

STATEMENT OF
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“EXAMINING THE POLICIES AND PRIORITIES OF THE BUREAU OF LAND
MANAGEMENT, THE UNITED STATES FOREST SERVICE, AND THE POWER
MARKETING ADMINISTRATIONS”

Thank you, Mr. Chairman and Members of the Subcommittee. My name is Mark A. Gabriel. I am the Administrator of Western Area Power Administration (WAPA). I am pleased to speak to you today regarding the status of WAPA as we invest in a connected energy future.

WAPA is one of four Power Marketing Administrations (PMAs) within the U.S. Department of Energy (DOE). Our role is to fulfill three lines of business outlined in WAPA’s mission: to market and transmit wholesale electric hydropower from 14 multiuse water projects; to provide a backbone transmission system for delivering that power; and to manage the Transmission Infrastructure Program (TIP), all to the benefit of the American public. WAPA markets and transmits hydropower from 57 Federal dams operated by the Bureau of Reclamation (Reclamation), the U.S. Army Corps of Engineers, and the International Boundary and Water Commission (IBWC). This power benefits rural economies, Native American tribes, federal and state agencies, and others who, in turn, serve more than 40 million Americans in the West. Last year, about 80 percent of our 700 customers experienced stable or decreased rates. Our efforts to control costs, eliminate waste, and seek ever more efficient and better ways of doing business help keep rates among the lowest in the country and support economic prosperity and viability of the Western U.S.

In this testimony, I present WAPA’s continuing commitment to its federal mission following *Strategic Roadmap 2024*. Success includes achieving and strengthening business, technology, and organizational excellence; seeking mutually beneficial partnerships; and evolving our services. Today, I will share WAPA’s efforts to keep pace with changes in the energy industry; invest in a connected energy future; strengthen grid resilience; maintain affordable costs for customers; and prepare our operations, assets, and people for a dynamic energy frontier.

Hydropower Product

WAPA’s footprint encompasses about 1.4 million square miles of diverse ecosystems and populations, from urban to rural, plains to mountains, and deserts to forests. Spanning 15 states, the communities WAPA serves have a wide variety of energy interests and needs; we are always

cognizant of the fact that what works in Montana will not work in California, and the needs of Arizona customers are different from the needs of customers in Colorado.

The hydropower WAPA markets, and the infrastructure that delivers it, provides unparalleled benefits to customers and citizens in the Western U.S. WAPA's rates are often among the lowest in the country, and are sometimes the lowest rates for an entire state, such as in Arizona.

In water year 2018, WAPA delivered 27.308 billion kilowatt-hours of hydroelectric power to customers, which is 106 percent of average power sales. This accomplishment was aided by better-than-average hydrology conditions across most of WAPA's territory, particularly in the Upper Midwest states of Montana, North Dakota, and South Dakota. The power WAPA sold is capable of fulfilling 100 percent of annual energy needs for more than 2.6 million average American homes, and all of this power is sold at cost.

We added a new hydroelectric facility to our portfolio in 2018. Olmsted Powerplant in Orem, Utah, represents the convergence of legacy and modern technological achievement. One of the oldest hydroelectric powerplants in the world has been made new again, and its expected output of 27 million kilowatt-hours a year will support the energy needs of more than 2.3 million people living in the area with reliable, clean, and affordable hydropower.

Our participation in energy and transmission market initiatives has delivered greater benefits than we anticipated. In 2015, WAPA became the first PMA to fully join a regional transmission organization. In addition to experiencing financial and operational benefits exceeding our conservative assumptions, above-average water conditions resulted in surplus generation sales into Southwest Power Pool (SPP) that accrued more than \$48 million of additional net market revenue. These surplus sales help put downward pressure on firm power rates. In California, market agreements with the California Independent System Operator have realized \$3.8 million in savings for customers since 2016, and participating in a max peaking program to optimally time hydropower sales led to another \$5.7 million in revenue in 2018 alone.

We collaborate closely with the generating agencies, power customers, and other stakeholders to assure the enduring value of the hydropower product in the face of drought, new regulations, and other constraints. The federal dam system in the United States provides several valuable services to the American people that must be appropriately balanced for the maximum benefit of all.

In the Central Valley Project (CVP), WAPA, Reclamation, and power customers have formed a customer steering committee to discuss changing market conditions in California. The most significant issues for this group include the stability of CVP power costs, reducing power bypass operations, improving the value of the resource to customers, and improving customer service. In response to ongoing drought in the Colorado River, WAPA has modeled and analyzed the potential impact of the drought contingency plan on hydropower costs and the Colorado River Basins Power Marketing Fund. We are engaging with Reclamation and state representatives to represent hydropower interests in discussions and to fully understand the impacts of any final drought contingency plan.

Through responsible fiscal management, planning, innovation, and transparent communication, the value of the hydropower and the services we provide will continue to grow. Today's activities, built on the wise investments of yesterday, will benefit Americans for decades to come.

Best Practices and Accomplishments

In 2018, we refreshed our organizational core values. An organization's core values serve as a guide in making decisions and a standard for our employees' behavior and actions. They define what we expect of ourselves and the organization as a whole. Listening, integrity, curiosity, transparency, partnership, stewardship, safety, and service all play a central role in who we are as individual employees and as an organization. The core values confirm our commitments to our customers, stakeholders, and interested parties to carve a credible path forward that stays true to our mission and also accommodates a new and dynamic future.

Power Rates

WAPA's rates recover annual operations and maintenance costs and the original investment in the infrastructure, plus interest. The preference power and transmission customers shoulder these financial responsibilities on behalf of their consumers and the American taxpayer. Repaying the U.S. Department of the Treasury (Treasury) for the investments exerts downward pressure on the federal debt. Over the past five years, WAPA has returned \$1.8 billion to Treasury.

In addition to sound financial practices, services continue to evolve, in concert with our customers, to sustain affordable power and transmission rates. We recognize the importance of remaining the most cost-effective organization in the industry. Our customers expect it of us, and we expect it of ourselves. About 80 percent of our customers experienced flat or decreased rates in FY 2018. This includes more than 50 percent of WAPA's customers in Colorado, Wyoming, Montana, Kansas, Nebraska, the Dakotas, and the western sections of Minnesota and Iowa who have enjoyed stable rates following two years of rate reductions.

It also includes another 20 percent of WAPA's customers who have experienced flat rates for 10 consecutive years. More than 130 public power customers, including 44 in Arizona, 23 in Colorado and 16 in Utah, are realizing the benefits of sensibly managing operation and maintenance costs. Finally, more than 50 long-term CVP customers, about 7.5 percent of WAPA's customers, enjoyed a 13-percent midyear rate decrease after Reclamation and WAPA worked closely to identify an interim credit located in the CVPIA Restoration Fund. This interim credit allowed power customers to offset the credit towards their CVP repayment obligations, resulting in a \$10 million reduction. Stable rates provide predictability to customers and communities, encouraging economic growth and development.

WAPA is progressing toward an appropriate level of reserve balances to protect customers and consumers from fluctuating prices due to uncertain water conditions and to help fund annual operations, maintenance, and capital construction projects. WAPA's reserve funding strategy is designed to fulfill three distinct risk mitigation needs: annual operation and maintenance

expenses; capital investments; and purchase power and wheeling. After years of diligent planning and working with Congress, we have eliminated excess annual operations and maintenance balances. The capital investment balance remained stable and purchase power and wheeling increased to \$325 million.

Possessing and appropriately managing reserve balances do not affect energy and transmission rates. Reserve balances prevent or minimize adverse impacts to customers and better manage our capital and operations and maintenance programs during drought conditions.

Transparency

The financial data as well as detailed information about our operations are publicly available to our customers, stakeholders, Congress, and others. Building on our tradition of transparency, we uploaded 10 years' worth of information last year to "The Source" website, sharing accurate and up-to-date financial and operational information in one convenient location. The site includes meeting slides and scripts, notices to customers, updates on key activities, rate information, and more. We pledged to update this information annually, and in January we kept that promise by sharing all the fiscal year 2018 data online.

WAPA's transparency efforts were recently recognized with a Corporate Social Responsibility award for organizational transparency by a leading international public relations firm.

WAPA's regions and Headquarters are dedicated to accessible and transparent communication with customers. Customers and members of the public are invited regularly to weigh in on the organization's proposed actions for its transmission system, rate-setting activities, capital investment, and expenditure plans. The Desert Southwest region negotiated a new joint planning agreement in 2018, memorializing the region's improved capital planning process to make planning, budgeting, construction, financial, and rates processes more transparent. Under the agreement, which has counterparts in all WAPA's regions, customers receive increased insight and opportunities for input into WAPA's system needs, helping improve collaboration and reliability of the grid in the Southwest well into the future.

WAPA works closely with Congressional representatives to ensure the data and information we share is consistent with the proposed WAPA Transparency Act. We welcome the opportunity to share and discuss transparency, and look forward to working with customers and Congress to leverage and improve on existing efforts.

Environment

Adhering to one of our enduring core values to respect the environment, we are committed to preserving and improving the ecosystems around the federal dams and WAPA's transmission assets. Working with stakeholders, customers, other executive agencies, and the public, we can identify solutions to the most pressing concerns regarding the environment, including threatened and endangered species.

In 2018, the Deseret milkvetch, found only in a small area in Utah, was removed from the endangered species list due to improved analysis of the plant, thanks to a partnership between

WAPA and the U.S. Fish and Wildlife Service. Partnerships like this one, which contributed to delisting this unique and thriving plant, is a success for the plant, supports development and growth for nearby communities and facilitates necessary infrastructure expansion to support rising populations.

Two endangered fish species in the Colorado River are recommended for downlisting from endangered to threatened, illustrating the success and effectiveness of recovery programs and relationships that seek to find win-win solutions to preserve and protect the Grand Canyon ecosystem.

Disaster response and recovery

Our charge and responsibility, fundamentally, is to keep the lights on for more than 40 million Americans. In no situation is this more evident than in responding to natural disasters and severe weather within and outside of WAPA's territory. No matter the day, time, working conditions, or distance, WAPA employees are ready and eager to do what they do best: bring electricity to communities.

As regular members of the Federal Emergency Management Agency's (FEMA) disaster response teams, WAPA employees last year were activated to support power restoration in Hawaii after a volcanic eruption and in Guam and the Northern Mariana Islands after they were struck by 2018's two strongest storms. Employees, along with others carrying out Emergency Support Function-12 responsibilities within the National Response Framework, liaise between FEMA and the local utilities on power restoration plans; visit work crews to identify priorities and needed materials; and remove barriers to acquisition and transportation.

We responded to July's damaging Carr Fire in northern California that directly affected WAPA's system and that of its customers. The Sierra Nevada region had 15 high-voltage transmission lines out of service, fires at the gates of its substations, and about a dozen hydroelectric generators out of service. Despite the unprecedented emergency situation, we continued supplying power to the area, and worked one-on-one with communities to keep as many people energized as possible.

Once the fire passed, our maintenance workers, some of whom had been evacuated and some of whom sustained fire damage to their own property, immediately went to work repairing damaged assets, including replacing a number of steel structures destroyed by the "firenado" in Redding, California. Once we were fully energized, our staff lent support to our neighbors and Reclamation to rebuild their systems.

Public-private partnerships and technological advancements

The Administration has stressed the importance and value of public-private partnerships in revitalizing the nation's infrastructure. Public and private organizations each bring unique strengths to infrastructure development and modernization. WAPA has embarked on a number of public-private partnerships designed to improve grid reliability and security, relieve congestion, and replace aging infrastructure.

WAPA is working with Reclamation, San Luis Delta-Mendota Water Authority, and Duke-American Transmission Company (DATC) to develop the 230-kilovolt San Luis Transmission Project (SLTP). SLTP will power Reclamation water deliveries to agricultural and water users in the Central Valley. By supplying power to federal water deliveries at sustainable and affordable rates, SLTP will support agriculture and water customers responsible for growing a majority of produce in the United States. DATC benefits by selling surplus capacity on the transmission line to recover their investment and support rising energy needs in the region.

A joint project with Southline Transmission LLC will provide about 1,000 megawatts of transmission capacity along a 360-mile path between southern New Mexico and Arizona. The Southline Transmission Project combines upgrades to existing WAPA infrastructure in Arizona and building new critical energy infrastructure in New Mexico. Teaming up with a private entity removes about \$120 million in costs from power customers in Arizona, New Mexico, Nevada, and Southern California while opening economic opportunities and access to energy markets for flourishing populations.

In addition to upgrading and constructing necessary energy infrastructure, WAPA is exploring new technologies with DOE, other utilities, and customers that could improve the efficiency, security, and effectiveness of the electric grid. Participating in these initiatives will help us keep pace with industry developments, modernize the grid, and invest in a connected energy future.

WAPA owns, operates, and maintains about 5,200 miles of fiber for utility communications in mostly rural areas. As stated in February's American Broadband Initiative, we will, in consultation with DOE's Office of Electricity, complete a feasibility assessment by the end of the year to determine if excess fiber capacity can be leased to customers and broadband service providers.

We are also working with our customers to identify opportunities to interconnect transmission-scale battery storage to WAPA's system. Customers and WAPA alike can take advantage of the benefits battery storage offers, including balancing load, increasing resource diversity, and managing the variability of water.

Finally, we are working to ascertain potential projects to integrate artificial intelligence (AI) into suitable business operations. Incorporating AI is expected to improve efficiency, reduce opportunities for errors, and liberate staff to work on other priorities. Early discussions have been constructive, and we look forward to finding innovative ways to do our business in the ever-evolving world.

In today's increasingly complex and connected world, no utility or organization can succeed alone. Success for WAPA requires close collaboration and mutually beneficial partnerships to preserve the value of WAPA's products and services for generations to come. WAPA is not looking to be on the leading edge of these changes and new technologies, but we cannot afford to be left to obscurity. Through transparent and respectful partnerships with our customers and others, we can invest appropriately in the connected energy future and ensure our ability to

supply premier power and transmission services at the lowest cost consistent with sound business principles.

Investing in a connected future

Investing in a connected future requires both long-term vision and clearly defined short-term actions. *Strategic Roadmap 2024* provides the goals, vision, and expectation for the organization. The Tactical Action Plan (TAP), refreshed every two to three years, adapts and accommodates change along our journey to ensure that the Roadmap leads to a relevant and valuable future. Updated in January, the 2019 TAP centers our attention on Mission Critical Customer Services in an Evolving Industry, Grid Resilience, Asset Management 2.0, and People and Organization.

Mission Critical Customer Services in an Evolving Industry

The advent of markets in the West is the most pressing opportunity facing WAPA and its customers in the near term. Despite the indefinite postponement of a six-utility effort to join the SPP regional transmission organization, we continue to collaborate with our customers and neighbors to develop strategies that maintain the ongoing reliability and economic efficiency of the electric system in our territory.

Internally, WAPA is exploring realigning our resources, clarifying our processes, streamlining our systems, and implementing modern technologies to accommodate several industry changes, including markets, so that we may continue to meet customer needs with the efficient and responsive services we have in the past. A stronger WAPA is a stronger business partner to build our desired energy future.

While the market environment evolves in the West, WAPA remains committed to reliable grid operations. Our regions are preparing to transition to new reliability coordinators this year, and our operations staff are working with several entities to promote a smooth transition to the new service providers. The Western Electricity Coordinating Council, a North American Electric Reliability Corporation regional entity, commended WAPA this year on its steady improvement in meeting reliability standards. An audit team ranked WAPA as one of the highest-performing transmission operators reviewed in 2018, noting several improved practices over the past two years. This accolade is due in large part to our professional staff who take personal responsibility in doing what is right and safe for grid operations, as well as WAPA's goal to meet the spirit of compliance.

Grid Resilience and National Security

One of the most significant challenges facing the energy industry as a whole is the targeting of electrical infrastructure by those wishing to disrupt America's economy and society.

WAPA continues to focus its attention on safeguarding our valuable assets and improving the resilience of the entire system. We have completed more than 345 physical security assessments since 2014, and 316 remediation items were implemented in fiscal year 2018. We are scheduled to complete risk assessments for all our assets in 2019. In addition, the Office of Security and Emergency Management is implementing new baseline security standards across the enterprise

to better align resources to asset criticality. By proportionately assigning resources to our most critical assets instead of a “one-size-fits-all” approach, we expect to realize more than \$1 million in savings over the next several years while providing the most effective protection to our extensive assets.

In 2018, cybersecurity tools identified more than 10,000 individual cases of suspicious activity on our system. More than 97 percent of these were investigated and resolved in two days. In an average day, WAPA’s firewalls are pinged nearly 200,000 times by suspicious or potentially damaging events. Aggressive education and training programs have strengthened employees’ ability to recognize and defend against phishing, the primary technique used by hackers to access secure systems.

As our security posture and awareness have matured, we have discovered interdependencies between our Cyber Security, Physical Security, and Asset Management programs. By looking at grid security holistically, wherein each effort complements and strengthens the other, we can more efficiently and cost-effectively defend our infrastructure from attacks. Physical Security and Cyber Security teams are working with each other and with our asset management effort to establish a tiered approach that streamlines and prioritizes programs aimed at protecting our most critical infrastructure from a whole-system perspective.

Security cannot be undertaken alone. Due to the connectedness of the bulk electric system, our neighbors and customers also have critical roles in defending the grid. To share best practices, information on current threats, and lessons learned, WAPA convenes stakeholders, security experts, customers, and other utilities to bolster the knowledge and awareness of the collective industry. Our 2018 Technology and Security Symposium looked at threats and leading practices broadly, while a smaller meeting focused on the convergence of operational and information technology to better promote resilience of certain grid components. Finally, WAPA participates in numerous forums to improve its cybersecurity posture, including nine associated with DOE agencies that focus on addressing different cybersecurity vulnerabilities.

None of the measures described here are inexpensive, but they are absolutely imperative. We have no option but to make these investments in monitoring, hardening, and reconstitution activities. We must all work together to identify leading practices, most efficient deployment of security resources, and, when possible, share in the costs of safeguarding the electric grid.

WAPA is unique in its energy, transmission, and power marketing support of several military installations and national labs, helping guarantee reliable power. WAPA provides the military with power marketing arrangements that extend beyond the maximum contract terms the installations can execute alone. These long-term contracts ensure affordable energy for decades, so the men and women in service to the country can concentrate on their primary mission.

In addition to supplying power, WAPA also supports hardening the defense critical electric infrastructure that supports our nation’s most crucial facilities.

Finally, WAPA is evaluating its operational risk and vulnerability to wildfires. Wildfires tied to malfunctioning power lines have resulted in several deaths and extensive property damage in

California. Although limited to California currently, much of WAPA's territory crosses wooded or grassland areas that could be prone to wildfires. Our thorough vegetation management programs prevent and mitigate unnecessary risk, but more can be done. We are reviewing these programs for adequacy and accuracy given what we now know about wildfire prevention, and working with Federal agencies such as the National Park Service and the U.S. Forest Service to sufficiently protect these valuable resources from unnecessary wildfire risk. Our regional office in California is developing plans to voluntarily meet the new standards in California Senate Bill 901 to further mitigate fire risk in that state.

Asset Management 2.0

As WAPA has \$4.3 billion in assets and currently represents one of the top 10 largest transmission organizations in the nation, we need to make well-informed, prudent, and realistic decisions about how to invest in our infrastructure to support future needs. In the next 10 years, WAPA anticipates significant investment needs in our assets. It is likely the largest investment since the infrastructure was originally built in the middle of the 20th century. WAPA continues to work with customers to flatten peaks in anticipated spending and provide measured and attainable financial expectations. The bulk of investment will be dedicated to maintaining and upgrading the backbone transmission assets in our system, which includes more than 100,000 structures along 17,305 miles of high-voltage transmission lines, 322 substations, and 291 high-voltage transformers.

WAPA's Asset Planning and Management program, established in 2014, uses objective data combined with field expertise to manage our assets based on risk and criticality. We use these data to communicate asset needs with customers and make informed business decisions so that the right investments occur in the right place at the right time and maximize the value of maintenance and capital efforts.

The Asset Planning and Management program is expanding its database with new asset classes to better forecast and develop our annual budgets and 10-year capital plans. In the next few years, the program will incorporate health and condition factors for station batteries, two additional types of transformers, and network equipment.

The program is also seeking ways to more efficiently acquire large power transformers by reducing the lead time for procurement from two years to between nine and 12 months. Shortening the time it takes to procure this critical equipment will support lifecycle replacements, periodic system additions, and allow WAPA to more quickly recover from an unexpected loss of power transformers including a high-impact, low-frequency event.

People and Organization

The final focus of the 2019 TAP is on our people – WAPA's most important resource. Like many of our peers, we are faced with a potential talent shortage as new generations seek positions in information technology, AI, and other technology-based professions instead of the traditional energy industry. By participating in educational science, technology, engineering and math activities, we are encouraging the next generation to pursue careers in energy as we are living in the most exciting time for electricity since electrification of the West at the turn of the 20th century.

Equally critical is developing our culture and making WAPA a place where employees wish to devote their careers. We are creating a safe, inclusive, diverse, and empowered workforce at WAPA that encourages innovative solutions to challenges and opportunities. We are creating an organization of problem solvers—a place where biologists and electricians teamed up to safely repel thousands of starlings from a high-voltage substation using a grape-juice derivative, and where linemen, in the face of new, restrictive fall-protection regulations, proactively created a safety program that became one of the leading programs in the industry.

This is not a culture that happens naturally; it must be cultivated. We empower employees to seek innovative solutions and raise issues and concerns. By encouraging curiosity and continuous learning, we can better fulfill our mission and meet the needs of tomorrow.

Program and Financing Accounts

WAPA's accomplishments and operations are primarily supported through three program and financing accounts: Construction, Rehabilitation, Operation, and Maintenance (CROM); the Falcon and Amistad Operating and Maintenance Fund; and the Colorado River Basins Power Marketing Fund. Only the CROM and Falcon-Amistad programs request funds from appropriations.

CROM, WAPA's largest account, is made up of four components: construction and rehabilitation; operation and maintenance; purchase power and wheeling; and program direction. Construction and rehabilitation supports the replacement, upgrade, and modernization of the electrical system infrastructure to sustain reliability, improve connectivity, and increase flexibility and adaptability of the bulk electric system. The operation and maintenance program replaces aging equipment, completes routine or significant maintenance, removes constraints that would impede power flows, and ensures WAPA's transmission system is at or above industry standards. The Operations and Maintenance Annual Expense Fund source, sometimes referred to as Net Zero, is a budget-neutral financing tool that begins the year with an appropriation and is continually offset as collections are received.

The Purchase Power and Wheeling program allows WAPA to meet contractual power sale commitments when hydropower is unavailable, and acts as a financial bulwark against drought. Program direction compensates WAPA's workforce that performs a broad range of business functions and directly operates and maintains WAPA's high-voltage, interconnected transmission system and associated facilities.

The Falcon and Amistad Operating and Maintenance Fund was established in the Treasury as directed by the Foreign Relations Authorization Act for fiscal years 1994 and 1995. It is administered by WAPA for use by the Commissioner of the United States Section of the IBWC to defray administrative, operations and maintenance, replacement, and emergency costs for the hydroelectric facilities at the Falcon and Amistad dams, the United States portion of which IBWC owns and operates.

The Colorado River Basins Power Marketing Fund is used to operate and maintain the transmission system for the Colorado River Basin projects to provide an adequate supply of reliable electric power in a clean, environmentally safe, and cost-effective manner.

Offsetting collections and alternative financing are used instead of or may supplement annually appropriated funds for a variety of WAPA activities, including annual expenses, purchase power and wheeling, and construction. These financing efforts are pursued proactively and collaboratively with customers to address funding needs.

WAPA has contained costs and staffing levels while at the same time addressing new mandatory regulations and physical security and cybersecurity requirements. This demonstrates an appropriate alignment of resources to meet the most critical needs facing the organization today.

Closing Statement

The industry is experiencing a wave of changes and opportunities, the likes of which have not been seen since the original construction of the electrical infrastructure. Through business, technology, and organizational excellence; mutually beneficial partnerships; and evolving new approaches to services and industry trends, WAPA is strategically increasing its readiness to address the challenges of tomorrow.

The legacy of WAPA has been one of powering the energy frontier, by providing electricity to homes, businesses, and towns. That valuable service persists today in the form of reliable and renewable hydropower that helps keep the economy of rural America running. We remain steadfast to our mission, yet how we accomplish it is changing. Together, we can chart the course toward securing a modern, resilient, connected energy future.

Thank you, Mr. Chairman. I would be pleased to answer any questions that you or the Subcommittee members may have.