California ISO
Shaping a Renewed Future

Reliability Services Initiative

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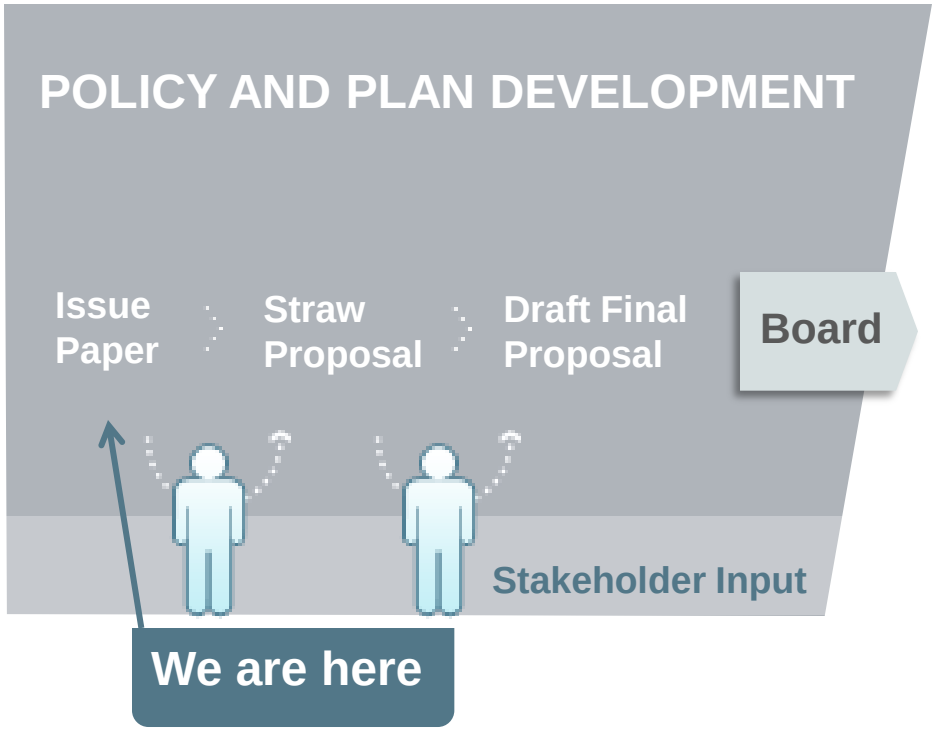
Stakeholder Meeting – Agenda – 02/04/14

Time	Topic	Presenter
10:00 – 10:05	Introduction	Tom Cuccia
10:05 – 11:05	Introduction to Reliability Services	Carrie Bentley
11:05 – 12:00	ISO backstop authority overview	
12:00 – 1:00	Lunch	
1:00 – 1:30	Standardized resource adequacy products	Karl Meeusen
1:30 – 2:30	Energy market participation incentive mechanisms	
2:30 – 2:45	Break	
2:45 – 3:25	Market-mechanism for backstop procurement	Carrie Bentley
3:25 – 3:30	Next Steps	Tom Cuccia

ISO Policy Initiative Stakeholder Process



Introduction to Reliability Services

Reliability Services

Holistic look at the ISO's backstop procurement authority to ensure sufficient resources with the right capabilities are offered into the ISO markets to meet local, flexible, and system capacity requirements

Market design changes to create an efficient market mechanism to procure backstop capacity	Conforming changes to various RA process rules	Enhancements to rules specific to RA resources

Impetus for initiative

- Capacity Procurement Mechanism (CPM) expiration
- Joint Reliability Plan

Capacity Procurement Mechanism (CPM)

- ISO procures capacity to maintain reliability through CPM backstop authority (tariff section 43.1.1)
- Currently, the CPM provisions address this when:
  - LSEs fail to meet resource adequacy requirements due to insufficiency or operational constraints
  - RA requirements are met, but procured RA resources are ineffective at meeting local reliability constraints
  - the ISO requires non-RA capacity for a significant event, exceptional dispatch, or risk-of-retirement event

CPM expiration

- Existing backstop capacity procurement mechanism expires on February 16, 2016
- The ISO tariff specifies an administrative rate
  - $67.50/kW-year to compensate resources under the CPM
  - increases automatically to $70.88/kW-year on February 16, 2014
- Entire section expires, not just the administrative price

Joint Reliability Plan

- CPUC and ISO formally adopted plan in 2013
- Plan proposed three processes:
  1. Establish multi-year resource adequacy requirements for system, local and flexible capacity
  2. Replace the ISO's CPM with a market-based mechanism
  3. Develop unified long-term reliability planning assessment

Reliability Services scope phase 1

- Create durable CPM pricing mechanism for backstop capacity procurement
- Standardize eligibility criteria and must-offer requirements for local, flexible, and system RA resources as needed
- Enhance incentive mechanisms for RA resource market participation

Reliability Services scope phase 2

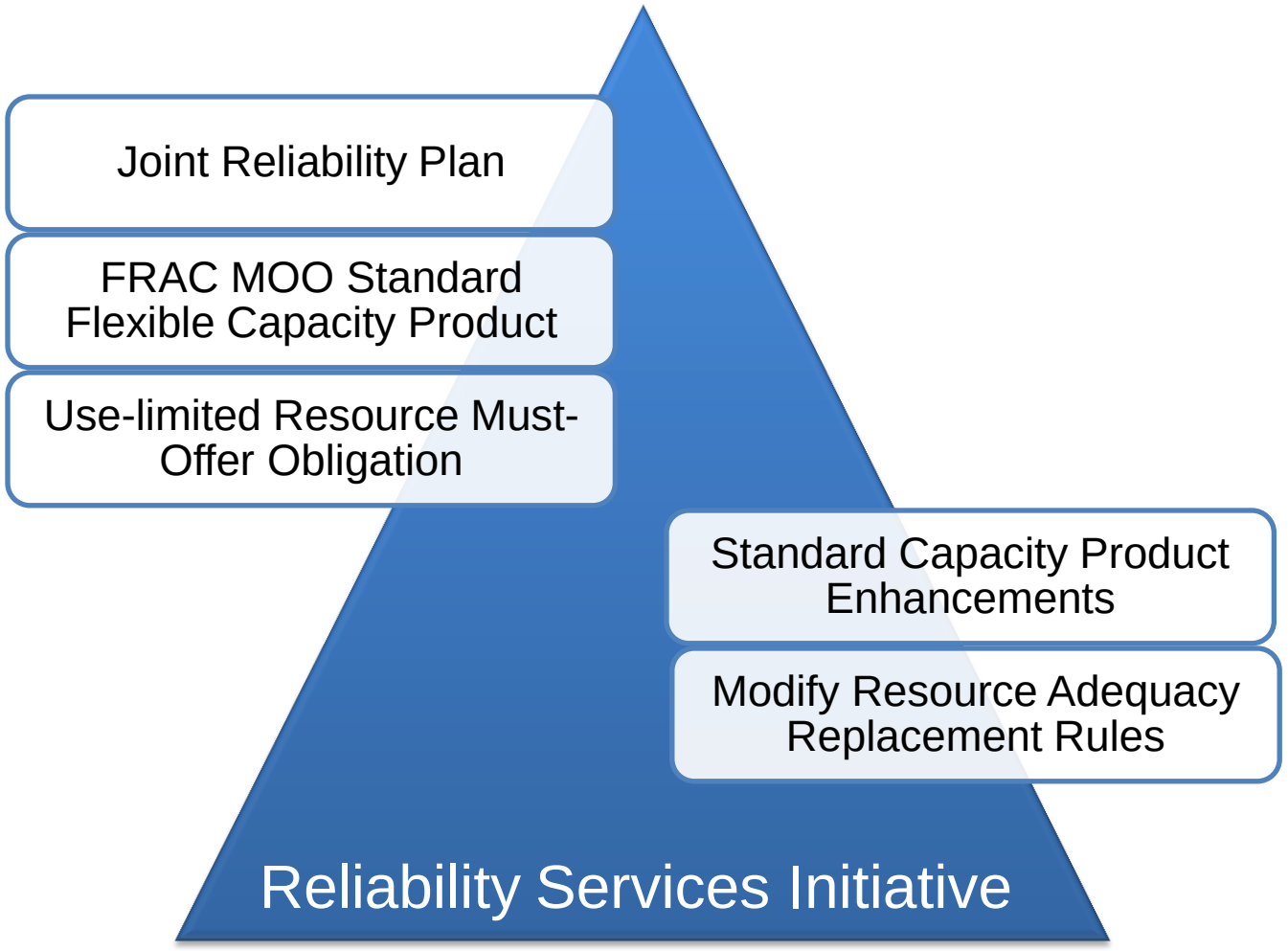
- Update the CPM to include multi-year backstop procurement authority
- Revaluate need for risk-of-retirement backstop procurement authority

Schedule

Date	Event
Tues, 01/28/14	Issue Paper Posted
Tues, 02/04/14	Stakeholder Meeting on Issue Paper
Tues, 02/18/14	Issue Paper Comments Due
Thurs, 03/20/14	Straw Proposal Posted
Wed, 03/26/2014 – Thurs, 03/27/2014	Stakeholder Meeting on Straw Proposal
Thurs, 04/10 /2014	Straw Proposal Comments Due
Q4 2014 or Q1 2015	Expected Board of Governors Decision on phase 1

Potential workshop 2/24

Umbrella initiative for other previously planned and highly ranked initiatives



Highly ranked initiatives in stakeholder catalog process

- Standard Capacity Product Enhancements
  - Monthly incentive price for RA resources to comply with must-offer
  - Phase 1: Enhance incentive mechanisms for RA resource energy market participation
- Modify Resource Adequacy Replacement Rules
  - Rules requiring local or flexible capacity shown as generic system capacity to be replaced at the higher quality level during an outage rather than merely with an alternative generic system capacity resource
  - Phase 1: Create durable CPM pricing mechanism for backstop capacity procurement

ISO backstop authority overview

ISO system reliability

- 7 fundamental elements of ISO Tariff resource adequacy provisions

First three are not within scope:

- A procedure for forecasting system conditions related to peak demand and net-load ramp requirements.
- A default reserve margin applicable when LRAs have not stated their own reserve margin.
- Deliverability requirements based on transmission limitations.

ISO system reliability

Within scope:

- Criteria for determining resource eligibility and the amount of resource capacity that will satisfy the reserve margin
- Plans developed by the load serving entities that identify how they have met their resource adequacy requirements through a portfolio of resources

ISO system reliability

Within scope:

- Rules under which the resources identified in the plans are made available to the ISO market, including outages and replacement rules and bid insertion
- A backstop procurement program

Capacity Procurement Mechanism

CPM backstop events

1. Insufficient local or system capacity in annual resource plan
2. Insufficient local or system capacity in monthly resource plan
    a) Replacement requirement deficiency
3. Collective deficiency in Local area
4. Significant event
5. Exceptional dispatch
6. Risk of retirement
7. Insufficient flexible in annual or monthly resource plan
8. Multi-year insufficiencies

High level review: backstop authority for monthly deficiency

T-45: LSEs provide replacement for planned outages

- RA and supply plans are submitted and cross-validated by the ISO

T-25: ISO notifies LSE/Supplier of any deficiencies

T-25 to T-11: Cure period

T-11: Any deficiencies must be cured

T-11 to T-7: Any remaining deficiencies subject to CPM

T-7: All plans fixed for the month and RA process ends

High level review: backstop authority for monthly deficiency

- T-25: Notice any deficiencies
- T-11: Issue CPM designation based on
  - Effectiveness at meeting designation criteria
  - Capacity costs
  - Quantity of Pmin relative to needs
  - Operating characteristics
  - Use-limited resource status

High level review: backstop authority for an exceptional dispatch

- Operators determine need to exceptional dispatch a non-RA resource
  - Will have already checked to see if RA, RMR or CPM capacity is available to meet reliability need
- Operators may determine a specific resource is needed or that multiple non-RA resources could meet requirements
  - Currently when choosing among resources, operators consider effectiveness and cost to the extent such information is available and time allows

Standardized eligibility criteria and must-offer requirements

Overview of standardized eligibility criteria and must-offer requirements

- What does standardizing products mean
- What is the significance
- Current eligibility criteria and must-offer requirements
- Scope of evaluation of:
  - Eligibility criteria
  - Must-offer requirements

Having standardized products is critical when procuring capacity through market mechanisms

- Having standardized products
  - Is needed for equitable procurement
  - Enhances the efficiency of the ISO's backstop procurement
- If transacting capacity through an auction, the ISO will need to make sure rules create standardized capacity for each product (system, local, flexible)
- In some circumstances there will be enhanced local resource adequacy resource criteria above the system criteria

Examine capacity types and establish minimum eligibility requirements for providing standard products

- Capacity products
  - System
  - Local
  - Flexible
- Eligibility criteria
  - Hours of availability
  - Minimum operating characteristics
- Must-offer requirements
- Resource considerations include, but are not limited to
  - Thermal (including ULR)
  - Hydro
  - Variable energy resources
  - Demand response (previously SCP III)
  - Storage

Resource adequacy capacity availability incentive mechanism rules and pricing

Overview of availability incentive mechanisms

- Existing availability incentive mechanism
- Future availability incentive mechanism
- Alignment with standard capacity products and ISO operational needs

Initiative will consider availability incentive mechanisms for system, local, and flexible capacity

- The existing availability incentive mechanism (price) for the SCP must be reassessed
- Similar incentive mechanisms must be designed for
  - Flexible
  - Local

The ISO's current resource adequacy capacity availability incentive mechanism needs to be reexamined

- Resource availability is measured based on forced outages during peak hours
  - Apr – Oct (14:00 – 18:00)
  - Jan – Mar, Nov, and Dec (17:00 – 21:00)
- Availability measurement for use-limited resources that do not submit bids or self-schedules but have not submitted is not reduced
- Need to reassess:
  - Calculation of availability
  - Time periods of availability
  - Value for availability of resources

The ISO's existing availability incentive mechanism applies credits and charges to resources measured based on forced outages during peak hours

- The ISO's existing availability incentive mechanism (aka "SCP") applies credits and charges to resources measured based on forced outages during peak hours
- Availability compared to historic availability percentages during peak hours
  - Resources more than 2.5% above/below historic availability metric receive availability credit/charge
- Availability charge tied to CPM rate
  - CPM expires after February 16, 2014

The ISO proposed a flexible capacity availability incentive mechanism in the FRAC-MOO stakeholder initiative

- The ISO's greatest demand for flexible capacity may not be during the times of peak demand
- Flexible capacity resources must submit economic bids into the ISO day-ahead and real-time markets
- ISO proposed various methods to calculate availability and price flexible capacity availability in FRAC-MOO initiative
  - Currently not a clear basis to establish price
- The flexible capacity availability incentive mechanism (aka "SFCP") was deferred to this initiative
  - Allows for the pricing of the incentive mechanism to be informed by other aspects the Reliability Services Auction and Flexible Ramping Product

Availability incentive mechanisms should align with the ISO need and apply comparable measurements

- Forced outage rate during peak may no longer accurately represent the greatest need for resource availability
- Resource availability may be better valued by availability during
  - Scarcity conditions
  - Binding ramping constraints (i.e. flexible ramping)
  - System emergencies
  - Need for balancing serves (CPS01)
  - Submission of economic bids

Replace the ISO's Capacity Procurement Mechanism (CPM) backstop authority

Scope

- Create a durable CPM pricing market mechanism that would replace the current administrative price when it expires
- Synchronize replacement and substitution rules with the new CPM pricing market mechanism as required

Deficiencies by time frame

A. Annual deficiencies (occurs in very small quantities)
- Insufficient local in annual resource plan
- Collective deficiency in Local area
- Insufficient RA in annual resource plan (in August)

B. Monthly deficiencies (occurs mostly summer)
- Insufficient local in monthly resource plan
- Collective deficiency in Local area
- Deficiency in LCA (vs TAC)
- Insufficient RA in monthly resource plan
- Replacement requirement deficiency

C. Daily deficiencies (occurs due to forced outages)
- Replacement requirement deficiency

D. Unsystematic deficiencies (occurs unpredictably)
- Significant event
- Exceptional Dispatch
- Risk of retirement

Market Mechanisms

- The CPM covers a wide variety of circumstances
- Underlying rules of CPM to stay the same
- There will have to be different market mechanisms to replace portions the CPM
- It may not be appropriate to replace every aspect of the CPM with a market based mechanism

Annual market mechanism

- Any annual market mechanism will eventually need to be coordinated with the multi-year requirement and backstop authority
- Given the interaction between the annual and multi-year market mechanism, should these be developed in conjunction or as completely separate mechanisms?
- What interactions between the annual and multi-year market mechanism should the ISO consider when designing the mechanisms?

Monthly market mechanism

- Should the ISO consider a market mechanism design that can optimize bids and offers for less than a month?
  - What time period should the ISO consider evaluating in a market mechanism?
- What could the ISO do to reduce market participant transaction costs related to outage replacement?
- Given the ability of the ISO to optimize total backstop procurement through a market mechanism, should the ISO consider changing the RA processes surrounding the cure period length of time?

Unsystematic market mechanism

- What should the ISO take into consideration when issuing a CPM designation for an event that requires an immediate designation?
- Should the ISO consider shortening the length of time allowed in the market mechanism?
- How should the annual and monthly backstop capacity price relate to the backstop price for an unsystematic event?

Workshop

- Before moving forward with a market mechanism design proposal the ISO plans on having a workshop to get feedback on several ideas
- Occur after comments are due
- Would only focus on market mechanisms