NWPP Resource Adequacy Program

Overview and Current Status

Frank Afranji (President NWPP)

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CREPC/WIRAB Spring Webinar

NORTHWEST PowerPool

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 includes two primary conclusions:

  1. The region may begin to experience shortages as soon as next year

  2. By the mid-2020s, the region 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

- As a result of this analysis, the NWPP and its member utilities are moving forward to design an RA program for NWPP member utilities

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

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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

Calculate: "PURE" CAPACITY NEEDED BASED ON:

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

"PURE" CAPACITY NEEDED

SUPPLY SIDE

Calculate: "PURE" CAPACITY AVAILABLE BASED ON:

› **Total Supply, de-rated and qualified as follows:**

Wind – ELCC

Solar – ELCC

Thermals – UCAP

Run of River Hydro – ELCC

Storage Hydro – UCAP + NWPP developed hydro methodology

"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

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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