PUBLIC POWER COUNCIL
Bringing public power together

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July 11, 2022

The Honorable Patty Murray
United States Senator, Washington

The Honorable Jay Inslee
Governor, Washington

Submitted electronically

RE: Public Power Council's Comments on "Lower Snake River Dams: Benefit Replacement Draft Report"

Introduction

The Public Power Council (PPC) appreciates this opportunity to comment on the "Lower Snake River Dams: Benefit Replacement Draft Report" (Draft Report). PPC is the trade association representing the non-profit, public power utilities in the Pacific Northwest who are eligible to purchase wholesale power and transmission services from the Bonneville Power Administration (BPA) at cost. Northwest public power relies on BPA for a reliable, cost-effective, and environmentally responsible power supply. For its part, public power has regularly demonstrated its commitment to funding a world-class fish and wildlife program to mitigate for the impacts of Columbia River System Operations (CRSO) in a scientifically sound manner. Public power, therefore, has vital interests in the system from both economic and environmental stewardship perspectives.

The Lower Snake River Dams (LSRDs) are unambiguously a source of tremendous power supply value for the region. PPC offers these comments to ensure that the Murray-Inslee process accurately represents the power supply benefits of the LSRDs to the region and balances those benefits with other considerations and impacts of the congressionally mandated operation of these federal projects.

The LSRDs provide huge value to the Northwest through carbon free power, irrigation, navigation, and recreation. The dams impact fish and wildlife, but mitigation efforts provide real results. Framing these important natural resources discussions in terms of "dams versus salmon" is both false and counterproductive. Sustainable solutions to salmon recovery must take an honest and complete view of all the factors affecting stocks. While hydropower is one factor, other factors such has harvest, habitat and

hatchery conditions – also known as "The All-H" approach to salmon recovery – must be addressed.

The power supply value that the LSRDs provide to the Western United States through low cost, carbon free energy, flexibility, and the capability to integrate other renewables must be fully considered in regional discourse going forward. The flexible capacity that the LSRDs provide will only increase in demand and value as state and federal legislation, policies and economic or societal factors drive the further retirement of fossil-fueled base load resources and replace them with intermittent renewable generation. The LSRDs are a key part of reliable and affordable grid operations and cannot be replaced at low cost with existing technology. The value of capacity and reliability of the power produced by these hydropower projects must be properly accounted for. Further, the economic, environmental and air quality value of the LSRDs is not limited to power supply and includes navigation, transportation, and water supply benefits – additional aspects that were also carefully evaluated in the federal government's recent and extensive Environmental Impact Statement (EIS) process.

Public power remains committed to mitigating its fair share of the impacts of operating the LSRDs on fish and wildlife. Over many years, this has included effective and substantial investments at the hydro projects themselves as well as funding of numerous off-site improvements to habitat throughout the region.

PPC welcomes discussions that advance collaborative solutions and shares costs on the basis of the broad regional benefits provided. Not only is it appropriate to equitably align cost responsibility with public benefits but doing so also recognizes the region's shared stake in fish recovery, economic vitality, and carbon reduction.

Power System Considerations

PPC is disappointed that the report focused on dam removal and neglected to fully consider the far-reaching consequences that removing the LSRDs will have on the region's communities served by non-profit, consumer-owned utilities. The LSRDs are an essential source of clean, reliable, renewable and affordable hydropower generation for millions of households in the Northwest.

PPC is particularly concerned that aspects of the report understate importance of the LSRDs to the power supply system today as well as the cost of any potential long-term replacement.

PPC recently released an analysis of the impacts of LSRD removal on costs, carbon emissions, and reliability conducted by Energy GPS. Additionally, Northwest RiverPartners commissioned Energy GPS to conduct a study of the long-term

replacement cost of the LSRDs with carbon free resources. Taken together, these studies provide an up-to-date and comprehensive picture of the value of the LSRDs and the challenges in replacing their output, particularly in a carbon free future.[1] This is in addition to the extensive analysis recently published as part of the Columbia River System Operations EIS.

We urge careful consideration of the findings from these studies in moving from the Draft Report to final, especially in light of the following relevant findings:

- **During the recent scarcity events, the LSRDs played an irreplaceable role in avoiding or reducing the magnitude and duration of the blackouts.** There was no evident alternative source for the electricity supplied by the LSRDs. LSRDs reduced the magnitude and duration of blackouts outside the region too, particularly in California.
- **The risks of extreme electricity prices and blackouts are the highest they have been since the Western Energy Crisis took place 20 years ago – and removing the LSRDs dramatically increases the risk of soaring prices and blackouts.** A number of recent developments have led to an electric grid that is the most vulnerable and strained it has been since the Western Energy Crisis.
- **Removal of the LSRDs may prove to be the tipping point, nudging the Northwest system into acute scarcity of electric supply.** The Federal hydro system, and particularly the LSRDs, are in a critical position of maintaining grid reliability and preventing blackouts in the West.
- **Replacing the LSRDs will take decades, and available technological options cannot provide the same combination of low cost, reliable and flexible attributes.**
- **Removing the LSRDs will make the transition to the clean energy goals more difficult. The report fails to analyze the energy-related CO2 implications of removing the LSRDs.** Natural gas will likely need to replace generation of the LSRDs in the near term, increasing carbon emissions and delaying a zero-carbon grid by years. Even if the LSRDs could be replaced with wind and solar, there will be no net reduction in carbon emissions.
- **Losing the LSRDs could increase consumer electricity rates by 25% or more**. Replacing the generating capabilities of the LSRDs alone would cost at least $15 billion under a carbon-free future. This type of financial hardship threatens to irreparably harm the vulnerable communities we serve.

[1] Full copies of both studies have been submitted along with these comments.

PPC is also deeply concerned with the use of a recent Energy Strategies study commissioned by the Northwest Energy Coalition to define the lower end of potential power supply replacement costs. That study suffers from substantial flaws, including understating the capacity and flexibility that needs to be replaced, assuming reliance on 300 MW of firm market power, and ignoring the broader context of the grid. Taken together these errors are not trivial and if corrected would add hundreds of millions of dollars per year to the resulting cost of replacement.

In terms of capacity, the Energy Strategies study assumes only 1,000 MW of capacity value from the LSRDs when in actuality they regularly generate over 2,000 MW during peak demand times. Energy Strategies also misapplies statistical techniques to conclude that the plants only provide 500 MW of ramping capability, when in fact they regularly provide 1,000-1,500 MW of four-hour ramping during the spring, fall and winter and even 500 MWs during the summer when flows are relatively limited. That study also does not account for the ancillary grid services provided by the projects such as operating reserves and voltage and frequency support via automatic generation control.

Energy Strategies also erroneously assumes 300 MW of market power is a valid replacement for the LSRD output. As recent scarcity events have shown, 300 MW of market power may not be available on a firm basis at any price for the long term, let alone $57/MWh for heavy load hours. Recent historical and forward prices curves are well above this level.

The Energy Strategies market assumption is also flawed from a carbon perspective. There is simply no source for additional dispatchable baseload power in the Northwest aside from natural gas. Assuming an efficient generator, this would still be over 1 million tons of CO2 annually, which is contrary to Washington law and policy.

Finally, Energy Strategies ignores the broader context of the grid in its analysis. As additional thermal resources retire, the incremental cost of replacing dispatchable carbon free capacity increases dramatically. The best approach to addressing this problem is to conduct an analysis of the resources required to meet load under a zero-carbon future with and without the dams.

This is exactly the analysis conducted by Energy GPS, which concluded a net present value of the LSRDs replacement cost of at least $15 billion. We also encourage a close examination of the recent work conducted by E3 on behalf of BPA on this topic.

Biological Impacts

Public power is committed to scientific, cost-effective mitigation for the impacts of the operations of the federal hydro system. From a financial perspective, costs related to fish

and wildlife mitigation typically comprise a quarter or more of BPA's power rates. This currently represents over $650 million annually to support structural improvements, hatcheries, habitat restoration, research, and many other high value areas. Today, public power funds nearly 70 percent of the agency's overall costs and 80 percent of its power costs. Without stable funding from Northwest consumer-owned utilities, there will be uncertainty for essential Northwest programs, including the world's largest fish and wildlife mitigation program. This investment has yielded tangible results both in terms of juvenile survival and adult salmon returns.

Although there are impacts to fish and wildlife from the hydro system, removal of the LSRDs is not a certain path to recovery for endangered species or overall abundance of salmon. The LSRDs are built to facilitate fish passage and actually achieve spring juvenile survival at 96% and summer migrating fish survival at 93%, meeting or exceeding performance standards. Academic studies have shown that fish survival through the federal hydro system is comparable to undammed rivers such as the Peace River in British Columbia.

The LSRDs also affect only four of 13 ESA listed salmon species and impound a relatively limited amount of historic habitat. The operation of the LSRDs also has little if any impact on orca populations. NOAA fisheries found in the 2020 Biological Opinion that continued operation of the LSRDs does not adversely affect Southern Resident Killer Whales (SRKW) "because increased prey availability through CRS-funded hatchery production more than offsets any negative effects on SRKW prey base caused by the proposed hydrosystem operations and maintenance."

The federal hydro system, including the LSRDs, ultimately affect a relatively small portion of the salmon lifecycle. Leaving commercial and sport salmon harvest aside, the dominant factor in adult salmon returns and abundance is ocean conditions. Unfortunately, climate change is creating an increasingly hostile ocean environment for West coast salmon. New research shows climate change driving equally precipitous declines in salmon populations across the entire West coast for both dammed and undammed rivers. Our best hope of reversing the decline in ocean conditions is to reduce carbon emissions. Removing a substantial source of carbon-free power and potential for new renewables integration is at odds with this conclusion, particularly with increasing pushes to electrify significant additional areas of the economy such as transportation.

The Draft Report cites, without substantial support, a claim that salmon abundance has decreased by 90% compared to pre-dam levels. Even taking this statement at face value does not support the conclusion that the federal hydro system is the cause of that decline. Rampant over-harvest originally devastated salmon and steelhead populations and current fish returns are substantially higher than historically in the years before the construction of Bonneville Dam.

The federal hydro system, including the LSRDs, is capable of supporting robust salmon returns when ocean and other conditions allow. Quite simply the current mitigation program works. Adult salmon returns are highly variable due to factors outside the hydro system, but returns have exceeded 2 million adults with the current system and operations, vastly more than seen prior to ESA listing. Current returns in 2022 are exceeding expectations and coming in well above the 10-year average.

Other Considerations and Impacts

Although these comments focus on hydro power issues and their intersection with salmon, it is crucial to recognize and account for the other sources of value the LSRDs provide. This includes irrigation, navigation and recreation. Therefore, PPC urges careful consideration of the comments of Northwest RiverPartners and Pacific Northwest Waterways Association on these topics.

Thank you for your consideration of these comments.

Sincerely,

Scott Simms
Executive Director, Public Power Council