Attachment A

Stakeholder Process: Flexible Resources Adequacy Criteria and Must Offer Obligation

Summary of Submitted Comments

Stakeholders submitted eight rounds of written comments to the ISO on the following dates:

- Round One, 1/9/13
- Round Two, 6/26/13
- Round Three, 8/15/13
- Round Four, 10/16/13
- Round Five, 11/27/13
- Round Six, 12/20/13
- Round Seven, 1/31/14
- Round Eight, 2/21/14

Stakeholder comments were received from: Alliance for Retail Markets (AReM), Bay Area Municipal Transmission Group (BAMx), Beacon Power, BrightSource, Cogeneration Association of California and Energy Producers and Users Coalition (CAC and EPUC), Calpine, California Wind Energy Association (CalWEA), California Department of Water Resources (CDWR), California Energy Storage Alliance (CESA), Center for Energy Efficiency and Renewable Technologies (CEERT), California Large Energy Consumers Association (CLECA), California Public Utilities Commission (CPUC) staff, Distributed Energy Consumer Advocates (DECA) and Clean Coalition, Dynegy, Office of Ratepayer Advocates (ORA), Environmental Defense Fund (EDF) and Comverge, EnerNoc, Iberdrola, Independent Energy Producers (IEP), Large-Scale Solar Association (LSA), Marin Clean Energy (MCE), Northern California Power Authority (NCPA), NGK Insulators, NRG, Olivine, Pacific Gas & Electric (PG&E), Powerex, Southern California Edison (SCE), San Diego Gas & Electric (SDG&E), San Francisco Public Utilities Commission (SFPUC), Shell, Sierra Club, Six Cities, Silicon Valley Power (SVP), The Utility Reform Network (TURN), VIASYN, Wartsila, Wellhead, and Western Power Trading Forum (WPTF)

Stakeholder comments are posted at:
http://www.caiso.com/informed/Pages/StakeholderProcesses/FlexibleResourceAdequacyCriteria-MustOfferObligations.aspx

Other stakeholder efforts include:

- Stakeholder meeting 12/20/12
- Stakeholder meeting 6/19/13
- Stakeholder meeting 8/1/13
- Stakeholder meeting 10/9/13
- Stakeholder meeting 11/13/13
- Stakeholder meeting 12/13/13
- Stakeholder meeting 1/13/14
- Stakeholder call 2/13/14
- Numerous outreach calls

Stakeholder	Management proposal: The ISO will conduct an annual study to determine the ISO system flexible capacity needs	Management response
AReM	ISO should provide results of annual study before September.	The proposed study methodology to set the flexible capacity requirement is described in detail in the proposal and was also vetted in the CPUC's resource adequacy. The implementation details will be described in the tariff and a business process manual. The methodology includes an annual stakeholder process in which stakeholders will be allowed to provide feedback into the assumptions the ISO uses in the study. The ISO will provide the results of the annual studies to stakeholders annually in May.
CDWR	ISO should clarify details of use of load data in study and process for recalculating flexible capacity needs if load serving entities provide inaccurate data.	
CLECA	Study process should account for how changes to retail rates could change loads.	
LSA	Proposed methodology does not account for the ability of some variable energy resources to reduce flexibility needs via existing economic curtailment provisions.	
PG&E	ISO should clarify process for recalculating flexible capacity needs if load serving entities provide inaccurate data.	
Six Cities	ISO should clarify load serving entity's data submission requirements.	
TURN	Proposed methodology may pose major challenges for gathering, validating, and applying renewable resource data in a consistently and accurately.	
WPTF	ISO should provide results of annual study before September.	

Stakeholder	Management Proposal: The ISO will annually allocate the system flexible capacity need to local regulatory agencies based on their jurisdictional load serving entities' contributions to the system need.	Management response
BAMx	Supports	It is most appropriate to allocate shares of the system requirement to local regulatory authorities because they are the entities that set procurement requirements for load serving entities. The overall need is based on the ISO system's maximum ramping needs and allocating shares of this need based on contributions to this maximum ramp reflects cost-causation. Allocating shares of the system flexible capacity need directly to variable energy resources would not recognize that local regulatory authorities establish procurement obligations and would be a major change to California's existing resource adequacy framework.
CalWEA	ISO should explicitly include a component for changes in distributed resource output in the allocation.	
CDWR	Supports, and should include exclusions for certain pumping events. The ISO should allocate a share of the system flexible capacity need to variable energy resources that export from the ISO.	
CPUC staff	Supports, but CPUC may use a different allocation methodology to allocate its share of the system need to its jurisdictional load serving entities.	
Dynegy	ISO should allocate system flexible capacity need directly to	

	load serving entities.	
Iberdrola	Supports	
NCPA	Supports	
NRG	Supports	
PG&E	Flexible capacity needs should be allocated to local regulatory authorities based on each load serving entity's maximum three-hour net load ramp, which may not be coincident with the system maximum ramp. Merchant variable energy resources should also receive a flexible capacity allocation.	
Powerex	Flexible capacity requirements should be allocated to variable energy resources rather than to load serving entities [through their local regulatory authority].	
SCE	Statistical variation not fully considered in the allocation methodology may not properly reflect each load serving entity's contribution to flexible capacity needs. There may be benefits of at least smoothing out these anomalies by averaging the allocation for the four summer months.	
SVP	Supports	
Wellhead	Supports	

Stakeholder	Management proposal: The ISO will determine the maximum amount of flexible capacity a resource can provide when assessing whether there is an overall system shortfall and need for backstop procurement. Local regulatory authorities determine flexible capacity of resources when establishing load serving entities' procurement requirements.	Management response
AReM	It is unclear which entity, the ISO or local regulatory authority, will determine resource's flexible capacity.	Management clarified its proposal to make clear that local regulatory authorities are the entities to establish forward procurement requirements for load serving entities, and, as such, establish how much flexible capacity each resource can provide towards meeting these procurement requirements.
CAC and EPUC	Combined heat and power resources should be able to establish their own flexible capacity subject to engineering verification by the ISO.	

CDWR	Local regulatory authorities should have primary authority to establish flexible capacity. The ISO should change these values only based on an operational study. The ISO may have default provisions if a local regulatory authority does not have provisions to set flexible capacity.	Management also clarified that it is appropriate for the ISO to establish minimum criteria for counting flexible capacity of resources that it will use to evaluate whether the system has an overall sufficient amount of flexible capacity and whether it needs to procure backstop capacity. The ISO must be able to ensure it has sufficient flexible resources to meet operational requirements.
CPUC staff	Local regulatory authorities should have primary authority to establish flexible capacity. The ISO should change these values only based on an operational study. The ISO may have default provisions if a local regulatory authority does not have provisions to set flexible capacity.	
PG&E	Local regulatory authorities should have primary authority to establish flexible capacity.	
TURN	Local regulatory authorities should establish procurement rules	

Stakeholder	Management proposal: Specific rules for determining how much flexible capacity each resource can provide.	Management response
BAMx	Supports	Based on stakeholder input to the draft final proposal, Management revised the proposed rules for establishing the flexible capacity of energy storage resources that should address many of these stakeholder comments. Management revised the proposed rules for establishing the flexible capacity of energy storage resources that use the ISO's "non-generating resource" model (which enables dispatch for energy using both charging and discharge) to account for these resources' charging capability. This is appropriate because the market optimization can consider both the charging and discharging capabilities to meet net load changes. The flexible capacity of storage resources that use the "regulation energy management" model is appropriately established by the amount of upward regulation these resources can provide, which only considers these resources discharge capability. Management previously considered stakeholder input and revised the rules for combined heat and power resources to count for the difference between their minimum load and net qualifying capacity, rather than the previous proposal to calculate it based on the difference between their "regulatory must take maximum" and net qualifying capacity. Management understands CPUC rules may require load serving entities to list this as flexible capacity which they
Beacon	The flexible capacity of storage resources that use the ISO's "regulation energy management" resource model should not be limited by the resource's net qualifying capacity and should consider resource's charging capacity in addition to its discharge capacity.	
Calpine	Supports	
CESA	The flexible capacity of storage resources that use the ISO's "regulation energy management" resource model should not be limited by the resource's net qualifying capacity and should consider resource's charging capacity in addition to its discharge capacity.	
Dynegy	The ISO should clarify the counting provisions for multi-stage resources.	
EnerNoc	Resources providing flexible resource adequacy capacity should not also have to count for "generic" resource adequacy capacity. The ISO should allow demand response to be modeled at the system level.	
IEP	The ISO needs to further modify the rules for the amount of flexible capacity combined heat and power resource can	

	provide.	may not be able to provide but believes this issue should be addressed through changes to CPUC rules. Management does not believe that further changes to its rules to determine flexible capacity that would allow combined heat and power resources to determine their own maximum flexible capacity are appropriate because the ISO must set standard rules against which it will assess the need for backstop procurement. Management believes 15-minute dispatchable imports have the potential to provide flexible capacity. However, it has not yet conducted the analysis to determine the extent these resources can also meet dispatch interval-to-dispatch interval ramping needs and believes it is appropriate to first gain experience with 15-minute dispatchable imports after the Order 764 real-time market changes go into place this spring. Finally, load serving entities would not be able to count these resources towards their CPUC mandated flexible capacity procurement obligations until the CPUC establishes flexible capacity counting rules for 15-minute dispatchable imports.
NGK	The flexible capacity of storage resources should consider these resource's charging capacity in addition to their discharge capacity.	
NRG	Storage resources that use the ISO's "regulation energy management" model to do not help meet the ISO system's three hour ramping needs	
Olivine	Supports	
PG&E	The flexible capacity of storage resources should consider these resource's charging capacity in addition to their discharge capacity.	
Powerex	The ISO should allow 15-minute dispatchable imports to provide flexible capacity.	
SCE	Supports	
SDG&E	Resources should be able to update the amount of flexible capacity they are eligible to provide monthly. The flexible capacity of combined heat and power resources should be based on the "regulatory must-take maximum" value rather than the resource's minimum load because CPUC rules will require load serving entities to list this as flexible capacity which they may not be able to provide and consequently would be subject to any future non-availability charges.	
Sierra Club	The flexible capacity of storage resources should consider these resource's charging capacity in addition to their discharge capacity.	
VIASYN	The rules for determining the flexible capacity of hydro resources are overly stringent.	
Wartsila	Should scale resource's flexible capacity based on resource's minimum load and the resource's start-up time.	
Wellhead	Supports	
WPTF	The ISO should clarify the rules for determining combined heat and power resources' flexible capacity.	

Stakeholder	Management Proposal: The ISO will identify three flexible capacity categories and associated must offer obligations for resources that count in these categories.	Management Response
AReM	The CPUC and ISO are both proposing three flexible capacity	The ISO needs these appropriately designed flexible capacity

	categories, but are proposing different maximum percentages of flexible capacity that can come from each category.	categories to establish corresponding bidding requirements for various types of flexible capacity resources. Without specific reference to flexible capacity categories, the ISO would have to enforce a single must offer obligation that would prohibit resources such as demand response and storage from providing flexible capacity. Management designed these categories out of the recognition that every flexible capacity resource is not needed in every hour. This enables a wide range of resources to provide flexible capacity, including preferred resources. The resources counted as flexible resources within each category should be able to provide the level of flexibility required of that category every day. Local regulatory agencies retain the ability to determine what portfolio of resources their jurisdictional load serving entities can or should procure. Therefore, while the ISO has set the levels of the categories, it is up to the LRA to determine if procurement within a category should be dedicated to a specific resource technology. Storage resources that use the "regulation energy management" model is appropriately established by the amount of upward regulation. Regulation is only appropriate to meet super peak overall load ramping needs so they should not be counted in the "base flexibility" category. Based on stakeholder input to the draft final proposal, management revised the proposed rules to allow the aggregation of use-limited resources so they can count in the "base flexibility" category.
BAMx	Supports	
Beacon	Storage resources that use the ISO's "regulation energy management" model should be able to provide "base flexibility" capacity	
Calpine	Generally supports but requested clarifications as to the criteria for start-limited resources to be included in the "base flexibility" category.	
CDWR	Supports the ISO's inclusion of hydro resources in the" base flexibility" category.	
CECLA	Tests of demand response flexible capacity should be coordinated with CPUC tests.	
CESA	Storage resources that use the ISO's "regulation energy management" model should be able to provide "base flexibility" capacity	
CPUC staff	The local regulatory agencies should establish categories and the ISO should not make reference to categories in tariff as any more than default provisions.	
Dynegy	Supports	
EnerNoc	Generally supports, but is concerned that "base flexibility" flexible capacity resources can displace "peak" and "super-peak" flexible capacity resources and "peak" flexible capacity resources can replace "super peak" resources, limiting the opportunities for demand response. Also concerned about random testing of demand response resources and the alignment of counting rules.	
IEP	Supports	
LSA	Concerned that seasonally determined required hours of availability for flexible capacity resources do not align with the production hours of variable energy resources. Also concerned the percentages allocated to the "peak and "super-peak categories are too small.	
NCPA	Supports the proposed flexible capacity categories, particularly the definition of "base flexibility." The definition is appropriately based on the specific operating characteristics and capabilities of resources, and properly recognizes that some use-limited resources can be used to meet the ISO's need for flexible capacity	

NGK	Storage resources providing “base flexibility” should be able to provide six hours of energy.	
NRG	Generally supports, but believes storage resources that use the ISO’s “regulation energy management” model should not count as flexible.	
Olivine	Supports	
ORA	The ISO tariff should not define procurement categories independently of the CPUC. Instead, the tariff should focus on grid operational requirements including flexible capacity requirement assessments, allocation of flexible capacity needs, flexible capacity must-offer obligations requiring economic bidding, flexible capacity showings and replacement, and flexible capacity backstop procurement.	
PG&E	Generally supports, but believes storage resources that use the ISO’s “regulation energy management” model should not count as flexible.	
SCE	Supports	
Sierra Club	Believes establishing categories impinges on CPUC authority to direct procurement.	
Six Cities	“Base flexibility” category may be too restrictive and unnecessarily prohibit the inclusion of use-limited resources. The ISO should permit bundling or aggregation of use-limited resources in order to meet the “base flexibility” criteria and allow partial credit for use-limited resources that cannot satisfy the criteria on an individual basis.	
Wellhead	Supports	
WPTF	Supports	

Stakeholder	Management proposal: The ISO will include an overall system shortfall in resource adequacy flexible capacity as a reason the ISO can procure capacity under its capacity procurement mechanism tariff provisions.	Management response
PG&E	Costs should go to all deficient load serving entities on a pro rata basis.	Management proposes to allocate backstop costs to deficient load serving entities only in the event that the LSE’s jurisdictional LRA is short in aggregate and there is an aggregate system deficiency. The LRA has the authority to determine compliance for their jurisdictional LSEs.
NRG	Supports	