



Spring 2020 Joint CREPC-WIRAB Webinar Series

Resource Adequacy Program for Electric Utilities in the West

April 17, 2020

NWPP RESOURCE ADEQUACY PROGRAM *OVERVIEW AND CURRENT STATUS*

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CREPC/WIRAB SPRING WEBINAR



KEY TAKE-AWAYS

- › Soon areas in the west may face a **capacity deficit** of thousands of megawatts. Deficits of that magnitude may result in both extraordinary price volatility and unacceptable loss-of-load
- › **Utilities in the west are moving forward** to design a Resource Adequacy (RA) program.
- › An RA program traditionally includes a forward showing program and an operational program which work together **to ensure reliability and unlock savings through diversity**
- › The West has unique cultural and operational factors, requiring **unique regulatory solutions**

WHY DOES THE REGION NEED AN RA SOLUTION?

- › The NWPP report: *Exploring a Resource Adequacy Program for the Pacific Northwest, 2019* identified planning deficiencies in NWPP's footprint.
 - › *Planning is state- and utility-specific*
 - › *Planning entities use different standards and methods*
 - › *As a result, the region lacks insight into its overall resource situation*
- › As a result of the 2019 Report, NWPP and its member utilities are moving forward to design an RA program for NWPP member utilities.
- › The high level goals are improving reliability and lowering costs.

OVERVIEW OF PROJECT TIMELINE



**Phase 1:
Information
Gathering
(concluded Oct.
2019)**

**Phase 2A:
Preliminary
Design Phase
(Early 2020)**

**Phase 2B:
Detailed Design
(Late 2020)**

**Phase 3:
Begin Work to
Implement
Program (2021)**

STATUS REPORT

- Four two-day Steering Committee work sessions; CAISO/SPP attended February work session
- Draft proposal on forward showing program; working through other design elements
- Started RA modeling for the region with the help of E3
- Evaluating regulatory pathways with legal assistance
- Conducted two advisory committee meetings and one public webinar; second public webinar on April 24
- Considering staging/sequencing of program functionality and scope and interim solutions

ORGANIZING AN RA PROGRAM

MARK HOLMAN, POWEREX



ORGANIZING AN RA PROGRAM

TWO TIME HORIZONS

Forward Showing

- › Regional metrics (LOLE standard: 1 event in 10 years)
- › Entities prove they meet regional metrics months in advance of a season
- › Ensures reliability benefits

Operational

- › Access to pooled regional resources
- › Enables lowering/right-sizing of forward showing capacity requirement to account for regional diversity
- › Unlocks investment savings through diversity
- › Function usually provided by an ISO/RTO

COMMON CHARACTERISTICS *OF A FORWARD SHOWING PROGRAM*

Obligation/cost is allocated to responsible entities

- › Forward procurement “showing” of defined level of capacity (quantity set to expected peak load forecast + defined planning reserve margin)
- › Load forecast determined/validated by independent Program Administrator
- › Defined consequences for entities that fail to “show” required capacity

COMMON CHARACTERISTICS OF A *FORWARD SHOWING PROGRAM*

Generators may provide / sell a pre-defined quantity of resource adequacy capacity:

- › Transactions through existing bilateral market framework
- › Receive compensation in exchange for energy must-offer obligation to “footprint”
- › Quantity of eligible RA capacity for each resource determined/validated by Program Administrator
- › Defined consequences for resources that fail to “deliver” energy in operational timeframe

COMMON CHARACTERISTICS *OF A FORWARD SHOWING PROGRAM*

Reliability of service is generally ensured through:

- › Establishing robust capacity procurement quantity and lead time
- › Quantifying capacity of resources
- › Rules that establish qualification of imports (credit), identification of firm export commitments (debit)
- › Curtailment / limitation on short-term discretionary exports, if/when needed

LOADS AND RESOURCES

DEMAND SIDE DEMAND SIDE

Calculate: "PURE" CAPACITY
NEEDED BASED ON CAPACITY
NEEDED BASED ON:

- P50 LOAD FORECAST +
- P50 LOAD FORECAST +
- Contingency Reserves +
- Contingency Reserves +
- PRM needed to meet The RA
- PRM needed to meet The RA
metric (1 in 10 LOLE)



"PURE" CAPACITY NEEDED
"PURE" CAPACITY NEEDED

SUPPLY SIDE SUPPLY SIDE

Calculate: "PURE" CAPACITY AVAILABLE BASED ON:
Calculate: "PURE" CAPACITY AVAILABLE
BASED ON:

- > Total Supply, de-rated and qualified as follows:
 - Wind - ELCC
 - Solar - ELCC
 - Thermals - UCAP
 - Wind - ELCC
 - Run of River Hydro - ELCC
 - Solar - ELCC
 - Storage Hydro - UCAP + NWPP developed hydro methodology
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 - Run of River Hydro - ELCC
 - Storage Hydro - UCAP + NWPP developed hydro methodology



"PURE" SUPPLY AVAILABLE
"PURE" SUPPLY AVAILABLE

STRUCTURAL AND GOVERNANCE CONSIDERATIONS

SUSAN ACKERMAN, EWEB



PROCESS

RESEARCHING AND SURVEYING

- The NWPP RA effort includes a work group that has been researching and surveying several topics related to program structure and governance
- Still in early stages; today's presentation includes preliminary information about regulatory landscape

CONSIDERATIONS

AROUND POTENTIAL FERC AND STATE JURISDICTION

- Jurisdiction will depend on **scope**, **functions**, and **timing** of functions of program
- Federal Power Act, “FPA”: *“an agreement affecting the rates, terms, and conditions of sales of electric energy for resale in interstate commerce and/or transmission of electric energy in interstate commerce”*

ROLE OF STATES

IN A REGIONAL RA PROGRAM

- States have exclusive jurisdiction over the facilities used for the generation of electric energy
- States traditionally have comprehensively regulated electric generation resource planning and adequacy
- The interplay between FERC regulation and the states' longstanding regulation of RA is thus an example of the “cooperative federalism” where both play a role

IMPORTANT CONSIDERATIONS

- The NWPP RA program is unique: currently all RA programs operate under RTOs/ISOs and must meet FERC's independence requirements
- What are the requirements for the Program Administrator (PA)? Will the PA be subject to FERC requirements?
- Where should the RA program point of compliance be? At the load-serving entity level?
- Timing of potential FERC jurisdiction: may depend on how program components are staged/rolled-out
- How to protect the jurisdictional status of non-jurisdictional entities?

PRELIMINARY CONCLUSIONS

- » A program without binding commitments or financial penalties may not be FERC-jurisdictional; but this would likely result in program with information sharing only
- » FERC likely will have jurisdiction over certain components of a binding program
- » Under a FERC jurisdictional program, the program administrator and governance structure will likely need to meet FERC's independence criteria



FORWARD SHOWING PROGRAM PROPOSAL

SCOTT KINNEY, AVISTA



PROCESS:

RESEARCHING AND SURVEYING

- › Steering Committee identified common program elements by canvassing other RA programs, like SPP and CAISO
- › Preliminary proposal developed for:
 - › *Seasons / Timeline*
 - › *Program Administrator*
 - › *Capacity Contributions*

*initial proposal, nothing has been decided.

TWO BINDING SEASONS

Winter (BINDING): Nov-March

Summer (BINDING): June-Sept

Spring (advisory): April -May

Fall (advisory): October

- Administrator will provide 3-5 years of advisory data/metrics for planning purposes
- **Compliance showing** deadline 7 months in advance of binding seasons
- **Cure period** for 2 months following compliance showing date



THERMAL CAPACITY CONTRIBUTION

Use UCAP Methodology

- › Improves upon ICAP methodology (discounting for ambient temperature) by accounting for resource-specific outage metrics
- › Enables more realistic reflection of unit reliability (vs socializing outage averages across the region)
- › SPP and CAISO are both considering shifting from ICAP to UCAP

HYDRO CAPACITY CONTRIBUTION

*Methodology is in development –no other region has tackled this issue. Intent is that hydro capacity calculations should be as consistent as possible with the way we calculate capacity contributions for VERS.

- › Run of river –ELCC
- › Storage
 - › *Using a time-period approach (historical look-back over 10 years)*
 - › *Assess generation output during historical high load periods*
 - › *Account for available storage during historical high load periods (assess what generation could have been available)*

VER CAPACITY CONTRIBUTIONS

- › Use ELCC calculations

Considering sub-regional basis to account for varying fuel characteristics

ELCC calculations have modeling/technical considerations; being considered/informed by current modeling efforts

- › CAISO and SPP approaches to VER capacity contributions are evolving

QUESTIONS?

www.nwpp.org/adequacy