

NORTHWEST POWER POOL

RESOURCE ADEQUACY

UPDATE

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AGENDA

WHO? BACKGROUND

WHY? A REMINDER OF WHY WE STARTED THIS

WHAT? RA PROGRAM CONCEPT AND BENEFITS

FORWARD SHOWING PROGRAM

OPERATIONAL PROGRAM

GOVERNANCE

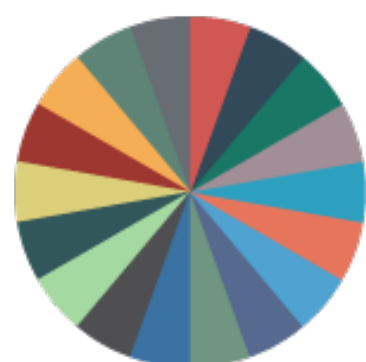
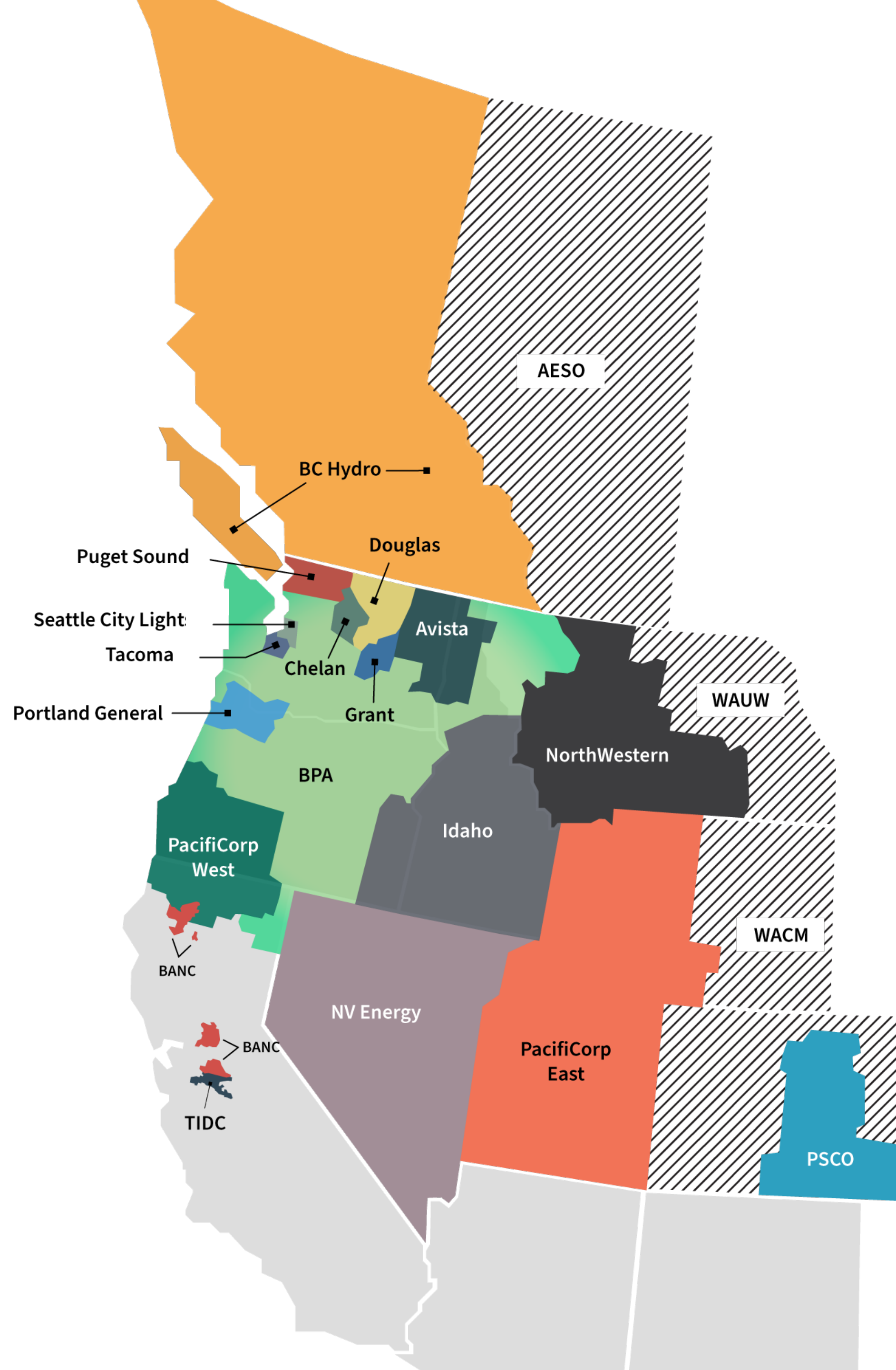
WHEN? TIMELINE

NEXT STEPS

WHO?

NWPP RESOURCE ADEQUACY PROGRAM DEVELOPMENT PROJECT

- The Northwest Power Pool (NWPP) was established in 1941 and since that time has been coordinating resources to maximize efficient electricity production.
- NWPP is acting as the vehicle for coordination across the region, project began in early 2019
- Goals
 - › *Reliability*
 - › *Improve effectiveness and efficiency*
 - › *Improve visibility and coordination*
 - › *Fair and Unbiased*
- 20 of the NWPP's members have funded the RA Program Development Project ("RAPDP")
 - › *Currently considering how to include others (non-NWPP) in the RA program and protect our non-profit status*



NWPP RA PARTICIPANTS TO DATE



ADDITIONAL NWPP AREA



NON NWPP AREA



BACKGROUND

RESOURCE ADEQUACY?

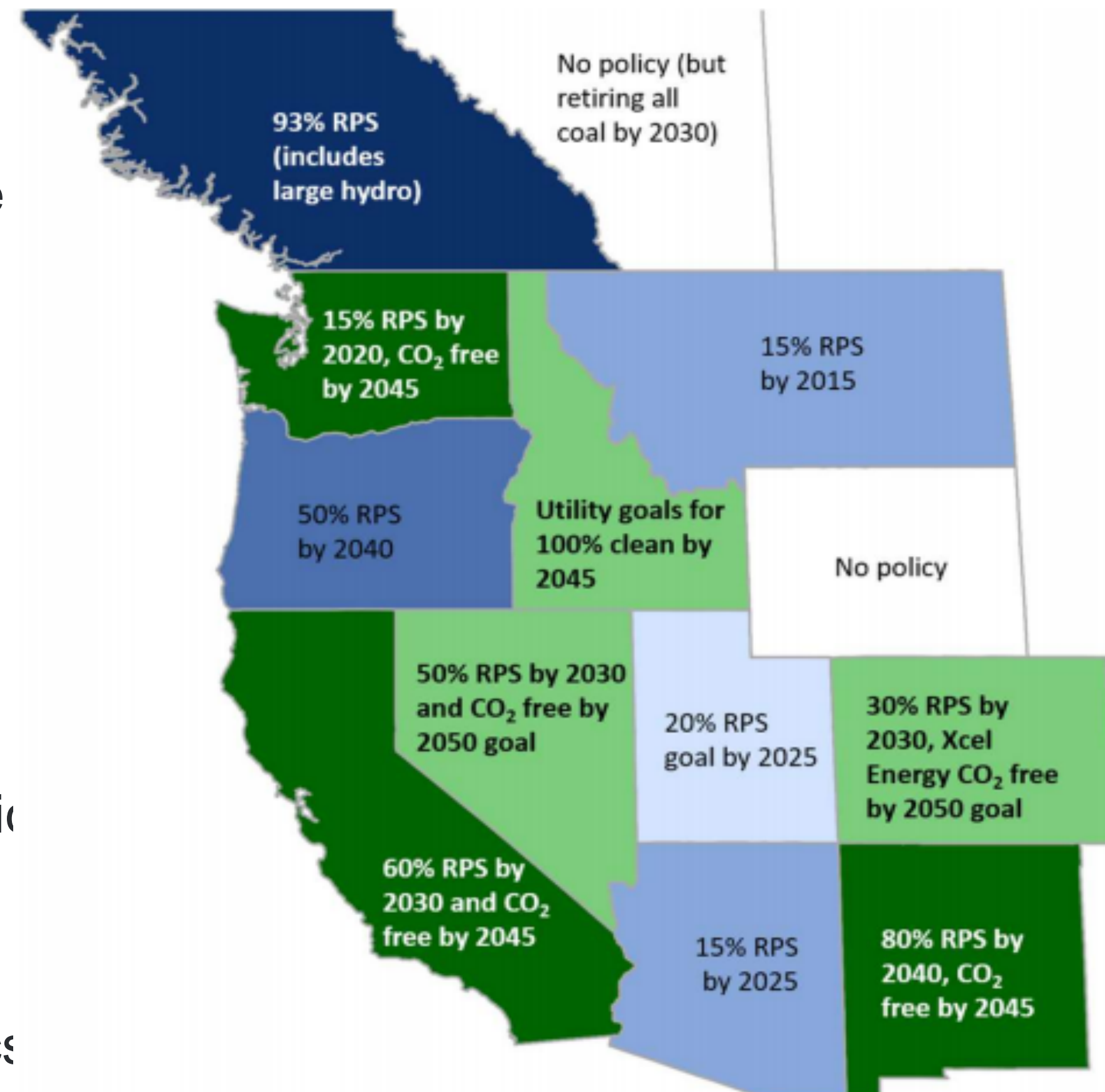
Resource Adequacy (RA) is:

- Having enough resources (generation, efficiency measures, and demand-side resources) to serve load
- Considered across a wide range of conditions with a sufficient degree of reliability

WHY?

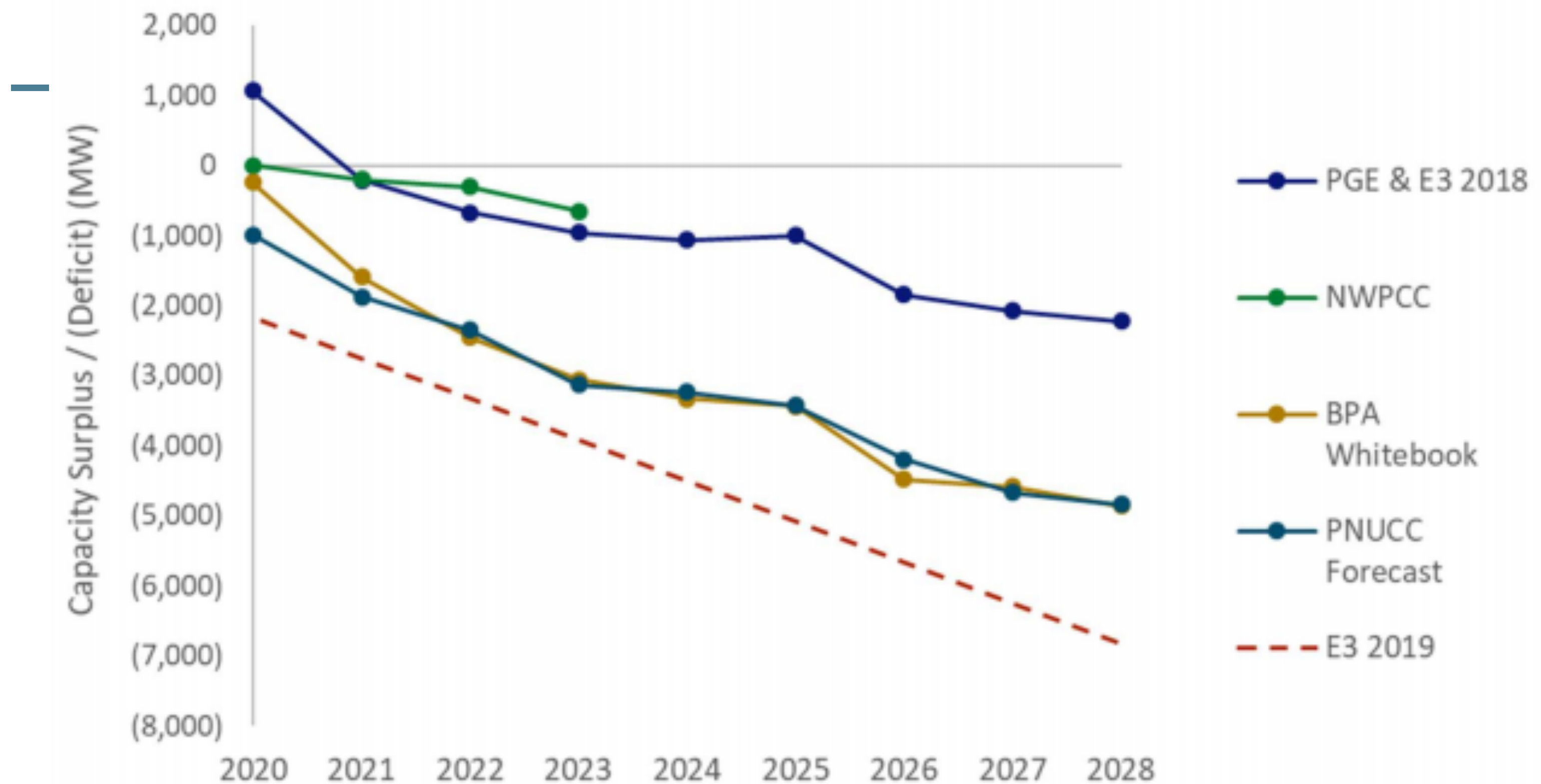
ENABLING A RELIABLE GRID TRANSITION

- Many states are mandating a shift to renewable resources - a change from the historical generating resources
- Regional capacity metrics will enable entities to appropriately support a transition to variable energy resources (VERs) by assessing their contribution to regional reliability
- The program will not mandate any specific resource type, leaving states and participating entities to determine what resources to use to meet reliability metrics



WHY?

GROWING NEEDS OF THE NORTHWEST



WHY?

NO COMMON RELIABILITY STANDARD TODAY

- Today, each utility calculates its own needs using different methods
 - › *Different methods to quantify capacity contributions*
 - › *Different load forecasting methods*
- Each utility builds, or enters into firm contracts with, physical resources to meet its own needs
- Each utility makes its own assumptions about how much it can rely on from market purchases
- ***No common planning standard in the region, voluntary or otherwise***

WHY?

BENEFITS OF A REGIONAL RA PROGRAM

RELIABILITY

- Ensure sufficient resources are installed and committed to reliably serve demand, during stressed grid and market conditions (capacity critical hours), with a high degree of confidence

COST SAVINGS

- Entities can meet a reliability target (usually some % of reserves on peak load, to be carried as a safety buffer) on their own, carrying reserves and the associated costs and risk OR entities can pool the risk and the associated reserves and benefit from the “diversity benefit” of the region, resulting in overall cost reductions

IMPROVED VISIBILITY & COORDINATION

- Enable members to make fully informed RA planning decisions, using best practice approaches

WHAT?

CHALLENGES UNIQUE TO THE NWPP FOOTPRINT

- Voluntary program
- Other RA programs have a market (with must-offer requirements) to facilitate the operational time horizon
- No specific FERC precedent on governance structure for an RA program outside an ISO/RTO
- Must meet needs of jurisdictional and non-jurisdictional participants

WHAT?

CHALLENGES

UNIQUE TO THE NWPP FOOTPRINT

- Must ensure alignment between other regional efforts: EIM/future EDAM
- Consideration must be given to the deliverability of RA resources via the definition of transmission constraints with the NWPP footprint
- Large amounts of hydropower

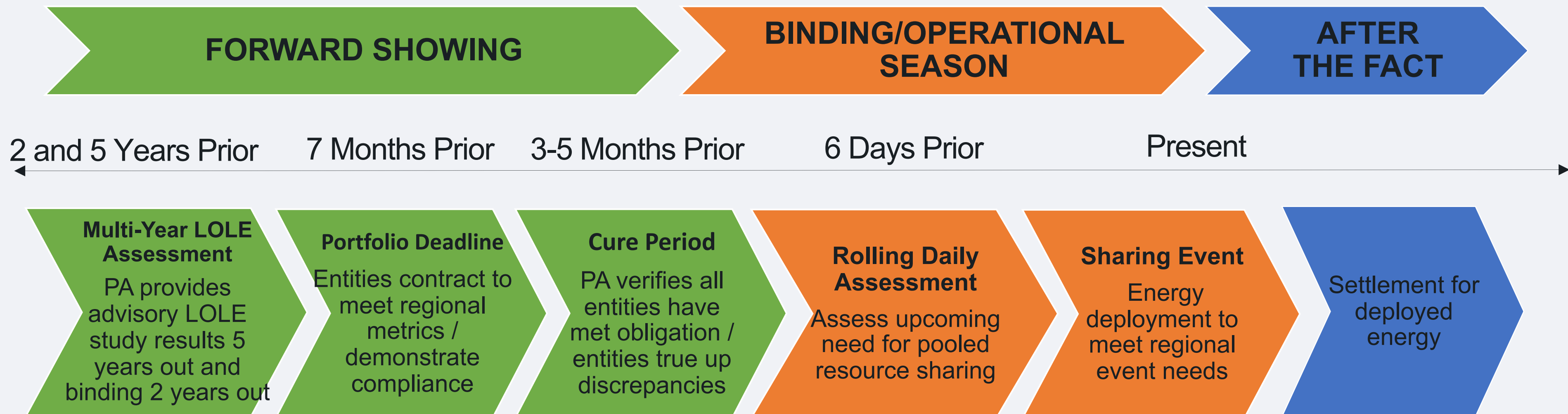
WHAT?

WHAT MAKES THIS PROGRAM UNIQUE?

- Participants will *plan to a common RA standard*
 - › *Voluntary entry, followed by mandatory obligation to comply*
- Program will develop common capacity counting methods for generating resources
- Will allow pooling of resources to meet reliability needs of member participants and unlock diversity benefits/ investment savings
- Centralized entity will administer and execute the RA program on behalf of members

WHAT?

PROGRAM FRAMEWORK *Two TIME HORIZONS*



Note: PA refers to Program Administrator

WHAT?

NWPP STORAGE HYDRO QCC

- Based on each resource's actual generation output, residual generating capability, water in storage, reservoir levels (if applicable) and flow constraints
- Critical hours occurring on the same calendar day will be evaluated together, taking into consideration the useable water (energy) in storage and inflows/outflows during that calendar day
- Impact of forced outage rates as well as the appropriate treatment of planned outages

WHAT?

TRANSMISSION AND DELIVERABILITY

- Similar to the NWPP Contingency Reserve Sharing Program, consideration must be given to the deliverability of RA resources via the definition of transmission constraints with the NWPP footprint
- Plan to develop a zonal approach of sufficient granularity to capture all major constraints that might impact the delivery of RA capacity
- Deliverability will rely on existing OATT framework

WHAT?

GOVERNANCE FRAMEWORK

- Independent board of directors
- Member committee with certain substantive control
 - › *Approve or reject amendments to the RA Program*
 - › *Approve or reject RA Program rules*
 - › ***Subject to stakeholder right of appeal to independent board***
- Once board and program is established, board has authority to hire and fire administration and support; approve budgets; provide direction and set priorities
 - › *Recommend amendments to the RA Program member services agreement*
- Some limitations on board authority are permissible

WHAT?

GOVERNANCE: POINT OF COMPLIANCE

- Point of compliance is which entity will have an obligation to the RA program - **recommend this is the LSE** (consistent with other RA programs)
- Ideally, all LSEs in the footprint would participate, but **program will be voluntary, absent any contractual or other regulatory requirements**
- We recognize that direction could change depending on externalities

WHAT?

GOVERNANCE: PROPOSED ROLE FOR STATES/PROVINCES

- Propose a Regulators' Committee with an incremental approach for State/Provincial authority and an evaluation process to re-examine role
- A Regulators' Committee be established for Stage 1 (non-binding forward showing) with advisory authority as an initial step
 - › *State/Provincial representatives would provide advice and guidance*
 - › *The Regulators' Committee would work together with the RA Program and the Member's Committee during Stage 1 to:*
 - Learn and understand Stage 1 inputs/outputs; build trust and understanding*
 - Evaluate the Regulators' Committee to determine authority structure for future Stages pursuant to a set timeline*

WHAT?

ROLE FOR OTHER STAKEHOLDERS

- Recognize it will be important to ensure there are avenues for other stakeholders to have input
- Seeking feedback from stakeholders on the role of other stakeholders in the governance framework

WHAT?

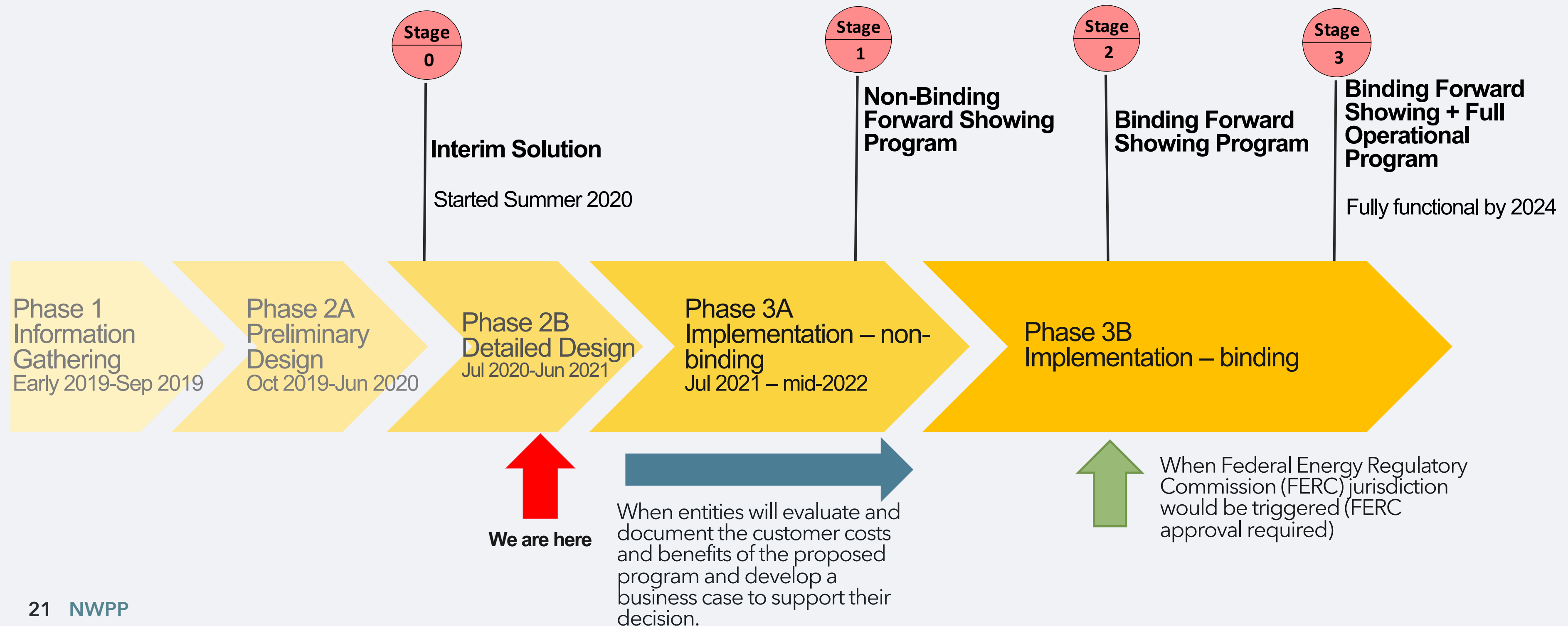
GOVERNANCE: NEXT STEPS

Steering Committee has begun (or plans to begin) discussion on the following topics

- Program exit provisions
- Role of the NWPP
- Role for other stakeholders in governance structure
- Consider stakeholder feedback from the Stakeholder Advisory Committee and public

WHEN?

OVERVIEW OF PROJECT TIMELINE



KEY TAKEAWAYS

Regional Benefits

- › Transparency related to capacity adequacy in the region
- › Increased reliability and visibility
- › Cost saving by tapping into footprint diversity

Up next

- › Completion of detailed design and governance structure
- › Continue state and stakeholder engagement
- › Implementation of first stage expected to commence mid-2021

DOWNLOAD
Conceptual Design
document

<https://www.nwpp.org/resources/resource-adequacy-program-conceptual-design>

APPENDIX

DETAILED DESIGN ELEMENTS



Snapshot of NWPP RA Program

Preliminary Conceptual Design: Forward Showing Program

Market Structure

Bi-lateral - entities will continue to be responsible for determining what resources and products to procure and from where

Participation

Voluntary to join - joining commits participants to meeting established requirements or incurring penalties (i.e., not “voluntary” to comply once committed) and to an operational program where they are obligated to deliver diversity benefit when called upon. Process will be established to join or leave the program.

Point of Compliance

Compliance obligation at the LSE level – details under consideration at the Steering Committee.

Administration

Program Administrator will likely have to be a FERC jurisdictional entity to the extent that it administers program elements that are subject to FERC jurisdictions, which means it will also have to meet federal “public utility” standards for neutrality - Phase 2B will also consider multiple layers of program administration that may not require FERC jurisdiction

Compliance Periods

Two binding seasons: Summer and Winter
Fall and Spring seasons would be advisory (no penalties for non-compliance, but metrics would be provided)

Contractual Supply Qualifications

Two general types of contracts:

- Energy + RA - include energy and specified QCC resource value (more detail in following slides); includes both unit specific and block-type contracts
- RA Transfer - one entity agrees to take on obligation for another

Snapshot of NWPP RA Program

Preliminary Conceptual Design: Forward Showing Program

Forward Showing Period

Forward showing will occur 7 months in advance of binding seasons, with a 2-month cure period

Planning Reserve Margin

Seasonal Planning Reserve Margins will be determined for summer and winter periods and expressed as a percentage of the 1-in-2-year seasonal peak load forecast

Resource Capacity Accreditation

Resource Capacity Accreditation will be based on methodologies appropriate to resource type, including:

1. **Variable Energy Resources:** Effective Load Carrying Capability (ELCC) analysis
2. **Run of River Hydro:** historical data and ELCC analysis
3. **Storage Hydro:** Common hydro model that considers appropriate set of water conditions allowing Program Administrator to verify data. Phase 2A included development of a conceptual storage hydro capacity methodology, which will be further considered as part of Phase 2B: Detailed Design
4. **Thermal:** Unforced Capacity (UCAP) method
5. **Other resource capacity crediting:**
 - a. Customer resources – capacity resource or load modifier
 - b. Short-term storage – ICAP testing
 - c. Hybrid resources – sum of parts

Penalty for FS Non-Compliance

Deficiency payment based on CONE for a new peaking gas plant (e.g., SPP's Cost of new entry (CONE) calculation) - further discussions on deficiency payments are anticipated in Phase 2B

Snapshot of NWPP RA Program

Preliminary Conceptual Design: Operational Program

Framework for Accessing Pooled Capacity

Accessing Entity:

- › Can only call on pool capacity when $\text{Load} + \text{Contingency Reserves} > \text{Forecasted peak load} + \text{Planning reserve margin (PRM)} - \text{forced outages} - \text{VER underperformance} + \text{VER over-performance}$
- › Participants can only access pooled capacity equal to the amount of load over their reliability metric

Providing Entity:

- › Administrator will ask those not experiencing loads over their RA obligations assist
- › Could request the difference between their RA obligations and forecasted load

Transmission and Deliverability

- › Will require modeling to identify any transmission considerations in the operational time frame
- › Plan to develop a zonal approach of sufficient granularity to capture all major constraints that might impact the delivery of RA capacity
- › Recommendations associated with transmission availability in the operational time horizon will be made in Phase 2B

RT Delivery Failures

- › SC discussing what delivery failure entails, how it is dealt with operationally, and how penalties are structured