

The Value of WAPA

*delivered at
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board and member meeting*



**Western Area
Power Administration**

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We begin each of our senior management meetings with a “drive for value” moment, where one of us shares an example of something that happened that delivered value for customers or shows collaboration across WAPA. We work to build value into our everyday practices and our culture.

My drive for value today is the powerful partnerships and nine-year remarketing that brought 50-year contracts to 31 new customers served by Boulder Canyon Project power.

For more than 80 years, the BCP has delivered hydropower from Hoover Dam to customers in southern Nevada, Arizona and Southern California.

The Value of Hydropower in the West

This coming year, I will be talking a lot about the value of WAPA. And that is going to mean a lot of different things, but at the end of the day, it is about the value we bring to customers. And the partnership we have here helps to maximize the value of the hydropower resource we offer.

I want to share a recent and salient data point to really illustrate this. Data from the Commerce Department shows that in October 2017—across the country—Americans, on average, spent only 1.31 percent of their income on electric utility bills. This percentage is the fourth-lowest month in history, going all the way back to 1959. And October was no anomaly. Five of the six lowest months since 1959 all happened in 2017.

For those of you who are curious, this trend was the highest in the 1980s. It dropped quite low in the years following deregulation, around 2002, but it is still lower today.

We can extrapolate even more good news for your customers from this data. This personal consumption data is based on income and how much people pay for certain line items—clothing, groceries, insurance, pet



supplies... The list goes on and on; there are almost 400 lines of data. Electricity is a great measure, though, because it affects every household.

All this data, as I mentioned, comes from the Commerce Department. What we know from the Bureau of Labor Statistics is that, regionally, in the West, we have higher incomes (compared to the Midwest, Northeast and South) AND lower electricity bills. Part of what keeps rates lower in the West is the high percentage of hydropower as well as electric cooperatives and public power. Taking that into consideration, consumers in the West likely pay only a little more than 1 percent, compared to the 1.31 average in the country.

Furthermore, because of the value of hydropower, consumers who benefit from WAPA power pay even less than that. There is a correlation between what retail customers pay and power generation costs at the wholesale level. These studies I have mentioned, obviously, cite retail costs. And WAPA, as you well know, markets its power at-cost. But when you look at utility costs across the country—whether from an investor-owned utility, a public utility district, a municipality—there are only relatively small differences in terms of cost. The overwhelming driver—what truly makes a difference in consumer rates—is the wholesale cost. And that, right there, is the value you get from the hydropower resource and from WAPA.

I am passionate about what we do, and what we can continue to do for your customers. And I am excited knowing that what we can accomplish working together is likely greater than what we could accomplish on our own. We have had a phenomenal year and I am looking forward, optimistically, to what the future has in store.

Framing our footprint

You represent an important portion of our customers. But I want to take a step back and ground ourselves in some perspective. WAPA runs a big business. You have all heard our numbers before, but I think that



sometimes as we dive into the details, we lose sight of the size and scope of WAPA's footprint, and the assets that run across and through it that are entrusted to us by the American public.

Our footprint is 1.4 square million miles. We operate across a 15-state territory. Let me take a moment to frame that footprint for you. It is comparable in size to the landmass that stretches from Oslo to Athens, and from Paris to Moscow—only slightly smaller than the Roman Empire at its height. We cover all that diverse territory and terrain, and deal with a complicated political mosaic.

We are entrusted \$4.3 billion in assets, which include:

- 177,000 structures
- More than 17,000 miles of high-voltage transmission line
- 665 buildings
- 479 communication sites
- 319 substations
- 297 transformers

We own it, we maintain it, we monitor it, we secure it and we repair it. And it requires investment. It is an enormous responsibility ... and an enormous privilege.

I remind our employees, though, that although it is easy to get caught up in the enormity and the complexity of our business, if we remain laser-focused on our mission, everything else becomes quite simple. We keep the lights on for 40 million Americans. We have designed an organization and a Roadmap around that singular mission. And we are good at it.

Of course, people have different ideas about how we could and should operate or where we should invest or which projects we should support. There is great value in the discourse. I am open to the conversations, but I must remind you that there are a number of areas where we do not have



choices, such as regulatory-driven mandates. Also, there is no one-size-fits-all approach with an organization our size—especially considering the differences in our regions and in our customers. What works in the Desert Southwest will not work in Minnesota.

It is our partnerships with customers, our knowledge of your needs and priorities that helps us serve your organizations and operations. We appreciate the special bond that has provided value for the past 40 years to your customers and the 40 million Americans touched by WAPA power.

What Remains and What Has Changed

Although the electric utility industry is changing rapidly, and evolving in a way never before seen, WAPA's critical and noble mission remains the same. It is true, though, our *role* in the industry has evolved some since many of you began working with us. If I had to guess, there are at least a few of you sitting here listening to me fondly remembering how things used to be ... but we must keep pace. We must evolve. WAPA must be present, be heard and be visible—across our footprint and within the beltway—as we comply with regulations, help shape the future of markets in the West and assure that WAPA's unique role does not become lost.

WAPA recently celebrated a milestone anniversary. WAPA turned 40 on December 21st. I cannot help but reflect on our organizational journey. I absolutely love the part we play in the story of the rural electrification of the West.

We literally help power communities that would not otherwise have affordable access to electricity ... we help generate economic growth in communities that do not have other competitive advantages ... we help businesses afford to stay afloat, which keeps people employed and families thriving.



We do not do these things in a vacuum. It is the relationships we have with you and your customers that enable us to be responsive, to understand the challenges and the needs you are facing. For 40 years we have been guided by our mission. Shortly after I arrived at WAPA, we developed our Strategic Roadmap to help further define our focus and path. And this year, we refreshed our organizational core values to further guide employees at critical decision points.

This refresh came on the heels of our culture assessment. Our senior management team identified key themes that would authentically refresh our core values. Then we brought in employees to make sure the themes resonated and that we had alignment and buy in. It was also important to identify blind spots. We put on the finishing touches and announced them in November.

I am excited to share them with you today.

- **Listen to understand – speak with purpose.**
- **Seek. Share. Partner.**
 - This collaboration refers to work we do internally, but also to the work we do with our customers and other stakeholders. We seek input from, share relevant information and partner to get things done.
- **Respect self, others and environment.**
- **Do what is right.**
- **Be curious, learn more, do better. Repeat.**
 - This includes innovation, training and developing others, and finding better ways of doing things.
- **Serve like your lights depend on it.**
 - This really sums up our commitment to business, technology and organizational excellence. At the end of the day, it all goes back to keeping the lights on. We do that through dedication to customer service to all of our stakeholders.



These core values are not new. There should be no surprises here. You have already seen them show up in interactions with our employees and various workgroups. And you will see more of them from here on out as we rededicate ourselves to the values that make WAPA the organization it is.

It is worth noting that since last we refreshed our core values in 1993, 88 percent of employees are new. So much of WAPA's culture is passed down employee to employee. With so many new people, and having just invested in our culture, we felt it critical to do a strategic reset to further ensure alignment. I am proud of the refreshed values and confident they will not only serve as a foundational reference point for employees, but amplify the great work and behavior already exhibited across WAPA's footprint.

Recognized for commitment

I am extraordinarily proud of WAPA employees and all we achieve. This year, I want to take a moment to acknowledge the recognition we received from industry, customers and government partners. I share this to you remind you all that we are leaders in many ways ... in the rates we can offer, in the service we provide, in the quality of our programs and our people. The recognition demonstrates our commitment to organizational excellence. More importantly, though, it keeps us at the table for important conversations, it keeps our name and our brand in front of people, it motivates our employees—public servants—to keep serving like their lights depend on it, and it helps us to attract and retain the best and brightest people to work in all corners of our organization.

Here are just a few awards we received in 2017. They span functions and offices across our footprint.



- The Department of Energy recognized WAPA in its Best Practices publication for our organizational transformation in incorporating both change management principles and our Strategic Roadmap into recent reorganizations and realignments.
- Jody Wootton, a public utilities specialist in our Sierra Nevada region, received the Coast Guard Reserve Officer of the Year from the Navy League.
- Chris Colson, an electrical engineer in our Upper Great Plains region, was recognized by RMEL with their Emerging Leader award.
- A Public Affairs video, featuring one of our California customers, was recognized by the American Public Power Association.
- Now-retired UGP Regional Manager Bob Harris received the Cornerstone Award from Basin Electric for his leadership and outstanding service to electric cooperatives.
- Headquarters Accounting staff received the Filling the Gap award from the Denver chapter of Association of Government Accountants for working with the Bureau of Reclamation to streamline a financial process.

Responding to the call

We have received recognition for our support in the recovery and restoration efforts in the aftermath of hurricanes Irma and Maria. Some of you may be wondering why this is important... I visited St. Thomas in November to tour the work our crews performed. And I am here to tell you that it was an absolutely transformative experience—both for the crews and for me. We have wrapped up the effort in the Virgin Islands with an immense sense of pride for our expertise, leadership, resourcefulness and craftsmanship. We have advisors on the ground in Puerto Rico as well.

This job was the embodiment of the value WAPA brings and the personification of our core value to “Do what is right.” Of course, I must remind you that the restoration effort was all paid for by the Federal Emergency Management Agency. We will be hosting a lessons learned



event later this month, but here is what I know we got from the experience: More experience, increased recognition of the value of our processes and our craftsmanship, lessons in how to improvise under challenging circumstances, and being humbled by directly supporting tens of thousands of Americans. Crews worked across difficult terrain amid challenging conditions. For more than 60 days WAPA employees sacrificed time with their families to assist this effort.

Again, this was a mutual aid effort. As part of the Department of Energy, when we are called, we participate in national incident responses.

Lastly, our work in the Virgin Islands and Puerto Rico reminded me of the value of common work practices. Crews from every region were able to come together and work together flawlessly because they all use the same operational processes. We are now reminded of how seamlessly we can perform combined crew work and joint projects—and these jobs save customers money.

Getting things done, making a difference

Last year, in talking about our Continuous Process Improvement program, I shared that we were looking to double or even triple our cost-avoidance and -saving. And I am thrilled to announce that we did it. Just before the fiscal year ended, the program surpassed the \$50 million mark. At the close of its third year, it saw a 190-percent return on investment.

Physical and cyber security

Last year, I told you about the increased investments we are making in our physical security program. We continue to make great progress toward securing our assets.

In Fiscal Year 2017, we made great strides to assess and mitigate potential risks at our facilities. We replaced signs, repaired locks and secured gates. In total, we closed 355 of 370 remediation actions.



WAPA also continued to improve its cyber performance throughout the year. We reacted to and closed 99.61 percent of cyber incidents within three days and did not experience a single significant cyber event. We aggressively pursued phishing training for the entire workforce, seeking to reduce the number of staff who click the wrong links.

Inclusion and Diversity Committee

In 2016, we launched an Inclusion and Diversity Committee, made up of employees from across WAPA's footprint to provide enterprise-wide leadership toward a sustainable and meaningful inclusion and diversity program.

For years now, study after study has shown that more inclusive organizations create better business results. Inclusive organizations have a greater competitive advantage. Inclusion positively affects their bottom line. At inclusive organizations, employees are more engaged, make more sound business decisions and avoid more pitfalls and blind spots. This is not a new program or initiative. It is strategically tied to our Roadmap and organizational goals.

I have called upon our employees to find ways to make WAPA more inclusive. And I hope you have noticed that our senior team is leading this effort by being more inclusive and transparent with customers and customer groups.

This effort demonstrates the "Respect others" piece of our core values. When WAPA creates space for employees to bring their best, when it unlocks the key to leveraging the best each employee has to offer, that is where we can find innovative solutions and exponentially expand the value we provide.



Asset Management

Our Asset Management program continues to evolve and we are reaping the benefits of your investment. In the coming year, we will focus on further leveraging information to make data-driven decisions and maximizing the value of our enterprise assets.

It is my vision that we completely integrate all assets to understand necessary investments for just-in-time capital projects. We have some work to do to get there—it will take some new tools, some new processes and a shift in culture. The integration will serve us well, though. We need to be looking at asset management, field knowledge, budget, procurement and customer support as one big picture, not separate activities.

This past year we identified 90 assets—breakers and transformers—as high risk, high probability of failure, or having a low health assessment, and completed mitigation on 12 of them. We also identified 68 actions to be taken on these assets—such as replace, maintain or roll into a larger project.

Power Repayment Study Tool

This year we have made giant strides toward a single, secure software solution for our Power Repayment Study. In April, we awarded a contract to a software development company to build WAPA a tool that will provide a reliable, transparent means to calculate rates and track repayment for our rate-setting systems that support our 15 power and transmission projects. This has been a long time coming.

The design and planning phases of the project are complete. We will continue the buildout through January and will concurrently begin functional testing at that time. We will begin training WAPA functional users in February and conduct parallel testing in March. We will be ready for production in April.



WAPA is planning a customer WebEx next month to provide an overview of the product. We told you that we would include customers along the way. This speaks to our core value to “Seek. Share. Partner.” This is us making good on our commitment to transparency. And also staying focused on what really matters, that which is outlined in our Roadmap.

Before we move on from the fantastic accomplishments of this past year, I want to reiterate what they all represent. The leadership demonstrated by WAPA employees translates to organizational accomplishments—by means of improving processes, increasing efficiency, finding less expensive ways to perform work, reducing risk, improving safety and security practices—and these collective accomplishments translate to improved service, increased reliability and reduced costs. And that is what makes a difference to your customers and the communities they serve. Our accomplishments serve you ... on both small and large scales.

Lastly, these accomplishments span all regions and represent the collective efforts of employees across our footprint, which brings me back to a point I made when I began speaking this morning ... a point about the scale of our operation and the scope of what we do. The fact that we operate as both a utility and a government organization contributes to the complexity of our operation.

Obviously, we need people in support roles to run the business: finance, human resources and legal. And we need people to operate and maintain our assets: Linemen, Engineers, Communication and relay folks, dispatchers, power marketers and rates managers. But we also employ archaeologists, heavy equipment mechanics, a statistician, biologists, geographic information system specialists and an industrial hygienist. We need these people to ensure safe practices in our offices and in the field, to safeguard the environment and cultural significance of the land on which our assets rest, to fix our specialized equipment when it breaks, and to



leverage asset analytics to ensure capital resources are expended efficiently.

Big picture, long view

We must be laser focused on our jobs while simultaneously preparing for the future. Our world is changing at a rapid pace with impacts far greater and at a speed much faster than in the past. Being prepared for these changes is a critical piece of our work. These are utility industry and societal movements that will dramatically impact all of your—and our—operations.

The move to markets as we have seen in UGP joining the Southwest Power Pool goes beyond staffing changes. The dams are being operated more efficiently due to different dispatch models. Negative pricing has become the norm in California and coal plant closures mean a different set of planning criteria.

Beyond markets, there are differing sets of expectations for all of us. Environmental, social and governance criteria—known as ESG Criteria—are spreading across from non-governmental organizations to financial communities. Wind purchase power agreements are falling below \$15 per megawatt-hour. In some places, solar PPAs are falling to \$30 per megawatt-hour. The utility business model is being challenged as technology meets consumers in a new way. This will happen in Arizona as surely as it will in Montana.

Not even 10 days ago, on Dec. 4, the Southwest Power Pool set three wind- and renewable-related records.

- At 5:20 a.m., wind generation hit 13,271 megawatts, serving 56.25 percent of SPP's load.
- At 6:40 a.m., total renewable penetration hit 58.23 percent.
- And at 7:55 a.m., SPP set a 13,588 megawatt record for peak wind generation.



The business is changing. Operations are changing. Times are changing. And we must not only keep up with the pace of change. But anticipate it and plan accordingly.

In some states the “gentailer” model is starting (this is where utilities own generation assets and sell retail energy in a competitive market) and the electrification of transportation could mean an increase in demand of 4 percent by 2025 – the equivalent of 15-20 million new households.

Of course WAPA is focusing on providing electricity to you at the lowest possible rate consistent with sound business principles. This does not, however, free us from understanding these impacts on you—and the potential rise in the value of hydropower—or our responsibility as an open-access transmission provider.

Markets

We believe markets are coming to the West. And now is the best time to negotiate because we have the most leverage. When we held meetings about our Colorado River Storage Project and Loveland Area Projects joining the Southwest Power Pool, only 6 percent of CRSP customers commented, but those who did represent our largest and most engaged customers—they represent 64 percent of the CRSP allocation. Of those that did respond, 41 percent are in favor of joining the Southwest Power Pool, only 4 percent are opposed, and 19 percent need more information to make a decision. We expect to make a decision by the middle of this year.

Transformer Reserve Program

Some of you heard about four months ago, that we are working on a Transformer Reserve Strategy. This is important work due to the long lead time for the traditional procurement of transformers – about 18-24 months. Our strategy will reduce this time to three to four months. To be



clear, this strategy addresses high impact/low frequency events that go far beyond general lifecycle issues. We are evaluating three alternatives: warehouse spares, in-service spares and subscriptions services using a third-party vendor. We are still presenting the strategy to customer groups and seeking feedback. Our next step will be to modify the strategy based on customer feedback and present it to our senior management team. After we finalize the strategy and develop a funding proposal, we will conduct additional stakeholder outreach.

D.C. Update

I know you are always interested to hear what is happening in D.C. As you know we are currently operating under a Continuing Resolution. The good news is that WAPA has funding separate from the normal appropriations process. It is our unobligated balance strategy that allows us to operate—almost completely uninterrupted—during CRs. The only effect of the CR is that our capital appropriations are constrained. We will continue to act on and execute our unobligated balance strategy.

There will always be pressure on appropriations as there has been during my five-year tenure. We are always concerned, given the complexity of our financing model that folks in D.C. fail to understand WAPA’s special relationship with its customers. Because of this, we are keeping our profile in D.C., both on the Hill and within the Department of Energy.

Conclusion

Thank you all for your time today. Thank you for allowing me the opportunity to address this group. As we begin this New Year and have more opportunities to come together, I want you to know that I am personally committed to WAPA’s first core value, which is to “Listen to understand, speak with purpose.” I trust you already recognize that I speak with purpose, but my commitment to you today is that when I show up, I will do so with an open mind and a willingness to set aside my own beliefs and assumptions to truly hear your concerns.



Thank you for the years of mutually beneficial partnerships. Thank you for asking the difficult questions. Thank you for your support. May we continue to work together productively to bring increased value to your customers.

