



Western  
Area Power  
Administration

# American Public Power Association National Conference Hydropower Future: Threats and Opportunities

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# WAPA at a Glance

- 10,000 MW from 56 Dams
- 17,000 Miles of Transmission in 15 States
- 3 Balancing Authorities
- Wholesale Supplier to Preference Customers



# Importance of Hydropower

- Clean, carbon free resource
- Single largest source of renewable emissions-free electricity in the U.S.
- Supports grid reliability
  - Regulation and frequency control
  - Ability to respond quickly to electrical emergencies
  - Blackstart and restoration resource
- Community benefits including lower electricity costs
- Revenue provides funding for environmental and salinity control programs



# Historic Operations

- Typically able to match generation to load patterns within plant capabilities
- Excellent control area regulation and frequency control
- Simple process to respond to system emergencies



# Environmental Actions Timeline



- Glen Canyon Dam
  - Interim Flows (1991)
  - Record Of Decision (1996)
  - Record Of Decision (2016)
- Flaming Gorge
  - Biological Opinion (1992)
  - Record Of Decision (2006)
- Aspinall
  - Record Of Decision (2012)



# Impact of 1996 Glen Canyon ROD

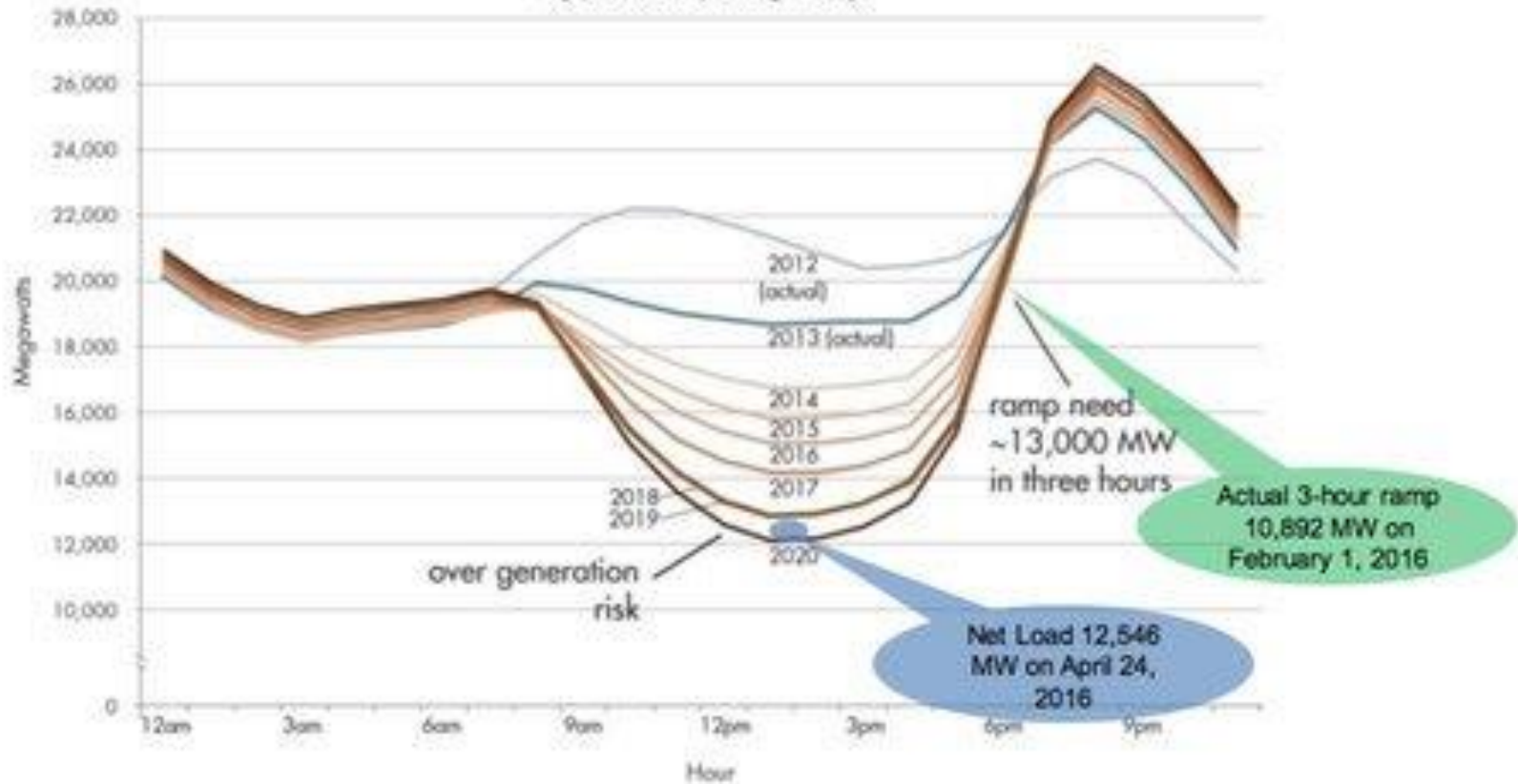
- “Flattened” the daily operation
- Reduced load-following capability
- Reduced marketable capacity by 30%
- Decreased the ability to “ramp” the power unit in response to changes in electrical demand.
- Reduced power value approx \$50 million/year
- Summer 2000 LSF experiment costs of \$26.4M
- Seven HFEs since 1996 ranging from \$1.8 to \$3.8 M per experiment



# The Duck Curve

CA story: Mid-day dip, followed by evening peak

Typical Spring Day



# Thank you!

