

ISSUE #3A/3B: RESOURCE SUFFICIENCY

Step 3: Data and/or analysis that supports the issue

Step 4: Discussions on possible alternatives to solve the issue

Objective

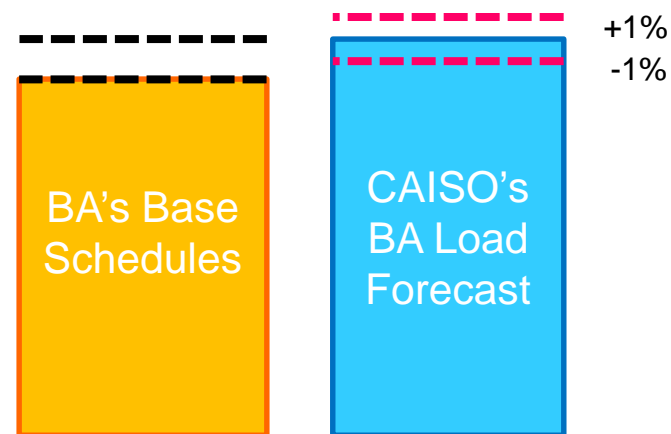
- To analyze and review possible alternatives:
 - What are the Options Available to Balance the BAA in the EIM?
 - Should BPA Set a Pass Target for RS?

What Options are Available to Balance the BAA in the EIM?

Step 3: Analysis

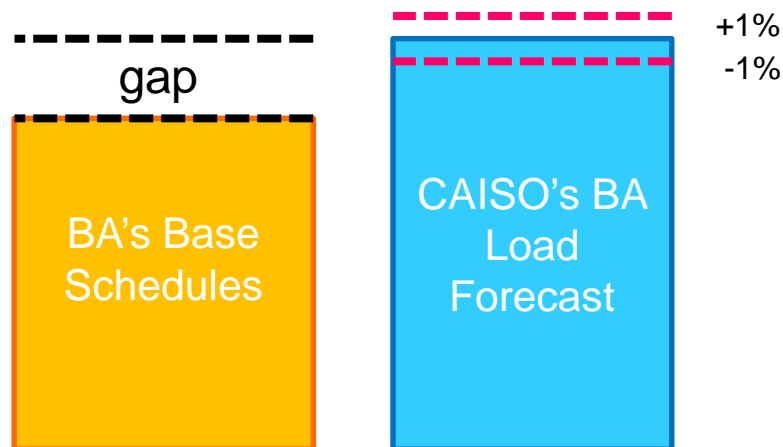
Balancing Test

- The BA's base schedules are the net of submitted gen base schedules and interchange schedules:
 - Everyone must finalize their base schedules and interchange schedules by T-55
- Every hour, the CAISO conducts 2 checks against the BA's base schedules:
 - Were the BA's base schedules at T-40 within +/-1% of the CAISO's BA load forecast?
 - Were the BA's base schedules at T-40 within +/- 5% of the BA's actual load (after-the-fact)?
- If the BA fails both checks, then it's charged an over/under scheduling penalty



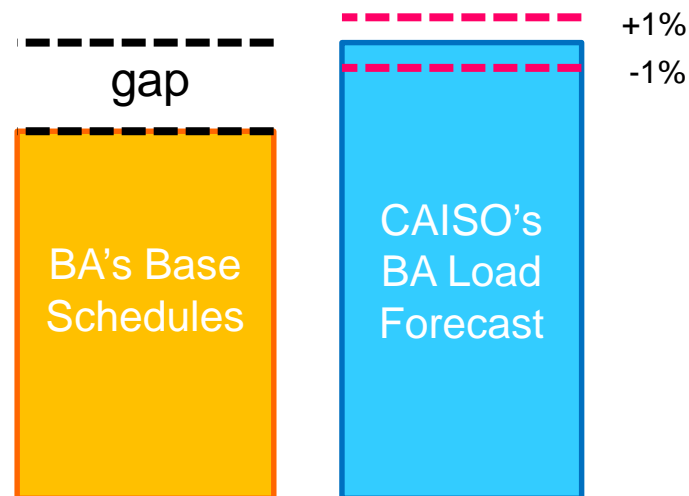
Gap in the Balancing Test

- The gap in the Balancing Test at T-55 equals the difference between CAISO's BA load forecast and the BA's base schedules
- Everyone within the BAA can impact the gap in the Balancing Test



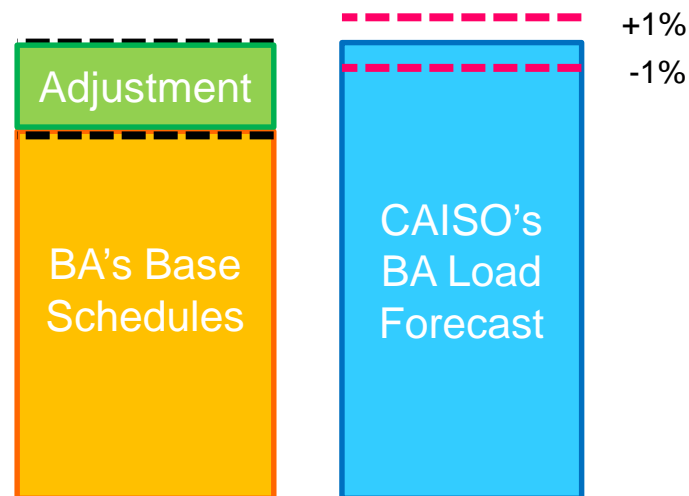
Reasons for a Gap

- Customers' or BPA's load forecasts are less accurate
- CAISO's BA load forecast is less accurate
- Under/over-scheduling to a load forecast:
 - For example, a customer is unable to schedule sufficient power to serve their load forecast due to a transmission constraint
- BPA will work with CAISO to investigate differences in load forecast methodologies and to determine the best approach to minimize errors from both forecasts



Balancing to CAISO's BA Load Forecast

- If balancing to CAISO's BA load forecast by T-40:
 - Base schedules would need to be adjusted if there's a gap at T-55
 - BPA would not be exposed an over/under-scheduling penalty
 - If CAISO's BA load forecast is the most accurate forecast, balancing to this forecast would reduce the BA's load imbalance (UIE)
- Not balancing to the CAISO's BA load forecast can increase a BA's requirements to pass the Capacity Test



Estimating the Gap

What are the challenges to estimating the magnitude of the gap prior to joining the EIM?

- CAISO's BA load forecast is not available
- Current BPA scheduling timeline is T-20, not T-55
 - Schedules at T-20 may not reflect what base schedules would be at T-55
- BPA Power's current process for setting basepoints is different than the anticipated process for setting base schedules in the EIM
- BPA does not receive load forecasts from customers at T-75 or T-55

Step 4: Alternatives

BPA's Desired State

- BPA should have visibility into how everyone is meeting their load obligations and into the accuracy of their load forecasts and scheduling

- Sub-BAA visibility is vital to evaluating the possible causes of imbalance in the RS time frame and towards meeting the following goals:
 - The gap at T-55 should be as small as possible
 - The BA shouldn't need to make large adjustments to base schedules after T-55 to balance the BAA

- Achieving the desired state will likely span beyond EIM go-live

Alternatives towards Desired State

BPA is evaluating alternatives to move towards its desired state for balancing the BAA. Some alternatives may not be achievable by the EIM go-live.

1. Status Quo:

- Everyone schedules to their best available expected load

2. Collection of load forecasts:

- Everyone provides BPA with their own hourly load forecast for a certain time horizon
- Everyone schedules to their best available expected load

3. Sub-allocation of CAISO's BA load forecast:

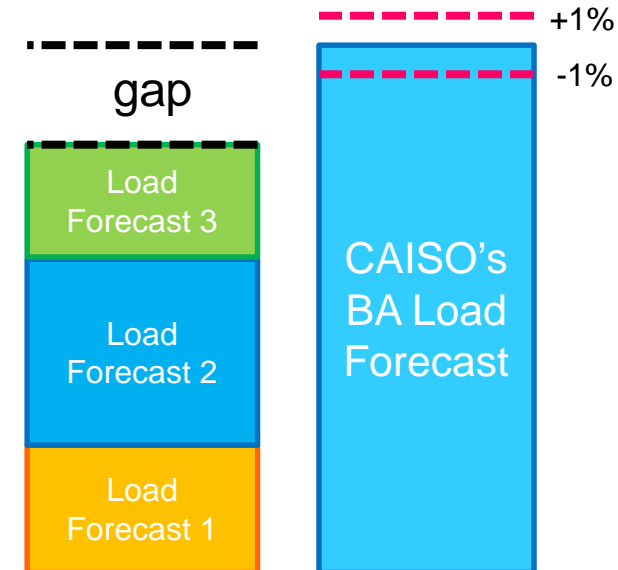
- BPA provides everyone with a share of the hourly CAISO BA load forecast
- Everyone provides BPA with their hourly load forecast
- Everyone schedules to their best available expected load

Alternative 1: Status Quo

- Status Quo: Everyone schedules to their best available expected load
- BPA would have less visibility into the possible sources of a gap in the Balancing Test:
 - BPA would have visibility into schedules
 - However, BPA would not have visibility into schedules versus load forecasts or the performance of load forecasts
- If BPA chooses to balance to CAISO's BA load forecast, BPA would potentially need to adjust base schedules to cover the gap:
 - If BPA isn't balanced to CAISO's BA load forecast, BPA may be exposed to an O/U penalty
- BPA will track the performance of the CAISO's BA load forecast

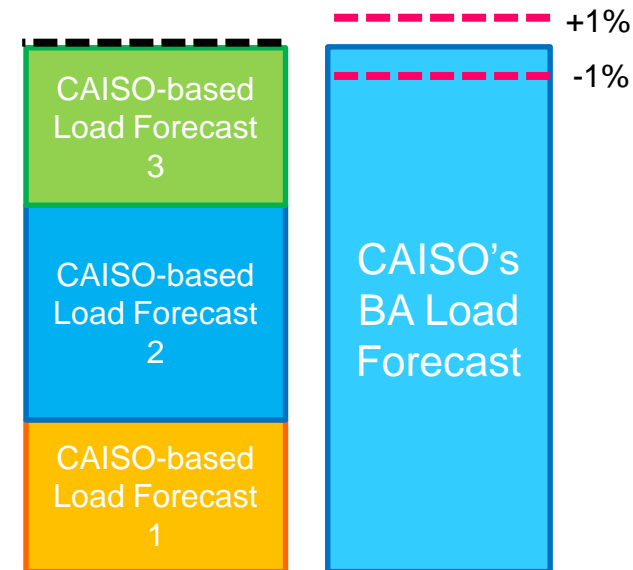
Alternative 2: Collection of Load Forecast

- Collection of load forecasts:
 - Everyone provides BPA with their own hourly load forecast for a certain time horizon
 - Everyone schedules to their best available expected load
- BPA would track load forecasts versus schedules
 - This would allow BPA to evaluate potential causes of gaps in the Balancing Test
- BPA would track the performance of a customer's hourly load forecast compared to its actual load
 - BPA could work with customers to improve their load forecasts
- BPA will track the performance of the CAISO's BA load forecast
- If BPA chooses to balance to CAISO's BA load forecast, BPA would potentially need to adjust base schedules to cover the gap:
 - If BPA isn't balanced to CAISO's BA load forecast, BPA may be exposed to an O/U penalty



Alternative 3: Sub-Allocation of Load Forecast

- Sub-allocation of CAISO's BA load forecast:
 - BPA provides everyone with a share of the hourly CAISO BA load forecast
 - Everyone provides BPA with their hourly load forecast
 - Everyone schedules to their best available expected load
- BPA would track load forecasts versus schedules
 - This would allow BPA to evaluate potential causes of gaps in the Balancing Test
- BPA would track the performance of the CAISO-based load forecast and a customer's hourly load forecast compared to its actual load
 - BPA could work with customers to improve their load forecasts
- BPA will track the performance of the CAISO's BA load forecast
- Assuming most everyone schedules to their CAISO-based load forecast, there would be a smaller risk of not being balanced to the CAISO's BA load forecast by T-55



SHOULD BPA SET A PASS TARGET FOR RS?

RS Tests

- A BA must pass the Capacity Test and the Flex Ramp Sufficiency Test (FRST) to be able to fully participate in the EIM
- A BA passes both tests if it has sufficient bid range capacity and ramp capability to meet the requirements
- Upon failure, a BA's EIM Transfers for the upcoming interval are limited to the previous 15-min interval's transfers

RS Tests

- All capacity bid into the EIM counts towards meeting the RS requirements of the Capacity Test and the Flex Ramp Sufficiency Test (FRST)

- BPA could bid into the EIM all, or part of, the non-regulation capacity held under Schedules 3 and 10 of the Tariff:
 - Any non-regulation capacity not bid in would be held as available balancing capacity (ABC)
 - BPA will hold regulation capacity as well, which would not be bid in

- BPA could also bid in additional capacity beyond the non-regulation capacity held under Schedules 3 and 10 of the Tariff, as could any participating resource

BPA's Desired State

- Preserve BPA's ability to meet its statutory, regulatory and contractual obligations, and its ability to maintain reliable transmission and delivery of power to its customers
- BPA's participation in the EIM remains discretionary, consistent with a sound business rationale, and aligned with the objectives of BPA's Strategic Plan
- Maximize EIM benefits for Power and Transmission customers
- Maintain operational (Power and Transmission) and marketing flexibility

Alternatives for Managing the RS Evaluation

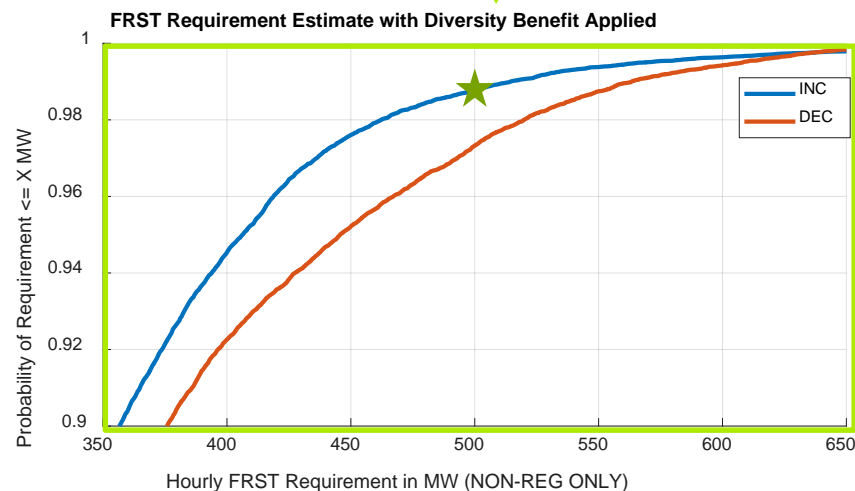
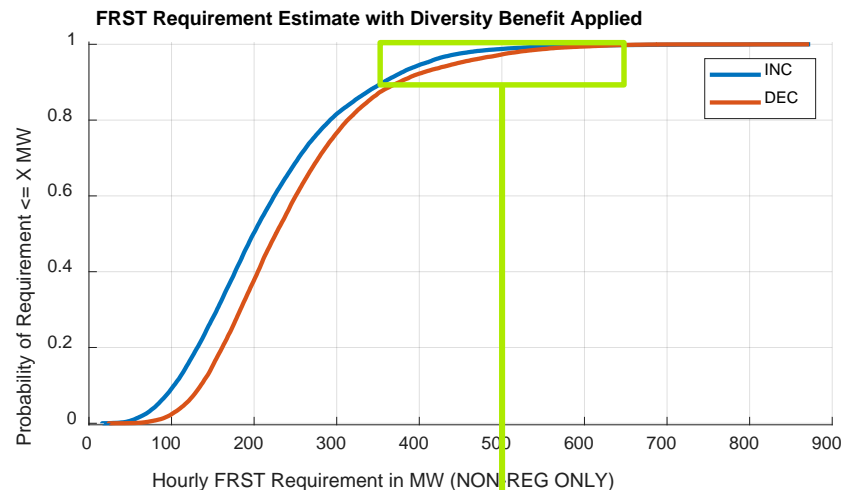
BPA is evaluating 2 alternatives for managing the RS evaluation:

1. BPA does not set an expected RS pass target
2. BPA does set an expected RS pass target

Analysis of the RS Evaluation

- BPA ran a preliminary analysis to calculate BPA's expected hourly RS requirements:
 - Focused exclusively on the final RS test – the Flex Ramp Sufficiency Test
 - Assumed no ramp rate limitation
 - Assumed sufficient donated Transmission to obtain the diversity benefit
 - Developed proxy input data for unknowns

- For instance, the results show that if 500 MW of capacity was bid in every hour, the BA would pass the FRST at least 98.7% of the time



Analysis of RS Pass Target

Pros to setting an RS pass target:

- Would establish greater certainty of market access for the BAA

Cons to setting an RS pass target:

- Would likely increase the complexity of EIM implementation
- Could expose BPA to uncertain RS requirements in the future:
 - Changes to the RS tests in the future are likely
- Not industry standard/pro forma:
 - No EIM Entity has defined an expected RS pass target
- Could reduce BPA's operational and marketing flexibility:
 - BPA would likely have to hold capacity specifically to bid into the EIM to meet the expected RS pass target rather than using that capacity in a potentially more valuable market
 - How much transmission will be made available is uncertain – diversity benefit
 - Non-reg capacity bid in versus ABC (available balancing capacity)
- Could result in significant changes to the Balancing Reserve Capacity Business Practice and rates

Next Steps

- Review feedback on alternatives under consideration:
 - Please submit to techforum@bpa.gov (with copy to your account executive) by Tuesday, March 10

- The next RS customer workshop:
 - Step 5: Discuss the feedback provided by customers on the alternatives and provide BPA's responses
 - Step 6: Discuss staff's proposal