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

![Diagram showing the gap between BA's Base Schedules and CAISO's BA Load Forecast]
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