Western Resource Adequacy Program

June 9, 2025

Western Resource Adequacy Program (WRAP)

- Overview
- Value Proposition
- WRAP Basics
  - Binding Seasons
  - Forward Showing
  - Operations Program
  - Settlements
- WRAP Timeline

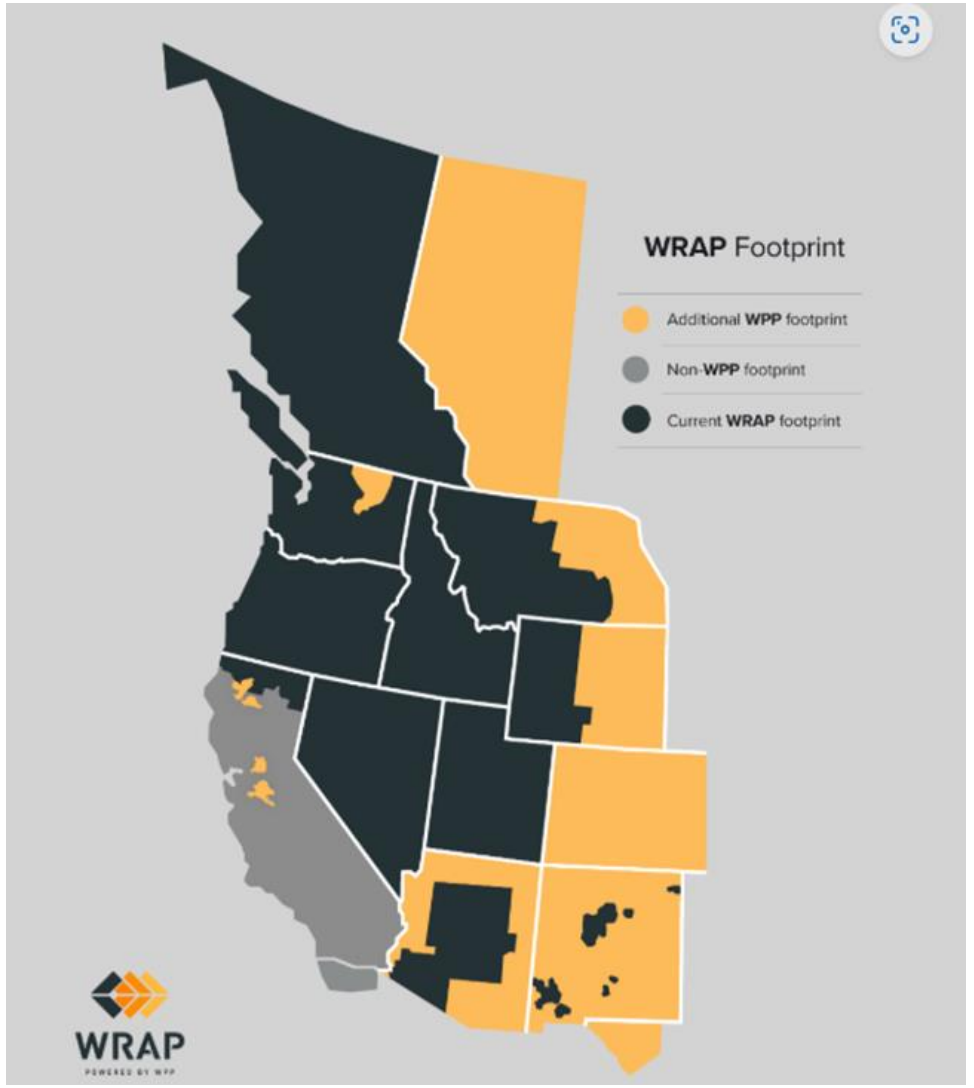
Resource Adequacy

- Resource Adequacy (RA) is the ability to serve load across a broad range of conditions, subject to a long-run reliability standard
  - An RA program is a regulatory planning framework that aims to ensure there are enough resources available to serve peak electric demand under most conditions, e.g. 1-day-in-10 years, and that those resources can deliver energy where it is needed

- A key requirement of an RA program is a Planning Reserve Margin (“PRM”) expressed as a percentage above peak load that is required to be held on a forward-looking basis
  - A PRM is an output determined by the adequacy standard
  - An RA program also defines a set of rules that apply to the entities that are covered by the program
  - For example, peak load forecasting methodology, how to count contribution of VERs, penalties for non-compliance, etc.

Western Resource Adequacy Program (WRAP)

- Value proposition:
  - We can improve reliability and reduce costs by planning cooperatively rather than individually for resource adequacy
  - Diversity of load and generation means a lower planning reserve margin, and thus lower capacity costs
  - Participants agree to aid each other in times of higher than expected load, higher than expected outages, or lower than expected generation



Western Resource Adequacy Program (WRAP)

- Other benefits:
  - Common methodology for accrediting resources
  - Common load forecasting approach
  - Common planning reserve margin
  - No double counting of resources
  - Commitment to aid others in the program during most difficult periods

WRAP Basics

- Binding Seasons
  - Summer: June 1 through September 15
  - Winter: November 1 through March 15

- Forward Showing
  - Make a showing 7 months in advance of the start of the season

  - Example: Assuming an entity's peak load forecast is 1,200 for the Summer Season and the PRM is 15%, on October 31 of the prior year, it would need to show control of resources totaling 1,380 MW of accredited capacity

WRAP Basics

- Operations Program
  - Multi-day Assessment
    - Participants provide 7-day forecast by hour of load, wind, solar, run-of-river hydro, and outages
    - Program Operator provides indicative Sharing Calculation
  - Preschedule Day
    - Program Operator determines any Holdback Requirement based on the Sharing Calculation
    - Participants that have surplus will be allocated a share of that surplus to provide to Participants that have deficits
  - Operating Day
    - Deficit Participants confirm need for Energy Deployment
    - Surplus Participants deliver energy in required hours

WRAP Basics

- Settlements
  - Surplus Participants are paid for their Holdback and Energy Deployments by the Deficit Participants
  - Pricing is calculated by Program Operator based on the Tariff
  - Transactions are settled bilaterally by the parties

WRAP Timeline

- All participants are currently in the non-binding phase
  - Tariff requirements are in effect
    - Participants are making Forward Showings, submitting data, etc. per the tariff and business practices
    - No penalties for deficiencies or failure to deliver during this phase
- First Binding Season will be Summer 2027
  - Forward Showing due October 31, 2026