September 25, 2015

Steven King, Executive Director and Secretary
Washington Utilities and Transportation Commission
Attn: Records Center
PO Box 47250
Olympia WA 98504-7250

RE: Docket UE-151069 - Modeling Energy Storage in Integrated Resource Planning

Dear Mr. King:

Thank you for the opportunity to provide comments on the Commission's energy storage policy development. We are pleased that the Commission is making a strong effort to evaluate energy storage options for Washington State and our region. As the Commission further evaluates energy storage options, the Northwest Hydroelectric Association (NWHA) and the National Hydropower Association (NHA) would be pleased to provide background on pumped storage hydro (PSH) as a valuable form of energy storage and renewable energy grid integration. The state and region seem committed to increase reliance on clean energy supplies (e.g. development of state Clean Power Plans as required by EPA), and we strongly believe PSH can be part of the energy storage solution to strengthen our electric grid while meeting future energy needs.

The energy storage workshop on August 25th appeared to be primarily focused on electro-chemical battery storage, and we recognize there are applications for this type of distribution level storage. However, hydroelectric pumped storage, essentially in the form of a water battery, provides significant storage opportunities to help manage the broader electric grid. Pumped storage projects can operate for decades (typically 50 years or longer) and can be scaled as needed, providing capacity ranges from 40 MW to over 2,000 MW – depending on grid and regional balancing needs. Originally developed to provide peaking and absorption power for thermal and nuclear facilities to allow them to operate at peak efficiency, when partnered with variable renewable energy sources like wind and solar advanced PSH technologies provide fast responding and highly flexible solutions to provide firm power to the grid – thereby providing additional opportunities to develop renewable energy resources.

In fall 2014, NWHA conducted a study for the Northwest Power and Conservation Council (Power Council) that included the evaluation of new hydropower potential in the Northwest including PSH (link, end of page 2). In response to the NWHA report, the Power Council asked a panel of PSH experts to provide a current analysis of the technology, including a synopsis of projects under consideration for development. The Power Council is undertaking a PSH study as part of its review for the 8th Power Plan. Just last week, the Power Council meeting included a presentation on a pumped storage project associated with Reclamation's Grand Coulee Project that is in the early stages of permitting (Columbia Basin Hydroelectric Authority's "Banks Lake" PHS project).

Our organizations support the responsible, sustainable development of pumped storage hydropower projects, including those that facilitate the integration of variable renewable energy resources (primarily wind and solar) in the Northwest. Pumped storage hydropower can help provide reliable power to the electric grid and unlock the greater value of existing and potential renewables. We believe the Power Council study will provide a further analysis of economic benefits to the region, and will highlight the numerous PSH candidate sites identified in the Northwest. In addition, there are a number of other recent studies that have been developed for PSH technology, including a U.S. Department of Energy funded study conducted by Argonne National Laboratories that modeled the latest PSH technology and economic benefits.

We applaud the Commission's recognition of developing an approach to address energy storage and the many benefits storage projects can provide to the region. Given that the presentation by the Pacific Northwest National Laboratory was primarily focused on electro-chemical battery energy storage, perhaps the WUTC would be interested in a similar workshop on PSH technology in the immediate future regarding potential for the region. If that is the case, we would strongly support that opportunity and would be pleased to help organize or present with experts on PSH to help inform the Commission on the benefits to our region. Thank you for your consideration.

Sincerely,

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References:

NWHA "Regional Hydropower Potential Scoping Study" prepared for the Northwest Power and Conservation Council (NWPCC), 2014; Chapter 3 – Pumped Storage Report:
http://www.nwhydro.org/resources/renewable_energy.htm
Power Point: http://www.nwhydro.org/resources/renewable_energy.htm

NHA "Challenges and Opportunities for New Pumped Storage Development"
http://www.hydro.org/wp-content/uploads/2014/01/NHA_PumpedStorage_071212b12.pdf