



Smart Planning Will Drive Replacing the Power from Lower Snake River Dams

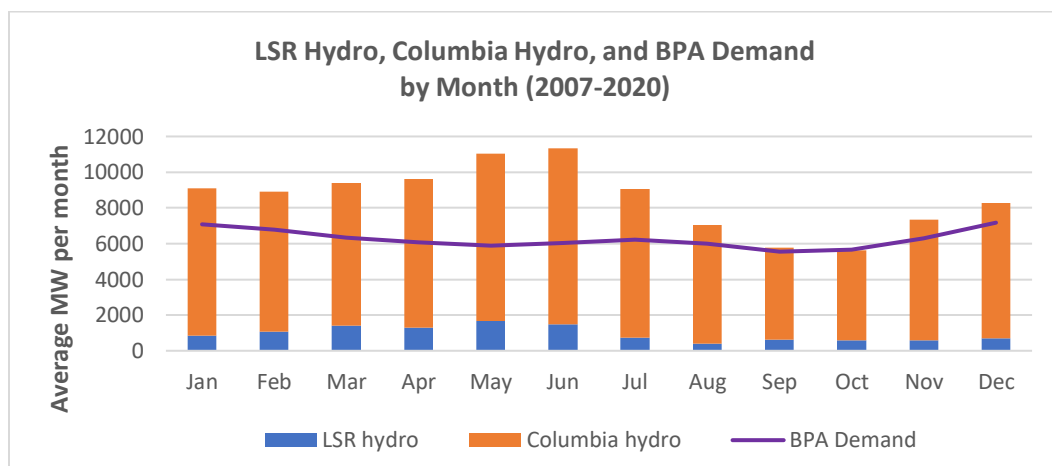
See nwenergy.org/news/smart-planning-will-drive-replacing-the-power-from-lower-snake-river-dams/

The Northwest has a remarkable opportunity to initiate a historic energy transformation around climate change, endangered salmon, clean energy, and Tribal justice. This white paper shows that:

- ◆ The energy services of the lower Snake River (LSR) dams are important, but increasingly variable due to climate-change impacted water conditions.
- ◆ Those services can be replaced with a diverse set of clean energy technologies that are rapidly declining in cost and better able to fill future regional energy needs.
- ◆ Planning for changes in power system generation resources is a routine and well-defined task for the utility sector.
- ◆ Recently passed state policies and developing collaborative efforts across the region will continue to drive down costs while increasing the reliability and flexibility of the grid to meet demand.

The Snake River dams provide limited, replaceable energy services

- ◆ The LSR dams produce about 925 average megawatts (aMW) of electricity each year, making up about 4% of the region’s power generation.
- ◆ This generation is highly seasonal: 51% of the LSR dams’ annual output is from March to June. When they produce the most output is when the rest of the system is also producing significant output – often in excess of customer demand.
- ◆ Clean energy resources can replace and improve on these energy services, providing more output in summer and winter, when power is actually needed, resulting in *better* year-round reliability.
- ◆ The dams’ ancillary services, such as reserves and voltage control, can continue to be supported by renewables and batteries.

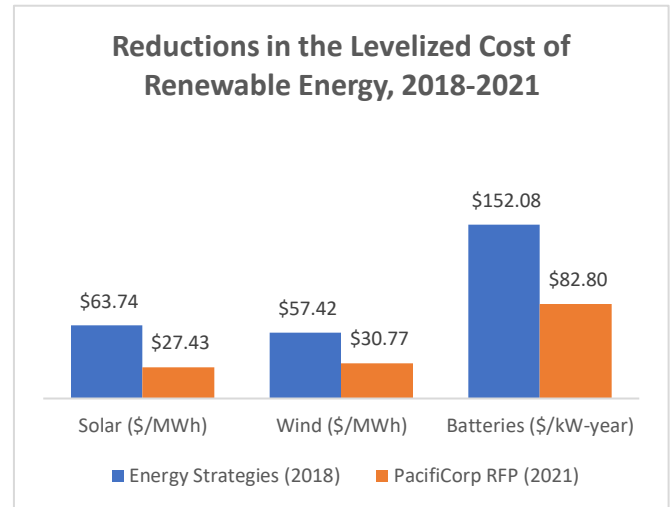


Data sources: Bonneville Power Administration and US Army Corps of Engineers DataQuery.

Renewable resources are getting rapidly cheaper

In 2018, Energy Strategies used contemporary renewable cost data in its lower Snake River dam replacement study. Since then, **costs have dropped by approximately 50%** (see figure), and are expected to continue to decline.

As an example of the significance of these cost reductions, in 2019, Idaho Power planned to add only 345 MW of solar and 60 MW of battery storage through 2039. In its updated 2021 planning, factoring in reduced costs, the utility intends to add 1,105 MW of solar, 700 MW of wind, and 585 MW of battery storage by 2030.



Replacing generating resources is a routine process

No energy system is designed to last forever. Across the West, utilities are closing legacy coal and nuclear plants and replacing them with portfolios of clean energy resources. This kind of replacement is not new or unusual: in 1993, several utilities replaced the closing Trojan Nuclear Plant (1,100 MW) with new resources.

Abundant amounts of renewables and energy storage have been proposed by developers.

- ◆ In 2020, PacifiCorp requested bids for a portfolio of 4,300 MW, to be ready in 2024. They received 36,000 MW of proposed projects bids.
- ◆ In 2021, Puget Sound Energy requested bids for a portfolio of 3,200 MW, to be ready in 2025. They received 18,000 MW of proposed project bids.
- ◆ Northwest-wide, utilities are planning to install nearly 20,000 MW of new renewables, customer-side resources, and storage before 2030.
- ◆ At the same time, developers have requested transmission service for more than 100,000 MW of renewable projects in the Northwest, though only a fraction of these will be built.

State policies and regional collaborative efforts are keeping the system reliable and affordable

A rapidly advancing, more resilient, and integrated Western grid is also creating new opportunities for renewable energy to deliver clean energy to customers efficiently and affordably.

- ◆ The **Western Energy Imbalance Market** is helping member utilities create record-breaking financial and system benefits. Additional market expansion is underway.
- ◆ The **Western Resource Adequacy Program** will provide coordinated use of capacity resources to meet peak hour needs and maintain reliability.
- ◆ The **Investment in Infrastructure and Jobs Act** and programs by the Department of Energy are laying the groundwork for significant expansion of the transmission system, which is needed to support the clean energy transformation of the grid.

CONCLUSION: for Snake River salmon and steelhead to recover to healthy levels and be resilient to climate change they need a free-flowing lower Snake River; in contrast, with effective and strategic planning the energy benefits of the four lower Snake River dams are replaceable with affordable, non-carbon emitting, reliable alternatives. This has been done before, and it can be done again.