Chair Helm and members of the House Committee on Energy and Environment,

Please support HCR 9. This bill supports development of closed-loop pump storage projects and encourages Oregon utilities to use closed-loop pump storage.

On January 20th, I went with Friends of the Columbia Gorge to view ~40 bald eagles roosting on trees next to the Dalles Dam. These eagles come here to prepare for their migration to Alaska, feeding on a buffet of plentiful shad[1] swimming upstream.

Jim Day, a U.S. Army Corps of Engineers Fisheries biologist, answered questions we had about this sensitive ecosystem. He says recent data shows the Columbia River temperatures rising ~4 degrees (which he says is not attributable to the nearby Google data center). We also talked about local efforts to build a pumped hydropower energy storage facility further upstream. This caught my attention because I was a public participant on SB 978.

In Appendix E of the report that came from the SB 978 process, [2] our Low-Carbon Future Group wrote, "**Explore strategies such as** energy storage sited at transmission and distribution substations, customer-sited energy storage, power-to-gas, and **pumped hydropower energy storage**."

The Oregon Public Utility Commission's 2017 strategic plan[3] includes the following:

PROMOTE CUSTOMER NEEDS IN EVOLVING MARKETS

> **Tactical Goal #4**: Ensure Oregon's regulations keep pace with changing technology and market conditions and continue to benefit consumers. (Governor's Priority - A Thriving Oregon Economy)

Wind and solar energy clean renewable energy sources are variable,[4] as opposed to a controllable renewable energy source such as hydroelectricity. Nature simply doesn't work 24/7 when it comes to energy derived from wind and sun.

There are two Oregon pumped storage projects currently awaiting permits at the Federal Energy Regulatory Commission.[5] One of them is the Goldendale Energy Storage Project on the Columbia River. It would supply 1200 MW of storage capacity and is estimated to cost $2 Billion.[6] The proposed site would redevelop a former aluminum smelter clean-up and appears to have broad-based support from the surrounding communities.[7]

This should be compared with PGE's investment in the Carty Natural Gas Plant. At $660 M (with cost overruns)[8] for 440 MW of power, the plant is already exceeding its estimates of GHG emissions.[9] These costs are comparable to the Goldendale Energy Storage. Carty, in contrast, should become a stranded asset as soon as possible to keep fracked fossil fuels in the ground.

That said, I do have questions about the current projects:

- Have tribal nations be included in these discussions will they be involved in the oversight of these projects in Oregon?

- Are temperatures throughout the Columbia River rising? What is causing this and will this project cause water temperatures to rise more?
- Will salmon migration be impacted on the Columbia River Gorge in the pumping process?
- Are there any concerns that toxic wastes at the Goldendale site will pollute the Columbia River?
- Can Investor and Consumer Owned Utilities become part owners of these massive projects?
- What if there isn't sufficient surplus renewable hydropower or wind energy on the grid to pump the water to the upstream reservoirs? i.e. Will this infrastructure compete with the electricity demands of customers?

More importantly, would Clean Energy Jobs or a Green New Deal give Oregonians the opportunity to in these types of projects? To mitigate climate change, public and private investments must combine forces in a multi-prong approach.

Please support this bill.

Respectfully,
Kris Alman