Western Resource Adequacy Program

Load Forecast (Step 2) Task Force – Proposal

Prepared by Load Forecast Task Force:

Garrison Marr - Snohomish	Ruth Burris – PGE
Tyler Moore - APS	Ray Johnson, Ryan Fulleman – Tacoma
Jon Cook, Tom Cooper, Harry Sauthoff – SRP	Steve Bellcoff – BPA
Mark Holman, Mike Goodenough, Dan O'Hearn - PWX	Becky Keating - Chelan
Emeka Anyanwu, John Rudolph - SCL	Lorin Molander – PSE
Charles Hendrix, Alex Crawford – SPP	Rebecca Sexton, Ryan Roy - WPP

Background

Load forecasting is a critical aspect of setting the WRAP Forward Showing (FS) metrics appropriately. The load forecasting methodology (specifically load growth expectations) must be objectively and consistently applied to ensure program rigor, fairness, and reliability.

It is critical that all quantified elements of the WRAP are consistently and objectively determined. Most elements, such as the reliability objective (1-in-10 LOLE), the associated PRM, and the Qualifying Capacity Contributions, are objectively determined. The one outstanding exception was the load forecast, which per that Phase 2B Detailed Design, was proposed to be determined and submitted by each Participant, based on their own load forecasting methodology and drivers. The purpose of this methodology is to develop a fair and objective way of establishing the load term (P50) in the compliance metric and reliably identify load inputs for the LOLE and ELCC studies. Note that this is not a replacement for existing IRP or infrastructure planning processes. The WRAP FS utilizes a 2-year ahead forecast to support the modeling timeline for the binding season. This is a much shorter timeframe than is addressed in resource and infrastructure planning processes.

Allowing entities to submit a subjectively derived load forecast, creates two potential problems for the program: 1) A significant gaming opportunity given the incentive to submit a an artificially low forecast which could benefit a Participant in both the FS and operations program and 2) stakeholders provided numerous comments on the load forecasting proposal from Phase 2B. These comments included a strong interest in either centralized load forecasting or an objective methodology that considers stakeholder areas of concern such as climate change. If not resolved this gap could open the program up for criticism from Participants, program stakeholders, and potential interveners in the FERC filing process.

This task force focused on the process used to establish the P50 load that Participants will use in their compliance metric in the non-binding forward showings (Winter 2022-2023 and Summer 2023) during Phase 3A.

When the Program Review Committee (PRC) is established in Spring of 2022, it will further consider how to refine the assumptions used to establish inputs into the LOLE study for use in determining the regional capacity needs for future binding seasons and any true ups, if they occur.

Proposed Approach: Non-Binding FS

For the purposes of the initial LOLE study and non-binding FS the group elected to prioritize a methodology that is objective, that will not materially impact the results of the study and provides a fair allocation of the program's capacity requirement given the current schedule and lack of an established PRC.

For LOLE Study:

The Task Force settled on the following methodology to establish a load forecast for the LOLE study.

- Start with the median of each year's peak load by season for the last five years (this was based on the 2016-2020 data provided in the FS data request) and apply a program-wide growth rate of 1.1% to all participating LREs
- 1.1% was identified by an informal survey of published load growth and demand projections from ten participating LREs as well as publicly available load forecast information from the Northwest Power and Conservation Council and other groups. Values ranged from –0.6% to +4.5 load growth.
- Note that the LOLE study will vary the load based on historical information; small changes to the load forecast utilized will have minimal impact on the actual PRM output from the modeling exercise.
- This load forecast, used for modeling (LOLE study and resulting PRM), will not limit or indicate the load to be used for the non-binding or binding showing (for any individual LREs P50 + PRM compliance metric).

For Allocation / Participant FS Requirement Metric (P50):

The Task force proposed using the following as the basis for the compliance metric / allocation of program capacity requirement (P50) in the non-binding FS. This is:

- Start with the median of each year's peak load by season for the last five years (this was based on the 2016-2020 data provided in the FS data request)
- At this time a load growth factor will not be included
- Allow Participants to modify the base load to account for known load to be added and any existing load that will be removed in the forecast window.
- The Participant must provide the median value as well as a narrative describing the load to be added or removed. The formal process and any documentation needed for verification is yet to be defined. Given the aggressive modeling timeline and significant Program Administrator (PA) / Program Operator (PO) workload this could be something as minimal as a very short, signed

statement of the accuracy of the offsets to load by the WRAP Participant committee member. A more formal process will be established for the binding program as described below.

Proposed Approach: Binding Program

For the binding program the WRAP is proposing a program-developed framework that could be utilized by each Participant to establish their P50 / binding FS capacity requirement and form the basis for the aggregate load forecast used in the FS modeling. It is important to note the details of this framework will be developed by the PRC. The narrative below is intended to serve two purposes: 1) provide the RAPC with enough context and background to be comfortable adopting the recommendation for the non-binding showing and to delegate the establishment of a more formal load forecasting methodology to the PRC for the binding phase 2) provide the PRC with background information related to the load task force work that might be useful as they address the load forecasting issue.

For the binding showing the task force thought that one viable approach would be establishing a growth rate or set of growth rates that could be added to the Participant base load (median of last 5 years) and adopted by any Participant as their binding forecast (potential considerations listed below). This would be coupled with the option to provide an entity specific growth rate through a negotiated process.

Base Load + Program Established Growth Rate:

This methodology would retain the approach from the non-binding seasons for calculating the base load which is to utilize the median of the previous five years, normalized to any additions or removals of load in the historical record and with the inclusion of additions and removals of load in the forecast window.

The task force proposed allowing the PRC (with stakeholder input) to establish a base program-wide growth rate that could then be regionalized to account for geographic differences, entity type, customer makeup, weather and other key factors that might cause Participants to have like growth rates. The exact methodology for developing the growth rate or rates would be developed by the PRC and follow the approval process defined in the governance document. This rate would be a safe-harbor growth rate that could be adopted by any Participant, and it would not require any PO intervention or validation.

This approach ensures that the growth rate is objectively established, accounts for the potential differences that may exist between Participants and is informed by input from stakeholders. (Note that this is not a replacement for the load forecast used in existing IRP or infrastructure planning processes)

Base Load + Participant Alternative Growth Rate:

If a Participant believes that using the program developed growth rate is not an accurate proxy of their anticipated load growth, they could negotiate an alternative growth rate with and independent entity. Possible alternatives include the PA, PO, or the Independent Evaluator (This could expand the currently anticipated scope of the Independent Evaluator beyond after-the-fact review and analysis)

The task force thought it was important that the independent entity make the evaluation of the alternative growth rate against a set of principles developed by the PRC and stakeholders. These might include things like

- Objective, robust and have a data driven basis for calculation
- Includes weather adjusted input data
- Includes factors that are relevant to determining peak load (economic growth, climate etc.)
- There was a strong desire that the alternative negotiation process be executed only:

1) in circumstances that it is absolutely necessary, and would therefore not be permitted unless the proposed growth rate was more than "x%" different from the program's default growth rate for the applicable area; and

2) if it resulted in incremental program costs (e.g., for the independent entity making the evaluation) then those costs may have to be covered by the requesting Participant.

Additional Considerations

- The basis for the load utilized in the LOLE / PRM studies will be the sum of the values submitted by Participants (Base Load + Growth Rate). This ensures alignment between the Participant forecasts and modeling inputs.
- Additions and removals are intended to be separate and distinct from the load growth factor. Load growth is intended to consider things like population change, economic factors, electrification, change in usage patterns due to climate change, demand destruction if applicable etc. The process for adding and removing load is intended to capture very sizable one-time changes such as the introduction of a large load industrial customer, change in contracts, an entity leaving a BAA etc.
- If there are additions and removals of load after the LOLE / PRM modeling but before the Forward Showing these can be reflected in the allocation of the regional capacity requirement. If a Participant has added loads (large industrial customer, additional contracted load as an ESS or third-party supplier) they would submit this in their FS workbook and will have a slightly higher capacity requirement than the original forecast. If a Participant has removed loads, they would submit this in their FS workbook and will have a slightly lower capacity requirement than the original forecast. It is critical that load not be understated in the FS and as such any load change greater than 10 MWs with a higher than 50% probability occurring after the LOLE / PRM modeling

must be provided in the FS workbook. This will not be actively monitored for compliance, but it is important to remember that the FS workbook is attested to by a senior officer.

- If there are load changes after the forward showing these will be absorbed by the Operations Program. A Participant that sees a significant addition in load may see a negative sharing calculation result more frequently. A Participant that sees significant load removed may see a positive sharing calculation result and additional holdback / delivery more frequently (will be adequately compensated through the settlement proposal). These will be trued up at the next Forward Showing.