EQL Energy Comments

Modeling energy storage in integrated resource planning.
Docket UE-151069

September 25, 2015

EQL appreciates the opportunity to submit comments to the Washington Utilities and Transportation Commission with regard to modeling energy storage in integrated resource planning. We support the Commission action to open this proceeding and appreciate work by staff to compile a whitepaper and review energy storage policies in other jurisdictions.

We expect that in many cases, the distributed energy resources (DER) and energy storage use cases that will demonstrate the highest benefit/cost ratio will involve assisting utilities to improve power reliability and quality, and in some cases displace or defer traditional utility investments in generation, transmission and distribution. Therefore a robust mechanism to compare DER and energy storage options against investments in capacity, transmission, and distribution that utilities would otherwise implement is central to establishing a framework of fair valuation. One mechanism to accomplish this objective is Distribution Resources Planning (DRP). EQL Energy has written about and advised on this process in other states.

At the Commission's August 25, 2015 open Meeting and Workshop on energy storage, we were encouraged to hear that a utility in Washington is beginning to perform DRP on certain portions of their distribution system. The DRP process is in its beginning stages and needs better tools, trained distribution engineers, and coordination with DER service providers and stakeholders. The big 3 IOUs in California have submitted their very first DRPs July 1, 2015, and more work is required to properly integrate DER and DRP into current transmission, generation, and distribution planning processes.

EQL contributed the following comments at the August 25 workshop:

1. All utilities should be doing DRP, especially for any areas of their distribution system that is seeing increased DER or peak load growth.
2. Benefits can be derived from engaging customers, and looking for value-add from storage, e.g., UPS and reliability. Utilities can be the provider of 100% reliable power, customer can participate in cost, and utility can utilize battery for grid-support services. EQL is advising utilities and customers on business models to achieve these ends.

We recognize that what some of what we are suggesting may go beyond the scope of the current IRP process in Washington. We are providing these comments on utility transmission, distribution, and capacity planning involving DERs and energy storage in order to supplement the record in this proceeding and assist the Commission in determining an appropriate balance between a near-term policy that can be adopted into utilities' next IRP cycles and exploring a comprehensive DER planning process.

The Commission sought comments to the following questions. We focus our comments on transmission and transmission upgrade deferrals and note relationships with other areas.

A. The following list identifies some of the potential uses, benefits or "value propositions" that energy storage systems could offer to a utility. How should a utility model such benefits in an IRP or resource procurement process?

1. Peak Shaving
2. Transmission and Distribution Upgrade Deferrals

   EQL Comments: Transmission and distribution upgrade displacement should be added to this section, to the extent energy storage investments are capable of serving as a reliable and complete alternative to a given transmission or distribution upgrade. We suggest two general ways to determine transmission and distribution upgrade deferral or avoidance value:

   - Calculate a system-wide, or more granular, generic avoided cost value based on recent information about average transmission and distribution upgrade costs
   - Directly compare DER and energy storage alternatives to discrete proposed transmission or distribution projects, to the extent utilities and the Commission are confident that these alternative will meet or exceed the reliability of the proposed upgrade. We encourage utilities and the Commission to consider 3rd party review of DER and energy storage alternatives to transmission and distribution projects with respect to reliability equivalence. Not all transmission and distribution projects will be appropriate candidates for comparison with DER alternatives, to the extent DER alternatives are brought forward, by utilities or other parties. We encourage the commission to consider a process by which projects can be selected for comparison through fair and objective criteria.

3. Outage Mitigation
4. System Balancing
   a. Regulation/frequency control
   b. Load Following
   c. Energy Imbalance
5. Contingency Reserves
6. Reactive Power Support
7. Network Stability Services
8. System Black Start
9. Other

B. Models are available today that assign values to the many different use cases of a storage system. These models optimize the value of a storage system by selecting the service that provides the most benefit to the utility and consumers at a particular moment. What technical capability do the utilities have to perform similar modeling? Given that planning in Washington focuses on a least-cost, least-risk resource analysis, how could utility resource plans best analyze and incorporate such analysis into existing IRP and resource procurement models?

C. Utilities, as balancing authority areas, currently provide ancillary services. As balancing authorities, what ancillary services are the utilities responsible for providing? What resources are do utilities currently use to provide ancillary services? What are the costs associated with using these resources to provide ancillary services, and what is the opportunity cost of using the resources to provide ancillary services? Would it be appropriate for Washington to use rates for ancillary services in organized electricity markets as a proxy for valuing the ancillary benefits of energy storage in Washington?

EQL Comments: we support use of a proxy value for ancillary services informed by organized markets and modified as appropriate for utilities that do not participate in ancillary services markets.