Standard Resource Adequacy Capacity Product Updated Straw Proposal Review

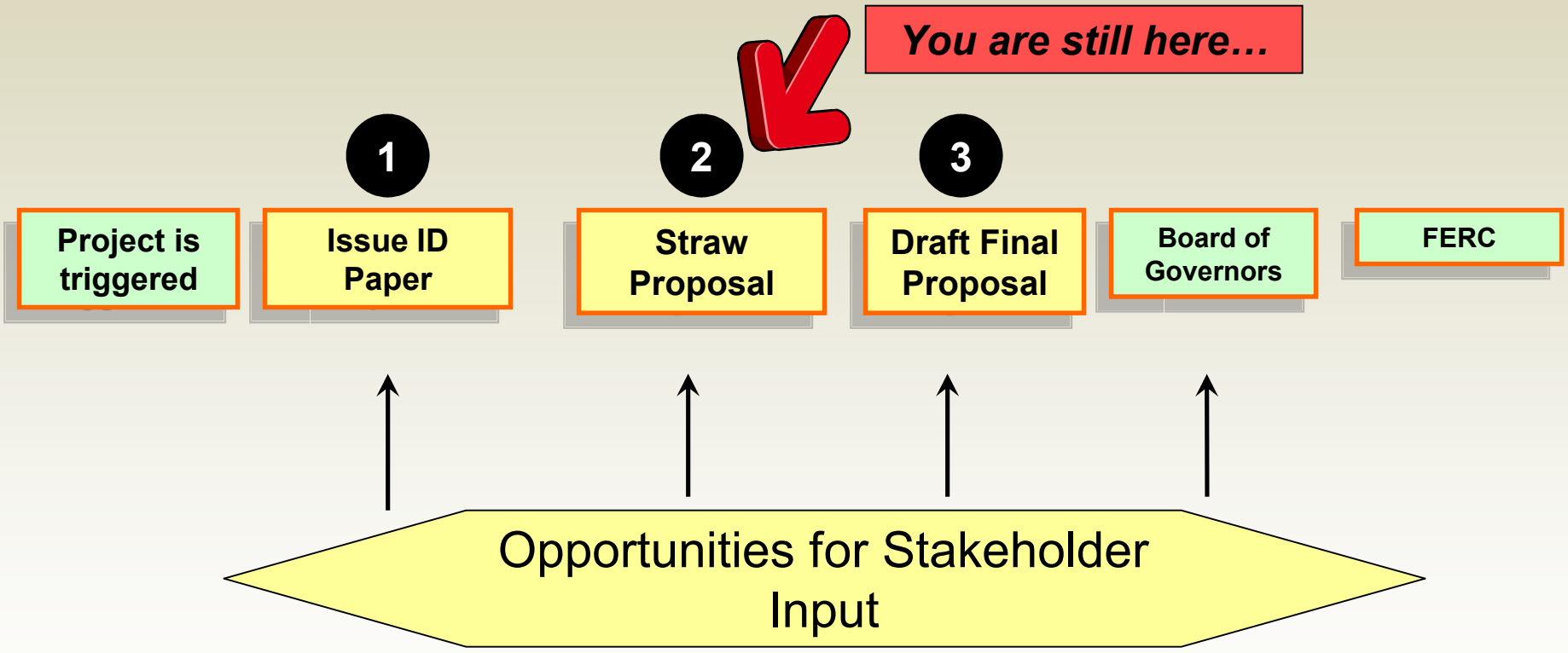
Presented by: Standard RA Capacity Product Team

Standard RA Capacity Product Stakeholder Meeting

December 11, 2008

CAISO Stakeholder Process

STANDARD RA CAPACITY PRODUCT



Today's Topics

- Introduction and SCP Schedule
- Review of SCP Definition
- The Availability Standard & Performance Incentives
- Unit Substitution
- Credit Requirements
- Transition/Grandfathering
- Next Steps

SCP Stakeholder Process Schedule

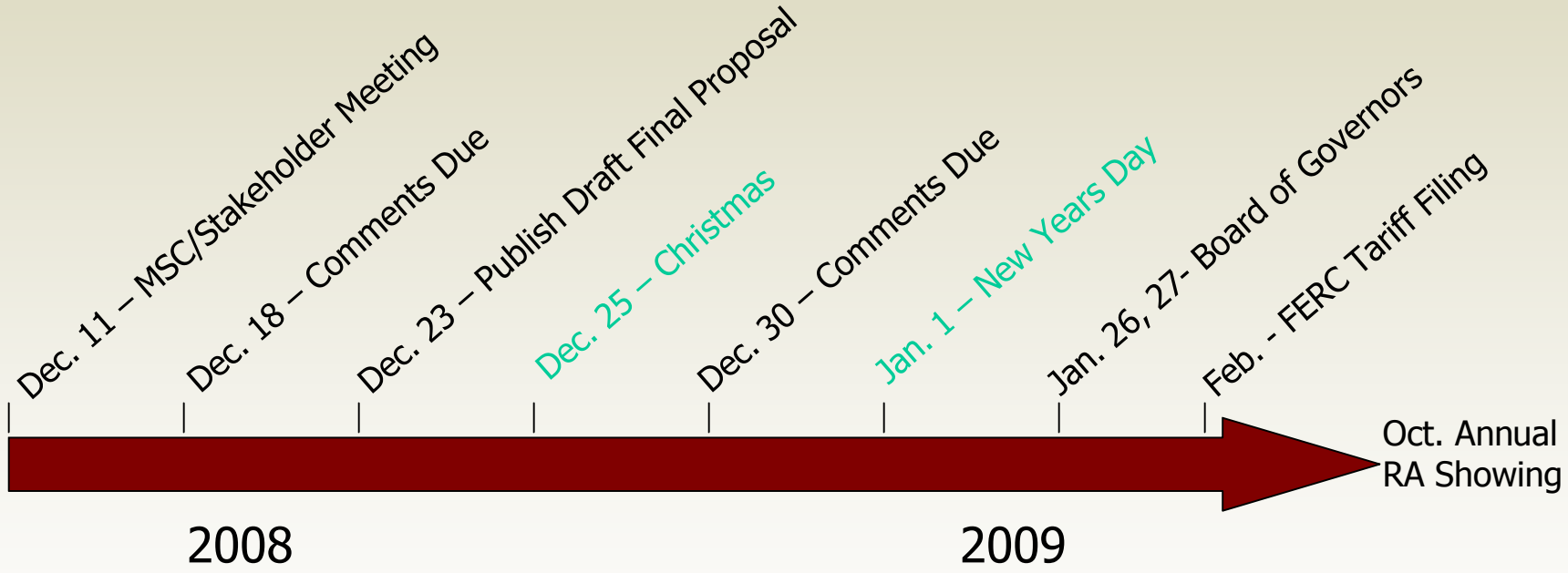
Cindy Hinman

Senior Market Design Project Developer

The primary objective is to design an effective product that meets the CAISO's and stakeholders' needs.

- Stakeholders prefer implementation in time for 2010 showing (October 2009)
- Timetable Challenges
  - Need to resolve controversial issues in a timely manner
  - Uncertainty about CPUC's Long Term RA decision
  - Coordination with MRTU start up/other CAISO Initiatives
  - Technical/Software requirements

The primary objective is to design an effective product that meets the CAISO's and stakeholders' needs.



Changes were made to some elements of the ISO's original straw proposal.

- Product Definition Clarifications
  - Duration of the SCP tag
  - Demand Response as a Capacity Resource
  - Metered Sub System (MSS) Obligation
  - Qualifying Facilities (QF) Obligation
- Availability Standard
  - Based on historical RA resource fleet outage information
  - Monthly assessment on peak hours
- Performance Incentives
  - In period financial penalties
  - Penalty price = ISO's backstop price (currently $41/kw/year)
  - Bonus payment for exceeding target availability

Changes were made to some elements of the ISO's original straw proposal.

- Consideration of Unit Substitution
  - Replace unit on outage with electrically equivalent alternative resource
- Creditworthiness
  - Requirement based on recent penalty history
- Transition/Grandfathering Considerations
  - Need more data to evaluate the extent of the problem

Review of SCP Product Definition

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Senior Market Design Project Developer

The product will be defined by using tags. An SCP tag is:

1. The total NQC sold as RA capacity/submitted for RA Compliance
2. Identified by uniform set of attributes
3. Eligibility of RA Resources to sell tags each year in compliance with NQC report
4. Reported by LSEs & SCs of Resources monthly
5. A representation of RA capacity
6. Tool for meeting the RA requirement
7. Fungible/Tradable
8. An agreement that all capabilities of an RA resource subject to RA-MOO are offered (energy & ancillary services)

Application of SCP to unique RA resources.

- Demand Response – similar to other RA resources
  - Emergency trigger DR – exempt from SCP
  - Dispatchable DR – all SCP rules apply
- Metered Subsystems (MSS)
  - Non Load Following MSS – all SCP rules apply
  - Load Following MSS
    - provide annual plan, no monthly plans
    - Load Following MSS exempt from RA MOO
    - Availability standards and incentives apply to local RA submissions

Application of SCP to unique RA resources.

- Imports
  - Resource Specific – standard rules apply
  - Non-Resource Specific & LD type contracts
    - Tags assigned
    - Subject to RA MOO
    - Availability standards and incentives apply
- Qualifying Facilities
  - Assignment of tags is standard
  - Exempt from RA MOO
  - Availability standards and incentives apply

The Availability Standard

Keith Johnson

Senior Market & Product Developer

The ISO proposes to add an availability standard to its tariff.

- "Available" will be defined as not being on a forced outage to an extent that would prevent the resource from providing its full Resource Adequacy ("RA") capacity value if called upon by the ISO

Each year a single target availability value will be established.

- Value will be based on availability of RA resource fleet during peak hours during a previous 12-month period
- Single value will be applicable to RA resources during the upcoming compliance year (currently calendar year)
- Concept is supported by a majority of stakeholders

- Still considering possible need to look at all hours and not just peak load hours

ISO proposes to define RA peak hours as follows:

Month	Hour-Ending[1]	Exclusions
Apr – Oct	14:00 - 18:00	Saturday, Sunday and federal holiday
Jan - Mar, Nov & Dec	17:00 - 21:00	

[1] These five hours of each day were chosen because ISO has found that the coincident peak load hour falls within that five-hour range during these months.

The target value will be established well before the start of the next compliance year.

- Value should be known about June of each year to be factored into procurement for the subsequent compliance year
- Example for 2010 availability standard
  - Use data from Jan-Dec 2008
  - Assess 2008 data in early 2009
  - Publish single value in June 2009
  - Assess actual availability each month during 2010

Data from the ISO outage scheduling and logging system (SLIC) will be used.

- Using SLIC data will allow for implementation of SCP for compliance year 2010
- Not feasible to implement a NERC Generator Availability Data System ("GADS") approach for compliance year 2010
- Propose to use SLIC data; willing to consider moving to NERC GADS data in future if warranted

RA resources less than 10 MW in size will submit outage data to the ISO each month.

- The tariff currently does not require these resources to submit outage data to the SLIC system
- Under SCP, these resources now will be required each month to submit outage data separate from SLIC that is equivalent to outage data submitted by resources greater than 10 MW

The target availability value for 2010 and the years beyond will be established as follows:

- In the first year of SCP (2010)
  - ISO will use data from SLIC system to calculate the value
- In subsequent years (when data from resources less than10 MW is available)
  - ISO will use both SLIC data and outage data submitted by resources less than 10 MW to calculate the value

Availability Assessment

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Senior Market & Product Developer

An assessment of each resource's availability against the standard will be done each month.

- The assessment will look at each RA resource's availability during the RA peak hours in the month using either
  - SLIC data, or
  - Data submitted by the resource (for resources less than 10 MW)

Forced Outages during the peak hours in the month will count against the resource's availability.

- A resource is considered 100% available if it has no Forced Outage hours in the month during the defined peak hours of the month
- Approved Planned Outage hours taken during the month will not decrease the availability value

Performance Incentives

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Senior Market & Product Developer

The ISO has considered both financial and physical penalties.

Penalty	Description
Financial Penalty	Charge assessed during compliance period or just after its conclusion for not meeting the standard within the compliance period
Physical Penalty	Adjustment to Net Qualifying Capacity for subsequent compliance period for not meeting the standard within the current compliance period

The ISO proposes to add a financial penalty to its tariff as a performance incentive.

- Financial penalty is supported by a majority of stakeholders, who believe it provides the correct incentive to be available
- Failure to perform in any month during the compliance year to the single availability standard will result in a penalty
- Each RA resource will have an incentive to ensure that it performs to limit its exposure to the penalty

The financial penalty proposals from stakeholders include the following elements:

- Each resource's availability should be compared to actual fleet availability
- Resources with lower-than-standard availability at peak load periods should receive penalty charges, while resources with higher-than-standard availability should receive credits
- Resources with availability of <50% should have a penalty applied to entire RA capacity; those with availability of >50% but less than target should have a penalty applied to a portion of their RA capacity

The formula for the proposed financial penalty is as follows:

$$A_{jn} = \frac{\sum \text{Hourly RA MW Available from Resource j}}{(\text{Total RA MW of Resource j}) \times (\text{Total Compliance Hrs. of Month})}$$

Where A_{jn} = Availability of Resource j in Month n

A financial penalty or bonus payment will be applied to Scheduling Coordinators of resources.

- Applied in first feasible settlement statement after the conclusion of applicable month
- A financial penalty will be applied each month where a resource has failed to meet the target value
- A potential bonus payment will be made each month (to extent that penalty funds are available) to resources that exceed the target value

A dead band will be used to limit the amount of penalty and bonus payment assessments.

- A dead band of 5% will be used around the target availability (2.5% on either side of the target value)
- The dead band provides for penalties and bonus payments to be assessed only when resources perform significantly better or worse compared to the established target value

The formula for the monthly penalty charge will work as shown below:

Actual Availability	Formula[1]
For resources with availability of 50% and up to the target availability percent, recognizing the dead band	$(1 - A_{jn})$ x (RA capacity in kW) x ($3.33/kW-month)
For resources with availability less than 50%	(RA capacity in kW) x ($3.33/kW-month)

Where Ajn = Availability of Resource j in Month n

[1]The "price" value in the penalty formula will be the replacement cost of capacity, i.e. ISO backstop cost, which currently is the $41/kW-year in Interim Capacity Procurement Mechanism tariff (or $3.33/kW-month).

Penalty funds collected will be allocated to resources that exceed the dead band for target availability.

- A monthly bonus rate will be determined by dividing total monthly penalty dollars by sum of MW of all resources that exceed target plus dead band
  - Rate = Total Revenue $ / $\sum_j [(A_{jn} – (\text{Target} + \text{Dead Band})) \times \text{RA MW}_j]$
  - $\text{Payment}_j = \text{Rate} \times ((A_{jn} – (\text{Target} + \text{Dead Band})) \times \text{RA MW}_j)$

    Where A_{jn} = Availability of Resource j in Month n

  Example
  - 90% target with 5% dead band will provide a potential bonus to resources that exceed a 92.5% availability rate
  - 500 MW resource available 100% of time during a month would receive a bonus payment = Monthly Bonus Rate *(100%-92.5%)*500

Unique Types of Resources

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Three types of resources may require a different methodology.

- Request stakeholder input on how the following can be addressed
  - Non-resource-specific imports (“imports”)
  - Liquidated damages energy contracts that do not specify a physical resource (“energy contracts”)
  - Demand response

Regarding imports and energy contracts, the ISO has not yet determined the appropriate approach.

- This RA capacity is not subject to outage reporting requirements; thus there is no outage data to measure availability and apply financial incentives
- Quantity of this capacity is significant enough that ISO is reluctant to waive availability standard and financial incentives

One approach is to measure availability based on extent that capacity is offered into ISO markets.

- Under MRTU RA imports must offer full amount of their RA capacity and establish a Resource ID to conduct the transactions
- ISO could track extent to which each RA import offers the full amount of its RA capacity
- Imports could be held to a target value and ISO could apply penalties and allow these resources to be eligible for bonus payments (propose using target value of 100% of RA hours for this type of RA resource)
- Same approach could be applied to LD energy contracts

Some demand response resources may be able to be treated similar to other RA resources.

- For demand response resources that have a Resource ID (Participating Load), these resources could be held to the target value and ISO could apply penalties and allow these resources to be eligible for bonus payments
- Emergency triggered demand response resources could be from exempt from the availability standard and performance incentives

Other Issues

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Unit substitution of an electrically equivalent unit may be implemented in the event of a forced outage.

- This offers reliability benefits to the ISO
- Avoids potential penalties for the SC of the resource
- Process
  - Pre-approval during NQC process required for alternative unit
  - Requests for substitution must occur before the close of the IFM
  - Control room has final approval

The Scheduling Coordinator for a capacity resource is responsible for creditworthiness.

- Credit requirement required for resources that are assessed penalties based on recent penalty history.
  - For each RA resource there is a monthly credit requirement as a weighted average of the penalties/incentives over a span of previous months
  - If weighted average net penalty > $0, SCs overall EAL calculation is impacted
- If an SC has more than one RA unit, the credit requirement can be offset

Some stakeholders requested a transition plan or grandfathering of existing contracts.

- Possible inconsistencies between contract provisions and SCP tariff provision
- Would only apply to contracts currently in existence (submitted for Oct. 2008 showing)
- Impacts ISO systems and business processes
  - Two types of RA Capacity availability obligations
  - Application of AS MOO
  - Tracking contract expiration
- Requires additional analysis
  - ISO will post questionnaire on contract data
  - Analyze data to frame the issue

Wrap Up & Next Steps

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Wrap Up and Next Steps

- Review highlights from today's meeting
- Comments due on December 18 to scpm@caiso.com
- Publish Draft Final Proposal on December 23