

Investing in the connected future

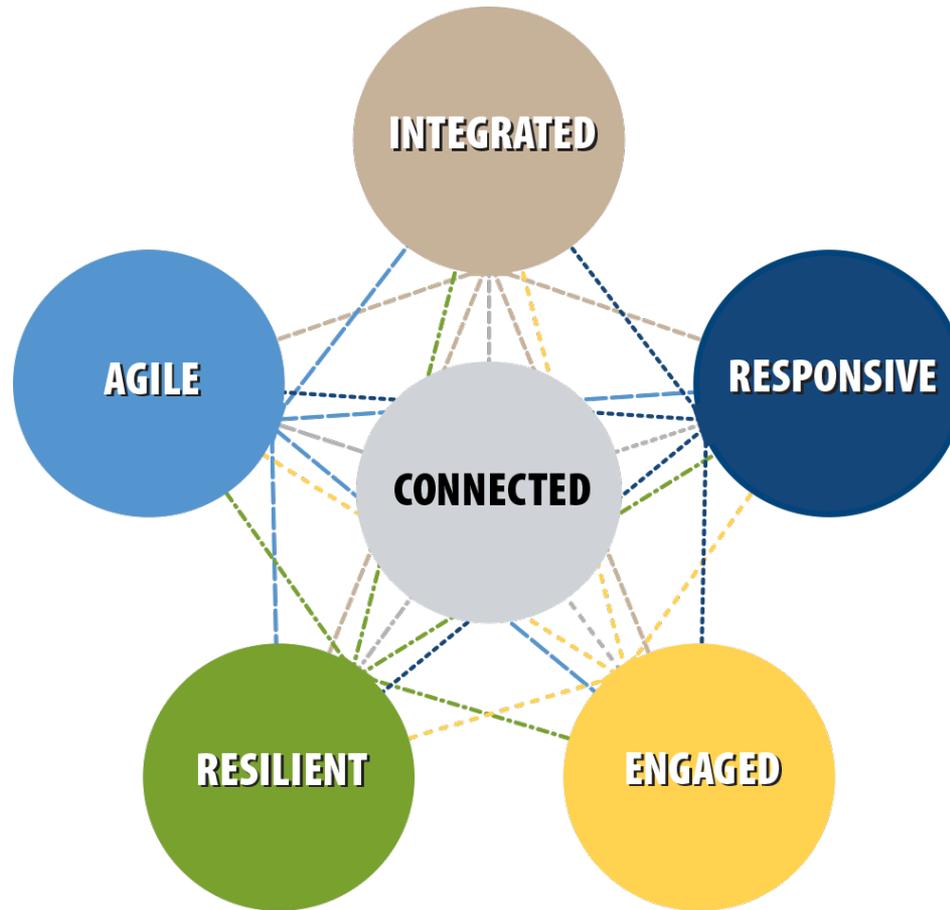
Mid-West Electric Consumers Association

Sept. 17, 2019 | Denver, CO

Kevin Howard

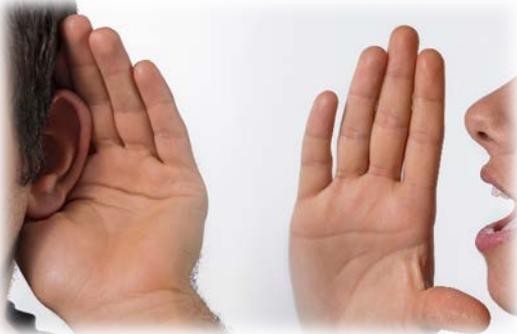
Executive VP and Chief Operating Officer

Connected energy future



Core Values

**Listen to understand,
speak with purpose**



Seek. Share. Partner.



**Be curious, learn more,
do better. Repeat.**



**Respect self, others
and environment.**



**Do what is right.
Do what is safe.**



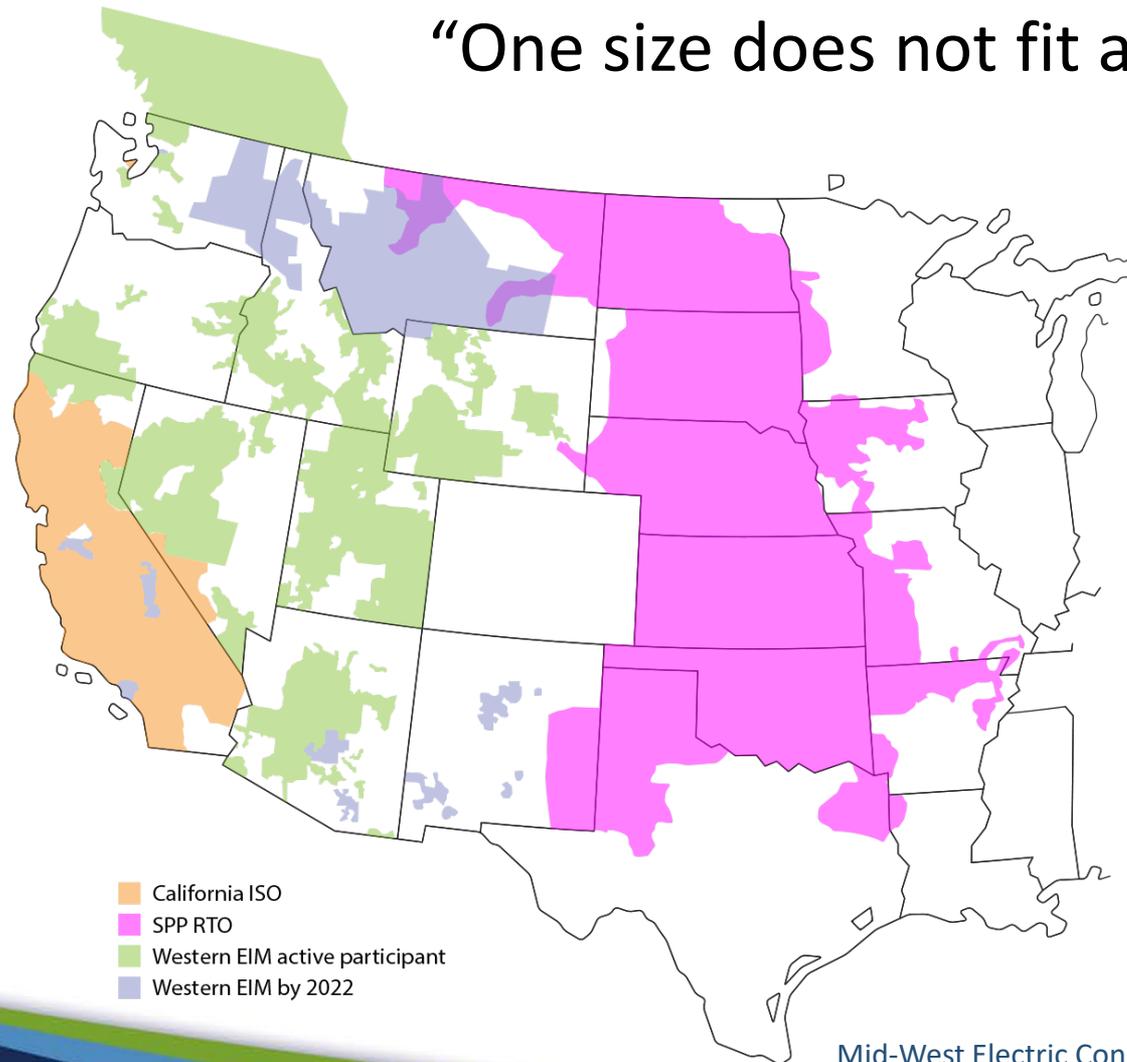
**Serve like your lights
depend on it.**

Pick-Sloan composite rate projection

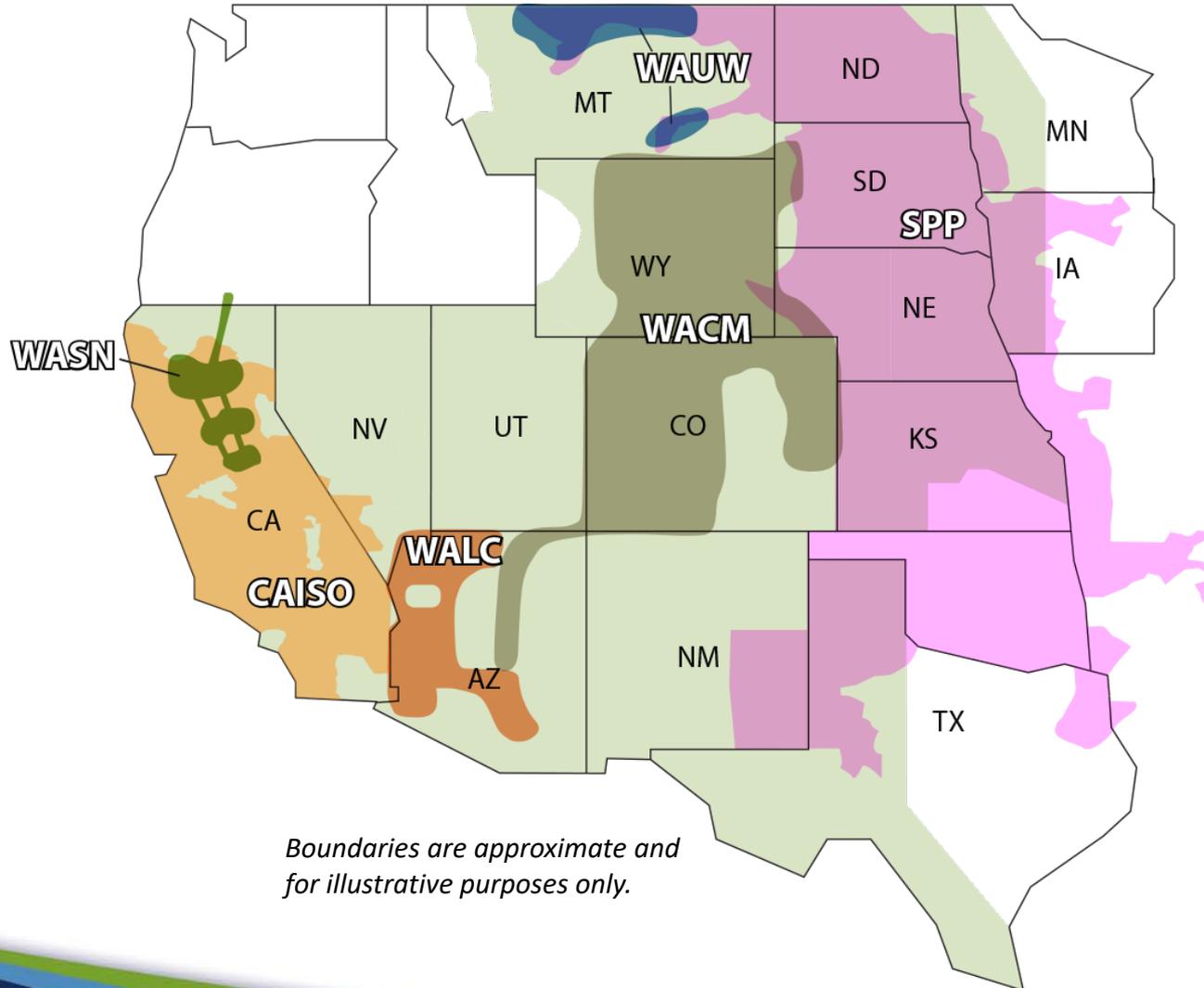
WAPA project	Long-term composite rate (weighted average) \$/MWh	Average long-term market- based electricity prices \$/MWh
Loveland Area	31.44	63.72-76.30
Pick-Sloan	24.00	35.26-66.60

Energy imbalance market decisions

“One size does not fit all”



WAPA BAs & markets

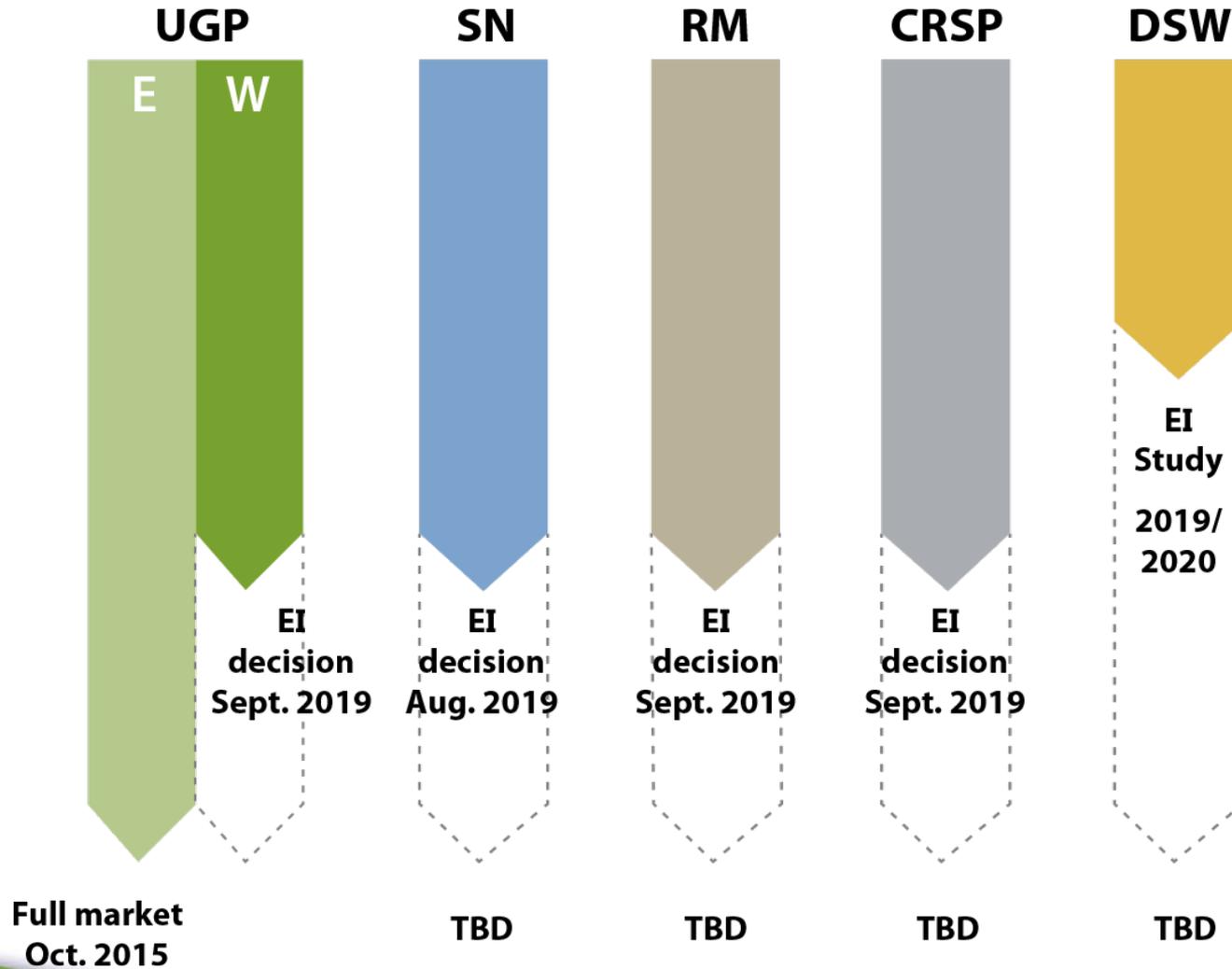


Boundaries are approximate and for illustrative purposes only.

EIM objectives

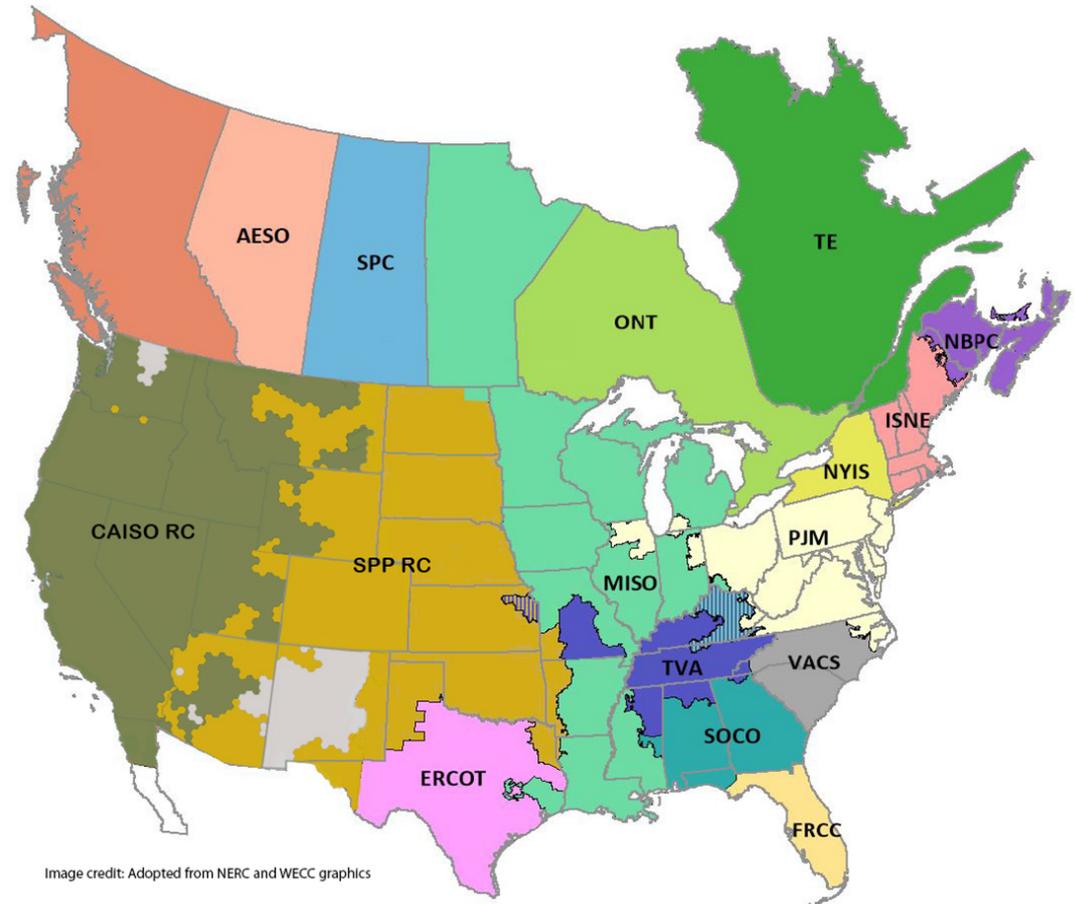
- Ensure reliable delivery of our hydropower while adjusting to a changing energy mix
- Respond to customer feedback requesting WAPA lead organized market discussions
- Address WAPA BA limitations
- Facilitate integration of renewable resources
- Enable participants who want to optimize their resources

Market status timeline

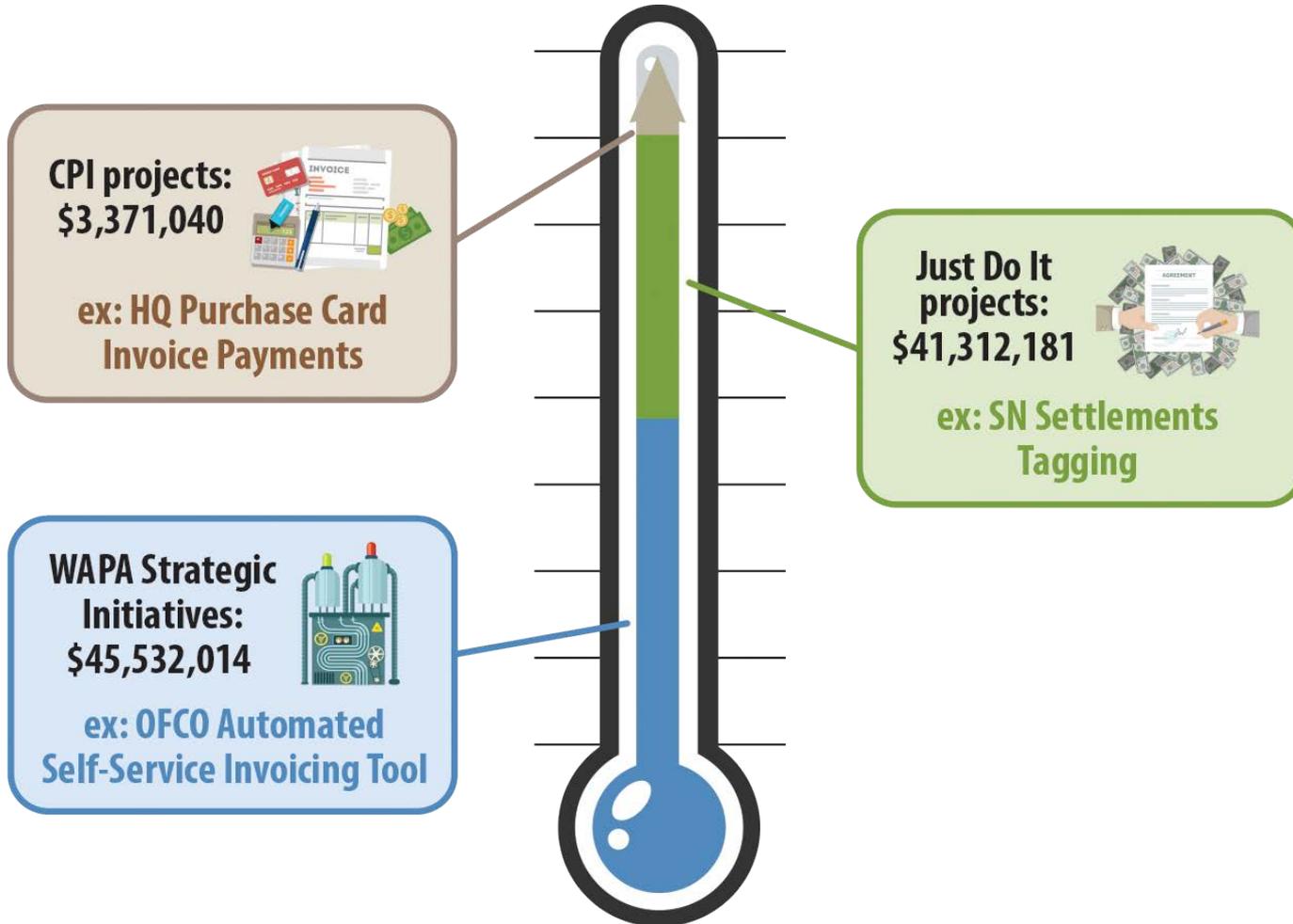


RC transition

- UGP-East – SPP
10/2015
- SN – CAISO
7/2019
- DSW/RM/CRSP/
UGP-West – SPP
12/2019



Continuous Process Improvement



WAPA cost savings and avoidance: \$90,215,234 as of June 30, 2019

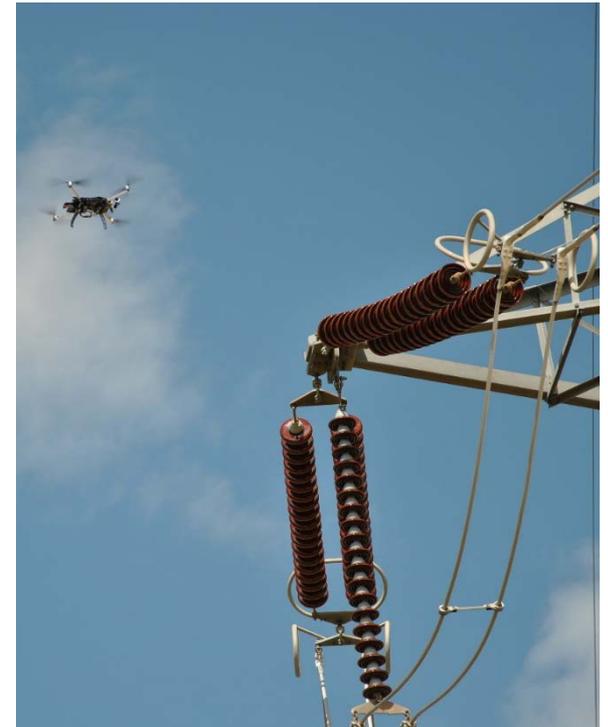
Helicopter benefits

- Replace 90 miles of dampers on Bears Ears-Bonanza 345-kV
- Options
 - Climbing: >\$1 million
 - Bucket trucks: >\$1 million
 - HEC: \$369,610
- Cost savings: ~\$640,000



Unmanned Aerial Vehicles

- Inspect 25 structures for Ault-Craig spacer replacement
- Options
 - Climbing (3 hours/structure):
\$11,250
 - UAS (30 mins/structure):
\$2,187.50
- Cost savings: >\$9,000



Common SCADA vendor

- Does not equal one SCADA across WAPA
- Equals one SCADA vendor
- Expected benefits
 - Improve operational flexibility
 - Increase reliability
 - Avoid future support and administrative costs due to cross training and supporting multiple contracts

Physical Security update

- Implementing new remediation validation process
- Tiered security protection levels focus resources on more critical sites
 - 1,000+ tasks reduced to ~450
- ~94 site assessments done in FY 2019
- 84%+ of planned security remediations done in FY 2019
- Conducting assessments in house in FY 2020 will save over \$378,000



Cyber threat environment

- Increasing regulations
- Internet of Things
- Scope and breadth of organization
- Asset management nexus
- Continuous communications



OT/IT convergence

- Lifecycle discrepancy
- “Smart” technology
- Situational awareness
- Data management



DC update

- Fiber discussions
 - Improved capabilities for utility operations
 - Protect customers' investments
 - Support customer needs for expanded services
- Integrated Resource Plans
- Purchase Power and Wheeling report

PPW report

- Submitted to Congress Sept. 10
- Details authority to use receipts as offsetting collections for PPW
- Proposes common definitions
- Describes risk mitigation strategies
- Demonstrates how PMAs are executing current authority to carry over unobligated balances for PPW
- [Available at The Source](#)

Key takeaways

- Make the best decisions based on regional needs.
- Prepare for and adapt to industry change.
- Leverage partnerships to achieve mission.



Contact/follow me

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Gavins Point