Engaging in a world of change

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This is now my seventh opportunity—one that I welcome wholeheartedly—to address all of you, and it continues to serve as the kick-off for our planning and messaging in the coming year.

In recognition of the significant strides we have taken to preserve the value of WAPA and the way of life of the communities we all serve, our theme this year is one of Engaging in a World of Change. The partnerships and common goals we share are the foundation of a bright future that is stable and progresses WAPA toward a successful, relevant and valuable future.

Stability and progress at first glance sound antithetical to one another—a clear contradiction—but they are inextricably linked and, in reality, co-dependent on one another. We cannot be a progressive organization without stability in our purpose, finances, people and operations. We cannot be a stable organization without making progress in our ability to deliver on our mission in a changing energy world, modernizing our operations, securing our financing and developing our people into thoughtful, collaborative leaders capable of carrying on our legacy.

We are seeking that balance between stability and progress through continuous engagement with you--our customers, the Department of Energy, our neighbors in the utility industry and with our employees.

It is no coincidence that three of our six core values are directly tied to engagement:

- Listen to understand, speak with purpose.
- Seek. Share. Partner.
- Respect self, others and the environment.

Engaging at all levels pays dividends to WAPA and customers; it is vital we are present in discussions about the energy industry and with people who can control our destiny with or without our input. It is why I have made more than 200 visits to members of Congress and their staffs in Washington D.C. since 2013 and testified at eight hearings. It is why I have made it a priority to rebuild our relationship with DOE, through the Office of Electricity, and participate on the Electricity Subsector Coordinating Council. Turnover in the staff levels of these groups is high, and it is important to continue educating our leadership and the people who hold the purse strings as to who WAPA is, why we exist and the value we bring to rural America.

Being part of the Department of Energy has its advantages; in 2019 alone we obtained $2.8 million in non-reimbursable funding to help with cybersecurity and physical security and also received $1.25 million in IT equipment and licenses. DOE can advocate our needs to other federal agencies and to Congress, such as supporting our efforts with the Purchase Power and Wheeling authority to ensure it is appropriately understood and scored by the Congressional Budget Office.

It has been a great journey and privilege to work with all our customers and WAPA employees to secure a relevant and beneficial future where WAPA is a stable, progressive and engaged organization focused on delivering on our mission, operating safely, securely and reliably, and preparing for the new energy frontier. We have, through frequent and respectful discourse and collaboration, found ways to better understand one another, manage the many opportunities before us and develop better tools for communicating and working together that yield tremendous results. The Source is one specific example of this success, garnering a prestigious award this year for government and organizational transparency from an international public relations firm.

To encourage further collaboration, I mandate my direct reports – the regional managers and other senior vice presidents—in their performance plans to proactively visit five customers, at a minimum, annually, one-on-one at the customer's location. This event does not count as a way to achieve that directive.

We must make a concerted and purposeful effort to engage you in your world and see firsthand your specific and unique needs, challenges and opportunities so we can optimally position ourselves to meet your needs in the future.

Big rock questions answered

In preparing for this meeting I took the time to look at the past six speeches I have given to you at this annual event.

Looking through the past Midwest annual meeting speeches, I came across the 10 Big Rock questions from 2014—the questions you should be asking of us. Does anyone remember those? I thought it would be interesting to take a look back at those and briefly see where we are and perhaps see the big rocks we did not see coming.

To begin with the questions, from a rates perspective:
What is WAPA doing to look at the major cost drivers?

Since 2013, we have returned about $2 billion to the Treasury, helping pay down that debt and ease pressure on cash flow. The power rates for Pick Sloan Eastern Division and Loveland Area Projects have decreased by about one cent per kilowatt-hour since 2013, and Pick-Sloan's composite rate should remain stable through fiscal year 2022. Much of that is admittedly due to good water years—perhaps a couple too-good water years in UGP—compared to the early 2000s, but much also is credited to prudent financial planning and our efforts to contain costs.

We continue to improve on our business processes with the goals of better predictability, cost containment and making sure we are properly managing the lifecycle of our assets. The tools we have developed over the past several years from unified 10-year capital plans, to asset management, to our reserve strategy and to improving our planning processes are allowing WAPA to be more efficient than ever. This is critical in managing the continuous upward pressure in a number of areas, including mandates that we face due as a federal organization.

The Continuous Process Improvement Program topped $93 million this year in mostly cost avoidance. Implementing common tools, especially in IT with projects like selecting a common SCADA vendor, results in fewer maintenance, service, installation, employee training and other redundant costs paid separately per region for the same service.

Our Office of Security and Emergency Management avoided a one-time cost of more than $1 million by consolidating alarm monitoring, rightsizing the contract security force and implementing enhanced procedures for identifying security solutions. The office will also save us more than $443,000 annually starting in fiscal year 2021 by absorbing the roles performed by contactors with no increase in federal staff.

We continue to find, evaluate and implement best practices in the utility industry to maintain our extensive transmission assets. Using drones and helicopter-assisted maintenance, we can avoid costs, reduce time spent on maintenance projects and avoid environmental impacts. In Rocky Mountain this summer, line crews saved $640,000 by using human external cargo techniques to replace 90 miles of dampers, and $9,000 by using a drone to inspect 25 towers in 13 hours. Climbing each individual tower to complete the inspections would have doubled the time for the job.

This year, crews in Sierra Nevada reduced the time spent on an insulator replacement job from about one year to six weeks by using a helicopter to transport them to towers along a critical transmission path in mountainous, forested territory. By using our aviation program where it makes fiscal and logistical sense, we can complete more maintenance with less wear and tear on vehicles and most importantly, reduce the physical stress and risk to our workers.

Cost savings and avoidance through continuous improvement allows us to redeploy limited resources to other pressing priorities, ensuring we are spending money and time on the right programs and activities.

Second question: Given the potential of dramatic spot market volatility, what should we collectively be doing to ensure purchase power and wheeling costs are better managed? Remember PPW has ranged from 27-61% of rates costs. What are you doing to stabilize your finances in volatile times?

PPW has been a focus area for us as it is the greatest source of volatility and uncertainty in rates. We successfully paid off the Pick-Sloan drought debt, a total of $843 million, two years early, causing the drought adder to drop to zero. This could not have been accomplished without customer support and, of course, the end of a decade-long drought.

To help prepare for the next drought, the reserve balance strategy, created in conjunction with our customers, outlines a reasonable threshold of funds to retain for PPW. We expect to reach our target amount of $393 million in 2020, which should be enough to fund about three years' worth of drought costs. A healthy PPW account improves WAPA and customer cash management and allows for continued funding of critical capital construction and maintenance projects.

As I mentioned earlier, we also continue to engage with DOE, Congress and others on the PPW authority. This year, we and the other power marketing administrations submitted a report to Congress that details our authority and current execution of using receipts as offsetting collections for PPW, describes risk mitigation strategies and proposes common definitions. This report is available at The Source. Our goal is to help D.C. understand the necessity of PPW authority and how it affects, or does not affect, rates or Treasury returns.

The third and fourth questions look at asset management. First,
Is WAPA investing sufficiently given the risk and age profiles of our equipment?

Our asset management program continues to mature and evolve in its ability to make data-driven recommendations for re-investment based on a number of inter-related factors, including asset health, criticality and last and probably least, age. As we all know, some of us are old and still have useful life. Some of us are young and need replacing.

We continue to add new asset classes to our program; this year, we successfully incorporated current transformers, capacitor voltage transformers, station batteries and network equipment. The first report on these assets is expected in 2020.

You may have also seen our first Asset Management Almanac, designed to provide a better understanding of our assets as we move from maintenance to rebuilding in some areas. The report summarizes the asset data we have collected internally, what can be learned and how we are using that information. Bottom line up front: Our transmission assets, taken collectively, are in good shape. Equipment is not on the brink of failure, and many critical items have redundancies in case of an unexpected failure. The health and strength of our transmission system owes much to the engagement between WAPA and our customers from today and spanning decades into the past.

From 2013 through 2018, Upper Great Plains has started more than 700 capital projects, representing $378 million of investment. Through Western States Power Corporation, you are major contributors to these projects.

WPSC has provided $37 million to WAPA since 2013 to fund system replacements and upgrades such as rebuilding Brookings and VT Hanlon substations, the Groton South Switchyard project and Rapid City-to-Dry Creek transmission line project.

In Rocky Mountain, WSPC has helped fund seven projects since 2013 to the tune of $22.1 million, including the Goshen County substation and the long-lasting Estes-Flatiron transmission line rebuild. This extensive amount of funding does not include the funding provided to the generating agencies to support their projects for Pick-Sloan or Loveland Area Projects.

The support we receive from you to re-invest in our transmission system and prepare it for a connected, modern future are critical to WAPA's continued success, relevance and value. Failing to maintain a safe, reliable grid is not an option. If we have ever wondered if anyone would notice if our system fell into disrepair, the events in California the past couple years have disabused us of that fantasy.

Working together on the 10-year capital plans, another major accomplishment in improving engagement, transparency and collaboration, we will be able to sustainably fund and maintain our transmission system well into the future.

Finally, we continue to make strides toward improving transformer acquisition. In 2019, we were able to develop a list of standard specifications for transformers and requirements for potential vendors.

Our next step is to enter into a long-term contract with a vendor, which we expect will cut acquisition time in half, reduce acquisition costs and help us forecast equipment needs that will help improve grid resilience and performance.

The second asset management question asked:
Is WAPA was prepared for a dramatic increase in intermittency and the system management changes that will occur?
A prescient question given today's environment, and I do not know if any of us expected the bottom to fall out of the coal industry as quickly as it has. Last month, the Navajo Generating Station – the West's largest coal plant and the only coal asset in WAPA's inventory—shuttered as have many other coal plants across the nation. The rate of bankruptcy is analogous to dominos falling in a Rube Goldberg machine in the massively complex generation transition. The hole coal has left behind has been filled with questions about reliability and the capacity deficit brought about by attempting to replace baseload generation with intermittent resources.

We have been working diligently to solve the impending challenges of increased intermittent generation before the problems come to fruition. We have added real-time engineers to our dispatch centers, conjuring a profession out of thin air to meet a compliance requirement and the real-world need to evaluate system conditions more frequently and comprehensively. Eventually, the data avalanche will become so overwhelming we will need to rely on artificial intelligence to parse valuable information through the noise and make the instantaneous decisions and adjustments necessary to reliably operate the grid. We are working already with DOE and the national labs to prepare for introducing safe AI tools into grid operations.

We also decided to move toward energy imbalance management solutions as our hydropower resources in the Western Interconnection are anticipated to no longer be able to meet the real-time demands of a more variable energy mix. Our options to accommodate increasing intermittency in the balancing authorities boiled down to joining an energy imbalance market or service or purchasing more generation resources to meet real-time needs. We believe that joining a larger market footprint for energy imbalance will best protect the hydropower resource while cost effectively adapting to the changing generation mix—another example of the dual import of stability and progress.

Employees at WAPA will be working diligently toward these efforts this coming year, whether it is joining SPP's Western Energy Imbalance Service in February 2021 for UGP, Rocky Mountain and the Colorado River Storage Project; joining the California Independent System Operator's Western Energy Imbalance Market in April 2021 for Sierra Nevada; or making a final decision next year for Desert Southwest. I can say, with certainty, this will be the most important activity before us in 2020 after keeping the lights on and the power flowing.

The changing energy mix brings up a larger issue of the carbon/capacity conflict. If the energy industry could be equated to the world of computers, baseload resources are computer terminals while renewable resources are memory sticks. The grid is the network. The number of computer terminals is declining radically while everyone is running around with their memory sticks trying to plug them into the network as quickly as possible. But you cannot run a network off memory sticks any more than you can run the grid off renewable energy alone.

As hydropower is one of the main remaining computer terminals—a supercomputer even, given its unique black start capabilities and low-carbon emissions—how do we ensure the capacity, reliability, black start capabilities and other operational benefits—ignored in today's market structure—are appropriately and adequately compensated? That is a new big rock question for you.

The future is looking brighter for our human capital questions, including the next two Big Rock questions:
How is WAPA managing an aging or close-to-retiring workforce? AND *How will WAPA compete for talent in a market with greater technical demands and higher pay than the federal system?*

A major concern expressed when I first joined WAPA in 2013 was the departure of staff, retention of personnel and the ability to attract the talent we need. I am proud to say that based on our Federal Employee Viewpoint Survey we have, for the fifth year in a row, increased our employee satisfaction in virtually every area. This is due to the dedication of WAPA personnel, a very active inclusion and diversity program, leadership development and training—and certainly helped by a hard-fought battle to get engineering salary increases.

We have also initiated a knowledge management effort focused on recording the expertise and talent of our most technical positions to alleviate the effect of the so-called "brain drain" of retiring subject matter experts.

We have leveraged unique hiring capabilities for hard-to-fill positions, such as cybersecurity, and our Human Resources staff is embarking on new and more modern recruitment efforts to motivate people to apply to WAPA.

It remains true that our ability to attract talent through wages and benefits remains strictly confined to the overall government model. Instead, we market our mission, our core values and the amazing work we do for America to potential recruits, many of whom want a purpose in addition to a paycheck.

Finally, we are working on retaining the excellent employees we have now. Our data indicates that if an employee remains with WAPA for five years, the chances of them staying at the organization for their career increases dramatically. To that end, we have focused on improving work-life programs for employees, like telework and flexible hours (for applicable positions), ensuring career progression opportunities and offering leadership development programs. A key focus for WAPA is leadership development, where we have committed budget and are fostering the next generation of WAPA leaders.

The next questions focused on sustainable funding, including one that remains a challenge today:
Given the continued decline in appropriations, will WAPA be able to manage the 10-year capital plan requirements?

Looking at our 10-year capital plans, we anticipate about $160 million of investment into our system each year to maintain the high degree of reliability we have come to enjoy, rely upon and expect.

As I discussed earlier about re-investing into our system, the partnership we share with customers remains vital and strong, and we will continue to rely on customer support for alternative financing for capital investments.

Another part of our three-pronged reserve balance strategy includes retaining up to three years' worth of capital investment needs to make up for a temporary shortfall in any funding source, including in appropriations. Yet, that is not a long-term strategy. We have coordinated and gained support for increased appropriations from DOE starting in fiscal year 2021 and are currently coordinating with OMB. Appropriations as a solution to funding shortfalls is a more mutually acceptable solution than others we have explored in the past but is subject to external pressures entirely outside of our control.

With enhancements in asset management, the 10-year capital plans and planned improvements regarding internal workload planning, we expect to have the right projects, with the right resources at the right times to care for 17,231 miles of transmission lines, 114,863 transmission structures, 322 substations and 487 communication sites in WAPA's inventory.

The other funding question is one ***we*** asked ***you****:*
Will you as customers be able to pass along costs in this changing environment?

Our low rates have provided stability for numerous small- and mid-sized communities across the West, allowing those areas to focus on increased prosperity and other needed investments.

The stable and lower rates from WAPA permit headroom for public power, rural electric cooperatives, irrigation districts, Native American tribes and public utility districts, among others, to do what you need to ensure your continued success and value.

On our side, the progress we are making in multiple initiatives and activities is necessary to create headroom to accommodate the requirements on the horizon, including greater scrutiny on complying with records managements laws, regulations and executive orders; new Critical Infrastructure Protection standards from the North American Electric Reliability Corporation; the ever-growing demand for more network capacity; and the exponential need to secure our equipment from attack. The more efficient we become, the better we will be able to hold down rates and meet the changing requirements. The name of the game will continue to be cost avoidance and prioritization of the many needs facing WAPA.

The final two questions revolved around markets, which I addressed in some depth already. But I want to make a few more key points on the arrival of markets in the West to answer:
How will WAPA have to operate its system in the world of markets and what will this do to costs? AND *Given the move to SPP [for UGP in 2015], the consideration of Northwest Power Pool, the California situation and other pressures, how should WAPA respond to protect its customers' rights and the availability of federal hydropower.*

The first accomplishment to note here is the completion of the 2021 and 2024 Power Marketing Initiatives for UGP and RM, extending firm power contracts for 30 years.

Long-term contracts help protect customers' investment in this successful business model and preserve affordable hydropower for communities for decades to come.

Concerns about the availability of hydropower do not come from markets alone. It is a constant consideration for us and always chief on our radar. From variable drought conditions to proposed changes to hydropower operations to accommodate environmental concerns, there are risks at every turn.

Pick-Sloan-Eastern Division generation was 133% of average this year and runoff was 241% of normal, according to the Army Corps of Engineers. It was the second highest generation year in recent history, yet I am not dancing for that. The "banner" water year took an extreme economic and physical toll in the form of flooding and catastrophic destruction. Floods affected our customers, citizens and significant amounts of infrastructure in South Dakota, Iowa and Nebraska, including some of our own. It was a stark reminder that you can have too much of a good thing, and that we will need to be resilient for extreme changes and events that affect the hydropower and transmission system.

In terms of markets, we should not overlook that WAPA is a major player. When Mountain West Transmission Group dissolved in 2018, an editorial statement made by a reporter in an article caught my attention. To paraphrase, he opined, correctly, that any market initiative in the West would have to involve WAPA due to our "sprawling transmission system." We have power as WAPA. We have influence to shape the future of the energy industry, even without load. It is our responsibility and obligation to use that power and influence to benefit our mission and our customers.

To do that, we must engage in all the discussions surrounding the energy issues and opportunities in the Western Interconnection and the nation. We must make progress toward the future to ensure stability for the hydropower product and the many benefits it brings.

One way we have prepared for markets internally is through the Organizational Approach to Markets initiative. The effort's goals include preparing WAPA staff and systems for markets, creating internal efficiencies and building a stronger WAPA through consistent organizational alignment, clear processes, knowledge management and modern technology. In 2019, we completed all Phase One activities more than one year ahead of schedule, which incorporated 10 of the 17 decisions to improve WAPA's internal readiness for a more connected and more integrated grid. Phase Two will begin once we move into markets, so I believe we are about as ready internally as we can be for moving into markets.

I must admit my thinking on markets has changed over the past few years. There are benefits to participating in a full market. Joining the SPP regional transmission organization for Upper Great Plains' east system has resulted in net benefits in the neighborhood of $125-150 million since 2015. The benefits we are seeing are significant and should not be ignored in this time of change.

To be clear, marketing and delivery of hydropower is our mission. To be successful in that mission, we must be involved in the other matters that affect WAPA, the grid and our customers. Failing to do so is equivalent to failing at our mission because we must proactively carve a place for preference power in the future. That place is not guaranteed.

We secure a spot for WAPA and preference power by engaging with the many players in the energy industry: We engage with our entire customer base to understand and help meet their unique needs; with the generating agencies, DOE and other federal partners who have their own mandates to fulfill; with Congress who, in many cases, barely knows who we are; with neighboring utilities that need us to move forward to their own bright futures; and with regulators who expect compliance.

The Rocks we missed

We have also seen some big rocks that I did not anticipate in 2014, namely, the importance of integrated vegetation management, cybersecurity and physical security. All three, while valuable, have diverted attention and resources for utilities across the nation.

No one could have anticipated the effect a northern California utility and mismanagement at many levels could have on the nation. There is plenty of blame to go around, but the ultimate affect has been increased scrutiny of utilities and their programs to prevent fires caused by powerlines. In California, we are regularly asked why we are still energized when Pacific Gas & Electric has shut off power to millions.

Keeping the lights on is a physics and engineering challenge, not a political decision. There has been almost a paradigm shift in utilities' thinking in California: It used to be that utilities kept the lights on unless there were no other viable options (a physics and engineering challenge). Now, California utilities turn off the lights proactively to prevent being the cause of a lethal and devastating wildfire, whether or not they were negligent (a political decision). For us, we are committed to the former line of thought, but that takes committed resources to accomplish.

Integrated vegetation management has jumped in criticality to asset management, and could be considered an indicator of asset condition. The risk of poor vegetation management is too high to warrant anything but the most concerted and genuine effort. To that end, we are reviewing and strengthening our integrated vegetation management programs to a stricter level than before, working with landowners and other agencies to help reduce the risk of vegetation-and-powerline interactions and participating in utility committees to learn best practices from others.

Cybersecurity and physical security, too, while always present, had been focused more on installing the proper measures to dissuade someone from breaking in and stealing valuables—the tools, vehicles and copper wire, much like we would do for our cars and homes. But make no mistake, the grid is under attack on a regular basis from state-sponsored actors, terrorists and other nefarious groups down to the people who think it would be funny to spark chaos by causing a black out. The grid is a prime target, and we must continue to mature our security programs to adequately defend against these threats. In 2019, we purchased a new cybersecurity program, which will provide employees increased visibility into substation-to-control-center communications and is a first step in an umbrella cybersecurity defense network.

Conclusion

In conclusion, the number of accomplishments WAPA, in cooperation with all of you, has made since 2013 is as incredible as it is humbling. None of these successes were achieved in a vacuum, and all required dedication, respect, communication, professionalism and a staggering amount of knowledge and expertise across the board.

It also requires the assistance of exceptional individuals, and I had the honor today to recognize two such individuals at the Mid-West board meeting today: Bill Drummond and Dan Payton. Bill, Dan, thank you for all you have done for WAPA and public power over your collective years serving both public power and the power marketing administrations. You have been instrumental advocates for WAPA's needs and the needs of the Midwest, UGP and RM customers. To reiterate what I said, congratulations to you both on your upcoming retirements and good luck in your future endeavors.

I am confident that together, WAPA and customers will continue the collaborative and fruitful discussions and activities to make our intertwined futures a continued success. We may not always agree, but with respectful dialogue, continuous engagement and understanding of everyone's needs, we can continue to navigate this changing world and define a relevant and valued future for all of us.