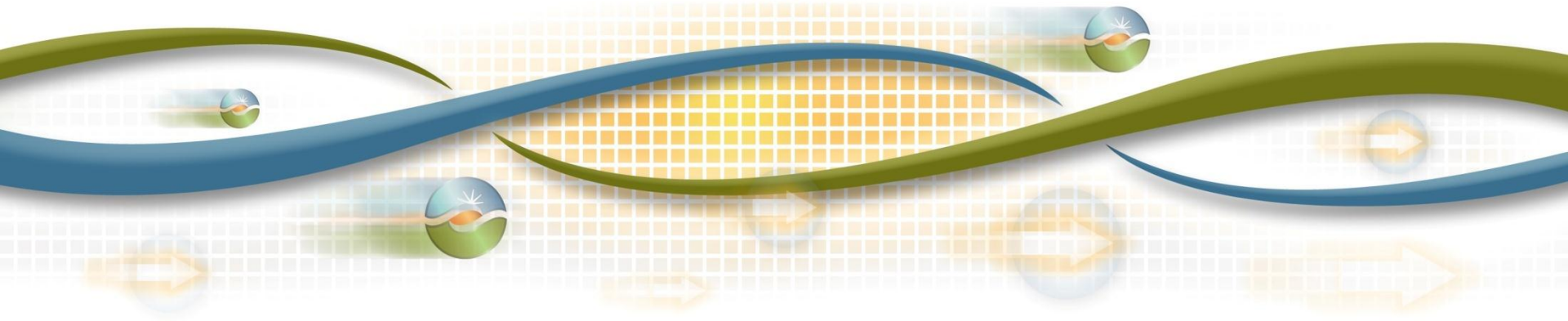




# Regional Resource Adequacy Stakeholder Meeting on Straw Proposal

Folsom, CA  
March 2, 2016

Chris Devon  
*Senior Infrastructure Policy Developer*



# Acronyms

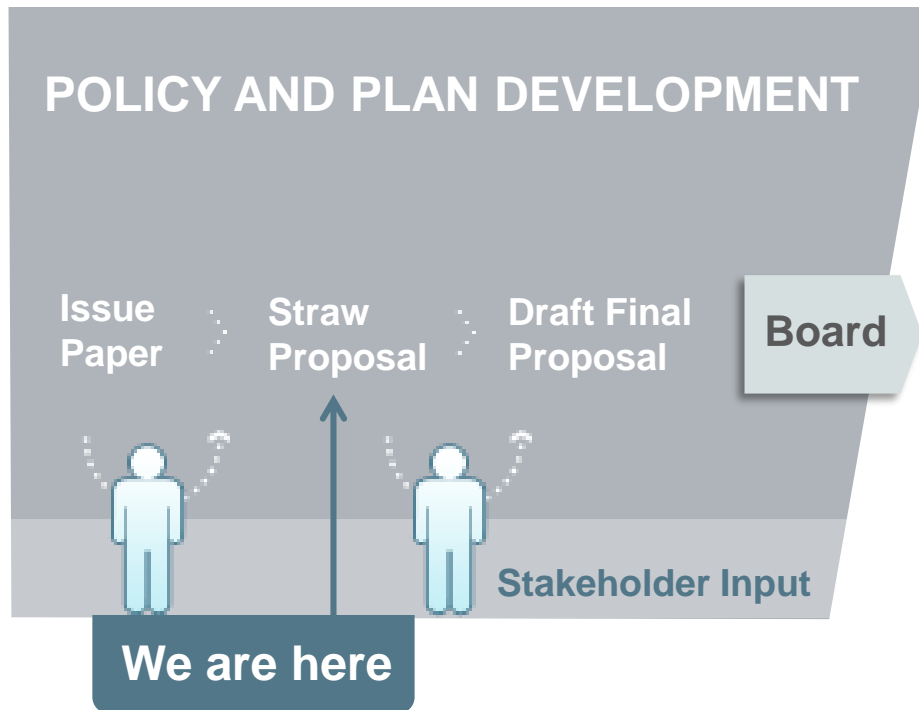
- BAA – Balancing Authority Area
- CEC – California Energy Commission
- CPUC – California Public Utilities Commission
- CRR – Congestion Revenue Rights
- DR – Demand Response
- DG – Distributed Generation
- EE – Energy Efficiency
- ETC – Existing Transmission Contract
- LSE – Load Serving Entity
- LRA – Local Regulatory Authority
- MIC – Maximum Import Capability
- PRM – Planning Reserve Margin
- RA – Resource Adequacy
- TPP – Transmission Planning Process
- TOR – Transmission Ownership Rights

# Agenda

Time (PST)	Topic	Presenter
10:00 - 10:10 am	Welcome and Stakeholder Process	Kristina Osborne
10:10 - 10:30 am	Initiative Schedule	Chris Devon
10:30 am - 12:00 pm	Regional RA Framework Discussion	Chris Devon
12:00 - 1:00 pm	Lunch	
1:00 - 2:20 pm	Regional RA Framework Discussion	Chris Devon
2:20 - 2:50 pm	Other Items	Chris Devon
2:50 - 3:00 pm	Next Steps	Kristina Osborne

# Stakeholder Process

# Stakeholder Process



# Initiative Schedule

# Stakeholder comments on schedule

- Several stakeholders have commented the schedule for this initiative is aggressive and have requested the ISO allow more time to complete the stakeholder process
- Regional RA is one of several Regional Integration initiatives targeted for completion by the end of 2016
  - Need to allow entities that are exploring joining multi-state ISO to conduct regulatory outreach during 2017, working toward potential go-live date of 2019
- ISO will evaluate Regional RA schedule following the stakeholder meeting and written stakeholder comments (due March 16)

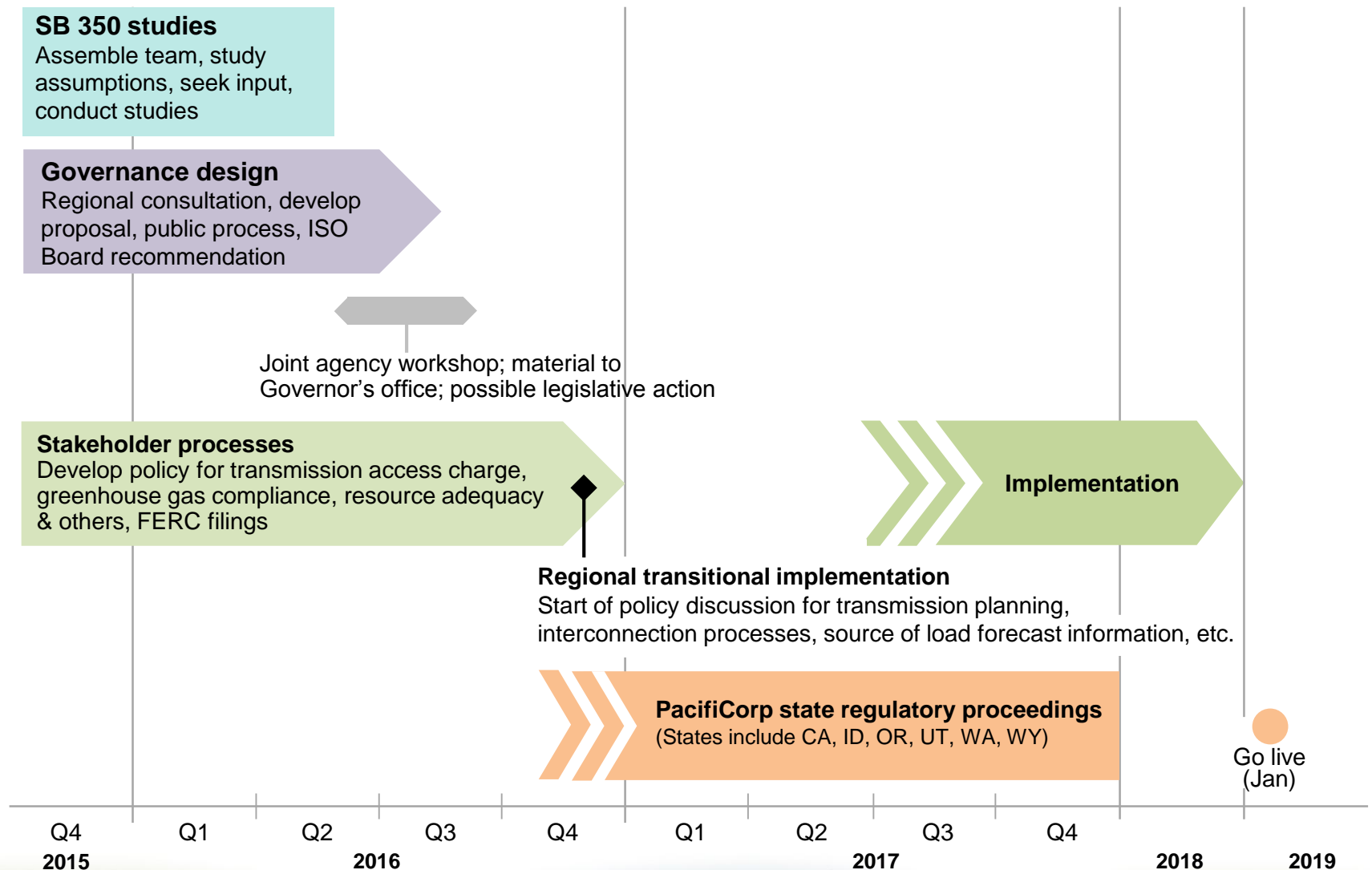
# Initiative schedule

Date	Milestone
Dec 9, 2015	Post issue paper
Dec 16	Stakeholder meeting on issue paper (Salt Lake City, UT)
Jan 7, 2016	Stakeholder comments due on issue paper
Jan 13	Working Group meeting (Seattle, WA)
Feb 24	Post straw proposal
<b>Mar 2</b>	<b>Stakeholder meeting on straw proposal (Folsom, CA)</b>
<b>Mar 16</b>	<b>Stakeholder comments due on straw proposal</b>
Apr 4	Post revised straw proposal
Apr 12	Stakeholder meeting on revised straw proposal (location TBD)
Apr 22	Stakeholder comments due on revised straw proposal
May 10	Post draft final proposal
May 19	Stakeholder meeting on draft final proposal (Folsom, CA)
May 31	Stakeholder comments due on draft final proposal
Jun 28-29	Present proposal to ISO Board of Governors



# Timeline for regional integration activities

Note: Designed to allow PacifiCorp to obtain state regulatory approvals before the end of 2017



# Regional RA Framework Discussion

# High-level RA framework for discussion

- ISO Straw Proposal presents a high-level framework for discussion
- RA framework does not have all details spelled out yet
- Intended to be high level concepts that will be further refined as stakeholder process moves forward
- More detailed proposals will be presented to stakeholders by ISO after discussion on framework

# Current RA construct has worked well

- Bilateral procurement framework overseen by CPUC and other LRAs has worked well for current BAA
- Proposed RA framework will continue to rely on the RA programs and procurement
- ISO only intends to modify tariff provisions that require modification to make RA work in an expanded BAA that spans multiple states
- Regional RA initiative is focused on “need to have” items

# RA framework includes seven elements

- ISO analysis of reliability needs
- State Commissions and LRAs oversee that LSEs secure capacity using their procurement processes
- LSEs “show” ISO what RA capacity has been secured
- ISO performs monthly reliability assessment
- If minimum reliability needs are not met ISO notifies LSEs of the amount needed to cure
- LSEs have opportunity to cure the shortfall themselves
- Only if LSEs do not choose to cure ISO may procure additional capacity through ISO backstop authority as last resort to maintain reliability

# Six tariff provisions that need to be revised or added

1. Load forecasting
2. Maximum Import Capability
3. Internal RA transfer capability constraints
4. Reliability assessment
5. Allocating RA requirements to LRAs/LSEs
6. Updating ISO tariff language to be more generic

# Background on load forecasting

- Load forecasting is used to predict electric needs to meet supply demand equilibrium
  - i.e. predicting system demand
  - Short, medium, and long-term load forecasting
- Accuracy of load forecasting is of great significance for operations and planning of electric system
- Load forecasting is used in RA process
  - Coincident peak demand forecast is used in determining peak system RA needs as well as a number of other practices

# Stakeholder comments on load forecasting

- Current load forecasting should not be affected
- California load forecasting is conducted in a transparent and public forum
- Load forecasting for any expanded BAA should also be robust and transparent
- Actual results should be compared with forecasts and accuracy/forecast error should be made public
- LSEs in expanded BAA may have the most experience with predicting loads in their footprints



# Revising the process for developing load forecasts for RA

- Must balance current California load forecasting process with the needs of a broader organization
- Many potential new entities effectively conduct their own load forecasting
- ISO proposes an approach blending ability of state jurisdictional agencies and LSEs to provide their own load forecasts with aspects of load forecasting methods in current BAA
- Will allow ISO to develop accurate and transparent load forecasts for use in an expanded ISO BAA

# Proposed load forecasting process

- Coincident system load forecast for expanded BAA would be created by ISO
- Based on LSE load forecast data
- Existing methods and arrangements continue to be used
- CEC continues to determine load forecast for LSEs in existing ISO BAA
- Entities outside of current BAA would create and submit their own load forecasts
- ISO calculates coincidence factor and identifies load ratio share of the coincident load for each LSE in BAA

# Proposed load forecasting process (cont.)

- Hourly load forecasts should include DR, Additional Achievable EE, and DG
- ISO proposes ability to review entities forecasts
  - May make adjustments if forecasts diverge unreasonably from actual peak loads or historical usage
  - Intent only if cannot demonstrate their forecast is reasonable
- ISO will use hourly load forecasting data to determine system coincidence peak and allocate respective share of the system needs to LSEs
- Must coordinate proposed approach with the forecasts used for TPP and CRR processes

# Maximum Import Capability background

- ISO calculates MIC MW amounts based on historical usage that establishes a baseline set of values for each intertie
- ISO examines previous two years of historical import schedule data to identify max amount of simultaneous energy schedules into ISO BAA at ISO coincident peak system load hours
- Historically-based MIC values based on scheduled net import values for each intertie plus unused Existing Transmission Contract (ETC) rights and Transmission Ownership Rights (TOR)
- MIC values for each intertie calculated annually for one-year term and 13-step process used to allocate MIC to LSEs
- MIC allocations are made available to LSEs on each intertie for use in procuring RA capacity from external resources

# Stakeholder comments on MIC

- ISO should evaluate if congestion issues within different areas of an expanded BAA would require changes to import classifications or adjusted methodology for calculating MIC values
- May need to address potential problems that could hinder RA compliance if current ISO MIC methodology is utilized
- How would pre-existing contractual obligations be treated for MIC calculations and allocations?

# Minor modification to MIC methodology

- ISO believes current MIC calculation and allocation methodology are still mostly appropriate
- Methodology for calculating MIC values needs slight adjustment
  - Need to properly reflect max amount of imports that can be depended on for RA
- Minor change to methodology necessary to perform MIC calculations using non-simultaneous base case studies
- Allows calculation of true max reliable MIC values where no simultaneous constraints exist between certain areas of expanded ISO BAA that have non-simultaneous peaks
  - Captures benefits of regional diversity

# Internal RA transfer capability constraints background

- Intra-BAA transfer constraints may potentially limit transfer of RA resources between major internal areas in an expanded BAA
- Potential internal transfer constraints need to be respected in ISO processes
- Path 26 Counting Constraint is utilized by LSEs within current BAA
  - Multi-step, iterative process to allocate Path 26 capability to prevent over reliance by LSEs on limited transfer capability across transmission path when procuring resources for meeting RA requirements

# Stakeholder comments on internal RA transfer capability constraints

- Zonal constraints should be respected in supplying resources to meet RA requirements
- As use of zones expands benefits and risks of alternate counting mechanisms need to be vetted among stakeholders
- Should limits apply to cumulative designated resources using path in each direction to reach its contracted load?
- Should limits be enforced on the gross contracts in each direction or the net?



# Adding internal RA transfer capability constraints

- ISO will determine and implement internal RA transfer limits between different areas of BAA where appropriate
  - Needed to ensure any reliability constraints limiting transfers of RA resources between major internal areas in an expanded BAA are properly respected
- ISO will build on methodology that is currently being used to address the Path 26 Counting Constraint
  - Important in multi-state ISO so LRA/LSE procurement programs consider and reflect these potential internal transfer limits in planning/procurement decisions

# Internal RA transfer constraints process

- ISO proposes to identify major internal transfer constraints through the TPP process
- Capability in each direction for these internal constraints determined annually
  - ISO provides base line allocations to LSEs on each constrained transmission path based upon *pro rata* load ratio share
  - Baseline allocation calculation will continue to protect existing ETCs, TORs, and Pre-RA Commitments (contracts)
- ISO will allow netting of RA contracts across each designated major constraint to increase allocation amounts for LSEs willing to participate in netting process

# Stakeholder comments on RA Standards

- ISO must maintain balance in allowing LRA flexibility in determining their own RA programs and ensuring grid reliability and equity
- In the absence of enforceable RA requirements in an organized market, regulators have no mechanism to ensure that the resources acquired by the LSEs under their jurisdiction are not being “leaned on” by LSEs in neighboring jurisdictions
- Existing RA programs are enforced by multiple jurisdictional authorities and have worked very well in coordination with other planning activities conducted by various LSEs within California
- ISO should continue to provide incentives for LSEs to meet share of ISO reliability needs for capacity and have adequate protections for allocating costs commensurate with each LSE’s contribution to ISO’s reliability requirements

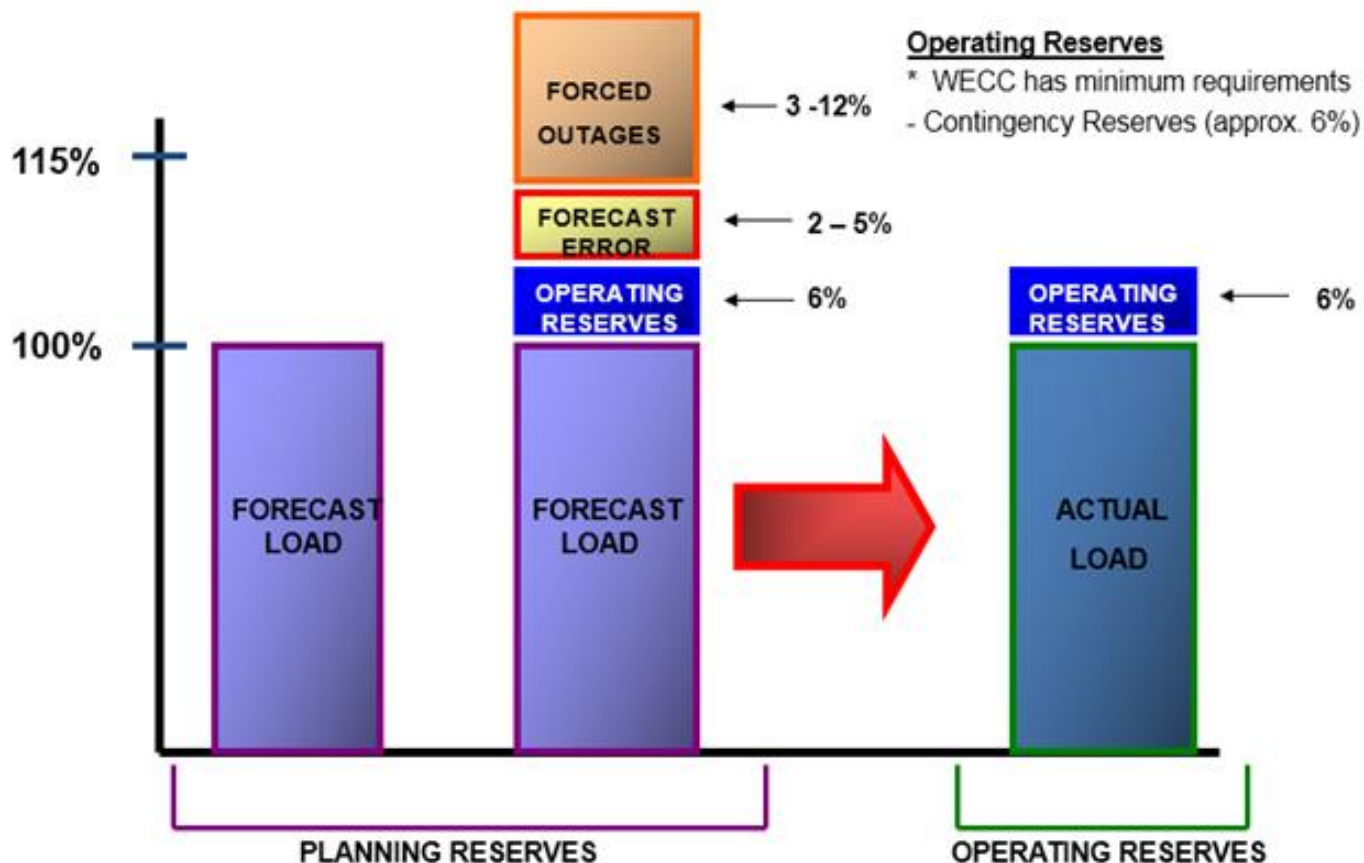
# Reliability assessment for Regional RA

- A reliability assessment is necessary to ensure LSE/LRA procurement programs have secured and committed adequate resources to ISO markets to allow reliable system operation
  - Will mitigate potential “leaning” on system by individual entities
- To perform this assessment, the ISO requires three elements:
  - A system PRM to evaluate total system-wide procurement levels
  - Consistent methods for assessing the capacity value that each resource type provides towards meeting ISOs reliability needs
  - Revisions to current backstop procurement authority and cost allocation tariff language to incorporate reliability assessment

# Planning Reserve Margin background

- PRM targets are a long-term measurement intended to assure sufficient electricity supplies can meet real-time operating reserve requirements and avoid the possibility that a loss of load would occur no more frequently than specified amount (usually one-day-in-ten-years)
- PRM is designed to ensure an adequate amount of generation capacity is available in planning horizon
- PRM accounts for peak load plus a margin to cover operating reserves, forced outages, and load forecast error

# Planning Reserve Margin example



# Stakeholder comments on Planning Reserve Margin

- ISO should consider a standardized minimum PRM
- RA requirements also exist to ensure that each of the LSEs is carrying its fair share of the system's total capacity needs
- While flexibility for LRAs to set their PRMs is very important, its also important the consequences of such a choice, positive or negative, rest with LSEs subject to LRA's jurisdiction

# Planning Reserve Margin for reliability assessment

- ISO must be able to assess level of reliability on a comparable basis across expanded BAA
  - ISO proposes to establish a system wide PRM to be used for reliability assessment
  - System wide PRM will not assign a fixed PRM to individual LSEs
  - Will be used to determine if the sum of all LSE procurement is sufficient to ensure reliability
- ISO will determine appropriate system PRM and methodology through a study and stakeholder process
  - PRM study method, process, inputs, assumptions, and conditions under which the study would be updated will be discussed in subsequent proposals



# Planning Reserve Margin for reliability assessment

- A minimum PRM is needed under RA construct to ensure reliability and fairness
- ISO cannot safely operate different areas of system at different levels of reliability
- Many benefits of an expanded BAA's load diversity
  - Includes benefits of reserve sharing and resource portfolio synergies
  - Lower overall resource requirements and lower individual resource requirements than would be necessary for individual entities if not participating in larger ISO BAA
- ISO has information needed to assess reliability on a system-wide basis and must ensure adequate resources are made available by LSEs

# Why does the ISO need resource counting methodologies?

- ISO needs resource counting methodologies in order to assess the amount that particular resource types are able to help meet the ISO's reliability needs
  - i.e. resources capacity values
- For some resource types there is not broad consensus on counting methodologies
  - Some jurisdictions may choose differing values for certain resource types which will cause potential inequities and difficulty in assessing reliability
- Uniform counting methods will mitigate some related issues

# Stakeholder comments on resource counting methodologies

- Allowing resources to qualify as different amounts of RA may lead to additional complications and inequitable treatment between LSEs
- Uniform counting values will simplify contracting for resources contracting with multiple LRAs and simplify internal RA processes
- Significant differences in RA programs across LRAs may cause difficulty transacting for capacity to meet RA requirements across states, which will prevent significant RA cost savings for all LSEs
- Some entities would not support adopting a standardized approach applicable to all jurisdictions within regional ISO
- Uniform approach may make it difficult to tailor a resource portfolio to LRA/LSE's specific needs

# Resource counting methodologies for reliability assessment

- ISO must have consistent counting rules so resources in different areas and different technologies are treated comparably
  - ISO proposes to develop a uniform counting methodology framework that would be applied for reliability assessment
  - Would provide consistent and transparent methodologies for evaluating amounts that each resource type is able to effectively contribute towards meeting ISO reliability needs
- Methodologies determined through an open and transparent stakeholder process
  - Max quantity of MW that a resource could be used for RA capacity would be published on ISO web page prior to year-ahead RA procurement

# Stakeholder comments on ISO backstop procurement authority

- Backstop procurement costs should flow to beneficiaries of procurement and those not benefiting should not be assigned costs
- Tracking cost causation by placing backstop procurement risk with entities that are shown to be short is appropriate
- ISO must have some authority to respond when an LSE proves to be deficient in meeting RA requirements
- As ISO expands, having a structure that innately allows leaning between LSEs and LRAs will likely reduce efficiencies and provide incentives for LSEs to not fully demonstrate RA sufficiency each month
- ISO should consider whether there may be alternatives to backstop procurement of generation resources

# Backstop procurement for reliability assessment

- ISO is reviewing backstop procurement authority and cost allocation provisions
  - Must ensure costs of any backstop capacity procurement would be allocated in a fair and open manner
  - ISO proposes to update the backstop procurement provisions to reflect the use of the proposed reliability assessment
- Potential for ISO backstop procurement is appropriate mechanism to incent entities to secure and commit adequate resources to the ISO to meet reliability needs
  - Helps mitigate potential for some to lean on other entities that have procured their share of reliability needs

# Process for backstop procurement

- ISO will conduct reliability assessment and determine if sufficient resources have been procured to meet system, local, and flexible needs
- ONLY if ISO identifies an aggregate deficiency:
- ISO will notify deficient LSEs and provide a period when they may procure additional resources to cure deficiency
- If aggregate deficiency still exists after cure period; some LSEs chose not to cure - only then would the ISO need to make a decision on any backstop procurement
- Backstop procurement costs assigned to entities that have not met minimum reliability requirements

# Other Items



# Allocation of RA requirements to LRAs/LSEs

- ISO's current process is for LRAs to receive allocation of local and flexible capacity requirements directly from ISO so they can allocate requirements among their jurisdictional LSEs
- Proposing minor adjustment so if LRA does not want to allocate these requirements to its LSEs, ISO would allocate requirements directly to LSEs themselves

# Updating tariff language to be more generic

- ISO tariff language needs to be more generic to accommodate additional entities
  - Intent is to avoid creating any unintentional barriers or consequences due to California-specific language currently used
- ISO tariff contains numerous references to CPUC and non-CPUC jurisdictional entities
  - Need to make the language more generic to accommodate additional regulatory authorities beyond current CPUC and non-CPUC jurisdictional entities
- Also need to amend tariff to reflect multiple time zones in an expanded BAA

# Stakeholder comments on updating tariff language to be more generic

- ISO tariff needs to be made more generic to eliminate specific references to California regulatory bodies and to update tariff provisions that are out of date
- ISO Straw Proposal should be clear on whether the changes are expected to have additional impacts on the RA program
- Regional RA would require an update to sections of the ISO's RA tariff language to change references specific to California and update sections of the tariff that do not reflect current RA policies

## Stakeholders have also raised other issues for consideration under this initiative

- Although SH have raised the following items in comments the ISO has determined these should not be part of the scope of the Regional RA initiative:
  - Deliverability
  - Local Capacity Study/Requirements
  - Flexible Capacity Study/Requirements
  - Major revisions to RA construct
- Appendix 1 of straw proposal contains stakeholder comment matrix identifying all comments and specific ISO responses
- LSE list and transmission path map link is included in straw proposal (Appendix 3)

# Next Steps

# Next Steps

- Stakeholders are requested to submit their written comments by March 16 to [initiativecomments@caiso.com](mailto:initiativecomments@caiso.com)
- Stakeholders should use the template at the following link to submit comments:  
<http://www.caiso.com/Documents/CommentsTemplate-RegionalResourceAdequacy-StrawProposal.doc>
- Initiative contact: Chris Devon ([cdevon@caiso.com](mailto:cdevon@caiso.com))