resource's capital cost in the IRP model (p8, p16).*

PSE also supports the Commission's direction to *use an external model capable of modeling sub-hourly benefits (p.12).* It is important, however, that utilities be allowed time and flexibility using new external models to attempt to properly quantify value streams with sub-hourly models. PSE has purchased the PLEXOS model and will need at least one IRP cycle to integrate that model with all the other models it uses to conduct the IRP. PSE believes sub-hourly benefits analysis has lots of promise and is open to a requirement they be included in IRPs in the next year or two. In addition to a reasonable timeline for requiring sub-hourly benefits, it will be important that the utility retain the flexibility and autonomy to work with its stakeholders to determine *which* sub-hourly benefits are best for inclusion with the model purchased by the utility. No doubt that list of sub-hourly benefits will grow over time as the utility becomes more familiar with the model, but the Commission should not prescribe the list of benefits that must be modeled.

PSE believes the Commission struck the right balance with respect to the treatment of proprietary information from commercially licensed models. The utility should be expected to *share assumptions from publically available models and if a utility opts for a commercially licensed model it should ensure the advisory group members are given opportunity to understand the model (p.13).*

PSE agrees with the Commission's draft language around modeling a larger representative sample of energy storage resources in the IRP. The Commission states that a*nalyzing one or two types of storage is not sufficiently representative of the diverse range of capabilities. While it would be unreasonable to expect a detailed analysis of every possible storage technology and configuration, we expect utilities to work with their advisory groups to identify and analyze a reasonable, representative range of storage technologies and chemistries (p13).* PSE has received significant input from its stakeholder group on a range of energy storage resources and has continued to expand the number of resources modeled in its IRP.

With regard to the Commission's guidance on sourcing technology cost assumptions in IRPs and resource acquisitions, PSE finds the draft language overly prescriptive in pointing to U.S. national laboratories, i.e. *we expect utilities to rely on cost data by reliable, independent third parties. PNNL and Sandia National Laboratories have compiled such data (p.13-14).* No doubt these are credible sources, but utilities should have discretion in sourcing data and be judged when demonstrating the reasonableness of their cost assumptions. Quality data can come from public sources, market surveys, paid consultants, RFPs, and other sources. It is also important to note that "reasonable" is different than "perfect" cost assumptions. Particularly in judging resource acquisition prudence (p.14, paragraph 56), it is important that utilities be granted the flexibility and freedom to choose data sources and ultimately be judged on the reasonableness of their assumptions and decisions. Consistent with WAC 480-107-015(3)(b) the Commission has the authority and responsibility to approve a company's filed RFP, it can therefore order the company to make changes consistent with existing laws and rules.

Finally, PSE is concerned the Commission's draft language regarding analysis of distribution system upgrades is overly prescriptive. The Commission states *any analysis of a distribution system upgrade should include analysis of storage options that capture all locational benefits associated with site in question.* Per PSE's earlier comments, this modeling guideline is not sensitive to the various sizes and scopes of distribution level projects and removes flexibility from the distribution engineer to be responsive. At this point, it is better for energy storage analysis to focus on IRPs and larger scale resources with longer lead times. If the Commission decides to maintain this language in the policy statement, PSE suggests the Commission remove the requirement that "all locational benefits be captured with the site in question," and replace with language that states the "utility should produce a reasonable list of locational benefits considered at the site", and to make sure this language comports with the existing law at RCW 19.280.

4. Regulatory Treatment

PSE appreciates the Commission's clarity in stating that it will apply the same basic prudence principles to energy storage resource acquisitions as any other, i.e. *the company must establish that it adequately studied the question of whether to purchase these resources and made a reasonable decision, using the data and methods that a reasonable management would have used at the time the decisions were made (p14).*

PSE also agrees with Commission that at this point the utility should have to demonstrate it has pursued additional energy storage funding opportunities at the state and/or federal funds level in the solicitation process outlined in WAC 480-107-015(p. 14-15). Consistent with WAC 480-107-015(3)(b) the Commission has the authority and responsibility to approve a company's filed RFP, it can therefore order the company to make changes consistent with existing laws and rules.

Further, PSE commends the Commission for acknowledging that with respect to energy storage resources *there are a number of benefits that may not be quantifiable* and for its

willingness to accept uncertainty around benefits quantification during consideration of an energy storage resource acquisition (p15).

However, PSE suggests the Commission delete the phrase that it will *give weight to an energy storage acquisition that is not the least-cost option, provided that it is reasonably competitive (p.15).* Deviating from the existing least-cost standard (RCW 19.280.02(11) and RCW 19.280-030(1)(d)) sends mixed signals to the utility and developers and overly complicates the resource acquisition process. As the market matures and more stacked benefits are calculated, utility scale energy storage resources will likely become more cost-effective even under the existing least-cost standard to which both utilities and RFP bidders have come familiar.

Conclusion

Again, PSE commends the Commission staff for expediting a draft policy statement that seeks to provide greater guidance to utilities in attempt to not let the regulation fall behind the rapidly evolving energy resource solicitation process. This draft policy statement moves energy storage forward and provides greater clarity in some areas such as modeling for energy storage resources. However draft policy statement could be improved by exempting smaller or routine resources from analysis so that utilities can focus on creating robust energy storage analysis for larger projects with longer lead times, and remove some overly-prescriptive and confusing language regarding resource acquisitions. PSE views these as diminishing the flexibility and autonomy it needs to properly evaluate all resources on a technology neutral basis to ensure customers receive the benefits of the utility acquiring the lowest reasonable cost resource and for the policy statement to be consistent with existing law.

PSE appreciates the opportunity to provide responses to this draft policy statement. Please contact Nate Hill at (425) 457-5524 for additional information about this filing. If you have any other questions please contact me at (425) 456-2110.

Sincerely,

Ken Johnson
Director, State Regulatory Affairs