

# **Reliability Services Initiative**

Draft straw proposal meeting June 12<sup>th</sup>, 2014

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## 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: Straw Proposal Posted	Thursday, June 05, 2014	
Meeting: Straw proposal meeting	Thursday, June 12, 2014	
Comments due: Straw proposal comments	Thursday, June 26, 2014	
Paper: Revised Straw Proposal	August	
Paper: 2nd Revised Straw Proposal	October	
Target Board of Governors Meeting	Q1 2015	



# **ISO Policy Initiative Stakeholder Process**





Stakeholder Meeting Agenda- June 12th, 2014

Time	Торіс	Presenter
10:00 - 10:05	Introduction	Tom Cuccia
10:05 – 10:35	Minimum Eligibility Criteria and Must-Offer Rules	Karl Meeusen
10:35 – 12:00	Availability Incentive Mechanism	Carrie Bentley
12:00 - 1:00	Lunch	
1:00 – 1:30	Availability Incentive Mechanism (cont.)	Carrie Bentley
1:30 – 2:30	Replacement and Substitution	Steve Keehn
2:30 - 2:45	Break	
2:45 – 3:50	Capacity Procurement Mechanism	Carrie Bentley
3:50 - 4:00	Next steps	Tom Cuccia



# DEFAULT QUALIFYING CAPACITY AND MUST-OFFER OBLIGATIONS ASSESSMENT

#### **K.MEEUSEN**



Guiding design principles for default qualifying capacity criteria and must-offer obligations

- Resources should able to meet the requirements of a defined product and can be used interchangeably with other resources providing the same product
- Products should designed to address a specific ISO need



# The ISO has reviewed all existing default qualifying capacity criteria

- Resource types without defined eligibility criteria
  - Non-generator resource
  - Distributed generation facilities
- Resource types requiring redefined default qualifying capacity criteria
  - Proxy demand resources
- In Phase 2, the ISO will conduct an assessment that will:
  - Provide guidance about the what is needed to address system and local capacity needs
  - Determine if MCC buckets will continue to effectively meet the ISO's reliability needs



The ISO is proposing default qualifying capacity provisions for distributed generation facilities

- Same availability criteria for distributed generation facilities in a resource classification as for those in the same resource classification interconnected to the transmission system
  - Example, a solar resource connected to the distribution system has same default availability and eligibility criteria as a solar resource connected to the transmission system
- Must be a participating generator or a system resource
  - Requires the resource be at least 0.5 MW



# The ISO is proposing default qualifying capacity provisions for non-generator resources

- Default qualifying capacity calculation based on the resource's discharge capability
- The ISO will provide two different default qualifying capacity provisions:
  - Regulation energy management (REM)
    - Based on their ability to provide energy for 15 minutes
  - Energy and regulation
    - Based on the amount of output the resource can sustain over a four-hour period
- Cannot choose the REM for the default qualifying capacity provisions and the energy option for EFC or vice versa
- Must be a participating generator or a system resource
  - Requires the resource be at least 0.5 MW



The ISO is proposing revised default qualifying capacity provisions for proxy demand resources

- Current default criteria for PDR:
  - Available for four hours per month
  - 30 minutes per event
- These requirements are inconsistent with the default provisions used for other resource classifications
- The ISO is proposing to replace the existing PDR default criteria requirements with at least :
  - 24 hours per month
  - Three consecutive days
  - Four hours per dispatch



The ISO is clarifying the application of existing mustoffer obligations for distributed generation facilities

- Must-offer obligation should be independent of resource's interconnection point within the ISO's BAA
- Supply-side resource adequacy resources of a given resource type should be subject to the same must-offer obligation regardless of the point of interconnection:
  - Grid level or
  - Distribution level



Non-Generator Resources should have a must-offer obligation comparable to a non-use limited resource

- Energy and regulation resources:
  - Self-schedule or economic bid for all energy and all certified ancillary services for all RA capacity
- REM resources:
  - Self-schedule or economic bid for all certified regulation capacity
- Other:
  - The ISO will optimize the dispatch of the resource charge and discharge capabilities
  - REM resources must be registered in master file and may only provide regulation to the ISO market, cannot submit commitment costs
  - Bid insertion will apply
    - Must determine methodology to calculate default energy bid
    - Ancillary Services bid at \$0



# The ISO must commence some phase two aspects now in order to resolve them in a timely manner

- Allowing 15-minute interties to provide flexible capacity
  - Minimum eligibility criteria
  - Maximum quantity of EFC that that does not have 5-minute dispatchablity that can count for providing flexible capacity while ensuring a single product can simultaneously address five minute load-following needs and longer steep ramps
- Block dispatchable pumping load
  - In reviewing this issue the ISO has identified several challenges
    - Voltage support
    - Congestion management
  - ISO must consider what "deliverability" means when addressing not just the pumping load, but any storage load



# AVAILABILITY INCENTIVE MECHANISM

#### **C.BENTLEY**



### Background

- The current standard capacity product (SCP) incentive mechanism does not address:
  - Economic bidding must-offer requirements
  - All use-limited resources
  - Certain renewable and preferred resources



# Percent of Resource Adequacy *capacity* (MW) subject to incentive mechanism by use-limitation class



- Use-limited resources exempt from incentive mechanism
- All other resources exempt from incentive mechanism
- Use-limited resources subject to incentive mechanism
- All other resources subject to incentive mechanism



Availability incentive mechanism proposal

- Create a new mechanism to incent availability, "Availability Incentive Mechanism" and retire the SCP incentive mechanism
- Single availability metric for local, system, and flexible RA capacity that will assess availability based on bids into the ISO market
- Fully account for flexible RA must-offer requirements
- Create market-based incentive structure where resources are paid more for availability in months where the ISO sees less availability



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 single availability concept
- Compare resource specific percentage against the standard percentage range to determine MWs to charge or receive payment
- Create a single price per MW to charge capacity outside band



Availability incentive mechanism agenda

- 1. <u>How will availability be assessed?</u>
  - a. Availability definition
  - b. Hours of assessment
  - c. Methodology of assessment
- 2. What will availability be assessed against for funding?
  - a. Standard availability percentage bandwidth
  - b. Self-funding concept
  - c. Price, payments, and charges
- 3. <u>What capacity is subject to assessment?</u>
  - a. Wind and solar
  - b. Exempt capacity and resources



## HOW WILL AVAILABILITY BE ASSESSED?



## Availability definition general

- Availability is defined as RA capacity being made available to the ISO in accordance with the must-offer requirements during a pre-determined set of hours
- Capacity is made available to the ISO by bidding into the applicable IFM, RUC, RT and AS markets
  - The AIM will only assess bidding into the day-ahead (IFM) and real-time (RT) energy markets
- Capacity can be bid into the energy markets as either:
  - an economic bid (there is a price associated with the bid)
  - a self-schedule (there is only a penalty price associated with the bid)



Availability definition: system and local capacity

- System and local capacity have the same must-offer requirements (tariff section 40.6.2) and are considered "generic" capacity
- Capacity can be self-scheduled or economically bid to satisfy bidding portion of availability assessment
- Resources bid obligations are based on their resourcespecific characteristics
- Generic capacity is considered available if it meets its must-offer obligations



Availability definition: flexible capacity

- The flexible must-offer requirement tariff rules are under development and not yet filed at FERC
- Flexible capacity must be economically bid to satisfy bidding portion of availability assessment
- Resources bid obligations are based on their resourcespecific characteristics
- Flexible capacity is considered available if it meets its specific category must-offer obligations



Availability definition: flexible Pmin capacity

- Pmin capacity may be considered as available to meet the flexible must-offer requirement if the resource meets the following conditions:
- 1. The resource must have a SUT less than or equal to 90 minutes
- 2. The resource has at least a portion of its capacity above Pmin economically bid into the energy market
- 3. No portion of the resource can be self-scheduled into the energy market



Hours of assessment: generic capacity

- 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



### Hours of assessment: flexible capacity

- 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
  - Category 3 will be evaluated for 5 hours on non-holiday weekdays based on seasonal assessment





Methodology of assessment: generic RA capacity that is not shown as flexible RA capacity

- 1. Each hour,
  - a. Capture the Pmin, self-scheduled, and economic bid amounts offered into the DA and RT energy markets up to the amount shown on the resource's supply plan
- 2. Each day,
  - a. Assess the difference between the MW amount bid during all generic must-offer hours and the supply plan
  - Determine resource's lowest availability percentage between DA and RT
  - c. Charge or pay resource based on the difference between resource specific availability percentage and standard availability percentage band



Methodology of assessment: flexible RA capacity that is not shown as generic RA capacity

- 1. Each hour,
  - a. Capture the economic bid amounts offered into the DA and RT markets up to the amount shown on the resource's supply plan
- 2. Each day,
  - a. Assess the difference between the amount bid in during all flexible must-offer hours and the supply plan
  - b. Determine resource's lowest availability percentage between DA and RT
  - c. Charge or pay resource based on the difference between resource specific availability percentage and standard availability percentage band



Methodology of assessment: a resource that has capacity shown as both flexible and generic RA

During all RA availability assessment hours, the ISO will:

- 1. Each hour,
  - a. Capture the applicable bids and Pmin amounts offered into the DA and RT markets up to the amount shown on supply plan
- 2. Each day,
  - a. Assess the difference between the bid during <u>all</u> must-offer hours and supply plan quantities
  - b. Determine resource's lowest availability percentage between DA and RT
  - c. Charge or pay resource based on the difference between resource specific availability percentage and standard availability percentage band



Methodology of assessment: a resource that has capacity shown as both flexible and generic RA

- A resource that is shown for both flexible and generic RA may have instances when the generic must-offer and flexible must-offer requirements overlap
- 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
- This proposal prevents double counting a single MW in the availability assessment
- Overlapping capacity leads to more a more complicated assessment methodology



Overlapping flexible and system RA

- In order for flexible and generic RA to overlap, they must overlap in:
  - Must-offer hours





Overlapping capacity example: Resource A 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



Overlapping capacity example: Resource A bidding





### **Overlapping example: Summary**

- Following example shows how the ISO will assess a resource's availability in the event a resources flexible and generic RA overlap in both hours and capacity
- Capacity will be counted only one time and will be held to the highest must-offer standard



Overlapping example: resource B 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



Overlapping example: resource B bidding behavior

## Self-schedule 90 MW Economic bid 10 MW




Overlapping example: ISO availability assessment of resource B

- Total RA = Max(flexible requirement, generic requirement) = 100 MW
  - Required flexible RA = 70 MW
  - Remaining generic RA = 30 MW
- Economic bid = 10 MW
- Total bid = 100 MW; capped at generic RA req = 30 MW
- In this hour therefore, the resource's total availability is 10 MW flexible + 30 MW generic
- Availability percentage = 40MW / 100 MW or 40%



## WHAT WILL AVAILABILITY BE ASSESSED AGAINST?



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 June as May
- Reflects that some forced outages are expected and included in the planning reserve margin



#### Current and historical availability standards

Trade 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%
Мау	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 standard percentage – fixed band consideration 1

- The availability incentive mechanism is self-funding mechanism
- Each MW below the standard band is charged the availability incentive price
- Each MW above the standard band will receive a prorata share of availability incentive pool from unavailable resources with no cap
- A fixed standard percentage will allow resources to receive payments in months of average high availability



#### 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
- May has the lowest availability and easiest threshold to meet

	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%



Availability standard percentage – Fixed band consideration 2

- Fixing the percentage will reward availability more in months when the ISO needs the availability more
- In months where there is on average high availability-
  - fewer resources will be charged and therefore resources will receive less of an incentive payment to perform
- In months with low availability-
  - more resources will be charged and higher performing resources will be paid a higher amount per MW to perform



Availability standard percentage – Fixed band consideration 3

- Fixing the availability standard percentage will allow the mechanism to always charge resources if they are not meeting the minimum amount relied on by the ISO to operate the grid
- It will incent resources to at least meet their target in each month because they will always be charged for being below a fixed band
- It will further incent resources to be above target in each month because there is a greater upside and the payment is not limited to the MW-charge rate



#### 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



#### Availability incentive potential prices

- Be a high enough price to incent routine resource maintenance to prevent significant forced outages
- Be a low enough price not to be overly punitive to resources
- Reflect the value of replacement capacity plus a small premium
- Mirror market conditions as possible



#### Considerations for inventive mechanism price

- Linked to the monthly or intermonth CPM price
   Potentially offer cap
- Derived using capacity contract data from the CPUC
- Cost-based price



## WHAT CAPACITY AND RESOURCE TYPES ARE SUBJECT TO THE NEW AVAILABILITY INCENTIVE MECHANISM?



#### Availability incentive mechanism- exempt capacity

- Planned outages
- 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



Availability incentive mechanism- treatment of uselimited 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



Availability incentive mechanism- renewable resources

- The energy market optimization has functionality for wind and solar resources that allows these resources to bid or self-schedule up to their forecast
- For resources that have output dependent on a dynamic forecast:
  - minimum of the amount shown for resource adequacy and either the ISO or the scheduling coordinator provided forecast
  - renewable resource is 100% available in any hour the resource is bid in up to the forecast amount even if the resource is shown for a higher amount on the capacity plan
- Appropriate because QC accounts for resources not being able to provide full RA amount



Availability incentive mechanism- exempt resources

- 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



Availability incentive mechanism- grandfathering provisions

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



## **REPLACEMENT & SUBSTITUTION**





Why the Current Replacement Rule?

- Monthly requirements account for forced outages,
  - resources can do maintenance in months they are not RA
- Previous CPUC replacement rule eliminated with expectation that ISO would handle replacements
  - ISO rule designed to ensure RA capacity is actually available to the ISO, except for forced outages
  - ISO rule provides opportunities for resources to take maintenance outages



Why the Current Replacement Rule? Cont.

- Responsibility to ensure RA availability is shared between LSEs and suppliers:
  - LSEs expected to include available RA in monthly showings
  - RA Resources expected to be available during the month
  - Balance of stakeholder positions, and continues situation that existed under previous CPUC replacement rule



#### **Current Substitution Rules**

- Availability incentive mechanism
  - Planned maintenance outages are excluded
  - Forced outages impact availability
- Monthly calculation of availability means short forced outage may have penalty
- Substitution provides method for resource to avoid penalties if it has a forced outage
  - Appropriate resource provides substitute RA



Replacement and substitution issues addressed in RSI

- Need to extend replacement and substitution to flexible RA
  - Similar to current rules for system/local RA
- Replacement
  - Complexity
  - Replacement for local/flex RA not counted as local/flex
  - CPM designation risk
  - Resource Leaning
  - Which entity is responsible for replacement
- Substitution
  - Many-to-Many substitution
  - Real-time Substitution



#### Flexible RA Replacement

- LSEs monthly showings include available flexible RA
  - ISO will calculate need for replacement flexible capacity similar to system today:
    - If outage leaves LSE with less than required
    - Then check is total flexible RA on each day of outage exceeds the total requirement
- Resources responsible for outage requests after showings
  - Under revised OMS tariff rules, resources can request:
    - Maintenance Outage with replacement
    - Maintenance Outage without replacement
    - Off-Peak Opportunity Outage
    - Short Notice Opportunity Outage



#### Flexible RA Replacement cont.

- Resources can provide both flexible and system RA
  - May need to replace either or both flexible and system RA
  - May use same or different resources to replace flexible and system
  - Since replacement is done daily, may need to replace on any given day:
    - Flexible RA
    - System/local RA
    - Both
    - Neither



#### Flexible RA Substitution

- Similar to existing rules for system RA
  - Substitute must be similar resource
    - Flexible categories
      - Same availability hours or more
    - Operational characteristics
      - Similar ramp rates?
  - Must be submitted before close of IFM day ahead
    - In order for ISO to analyze and approve
  - If resource on outage is providing both system/local and flexible RA, will need to substitute for both
    - Can be from one resource which can provide both, or from multiple resources
  - Stakeholder suggestions for simplification?



#### Additional Replacement Rule Issues

- Complexity
  - Existing replacement can be complex and adding flexible RA will only increase complexity
  - Could complexity be reduced by altering responsibility?
    - Resources responsible for all replacement
    - LSEs responsible for all replacement and availability incentive
    - Modification of current sharing of responsibility
  - Other stakeholder suggestions for reducing complexity?



Additional Replacement Rule Issues cont.

- Replacement for local/flex RA not counted as local/flex
  - For replacement, local replacement not required
- CPM designation risk
  - Not all contracted resources shown as RA, so could get CPM
- Resource Leaning
  - All LSEs face same responsibility to replace similar resources
  - Requiring replacement for all outages might create excess RA



#### Additional Substitution Rules

- Many-to-Many Substitution
  - Manual, limited is currently available
  - Automatic will be implemented when possible
- Real-time Substitution for non-Local RA Resources
  - Local real time is very limited
    - Must be similar resource at same bus,
      - Substitution creates no reliability issues and no need to analyze
  - Could possibly extend to non-local
    - Non-local and/or flexible RA substitutions could be prequalified annually if similar resources at same bus
    - Would this provide any benefit?
    - Are there reduced requirements that might work?



# **CPM REPLACEMENT PROPOSAL**

#### **C.BENTLEY**



#### CPM replacement for RSI phase 1 and phase 2

- There is a distinction between current CPM designation events and a multi-year forward CPM that go out further into the future
  - Year to current: ISO will look primarily to the CPM order for discussion of CPM compensation, which stressed the need for flexibility in the CPM price to reflect market conditions
  - Multi-years forward: If there is a need to backstop for multiyear, at that time the ISO would look toward the FLRR order
- In phase 1, the ISO will only focus on the current CPM designation events, which do not include a multi-year forward CPM



#### **Options for CPM replacement**

- Direction from FERC in response to ISO's initial CPM proposal:
  - Procurement design should provide a reasonable opportunity to recover fixed costs and reflect fluctuating market conditions
  - Backstop CPM should also support incremental investment by existing resources to perform long-tern maintenance
- ISO considered two main options (1) Index price using RA bilateral market data, (2) Competitive solicitation process



#### Index price

- If the ISO submitted an index capacity price of contracts for CPM replacement FERC might ask the following:
  - Are the products procured in the contracts the same as what the ISO would procure in the future under CPM?
  - Is the price flexible enough to reflect market conditions in the event of future reliability events?
  - Is the index-based price set by an entity or decision an administrative price? If I am limited to a price set by historical data, describe how that is that a market-based price?



Competitive solicitation process

- 2004 FERC outlined 4 rules for process:
  - Transparency
  - Defined products
  - Evaluation criteria
  - Independent oversight
- There must be transparency in the price and the rules and mechanisms on what seller is picked and how offers are processed
- Whether the competitive solicitation leads to transparent price signals is dependent on the market design



#### Design summary: Competitive solicitation process

- Maintain the majority of the current CPM rules
- Use competitive solicitation process in the event a CPM designation is necessary
- Run process as needed by CPM designation time period
  - Annual
  - Month
  - Inter-month (exceptional dispatch and significant event designations)
  - Ad hoc (risk of retirement designation)



#### **CPM** designation events

- Annual deficiencies
  - Insufficient local in annual resource plan
  - Collective deficiency in Local area
  - Insufficient RA in annual resource plan (in August)
- Monthly deficiencies
  - Insufficient RA in monthly resource plan
  - Collective deficiency in Local area

- Daily deficiencies

   Replacement
   requirement deficiency
- Unsystematic deficiencies
  - Significant event
  - Exceptional Dispatch
  - Risk of retirement



# Proposed competitive solicitation process basis (tariff section 43.4)

- the effectiveness of the Eligible Capacity at meeting the designation criteria specified in tariff section 43.2;
- the capacity costs associated with the Eligible Capacity;
- the quantity of a resource's available Eligible Capacity, based on a resource's PMin, relative to the remaining amount of capacity needed;
- the operating characteristics of the resource, such as dispatchability, Ramp Rate, and load-following capability;
- whether the resource is subject to restrictions as a Use-Limited Resource; and
- for designations under tariff section 43.2.3, the effectiveness of the Eligible Capacity in meeting local and/or zonal constraints or other CAISO system needs.


# Competitive solicitation process

- ISO is in initial design stages and seeks stakeholder feedback on whether to pursue further
- Use tariff criteria section 43.4 to determine which resource to designate CPM
  - Replace current "capacity term" with procedure for resources to be offered into competitive solicitation process
  - Seek stakeholder input on other terms in section 43.4 to include or alter accommodate competitive solicitation process
- Process run annually, monthly, and inter-monthly as needed



### Competitive solicitation process capacity offers

- In all processes the ISO will solicit offers for capacity prior to the determination of CPM designation need
- Designation process will only occur if the ISO determines there is a qualifying CPM designation event
- Offers will take the form of a single price for all MWs
  - Price can vary by flexible, system, and local capacity
  - If submitting a flexible and system offer, must also submit offer to provide both capacity types
  - Offer is firm and locked in for a designated period of time



#### CPM designation for annual deficiencies

- Annual RA offered into CPM annual tool in \$/kW-month
- Single price for capacity; however, can vary by month and capacity type
- ISO will validate offers
- In the event of a backstop need, offers will be evaluated based on rules defined in tariff section 43.4
- In the event of a CPM designation the ISO would pay resource as bid cost



#### Annual Resource Adequacy timeline



LSEs procure for next compliance year



# CPM designation for annual deficiencies timeline

Annual CPM offer due	Report with individual and potential collective deficiencies	Cure period and option to remove CPM offer	Anı desig	nual CPM gnation tool	6 6 6
La busi day i	n Oct + 21	days +21 ov) (D	days ec)		RA year



# CPM designation for monthly deficiencies

- Monthly RA offered into CPM annual tool in \$/kW-month
- Single price for capacity; however, can vary by month and capacity type
- ISO will validate offers
- In the event of a backstop need, offers will be evaluated based on rules defined in tariff section 43.4
- In the event of a CPM designation the ISO would pay resource as bid cost



# CPM designation for monthly deficiencies timeline

Monthly CPM offer due	Validation & calculation o shortages & outage repor	f Cure p	eriod	Competitive solicitation run as needed	
45 d befo mo	days 2 re RA be onth r	5 days fore RA nonth	11 d befor mor	ays 7 e RA bef 1th m	RA month days ore RA onth



Exceptional dispatch and significant event

- ISO will use capacity offers from the monthly process in any inter-monthly process
- Offers:
  - Can reduce in quantity all the way to 0 MW
  - Can reduce in price
  - Cannot increase in price
- Any capacity designated under an ED or SE will be paid its offer price accounting for any mitigation



# **Risk-of-retirement designation**

- In order to be eligible for risk-of-retirement CPM designation a resource must:
  - Offer into all competitive solicitation processes
  - Comply with current tariff rules, including requirement to have participated in bilateral request for offers
- In the event of a risk-of-retirement designation the ISO will pay the resource its annual competitive solicitation process offer price accounting for any mitigation



#### Market power mitigation

- Supply-side market power mitigation measures are necessary
- Local market power mitigation measures may need to be more stringent than system or flexible market power mitigation measures
- Measures may vary by competitive solicitation process
  - Expect that market power is more likely during an exceptional dispatch CPM designation than during a monthly system CPM designation



Market power mitigation – bidding flexibility

- Impose limits on bidding flexibility into the competitive solicitation process
  - Offer into the process before a deficiency is determined
  - Have the bid price locked in for a certain amount of time
  - Allow reduction in price or MWs, but not an increase
- ISO seeks input from stakeholders on limiting bidding flexibility as a market power mitigation tool



Market power mitigation – resource specific mitigation

- Market power assessment within each process
  - Local assessment
  - Flexible/resource attribute assessment
- Only mitigate offers if resource was found to have market power
- Mitigate offers to a cost-based price
- The ISO seeks input from stakeholders on resource specific mitigation as a market power mitigation measure



Market power mitigation – offer cap

- Offer cap that limits all offers in each competitive solicitation process
- Offer cap price could be used as the availability incentive mechanism price

