RESOLUTION NO. 2523

November 12, 2019

A RESOLUTION OF PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY, WASHINGTON IN SUPPORT OF ACTIONS TO ENSURE ELECTRIC SECTOR RESOURCE ADEQUACY IN THE PACIFIC NORTHWEST

WHEREAS, policy makers in Washington and other key western states have enacted policies or legislation to significantly reduce or remove fossil fuel generation (coal and natural gas) from the electric system in favor of incorporating a significant amount of renewable energy generation (wind and solar); AND

WHEREAS, recent legislation in the State of Washington calls for the elimination of coal by 2025 and all carbon emitting generation by 2045, including natural gas; AND

WHEREAS, while wind and solar can be substitutes for the energy that coal resources have traditionally provided, they cannot easily replace the capacity that is needed for resource adequacy due to the lack of economically viable and operationally proven long-term grid-scale energy storage and the variable nature of wind and solar "fuel" sources which are largely dependent on the weather and time of day; AND

WHEREAS, Resource Adequacy is the term most often used to describe an electricity system's ability to meet demand under a broad range of conditions including times of peak energy demand during the hottest and coldest days in any given year; AND

WHEREAS, failure to ensure Resource Adequacy may result in capacity shortages which refers to any situation in which the energy supply capability of an electric utility is not sufficient to meet its customers' energy requirements and this shortage would affect the utility's ability to adequately supply electric services to its customers; AND

WHEREAS, under the sponsorship of three investor-owned utilities and ten public utilities, Energy & Environmental Economics (E3) published an extensive study in March 2019 titled *Resource Adequacy in the Pacific Northwest* (Resource Adequacy Study) which found that 5,000 MW of new firm capacity is needed by 2030 to maintain reliability for load growth. With planned coal retirements of 3,000 MW by 2030, 8,000 MW of new capacity would be needed. If all coal is retired in the region, then 16,000 MW of new firm capacity would be required; AND

WHEREAS, the Resource Adequacy Study found that within the greater Pacific Northwest, including Washington, Oregon, Idaho, Utah, and major portions of Montana and Wyoming, coal and natural gas accounted for over 48% of the effective capacity of electric resources in 2018; AND

WHEREAS, the Resource Adequacy Study concluded that it would be extremely costly and impractical to replace this magnitude of firm generating capacity with solar, wind and storage due to the significant renewable overbuild and required transmission-line construction needed to maintain adequacy; AND

WHEREAS, the Resource Adequacy Study concluded that renewables such as wind and solar generation require much greater land area to generate equivalent energy compared to generation sources such as natural gas and nuclear. Under deep decarbonization scenarios, significant land area is required for wind and solar project development. In the 100% greenhouse gas reduction scenario analyzed in the Study, estimates of total land use vary from 3 million acres to 14 million acres which is equivalent to 20 to 100 times the land area of Portland and Seattle combined; AND

WHEREAS, the Resource Adequacy Study identified a very low capacity contribution from existing wind and solar in the greater Pacific Northwest with Effective Load Carrying Capability (ELCC) values of 7% and 12% based on 2018 load and resource balance. ELCC is a generation resource's firm contribution to system peak load; AND

WHEREAS, the Resource Adequacy Study concluded the incremental capacity contribution of new wind and solar in the greater Pacific Northwest declines as a function of penetration. ELCC for wind and solar in 2050 under a 100% greenhouse gas reduction scenario only increase to 22% and 16% respectively (assuming significant contributions from Montana and Wyoming wind projects); AND

WHEREAS, while the capacity contributions from wind and solar power are relatively small when compared to other generation resources, the land-use impacts of overbuilding wind and solar could be significantly impactful to citizens of Benton County and adjacent counties in eastern Washington; AND

WHEREAS, wind and solar power project development should be evaluated and prioritized for construction based on informed and complete evaluations of all costs and benefits, including economic, environmental, ecological and operational factors; AND

WHEREAS, electric utilities must balance environmental concerns with costs and very high customer expectations for grid reliability; AND

WHEREAS, the Resource Adequacy Study used an Annual Loss of Load Expectation (LOLE) of no more than 2.4 hours per year as the standard for assessing the adequacy of the greater Pacific Northwest power grid. The LOLE was derived from a 1-in-10 standard of no more than 24 hours of lost load in 10 years which is a common standard used across the electric utility industry; AND

WHEREAS, the LOLE standard does not specifically characterize the magnitude of lost load or the duration, it is a metric for determining the risk of power grid blackouts which depending on the location and weather conditions can represent a serious risk to the safety, health, and well-being of electric utility customers; AND

WHEREAS, the Resource Adequacy Study concluded the greater Pacific Northwest power grid based on 2018 data does not currently meet an LOLE standard of 2.4 hours per year and will not meet this standard through 2030 under assumed load growth and planned coal-fired power plant retirements; AND

WHEREAS, the Resource Adequacy Study also identified the lack of a mandatory or voluntary national standard for Resource Adequacy; AND

WHEREAS, the real-time balancing of demand and supply in the Western Interconnection of the United States and Canadian power grids is accomplished by thirty-eight Balancing Authorities, thirteen of which operate in the greater Pacific Northwest; AND

WHEREAS, Balancing Authorities typically have specific generation plants and loads assigned to them that together with interconnections to other Balancing Authorities allows for regional interchange of electricity as a means of maintaining precise balance of demand and supply across large geographical areas; AND

WHEREAS, the North American Electric Reliability Council (NERC) and Western Electric Coordinating Council (WECC) publish information about Resource Adequacy but have no formal governing role; AND

WHEREAS, each Balancing Authority establishes its own Resource Adequacy standard subject to oversight by state commissions or locally-elected boards; AND

WHEREAS, Balancing Authority utilities and many other utilities, including Benton PUD, have historically relied on market purchases of unspecified generation resources contracted on a day-ahead and real-time basis to ensure demand and supply are balanced; AND

WHEREAS, the announced retirements of dependable and dispatchable coal-fired power plants in the greater Pacific Northwest coupled with various state policies is anticipated to significantly diminish the pool of available market resources that are critical to meeting electricity demand on the hottest and coldest days of the year; AND

WHEREAS, utilities in the greater Pacific Northwest are concerned that preferences for wind and solar power, coupled with battery storage technology which today is uneconomic and operationally unproven for durations required for Northwest weather events, may risk underinvestment in dependable capacity that is needed during low hydro generation periods

and prolonged periods of low wind and solar generation that often occur during extreme weather and temperature events; AND

WHEREAS, the Northwest Power Pool, an organization comprised of major generating utilities serving the greater Pacific Northwest, British Columbia and Alberta, issued a summary paper highlighting major studies and reports issued by leading utility industry groups that the Northwest's transition away from coal and towards cleaner generating resources is leading to an urgent and immediate challenge to the ability of the Northwest's electric system to provide reliable electric service; AND

WHEREAS, the Northwest Power Pool's white paper noted two conclusions of particular concern: 1) the region may begin to experience capacity shortages as soon as next year; and 2) by the mid-2020s, the region may face a capacity deficit of thousands of megawatts; AND

WHEREAS, acting through the Northwest Power Pool, a broad coalition of electric utilities across the Pacific Northwest agreed that a voluntary Resource Adequacy program be designed in 2020 and implemented as soon as 2021; AND

WHEREAS, Benton PUD's 2018 electricity resource mix was approximately 95% carbon-free, primarily attributed to hydro and nuclear power which provide reliable baseload generation obtained via contracts with the Bonneville Power Administration (BPA); AND

WHEREAS, Benton PUD's peak loads are in excess of its allocation of hydro, nuclear and wind power resources; AND

WHEREAS, Benton PUD's approach to managing capacity deficits experienced during peak summer and winter loading periods has been primarily to use financial instruments to hedge its position and to make unspecified market purchases for energy and capacity deficits in day-ahead and real-time markets; AND

WHEREAS, Benton PUD's 2018 Integrated Resource Plan recommended considering longer term physical capacity purchases in periods when the Northwest Power and Conservation Council (Council) is projecting a Loss of Load probability (LOLP) greater than 5%; AND

WHEREAS, the Council has established the loss-of load probability (LOLP) metric to assess the adequacy of the Northwest's power supply. The power supply is deemed adequate if its LOLP, five years into the future, is 5 percent or less for each of the years being evaluated. This means that the likelihood of at least one shortfall in generation resources during any of the years in the five-year study must be 5 percent or less; AND

WHEREAS, the Council's 2024 Resource Adequacy Assessment indicates an LOLP of 7.5% in 2021, increasing to 8.2% or possibly 12.8% in 2024 given the October 2019 announcement by PacifiCorp of a possible early retirement of their 530-megawatt Jim Bridger 1 coal-fired power plant; AND

WHEREAS, Benton PUD's recently completed capacity analysis identified average projected heavy load hour (HLH) capacity deficits beginning after the expiration of the Frederickson power purchase agreement in September 2022 of approximately 100 megawatts in summer months (July and August) and 45 megawatts in winter months (December, January and February); AND

WHEREAS, the rapid elimination of the electric capacity provided by coal as well as the anticipated reduction of available natural-gas capacity expected to occur if new plants are not constructed may lead to capacity shortages during peak winter and summer demand periods directly impacting Benton PUD along with utility customers throughout the region; AND

WHEREAS, the creation of a greater Pacific Northwest, voluntary but enforceable Resource Adequacy standard has the potential to provide a common and consistent measure by which regulating bodies can objectively evaluate utility recommendations to acquire or construct new generation capacity for their individual and/or collective benefit.

NOW THEREFORE BE IT RESOLVED that the Commission hereby declares its support to the Northwest Power Pool's efforts to develop a voluntary Resource Adequacy Program.

BE IT FURTHER RESOLVED that the Commission and Staff will undertake an effort to heighten the awareness of customers and policy makers as to Resource Adequacy concerns, environmental and land use impacts associated with high wind and solar project development scenarios, as well as decisions that may significantly harm electric system Resource Adequacy, such as the breaching or removal of the four Lower Snake River Dams as outlined in Resolution No. 2505.

ADOPTED at an open meeting as required by law this 12th day of November 2019.

Jeffrey D. Hall, President

ATTEST:

Barry A. Bush, Secretary