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Thank you, Chairman Duncan, Ranking Member DeGette, and distinguished Members of the Subcommittee. It is an honor for me to appear before you today and represent the Department of Energy (DOE) at this hearing related to the Columbia River System.

DOE is committed to ensuring reliable, resilient, and affordable electricity in the United States. We also work to enable the maintenance and development of hydropower, along with other zero-carbon energy technologies. Hydropower has provided clean, low-cost electricity for over a century as the Nation's first renewable source of electricity. Hydropower plays an important role in a 100% clean energy future, particularly in the Pacific Northwest, using existing and new technologies and infrastructure. Hydropower, including pumped storage, provides flexibility, inertia, storage, and grid services to support the integration of variable renewable energy resources.

There are more than 90,000 existing dams across the Nation, of which about 2,500 have hydropower facilities for electricity generation.[1] In 2022, hydropower provided 6.2% of the electricity on the grid – accounting for 28.7% of U.S. renewable electricity generation[2] – and continues to provide outsized grid services, including approximately 40% of black start resources.[3] The latest DOE Hydropower Market Report also shows that in many parts of the country, hydropower provides more flexibility, ramping, and frequency regulation than its share of installed generating capacity, even compared to extremely flexible natural gas capacity. However, the U.S. hydropower fleet contains some of the oldest electricity generating facilities in the world, and it will continue to require innovations and investments to meet the evolving needs of the grid as it continues to decarbonize. Seventy-five percent of U.S. hydropower

[1] DOE, "FY 2024 Budget Request; Volume 4," 2023, Page 113. https://www.energy.gov/sites/default/files/2023-03/doe-fy-2024-budget-vol-4-eere-v2.pdf.

[2] DOE, Water Power Technologies Office. U.S. Hydropower Market Report, 2023 Edition, Page 2. https://www.energy.gov/sites/default/files/2023-09/U.S.%20Hydropower%20Market%20Report%202023%20Edition.pdf.

[3] DOE, "2021 U.S. Hydropower Market Report," 2021, Page 19. https://www.energy.gov/sites/prod/files/2021/01/f82/us-hydropower-market-report-full-2021.pdf.

capacity is located at plants that are over 50 years old,[4] and the average hydropower plant is 64 years old.[5] Most U.S. hydropower is also integrated into projects that are multipurpose in nature; the vast majority of capacity is located at dams also serving important flood risk management, irrigation, water supply, navigation, and fish and wildlife missions.

DOE operates several programs that enable the safe and sustainable operation and development of hydropower in the United States. The Office of Energy Efficiency and Renewable Energy (EERE)'s Water Power Technologies Office (WPTO) administers a broad portfolio of activities to strengthen the body of technical knowledge and support for industry efforts to develop, demonstrate, and deploy hydropower and marine energy technologies at all scales. To advance water power, WPTO supports research, development, demonstration, and deployment across industry, academia, and the National Laboratories through a wide variety of mechanisms and other innovative partnership approaches to accomplish its objectives. The Grid Deployment Office administers the Hydroelectric Incentives Programs, which are authorized by sections 242, 243, and 247 of the Energy Policy Act of 2005 and funded by the 2021 Bipartisan Infrastructure Law[6]:

- **Hydroelectric Production Incentives (BIL Section 40331)**: Incentive payments to qualified hydroelectric facilities for electricity generated and sold, with an emphasis on communities with inadequate electric service.
- **Hydroelectric Efficiency Improvement Incentives (BIL Section 40332)**: Incentive payments to owners or operators of existing hydroelectric facilities for capital improvements that can increase efficiency of a hydroelectric facility by at least 3%.
- **Maintaining and Enhancing Hydroelectricity Incentives (BIL Section 40333):** Incentive payments to enhance existing hydropower facilities through capital improvements directly related to three main areas: grid resiliency, dam safety, and environmental improvements.

The Department's Office of Electricity supports critical grid system research to better integrate renewable energy resources, including hydropower. Qualifying hydropower deployments are eligible for financing through the Department's Loan Programs Office, including through the Tribal Energy Finance Program, which supports Tribal investment in energy-related projects by providing loans and loan guarantees to federally recognized Tribes or Tribal Energy Development Organizations. And of course, the Department's Power Marketing Administrations, including the Bonneville Power Administration (Bonneville), market the power produced by power generation units to local utilities. Among other responsibilities, Bonneville markets power from 31 federally owned dams, 29 of which are in the Columbia River Basin. Through one of the largest fish and wildlife management programs in the nation, Bonneville also plays an important role in protecting and enhancing fish and wildlife in the Columbia River Basin.

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[4] DOE, "2014 U.S. Hydropower Market Report," 2014, Page 9. https://www.energy.gov/sites/default/files/2015/05/f22/2014%20Hydropower%20Market%20Report_20150512_rev6.pdf.

[5] DOE, *supra* note 1.

[6] The Hydroelectric Incentives (Section 242, 243, and 247) are for the non-federal hydropower fleet.

December 2023 Columbia River Basin Agreement

On December 14, 2023, the U.S. Government parties reached an historic agreement with Tribes and States from the Pacific Northwest to restore wild salmon populations, expand Tribally sponsored clean energy production, and provide stability for communities that depend on the Columbia River System. For generations, the Columbia River Basin ecosystem and infrastructure in the Basin have been an integral economic and cultural cornerstone. For Tribal Nations, the Columbia River Basin and its natural abundance have provided the foundation for culture, health, religion, and more. The Administration's historic agreement reinforces the President's commitment to honoring the Federal government's treaty and trust responsibilities, will contribute to restoring a species that is critical to Tribal Nations and the whole regional economy, and provide long-term stability and operational reliability for the hydropower system that Bonneville and its customers have long sought.

In that Agreement, the Department of Energy is making several commitments, the first of which is to, with the Department of Agriculture, provide technical assistance, planning, and funding to the Confederated Tribes and Bands of the Yakama Nation, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, and the Nez Perce Tribe to help them develop Tribally-sponsored clean energy projects.

The Agreement also includes a commitment to adjustments to the operations of the Federal hydroelectric power system to deliver a net-benefit for fish as well as for grid reliability. These adjustments will also increase flexibility to deliver power during the summer when the region needs it most. Importantly, the agreement provides 10 years of predictable hydropower operations for the region, a long-sought benefit for Bonneville customer utilities. My colleague, John Hairston, Administrator of the Bonneville Power Administration, can speak in more detail on the operations side.

Finally, DOE and the Pacific Northwest National Laboratory have been working with states, regional entities, and utilities to convene and support a regional energy planning process designed to help regional partners access DOE National Labs' best tools to answer a range of thorny issues they and regions across the country face: how to study and plan across service territories when it comes to infrastructure needs, how to improve load forecasting when sectors like transportation are starting to electrify, how to meet accelerating demands for new single large loads (like new manufacturing capacity), and more. This work has been ongoing before the Agreement and is not primarily about the Agreement, but you will also see in the Agreement that we have committed that this process will include looking at how the region's infrastructure needs would be different if Congress were to authorize breaching of the dams.

DOE and its interagency partners look forward to working with Congress to implement the commitments made in this historic Agreement. We thank the Committee for the opportunity to testify on this important topic.