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Hearing on:  
*“Benefits and Access: The Necessity for Multiple Use of Water Resources”*  
U.S. House Natural Resources Committee  
Subcommittee on Water, Wildlife, and Fisheries  
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Chairman Bentz, Ranking Member Huffman, and Members of the Committee, thank you for the opportunity to testify today on the multiple use of water resources so vital to the economic and social fabric of communities across our country. We appreciate you holding this hearing and your support of water resources and specifically of the hydroelectric power generation that our members rely on to energize their communities.

The Northwest Public Power Association is comprised of over 150 consumer-owned electric utilities in the Western United States and British Columbia. These are rural electric cooperatives, municipalities, and public utility districts governed by the people they serve and located in the states of Alaska, California, Colorado, Montana, Nevada, Oregon, Utah, Washington, and Wyoming.

Our membership uses a wide mix of power generation resources including coal, natural gas, hydropower, nuclear, wind, solar, geothermal, biomass, and diesel. With many members relying on it to meet a large portion of their demand, clean and renewable hydropower plays a prominent role in many rural communities in the West that face economic challenges from an array of other factors.

### **Background on Hydropower and Multiple Use of Water Resources**

Hydropower has been the foundation of renewable power since the earliest use of the waterwheel to grind corn. In many areas of the country, and particularly in the West, hydropower is a critical element of the multiple use river systems that are the lifeblood of these communities. When much of the West was still without electricity in the early 20<sup>th</sup> century, the dams brought light, economic opportunity, and a new way of life as the nation emerged from the great depression.

A foundation of the West’s energy supply, hydropower is a vital component of our nation’s clean energy generation portfolio. Although it makes up only 7% of energy capacity nationally, hydropower provides 25% of the capacity in Alaska, almost 60% of the capacity in the Northwest generally, and almost 90% of the capacity used by our members who have contracts with the federal power marketing administrations such as the Bonneville Power Administration and Western Area Power Administration.

The dams lend not only a clean, continuing supply of power, they are critical to transportation, irrigation, flood control, and recreation as well. Just down the road from our office in

Vancouver, Washington, flood levels of the Columbia River in the late 19<sup>th</sup> century and during the deadly flood of 1948 were measured at over 30 feet of elevation where the river is usually between one and five feet. We now have 37 million acre-feet of upstream storage reserved for flood control. With respect to navigation, the Columbia and Snake River System moves 51 million tons of international trade, including 60% of all of the nation's wheat according to the Pacific Northwest Waterways Association. Just one towboat with four barges replaces over 500 trucks to haul those same commodities.

The benefits of hydropower pertain to most hydropower facilities, whether produced at federal or non-federal dams. Non-federal hydropower is subject to a lengthy licensing and permitting process by the Federal Energy Regulatory Commission (FERC) in conjunction with various other agencies. Federal projects are marketed by the federal Power Marketing Administrations, are subject to Congressional oversight through this committee, and have a distinctly different regulatory regime than the non-federal hydropower. Most federal projects are owned and operated by the U.S. Army Corps of Engineers and Bureau of Reclamation, but the customers of community-owned utilities with rights to purchase that power pay for the costs of operating and maintaining those projects.

There are four federal Power Marketing Administrations (PMAs), which sell the electrical output of federally owned and operated hydroelectric dams in 34 states. They are the Bonneville Power Administration (BPA), Western Area Power Administration (WAPA), Southwestern Power Administration (SWPA), and Southeastern Power Administration (SEPA).

BPA, headquartered in Portland, Oregon, markets the power from 31 federal dams operated by the Army Corps of Engineers and the Bureau of Reclamation. BPA also owns 15,000 miles of high-voltage transmission lines that tie together this large integrated system.

WAPA, headquartered in Lakewood, Colorado, markets and delivers power across 15 states from 10 rate-setting projects that encompass both WAPA's transmission facilities and the power-generating facilities owned and operated by the Bureau of Reclamation, the U.S. Army Corps of Engineers (Corps) and the International Boundary and Water Commission. These projects are made up of 14 multipurpose water resource projects and three transmission projects.

SWPA, headquartered in Tulsa, Oklahoma, markets hydroelectric power in Arkansas, Kansas, Louisiana, Missouri, Oklahoma, and Texas from 24 Corps multipurpose dams with a combined generating capacity of approximately 2,213 MW. Southwestern operates and maintains 1,381 miles of high-voltage transmission lines.

SEPA, headquartered in Elberton, Georgia, has the authority to market hydroelectric power and energy from 22 reservoir projects operated by the Corps in the states of Alabama, Florida, Georgia, Illinois, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia, and does not operate a transmission system.

With their organic statutes linked to flood control and irrigation as well as other governing laws and treaties which address navigation, fisheries, recreation, and environmental stewardship, the federal hydropower projects are prime examples (as are many non-federal projects) of how the

multiple uses of water resources fit together to benefit a broad array of interests. It is also worth noting that power customers pay via rates for the costs of power production and transmission and that proper allocation of the costs of other project purposes to the appropriate users is an important principle that supports continued ability to market hydropower effectively.

### **Specific Benefits of Hydropower**

Even though hydropower may fluctuate year to year, month to month, or week to week, it is stable and flexible within short periods of time. It has very important positive characteristics in addition to deriving its source of energy from continuously renewable water: (1) it is *efficient* in its conversion of energy; (2) it is *clean* in that it does not have waste heat or external emissions; (3) it is *reliable* since it makes use of basic and time-tested technology; (4) it is generally *low-cost*; and, (5) it is *flexible* in that it can adjust quickly to changes in demand.

While other forms of energy storage that exhibit some of these characteristics may increase over time, the ability to store the energy of falling water is serving us today and provides the fast response needed on demand. Significant pursuit of development of pumped storage hydropower projects will also serve to create even more capacity for meeting peak demand, for avoiding reliability events, and for balancing other resources.

*Non-Emitting Flexibility* – Hydropower’s unique attributes add stability to the grid and enable newer forms of generation. These qualities include a high level of flexibility that very well matches the increasing need to balance intermittent renewable generation sources such as wind and solar. It lends system stability, reliability, ramping capacity, resilience, and effective integration of other resources that do not have this same level of capacity.

*Grid Resilience* – The threat of electric system outages, especially during severe weather, is always a top concern to our members. Grid resiliency is getting more focus at a national and hydropower is particularly well suited to lend a hand with resilience as outlined in a useful Department of Energy report from October 2021 called *Hydropower’s Contributions to Grid Resilience* (PNNL-30554). It noted the critical role hydropower can play in the Western Interconnection during extreme events causing unplanned large loss of generation. Hydropower also has qualities very well suited to rapid restoration of service. Even small-scale, run-of-the-river hydropower has potential for adding resiliency in black start situations. In a demonstration project with public power utility Idaho Falls Power, the Idaho National Laboratory completed a series of tests to implement operational controls in which they could restart generators individually and then gradually add load to operate the system in islanded mode – in effect, creating their own new microgrid during emergencies.

Another study from September 2022 by DOE’s Pacific Northwest National Laboratory is noteworthy in showing the benefits of regional diversity in hydropower resources. The multiyear drought has had devastating effects in some areas of the West. Each hydropower project and electrical systems are impacted in different ways over various time periods. PNNL found that even during the most severe droughts over the last two decades, hydropower has sustained

80% of average power generation to continue to help balance supply and demand on the grid. (PNNL-33212)

## Access and Challenges

Access to hydropower as a primary use of water resources is critically important. Losing these assets would be devastating to many communities relying on their multiple purposes and would threaten the stability of our electric system.

For example, even though it is only 10% of total generation for the California Independent System Operator, hydropower provides up to 60% of CAISO's spinning reserves. For the Midcontinent Independent System Operator it can provide up to 35% of spinning reserve requirements according to DOE's *Hydropower Value Study: Current Status and Future Opportunities* (January 2021 PNNL-29226). This is not capacity that is easily replaced.

When hydropower was needed during last summer's heat wave it was there to help. BPA noted during the heat wave in late June 2022, that the four lower Snake River dams provided 1,118 MW of combined energy production and reserve capacity while maintaining flows for juvenile fish migration. For context, a city the size of Seattle has an average electricity consumption of about 1000 MW.

Two studies by consulting firm Energy GPS, analyzed the operational, financial, and CO2 impacts of breaching the four lower Snake River dams. One study conducted for Northwest RiverPartners detailed why it would take five times as much new renewable generation and battery storage to replace the clean, flexible power of the dams. [https://nwriverpartners.org/wp-content/uploads/2022/06/EGPSC\\_LSRD-Power-Cost-Replacement-Study\\_6\\_29\\_2022\\_Final\\_1223.pdf](https://nwriverpartners.org/wp-content/uploads/2022/06/EGPSC_LSRD-Power-Cost-Replacement-Study_6_29_2022_Final_1223.pdf)

Another study by Energy GPS conducted for the Public Power Council, a well-respected organization that represents customers of BPA, analyzed likely results from proposals for increased spill for fish (rather than using the water to generate power) as well as breaching of the four lower Snake River dams. The report showed both policies combined would cost \$790 million per year (based on 2023 prices) and result in increased annual CO2 emissions of 4.2 million metric tons per year. The analysis also reveals how a looming scarcity in generating resources in the West is increasing the risk of shortage events, "possibly including blackouts, higher carbon emissions, and higher prices for consumers and businesses." Losing any additional hydropower capacity would only exacerbate these concerns. <https://www.ppcpdx.org/wp-content/uploads/Cost-Carbon-and-Reliability-Impacts-of-Increased-Spill-Requirements-and-LSRD-Removal.pdf>

*Market Valuation*— As capacity resources become scarcer, it is evident that hydropower's flexibility is needed to address the resource adequacy concerns arising from situations where renewable portfolio standards and carbon policies create large amounts of variable resources such as wind and solar that may not be available to the system when needed most (for example during an evening peak in hot weather). Traditional energy markets value some attributes of power, such as energy, and are not designed to provide proper price signals for capacity,

ancillary services and other attributes. This failure to adequately price hydropower's attributes puts reinvestment in these resources, and reliability of the system, at risk.

*Permits to Remove Sediment*—Some of the challenges to hydropower involve the regulatory process to simply maintain a facility in good working order. A notable example of this is sediment removal when it involves federal lands. In areas prone to wildfire, the run-off from the cycle of fires and floods on U.S. Forest Service lands adjacent to reservoirs creates rapid buildup, dramatically reducing generating capacity, restricting water supply, and potentially causing safety concerns at the dam. This sediment buildup limits storage capability, degrades water quality, and reduces overall generation of a clean and renewable resource. The USFS should accept relocated sediment onto their lands for beneficial use in a timely, transparent, and efficient manner. Federal permitting processes and laws must be reformed to recognize and reflect the time-sensitive climate adaptation challenges this presents.

*Permitting for Vegetation Management* – On another issue related to wildfire, there is still room for improvement in the permitting process for conducting vegetation management on lines crossing federal lands. The benefits of hydropower are only available if the power can be moved to where the demand exists. Ability to properly maintain power lines in a timely manner is critical for stability of the grid, and for prevention of fires caused when trees are blown into lines during storms. There has been some progress on this issue resulting from a federal law passed in 2018 and the follow-on work of a joint federal industry task force. More consistency between federal agencies and their various offices and more pervasive use of standardized agreements that reduce unnecessary time and cost burdens is needed especially for smaller utilities trying to implement critical wildfire mitigation plans with limited staff and budgets.

### **Other Challenges and Solutions for Permitting**

Existing or new hydropower projects navigate an arduous federal permitting process that threatens continued access to these resources. The laws around licensing are intended to address the impacts of projects to the surrounding environment, and owners and operators take their stewardship responsibilities and mitigation needs very seriously. But often resources that could be invested in mitigation measures are tied up instead to pay for lengthy processes and duplicative studies that may or may not have a clear nexus to impacts of the project. Energy Northwest, a public power joint operating agency in Richland, Washington said that it took less time and process for them to renew the license for their 1200 MW nuclear plant than it did for their 27 MW hydro project. In describing how this could be the case, they highlight the contrast between having a clear lead agency in the Nuclear Regulatory Commission with authority to drive and manage the other agency reviews versus an array of agencies without firm timelines for their hydro project. FERC should be the clearly designated lead agency for hydro license renewals with the ability to hold to firm schedule discipline and exercise accountability to ensure timely coordination among federal agencies.

We support various legislative proposals that would add more reason to this hydropower permitting process. We also support bills to level the playing field for existing hydropower from a tax perspective to receive tax treatment similar to other renewable generation.

Without significant changes to this process there is risk of more abandonment of projects because developers and investors have other places to focus their resources and project sponsors cannot afford to continue to pursue these projects at exorbitant cost on an unpredictable timeline. According to the National Hydropower Association, 40 licenses (275 MW) were surrendered between 2010 and 2019, and by 2035 there are 459 licenses up for renewal for 9,076 MW of hydropower and 8,381 MW of pumped storage. The average time to relicense a hydropower project is 7 years and costs \$3.5 million in paperwork, not counting any new environmental, safety, or other equipment upgrades.

Once a license is in place, *FERC should allow operating flexibility to meet critical needs*. As operators see changes to the hydrograph from wildfire, landslides, flooding, and extreme weather that increases uncertainty, variability, and demand, it would be helpful if FERC could offer additional operating flexibility to support maintaining and increasing hydropower capacity during certain conditions.

## **Conclusion**

Thank you for your attention to the important issues surrounding multiple use of our water resources. As one of those uses, hydropower is positioned well to play a lead role in our energy future. Because of its significant benefits to consumers and to the environment hydropower should be preserved, encouraged, and enhanced where possible. Local communities have benefited for decades from this resource and its capability to provide clean energy, low impact transportation, irrigation, flood control, and recreation. This safe, reliable, and low-cost resource has the flexibility to enable other renewable generation and meet the operational challenges of the energy evolution. Hydropower can be one of the best tools in our industry to help achieve our goals and is a technology too valuable to ignore considering the challenges facing us in the days and years to come.

Thank you for your leadership in holding this oversight hearing today.