

# **Reliability Services Initiative**

Revised straw proposal meeting August 18, 2014

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#### Stakeholder Meeting Agenda- August 18th, 2014

Time	Торіс
10:00 – 10:05	Introduction and meeting agenda
10:05 – 10:15	Scope and schedule
10:05 – 12:00	Availability incentive mechanism
12:00 - 1:00	Lunch
1:00 – 1:15	Replacement and substitution roadmap
1:15 – 1:30	Replacement rule proposal targeted for 2016 RA year
1:30 – 2:00	Substitution rule proposal targeted for 2016 RA year
2:00 – 2:30	RA monthly process and outage policy proposal for 2017 RA year
2:30 - 2:45	Break
2:30 – 3:55	Proposes changes to RA monthly process and outage policy for 2017 RA year (cont.)
3:55 – 4:00	Next steps



## **ISO Policy Initiative Stakeholder Process**





#### Reliability services initiative scope

## Straw proposal

- Minimum eligibility and must-offer rules
- Availability incentive mechanism
- Replacement and substitution
- Capacity Procurement
  Mechanism

## Revised straw proposal

- Minimum eligibility and must-offer rules
- FRAC MOO update
  - MSS load-following flexible capacity requirements
- Availability incentive mechanism
- Replacement and substitution



#### Schedule

Item	Date		
Paper: Issue paper posted	Tuesday, January 28, 2014		
Meeting: Issue paper meeting	Tuesday, February 04, 2014		
Meeting: 1st Working Group on CPM replacement	Monday, February 24, 2014		
Meeting: 2nd Working Group on CPM replacement	Thursday, March 27, 2014		
Meeting: 1st Working Group on RA processes	Wednesday, April 23, 2014		
Paper: RSI Straw Proposal Posted	Thursday, June 05, 2014		
Meeting: RSI Straw Proposal meeting	Thursday, June 12, 2014		
Comments due: RSI Straw Proposal comments	Thursday, June 26, 2014		
Paper: RSI Revised Straw Proposal	Monday, August 11, 2014		
Meeting: RSI Revised Straw Proposal meeting	Monday, August 18, 2014		
Meeting: CPM working group on MPM and prices	Monday, August 25, 2014		
Comments due: RSI Revised Straw Proposal comments	Friday, September 5, 2014		
Meeting: Working group on replacement and substitution proposal	TBD- September		
Paper: RSI 2nd Revised Straw Proposal	October		
Target Board of Governors Meeting	Q1 2015		



# AVAILABILITY INCENTIVE MECHANISM



# Resource adequacy availability incentive mechanism (RAAIM) agenda

- Purpose and overview of AIM proposal
- Changes to straw proposal
- AIM Proposal
  - Bid-based assessment of hourly availability
  - Price
  - Monthly assessment of availability for payments/charges
  - Threshold
  - Payments
  - Exemptions



#### Availability incentive mechanism purpose

- Maintain real-time reliability during outages
- Incent scheduling coordinators to provide ISO forced outage substitute capacity in the event a resource becomes unavailable
  - Penalize resources that have a monthly average availability less than acceptable reliability percentage
  - Reward resources that have monthly average availability higher than acceptable reliability percentage



Availability incentive mechanism overview

- Create a new mechanism to incent availability, "Availability Incentive Mechanism" and retire the SCP incentive mechanism
- Assess availability based on bids into the ISO market – Were you supposed to bid? Did you bid?
- Single availability metric and price for system, local, and flexible capacity
- Fully account for flexible RA must-offer requirements
- Create an incentive structure where resources are rewarded more for availability in months where the ISO sees less availability



#### Summary of proposal design changes

- Revised AIM to assess a resource's average monthly availability
- Proposed an incentive mechanism monthly price
- Added a cap to the potential incentive mechanism payment a resource may receive
- Proposed specific resource exemptions to all AIM and generic-only AIM
- Added rules related to pumping load
- Clarified when the ISO will use a resources day-ahead or real-time performance
- Added an example on why the ISO proposes a single availability metric



#### **AVAILABILITY INCENTIVE MECHANISM PROPOSAL**



#### Availability Incentive Mechanism design summary

- Assess resource availability by comparing bids to applicable must-offer requirement in order to determine resource specific availability percentage
- Address different must-offer requirements for flexible and generic RA though a single availability concept
- Compare resource specific percentage against the standard percentage range to determine MWs to charge or receive payment
- Penalize low performers at \$3.5/kW-month and pay high performers pro-rata share of penalty pool up to double the incentive price
- Exempt certain resources from mechanism



Bid based assessment of hourly availability System and local hours of assessment

- System and local capacity is expected to be available 24 hours each day
- Certain resources are not under contract for this entire period and has previously relied on the CPUC's MCC buckets to appropriately limit subset of hours contracts
- The ISO proposes a two-phase path for hourly assessment of generic resources:
  - Phase 1: use 5-hour methodology from SCP availability incentive mechanism
  - Phase 2: assess benefits of using actual contracted hours



Bid based assessment of hourly availability Flexible RA hours of assessment

- Flexible resources hours will depend on the category
- Category 1 will be evaluated for 17 hours each day

 Category 2 will be evaluated for 5 hours based on seasonal assessment each day







Bid based assessment of hourly availability Counting flexible and generic RA capacity

- A resource that is shown for both flexible and generic RA may have instances when the generic and flexible mustoffer requirements overlap in MW and time
- Flexible must-offer requirements are a higher quality than generic must-offer requirements
  - If meet flexible must-offer requirement in hour, also will automatically meet generic must-offer in that hour
- Flexible RA requirements are a subset of system requirements
  - Flexible requirement intended to reduce amount of selfscheduling and increase economic bidding



Bid based assessment of hourly availability Counting flexible and generic RA capacity

- Three options for assessment:
  - 1) 2 prices: evaluate flexible and generic RA completely independently (a single MW could be counted in both flexible and generic assessment)
  - 2 prices: evaluate flexible and generic RA separately (a single MW could either be counted in flexible OR generic assessment)
  - 1 price: flexible and generic RA separately (a single MW could either be counted in flexible OR generic assessment)



Bid based assessment of hourly availability Option one: 2 prices, MW double counted

- The ISO assumes most, but not all flexible MWs will also be generic MWs
- There are two ways a flexible MW can fail to meet mustoffer obligation
  - Non-exempt outage: generic must-offer not met
  - Self-schedule: generic must-offer met
- Under option one therefore:
  - Flexible price must be high enough to discourage self-scheduling
  - Flexible price must be low enough to not double penalize a resource during resource outage



#### Bid based assessment of hourly availability Option one: 2 prices, MW double counted example

- Assume generic \$3.5 kW/month, flexible \$.5 kW/month
  - Flexible-only capacity would barely be incented to perform
  - Capacity counted under both flexible and generic mustoffer could self-schedule entire month and potentially receive a payment for availability
- Assume generic \$3.5 kW/month, flexible \$2 kW/month
  - Above issues are not longer a problem
  - If resource goes on outage (more likely than self-schedule) capacity is penalized at \$5.5 / kW month
- The design proposal is meant to incent flexible mustoffer compliance



Bid based assessment of hourly availability Option two: 2 prices, MW counted only once

- Will have to assess overlapping MWs (just like option three)
- Would have to determine difference in price between a flexible MW and generic MW
- ISO believes this would needlessly complicate availability incentive mechanism
- There are bigger differences between the local and system price than the flexible and system price
- Availability incentive mechanism is not meant to perfectly capture each resource's monthly capacity contract price



Bid based assessment of hourly availability Option three: 1 price, MW counted only once

- In the event that the flexible and generic must-offer requirements overlap, the capacity will be held to the higher flexible must-offer standard in order to be considered available
- Benefits in comparison to other options:
  - Incents flexible must-offer compliance
  - Prevents over penalizing a single MW in the availability assessment during an outage
  - Increased transparency of availability
  - Reduces complexity compared to option two



Bid based assessment of hourly availability Overlapping example: Summary

- Capacity will be counted only one time and will be held to the highest must-offer standard during hour
- Following example shows how availability will be assessed for a single hour for overlapping capacity
- Availability is calculated as\*: Economic bid + (total bid flexible RA showing) / total RA requirement, where
  - Total bid = self-schedule + economic bid + pmin
  - Total RA requirement = Max(flexible RA showing, generic RA showing)

\*complete formula in appendix



Bid based assessment of hourly availability Overlapping example: resource A characteristics

- NQC = 100 MW
- EFC = 100 MW
- Pmin = 0
- The resource is shown on the monthly resource adequacy plan for:
  - 70 MW of flexible capacity
  - 100 MW of system capacity



Bid based assessment of hourly availability Overlapping example: resource A bidding behavior

Self-schedule: 90 MW Economic bid: 10 MW Total bid: 100 MW



Bid based assessment of hourly availability Overlapping example: availability assessment

- Economic bid = 10 MW
- Total bid = 100 MW
- Flexible RA showing = 70 MW
- Eligible generic RA (Total bid flexible RA showing) = <u>30 MW</u>
- In this hour therefore, the resource's total availability is 10 MW flexible + 30 MW generic
- Availability percentage = 40MW / 100 MW or 40%



#### Price

Principles for availability incentive price

- Two ways to allow availability to impact the price paid to capacity
  - Decrease QC based on historic availability
  - Create payment/penalty structure to distribute RA capacity payments after the fact based on actual availability
- No pure theoretical way to come up with availability incentive price similar to other ISOs due to bilateral market construct where capacity is paid different prices per MW
- Goal is to have a price that incents maintenance of fleet and optimal behavior



#### Price AIM straw proposal price

- ISO proposes AIM price \$3.5/ kW- month
- Believes this reflects a price slightly above the average bilateral contract price
  - Market participant feedback
  - 2012 CPUC report (weighted average price 2013)
- Proposes escalation process
- Proposes to explore stakeholder suggestion on the link between CPM safe harbor price and AIM price



#### Monthly availability assessment Overview

- ISO will assess availability based on a monthly average
- If availability below threshold value the ISO will:
  - calculate the difference between the expected monthly availability (lower threshold MW value) and actual monthly availability (monthly average MW value)
  - Multiply this value times the incentive price
  - Pro-rate this amount by the number of eligible days in month



#### Monthly availability assessment Additional details

- Capacity on planned outages that do not require replacement capacity or have provided replacement capacity will not be eligible to be assessed under AIM
- Capacity will be paid a pro-rated amount based on the number of eligible days in the month



#### Availability Threshold Standard availability percentage proposal

- ISO proposes to fix a 4% band around 96.5%
  - Resource will be charged if availability falls below 94.5%
  - Resource will be paid if availability is above 98.5%
- Reflects a monthly resource adequacy construct that already varies requirement by month
  - Availability by percentage should be just as important in January as it is in August
- Reflects that some forced outages are expected and included in the planning reserve margin



#### Availability Threshold *Current and historical availability standards*

Trada Month	Availability Standard Percentage				Avorago
	2014	2013	2012	2011	Average
Jan	97.7%	97.5%	97.2%	98.0%	97.6%
Feb	97.0%	97.7%	97.8%	98.0%	97.6%
Mar	96.8%	97.0%	95.7%	96.0%	96.4%
Apr	96.2%	95.8%	95.4%	95.0%	95.6%
May	95.3%	94.9%	94.0%	95.0%	94.8%
Jun	96.3%	96.3%	96.6%	97.0%	96.6%
Jul	96.9%	96.6%	96.0%	96.0%	96.3%
Aug	95.1%	95.3%	96.8%	96.0%	95.8%
Sep	95.9%	95.5%	95.8%	96.0%	95.8%
Oct	95.3%	96.3%	97.2%	98.0%	96.7%
Nov	95.9%	96.1%	97.1%	96.0%	96.3%
Dec	97.4%	97.8%	97.7%	98.0%	97.7%
Average	96.3%	96.4%	96.4%	96.6%	96.4%



#### Availability Threshold Current availability band





#### Availability Threshold Proposed availability band





#### Historical average bounds and fixed price implications

- December, January, and February have the highest historical availability
- Resource availability is not rewarded in these months currently

	Average historical lower bound	Average historical upper bound
Jan	95.1%	100.0%
Feb	95.1%	100.0%
Mar	93.9%	98.9%
Apr	93.1%	98.1%
May	92.3%	97.3%
Jun	94.1%	99.1%
Jul	93.8%	98.8%
Aug	93.3%	98.3%
Sep	93.3%	98.3%
Oct	94.2%	99.2%
Nov	93.8%	98.8%
Dec	95.2%	100.0%





- AIM payments will be paid based on amount of dollars collected from penalty pool
- ISO proposes to pay out penalties pro-rata to capacity that has exceeded the threshold
- Payments will be capped at twice the availability incentive mechanism price
- Roll-over account will be created in the event there are excess monthly funds
- If there are still excess funds at end of year will be paid to load (currently each month excess funds are paid to load)



#### Exemptions Capacity exemptions

- Planned outage capacity that does not require replacement or has replacement provided
- Planned Unit testing
- Unit Cycling
- Unit Supporting Startup
- Transitional Limitation
- Ambient not due to Temperature
- Transmission induced Outage
- Environmental Restrictions Use Limit Reached
  - Will be monitored for excessive use



#### Exemptions

Treatment of use-limited resources

- Daily limitations
  - MWh or other limitations, these can be accounted for in the optimization and should not lead to the need for special treatment under availability incentive mechanism
- Monthly limitations
  - Optimization cannot account for monthly limitations at this time
  - Will allow resources to include opportunity cost in their minimum load and start up (Commitment cost enhancements initiative)
  - Some use-limited resources may be exempt, this will be determined through a review of use plans


#### Exemptions

Exempt resources from flexible and generic AIM

- Proposed exempt resources:
- Pmax < 1.0 MW
- Contracts for Energy from non-specified resources
- Modified Reserve Sharing LSE and Load following MSS resources
- Most Qualified Facilities (QFs)
- Some use-limited resources if use-limitation cannot be captured in market optimization or opportunity cost calculation



#### Exemptions Wind, solar, CHP

- Wind, solar, and CHP resources are different from other resource types
- Availability is taken into account in their Qualified Capacity (QC) value
- Additionally, wind and solar are required to offer up to forecast value, not RA value
- ISO proposes to exempt wind, solar, and CHP resources from generic availability calculation
  - Already have incentive to be available as low availability would lower the QC
  - May unfairly take AIM payments from other resources since compared against forecast and not RA value



### Exemptions

Grandfathering provisions in SCP mechanism

- Current SCP mechanism will retire with the implementation of availability incentive mechanism, so grandfather provisions will no longer apply
- Will be up to market participants to justify new grandfathering provisions
- If justified, ISO may consider limited grandfathering that sunsets at a certain date
  - ISO encourages market participants to comment on what would be an appropriate date



# **REPLACEMENT & SUBSTITUTION**



#### Replacement and substitution purpose

- Replacement rule- define when additional capacity is needed to accommodate a planned outage
  - Planned outages are not accounted for in PRM
  - Outages are allowed on monthly RA resources
  - Replacement rule currently evaluates system capacity
- Substitution rule- define when additional capacity is needed to accommodate a forced outage
  - Forced outages are accounted for up to a point in PRM
  - "Like for like" rules cover system and local capacity needs



#### Replacement and substitution overview

- Need to integrate flexible RA requirements in replacement and substitution outage rules
- ISO considering provisions to simplify and increase transparency of current outage rules
  - ISO is planning on updating flexible RA requirements in Spring 2016
  - Flexible planned outage rules on non-updated flexible rules would be implemented in Fall 2016
  - The ISO would then need to change planned outage rules immediately after implementing first set of rules
- Therefore, ISO proposes to delay flexible RA outage rules



## Replacement and substitution roadmap

Expected implementation date		2016 RA year	2017 RA year	2018 RA year
Proposed in RSI Phase 1	Planned outages	Small changes to replacement rule to ensure flexibility of fleet in real-time	Redesign of replacement rule for system RA and monthly RA process	N/A
	Forced outages	Enhancements to current rules and new flexible RA forced outage rules	Any policy unable to be implemented by 2016	N/A
Proposed in RSI Phase 2	Planned outages	N/A	Any additional changes in advance of implementing updated flexible RA requirements and associated outage rules	Rules related to flexible RA planned outages
	Forced outages	N/A		Updated rules related to flexible RA forced outages, if necessary



Replacement and substitution agenda

- 1. Replacement rules targeted implementation prior to 2016 RA year
- 2. Substitution rules targeted implementation prior to 2016 RA year
- 3. Outage rules targeted implementation prior to 2017 RA year



# PLANNED OUTAGE RULES TARGETED IMPLEMENTATION PRIOR TO 2016 RA YEAR



### Replacement rule background

- ISO relies on monthly RA showings to ensure capacity is available throughout the month
- Monthly RA requirement varies by month
- Planned outages are not accounted for in the planning reserve margin
- It is expected a resource will take a maintenance outage during months it is not shown as RA or that the during the planned outage the scheduling coordinator will "replace" the outage capacity
- Replacement rule ensures 115% of system capacity



#### Replacement rule issues

- ISO filed flexible RA requirement in August
  - Does not propose to implement replacement rule for flexible RA until 2018
  - There will therefore be a gap in flexible planning process
- ISO has observed that system resources are not always replaced with similar characteristic resource
  - For example:
    - MCC buckets: use limitations may increase beyond acceptable level
    - Dispatchability: Flexible *attributes* may not be replaced



#### Replacement rule proposal

- 1. Dispatchable resources cannot be replaced by nondispatchable resources
  - a) Will need to update dispatchable definition in tariff
- 2. Non-use-limited resources cannot be replaced by uselimited resources
  - a) Considering updating use-limited definition in tariff



# FORCED OUTAGE RULES TARGETED IMPLEMENTATION PRIOR TO 2016 RA YEAR



### Substitution background

- Forced outages are expected to occur at a certain rate throughout a month
- Availability incentive mechanism is in place to incent SC's to provide additional RA capacity to the ISO in the event this rate is higher than expected
- Substitution rules dictate how this additional RA can be provided to the ISO
  - Timeframe for providing substitution
  - Resource characteristics ("like for like" criteria)



#### Substitution issues

- Automated many-to-many substitution has not yet been implemented
- Substitution RA is locked in even if outage moves or is cancelled
- Deadline for providing day-ahead substitution is very early in the morning



Substitution issues (cont.)

- The ISO does not allow real-time substitution for system resources
- Local substitution rules require the substitute capacity to be located at the same bus in real-time
- No flexible RA substitution rules in place



## Substitution proposal

Automated many-to- many substitution has not yet been implemented	<ul> <li>System on track for Fall 2015 implementation</li> <li>Propose to implement this for flexible substitution in 2016</li> </ul>			
Substitution is locked in even if outage moves or is cancelled	<ul> <li>Propose to provide flexibility to move substitute RA capacity in the event the outage is moved or cancelled</li> </ul>			
Deadline for providing day-ahead substitution is very early in the morning	<ul> <li>Propose to move deadline from 6am to 8am</li> </ul>			



## Substitution proposal (cont.)

The ISO does not allow real-time substitution for system resources

 Explore pre-qualification process for system resources

Local substitution rules require the substitute capacity to be located at the same bus

• Explore whether same bus is always necessary

No flexible RA substitution rules in place

- Propose category or better substitution rules for flexible RA
- Propose substitution quantity flexibility



#### Substitution for flexible RA resources

- ISO will make no presumptions on how resource with flexible RA on it will operate
- In the event of an outage, the ISO will allow SC to provide ISO with substitute capacity up to the outage amount
- This is necessary because ISO cannot determine in advance how a resource will meet a flexible requirement



Options to meet 60 MW flexible RA requirement





# OUTAGE RULES TARGETED IMPLEMENTATION PRIOR TO 2017 RA YEAR



# RA and outage process background: Monthly validation and requirements

- Monthly RA planning process ensures system, flexible, and local requirements are met with <u>monthly</u> RA plans
  - These resources may be on planned outage for all or part of the month
- Monthly outage planning process ensures system requirement is met <u>daily</u> during planned outages
  - Outage impact assessment checks system requirement daily and requires replacement for capacity on outage if system is short



RA and outage process background: complexity

- ISO process and rules surrounding monthly process for monthly RA validation and replacement rule are very complicated
- Numerous issues identified both by internal to ISO and by external participants
- Much of the complexity comes from the fact the ISO has two separate processes for planned outages with different:
  - Approval procedures by ISO
  - Obligations on supplier and LSE
  - Requirements of when to replace
  - Penalties, if replacement is not provided



RA and outage process background: rules for planned outages prior to 45 days before the RA month (T-45)

- Outages will be approved, denied, or pending by T-25
  - The ISO considers all outage requests within outage assessment
- The obligation to replace is on the LSE
  - Outages stacked in first in, last out order
  - If system short and LSE short, LSE must replace
- Replacement is non-discretionary
- Non-replaced outages may trigger a monthly CPM event
  - Costs allocated to deficient LSEs



RA and outage process background: rules for planned outages <u>after</u> 45 days before the RA month (T-45)

- Outages will be approved, denied, or pending by T- 11
  - The ISO considers outage requests as they come in with no deadline
- The obligation to replace is on the supplier
  - Supplier may have to replace all, some, or none of the planned outage capacity
- Replacement is discretionary
- Non-replaced outages may be cancelled or denied
  - If the planned outage turns into a forced outage, the supplier would face SCP incentive mechanism penalties



Monthly RA and outage issues: Process complexity

- Data transparency issues, additional administrative and coordination costs for the market, customer frustration, and general dissatisfaction
  - Overlapping cure periods for LSE monthly RA requirements and LSE replacement requirements
  - Overlapping cure periods for LSE replacement requirements and supplier replacement requirements
  - Tracking outage replacement responsibility across multiple entities
  - Multiple LSE replacement responsibility for a single outage



Monthly RA and outage issues: ISO dual processes and associated incentives

- Dual processes potentially creates incentives for suppliers to cherry pick process
- ISO is concerned that it appears an increasing and significant number of outages are coming in after T-45
  - Less time to evaluate outage impacts on ISO system
  - More ISO ends up moving around outages to try and accommodate all necessary work
  - Concerned in the future this will not allow enough time for market participants to contract with additional capacity



#### Monthly RA and outage issues: Contract complexity

- Dual processes make it difficult for market participants to anticipate costs and risks related to outages
- If cannot easily quantify costs and risks, then contracting becomes difficult and more costly
- The timing of submission drives the obligation of replacement and potential penalties
  - Obligation on LSE or supplier
  - Penalty could be CPM, outage cancellation, or availability incentive mechanism



Monthly RA and outage issues: Inefficient RA commitment and over-procurement

- Use of load forecasts in both planning and operating horizons
- Overlapping cure periods
- Immobile RA commitment established in planning horizon
- Timing of outage assessment



Monthly RA and outage issues: Risks related to cancelling or moving planned outages

- ISO asks suppliers to move planned outages after T-45
  - Typically if ISO asks suppliers to move the ISO will not require replacement capacity
  - Any RA provided as replacement for the initial outage is still subject to SCP mechanism
- Suppliers cancel or move outages after T-45
  - Any RA provided as replacement for the initial outage is still subject to SCP mechanism
  - If outage moves may be required to provide additional replacement capacity



Monthly RA and outage issues: Unnecessary SCP incentive mechanism risk

- Local area capacity commitment
  - In the monthly planning process the ISO counts RA as local on an LSEs plan even if the resource is not needed to satisfy the LSEs local requirement
  - This causes LSE leaning in the validation process
  - During the RA month, this capacity must then be substituted with local capacity if a forced outage occurs



# Monthly RA and outage issues: Outage information sharing

- ISO shares information to aid in cure process
  - LSE is responsible for any necessary replacement if planned outage reported to ISO prior to 45 days before the RA month
  - ISO therefore must inform LSE of supplier outage so that it can be cured
  - Certain market participants have indicated they feel there are confidentiality issues with this process



## Monthly RA and outage process proposal: Summary

- ISO proposes both timeline and rule changes to monthly RA planning and outage process
- Goal is to remove complexity in rules and processing





Monthly RA and outage process proposal: Summary

- ISO proposes both timeline and rule changes to monthly RA planning and outage process
  - Goal is to remove complexity when it does not serve a reliability purpose
- Vision:
  - Outages with nature of work categories
  - Depending on the outage category, the ISO will require or allow:
    - Planned outage substitute capacity
    - Forced outage substitute capacity
    - No substitute capacity
  - All outages run through same processing system



# Monthly RA and outage process proposal: Monthly RA timeline changes



Proposed Process





# Monthly RA and outage process proposal: Outage assessment timeline changes



Suppliers responsible for working separately with outage management office for planned outages given to the ISO after T-25 and any increases or changes to any outages



Suppliers responsible for working separately with outage management office for planned outages given to the ISO after T-25 and any increases or changes to any outages



Proposed Process
Monthly RA and outage process proposal: Separation of LSE and supplier responsibility

- Supplier will be responsible for all outage replacement
- Currently, ISO sees majority of outages come in after T-45 and so the obligation is on the supplier
- ISO understands that ultimately it is the contract between the supplier and LSE that dictates which party will provide replacement capacity to ISO
- The ISO is willing to explore potential for LSEs to show a daily RA value in the event a contract between LSE and supplier does not put the obligation to replace during planned on the supplier



Monthly RA and outage process proposal: Consistent forecast used to assign needed capacity

- ISO proposes to investigate whether a more up-to-date forecast could be done at T – 25.
- Currently, after T-45, the ISO will use discretion on replacement
- The ISO proposes to create clear, transparent rules on when replacement will be needed and to use a single set of rules regardless of when the planned outage is reported



Monthly RA and outage process proposal: Penalties for planned and forced outages aligned

- The ISO proposes to remove the potential of designating capacity under a monthly CPM in the event a resource does not supply replacement capacity
- Instead the ISO may cancel or deny the outage
- In the event the outage takes place anyway, regardless of whether it is still reported as a planned outage or was removed and reported as a forced outage, the capacity will be subject to the availability incentive mechanism



Monthly RA and outage process proposal: Release of substitute capacity as RA capacity in the event an outage moves

- Currently once capacity is accepted by the ISO as replacement capacity it is considered RA
  - Cannot be released
  - Is subject to SCP mechanism
- ISO proposes in the event an outage moves or is cancelled, the scheduling coordinator will be able to move any planned or forced substitute capacity up to the amount moved or cancelled



Monthly RA and outage process proposal: Separation of system and local showings

- The ISO proposes to enhance the monthly RA showing process and require LSEs to indicate which MWs are being shown as local capacity to meet the LSEs requirement
- The ISO in real-time will then require local substitution only if the capacity was shown on the LSEs plan as local



## Next steps

- Comments due September 5<sup>th</sup>, 2014
  - Send to RSA@caiso.com
- No stakeholder comment template posted.





## **APPENDIX**



Bid based assessment of hourly availability Formula for availability

Hourly availability:

{ Min(economic bid + eligible pmin, flexible RA showing) + Min {Max generic incentive, Max(0,Total bid – flexible RA showing) } / Total RA requirement, where

Total bid = self-schedule + economic bid + pmin

Total RA requirement = Max(flexible RA showing, generic RA showing)

Max generic incentive = Max (0, Generic RA showing – Flexible RA showing)



Bid based assessment of hourly availability Overlapping capacity example: Resource characteristics

- NQC = 100 MW
- EFC = 80 MW
- Start-up time (SUT) = 120 minutes
- Pmin = 20 MW
- The resource is shown on the monthly resource adequacy plan for:
  - 60 MW of flexible capacity
  - 60 MW of system capacity



Bid based assessment of hourly availability Overlapping capacity example: Resource bidding



