



Western
Area Power
Administration

WAPA 101

Delivered to Big Horn Users Group Meeting

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What is WAPA?

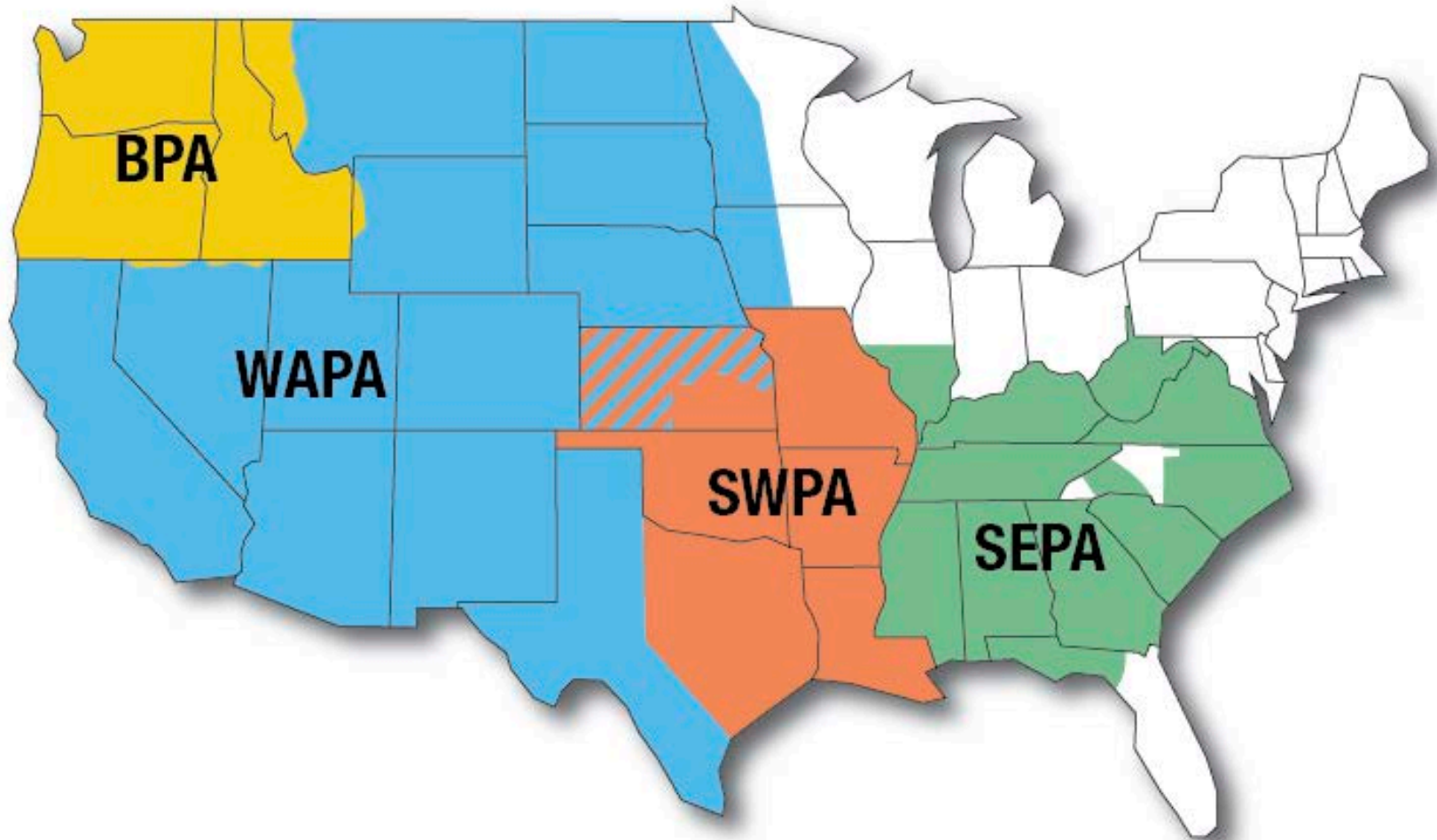


Part of DOE



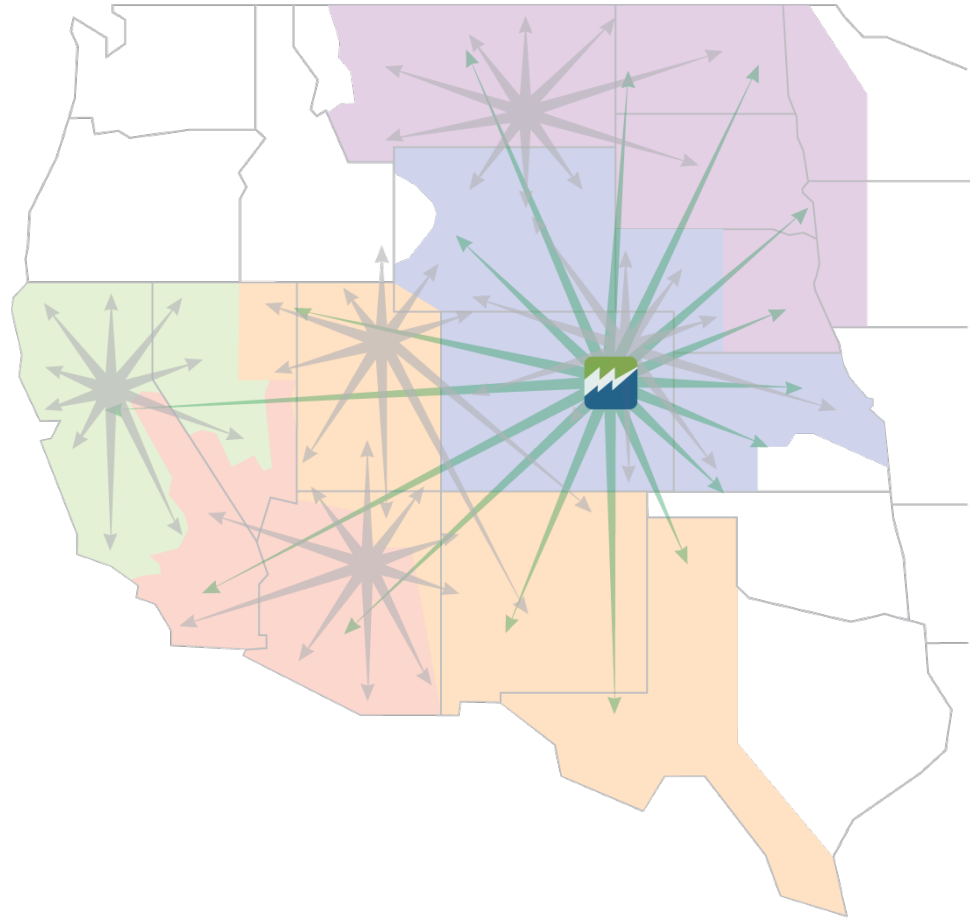
- One of four Power Marketing Administration's under DOE
- Wholesale electricity supplier
- Nearly 700 customers
- Customers, in turn, serve 40 million Americans in the West

Power Marketing Administration

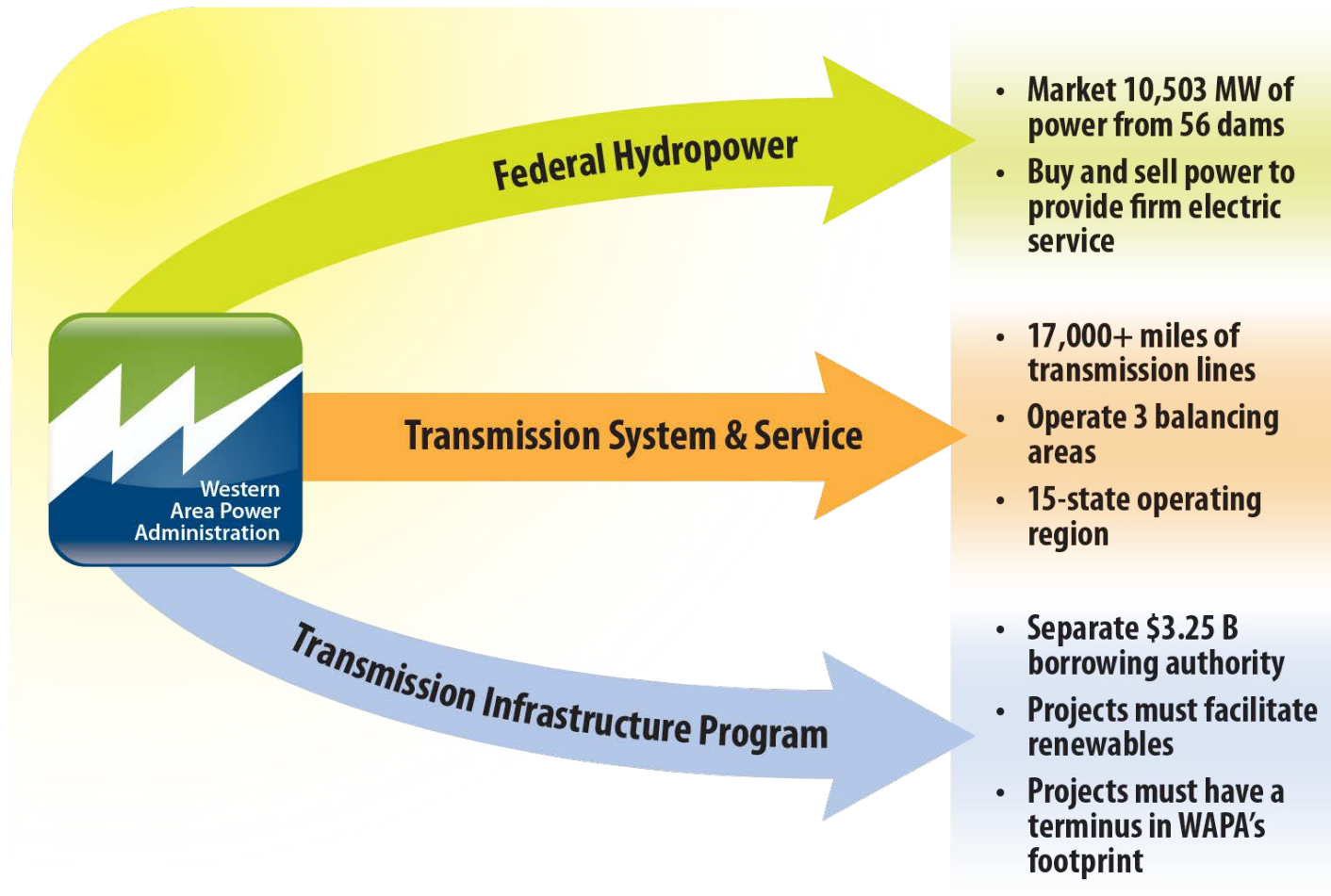


In the West

- Balancing and distributed across large foot print
- 4 regions
- 1 Management Center
- 15-state footprint
- Top 10 largest transmission utility in the country



Three lines of business



Strategic Roadmap 2024





WAPA's history

- Reclamation Act of 1902
- Flood Control Act of 1944
- Economy Act
- DOE Act





Customer focused

- Nearly 700 customers
 - Cities and towns
 - Rural electric cooperatives
 - Irrigation districts
 - Public power districts
 - Federal and state agencies
 - Native American tribes
- Preference entities under the 1939 Reclamation Reform Act

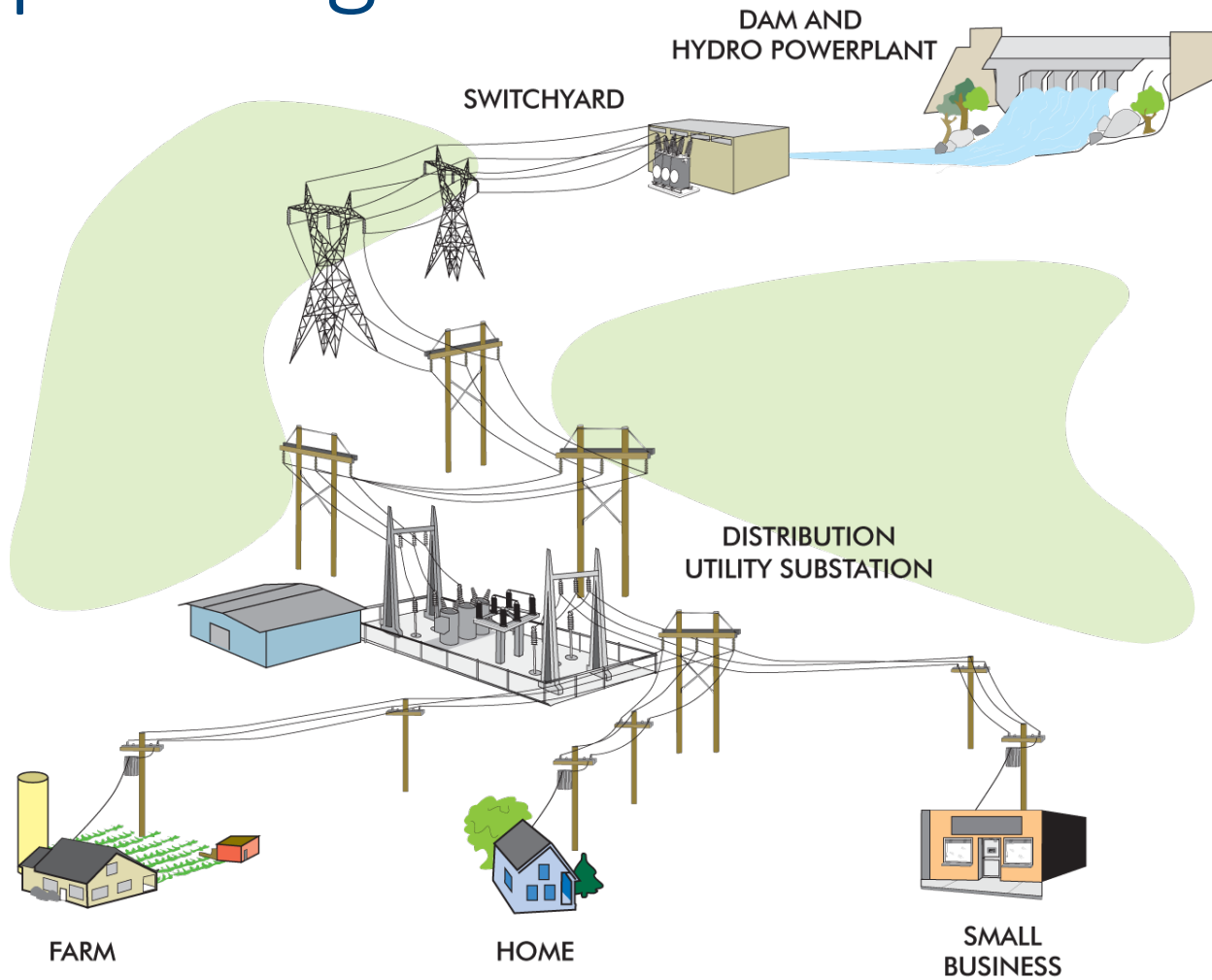


Our power comes from



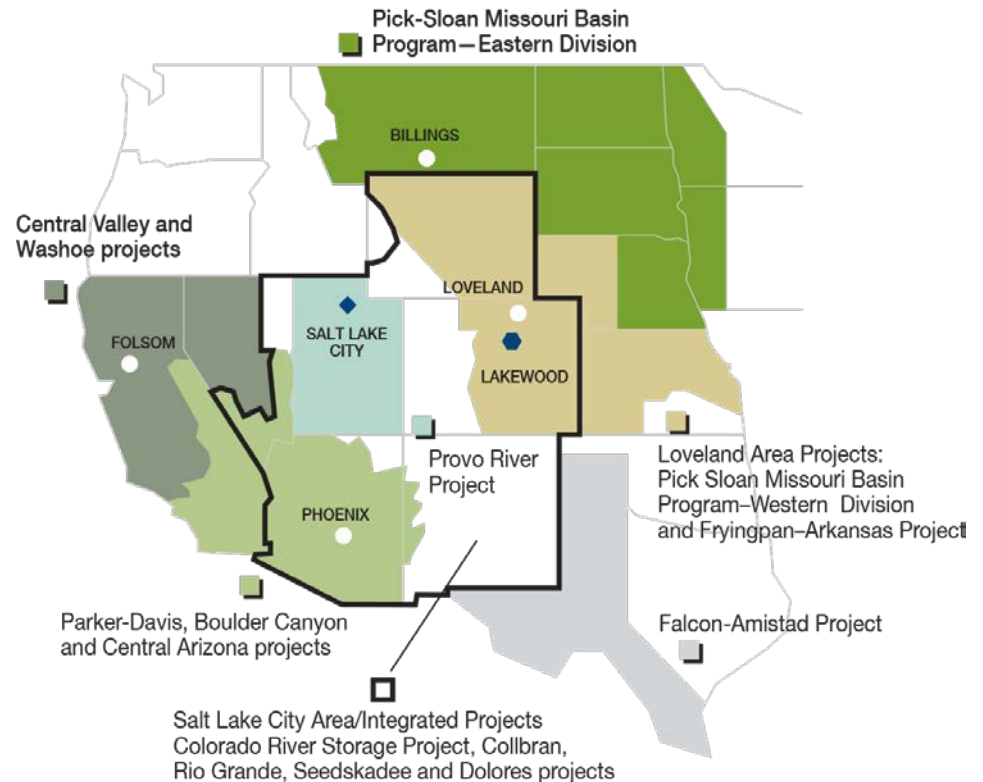
- Hydroelectric energy produced at federal generating agencies
- Multipurpose projects
- Variable water availability

The power grid



WAPA's hydropower projects

- Power marketed on a project-specific basis
- Marketing plans developed through public processes
- Normally consist of:
 - Marketing criteria
 - How power is sold
 - Allocation criteria
 - Who receives power
 - No total load requirement



Our role in providing energy



- Market clean hydropower
- Transmit it to customers
- Control parts of the energy grid
- Manage interties
- Provide open access to transmission





WAPA's Mission

Market and **deliver** clean,
renewable, **reliable**, cost-based
federal hydroelectric **power**
and related services





North American Electric Reliability Corporation regulates and oversees the operations of the Power Grid in North America.

NERC



NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION



Energy (generation) on the Bulk Electric System can not be stored and must generated at the same time that it is used.



To ensure the reliable operation of the power grid, the generation and load must be balanced at all times.





The energy used to maintain this balance falls into 2 main buckets.

- Regulation (regulating reserves) – Energy used to balance the minute to minute difference between generation and load.
- Contingency (Contingency reserves) – The generation available to immediately replace generation lost due to equipment failure.





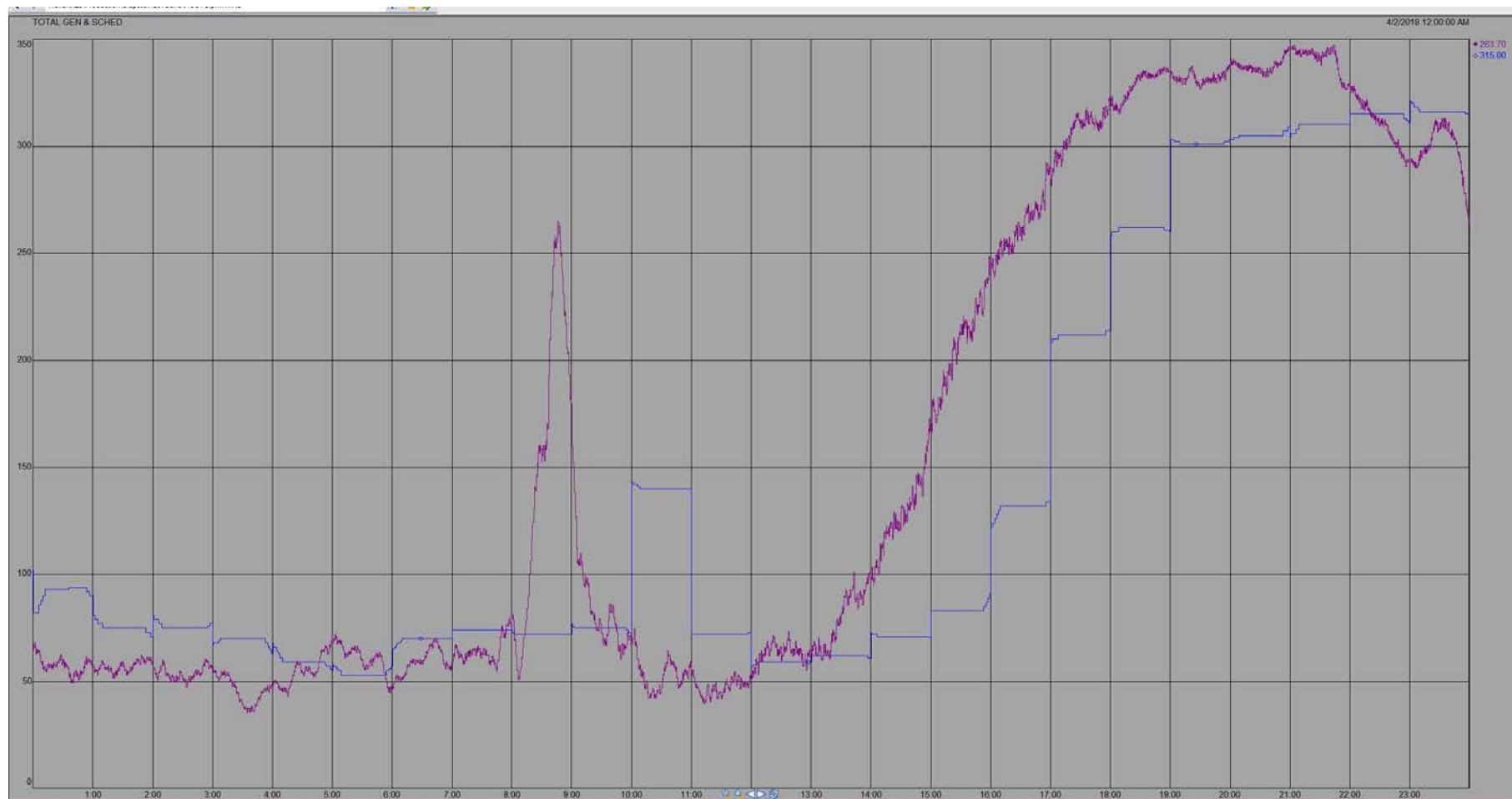
- The WACM Balancing Area (BA) is required to maintain 95MW of regulating reserves and 70MW of contingency reserves.
- Currently LAP is contractually required to supply 55MW of regulating reserves and 40MW of contingency reserves.
- These reserves are usually carried at Yellowtail dam and Mt. Elbert pumping plant.





- The normal Balancing Area (BA) load ranges from 2,000 MW to 4,000 MW.
- Of that, renewable (wind) energy can be as much as 350 MW (10% of load).
- Wind energy is hard to reliably forecast.
- Wind energy can change rapidly with little to no warning.
- Current State and Federal policies promote and encourage the growth of renewable resources. These are primarily wind in the Rocky Mountain Region.







Recent and continuing challenges at Yellowtail

- Major unit maintenance and upgrades started in March 2016 and will continue for several more years. We will only have 3 out of the 4 units to operate.
- Last year was record run off into the reservoir that has not been seen in modern history.
- Increased requirements for facility operations.

Power production

Environmental consideration

Recreational uses





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Questions and comments.

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