Comments of Pacific Gas and Electric Company
Reliability Services Initiative – Straw Proposal 6/5/14

Submitted by	Company	Date Submitted
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Pacific Gas and Electric Company (PG&E) offers the following comments on the California Independent System Operator's (CAISO) Reliability Services Initiative (RSI) June 5th Straw Proposal.

1. Please provide feedback on Part 1: Minimum eligibility criteria and must-offer rules.
    a. Comments on proposal portion of section
        i. Eligibility criteria

Non-generator Resource

PG&E supports the CAISO's proposal to count a non-generator resource's (NGR) discharge capability as basis for the default qualifying capacity (QC), and its full charge and discharge range as the basis for the effective flexible capacity (EFC).

However, CAISO's proposal would allow energy storage resources to seemingly qualify for an undue amount of flexibility (i.e. equal to nameplate rating) for those resources that provide regulation energy management. This element of the proposed market design may result in hundreds of MW of regulation energy management in excess of what the CAISO needs to run its system. At a minimum, any storage resource providing regulation energy management should count as no more than one-twelfth of its nameplate rating for flexibility, based on the three-hour energy requirement applied to other resources. This is the appropriate measure since this resource will be providing fifteen minutes (one quarter of an hour) of energy, based on PG&E's understanding that resources must be able to ramp to and sustain their output for three hours to qualify. Similarly, a REM-only energy storage resource's QC should be one-sixteenth of its nameplate rating (based on sixteen 15-min intervals in the 4 hour period).

The table below shows the QC and EFC that would result from the CAISO's proposed counting and a prorated calculation for a REM-only resource.

Example: 12 MW REM-only NGR

QC		EFC	
CAISO Proposal	Prorated (over 4 hours)	CAISO Proposal	Prorated (over 3 hours)
12 MW	750 kW	12 MW	2 MW

ii. Must-offer requirements

Non Generator Resource

PG&E objects to the CASIO's proposal to designate NGR as non-use-limited and require bid insertion. The proposal states, "[B]ecause the ISO can optimize the dispatch of the non-generator resource through both the charge and discharge ranges, no operational or environmental limits appear to justify the ISO classifying a non-generator resource as a use-limited resource. Therefore, the ISO proposes that a non-generator resource be classified as non-use-limited, unless it submits an application for use-limited resource status and the application is approved by the ISO. As with any other non-use-limited resource, a non-generator resource would be subject to bid insertion rules."

First, PG&E believes that most NGRs will have some use limitations in order to limit system degradation, such as total energy throughput and charge/discharge cycles. Second, PG&E has serious economic and operational concerns with the CAISO's proposal to insert bids for NGRs. It is PG&E's understanding that, contrary to the statement above, the CAISO does not manage the state of charge (SOC) for NGRs, other than 15 minute REM only resources (which will represent very little of the planned storage). Therefore, bid insertion done by CAISO software for non-REM NGRs could create infeasible schedules, or worse, damage to the resource if such infeasible schedules were to be followed. Without management of the SOC, CAISO will not have the ability to accurately insert bids.

For these reasons, PG&E proposes that bid insertion is not appropriate for NGRs. CAISO should explore alternatives such as exempting NGRs from bid insertion, defining NGRs as use-limited (thereby removing bid insertion requirement), or allowing NRGs to include parameters such as cycle and throughput limits in their Master File. PG&E is open to discussing other possible solutions that stakeholders or the CAISO offer to address this issue.

Proxy Demand Resource

PG&E supports the CAISO's efforts to better align the proxy demand resource (PDR) default QC with the CPUC requirements. The CAISO proposes the following minimum availability requirements:

- At least 24 hours per month,
- At least three consecutive days, and
- At least four hours per dispatch.

This appears to be consistent with the CPUC rules with the exception of the 4 hours *per dispatch* requirement. The CPUC requires 4 hours *per day*. PG&E recommends that the CAISO modify their requirement to 4 hours per day, in line with the CPUC requirement.

PG&E also appreciates CAISO's recognition of demand response use limitations. The CAISO has proposed that a PDR obtain an outage exemption from the CAISO once it has reached its use limitation in a given month (i.e. the resource has been dispatched the maximum number of times). For the remainder of the month, PDRs will not have an obligation to bid into the CAISO market and will not be subject to non-availability penalties during that time.

The CAISO should address in its RSI proposal the bidding requirements for DR resources. As more DR resources develop in the market, this is an issue that needs further consideration. Under CAISO Tariff Section 40.6.4.3, the bidding rules for Use-Limited Resources, DR resources would only be subject to a requirement to bid or self-schedule in the Day-Ahead Market. Under the proposed FRAC MOO tariff, DR resources providing Flexible RA must bid into both the Day-Ahead Market and Real-Time Market. The CAISO should clarify the bidding requirement for DR resources providing System RA and Local RA has not changed.

b. Comments on phase 2 consideration items

i. Intertie resources

ii. Block dispatchable pumping load

PG&E supports the CAISO's analysis of the concept of deliverability for pumped hydro resources; however, PG&E recommends the CAISO look more comprehensively at all storage technologies (not just existing hydro pumped storage) in this analysis. In addition to the block dispatch issue, CAISO should also examine how variable loading, transition time, and state of charge management impact a resource's ability to deliver flexibility to the grid.

iii. ISO dependence on MCC buckets

c. Other comments

CAISO should expand the scope of this initiative to include determining Effective Flexible Capacity (EFC) for wind and solar resources. The CAISO's methodology assumes all wind and solar resources are intermittent variable energy resources. However, some wind and solar resources can and do provide dispatchable bids into the CAISO's day-ahead and real-time markets, despite the fact they do not currently count as flexible capacity. The CAISO should encourage wind and solar resources to provide operational flexibility by establishing EFC values for them and allowing them to count toward flexible RA requirements.

2. <u>Please provide feedback on Part 2: Availability Incentive Mechanism.</u>

a. Comments on the general direction of the design

The CAISO has proposed moving from the current *monthly* availability assessment and settlement methodology to a *daily* availability assessment and settlement methodology. PG&E opposes this change, and would like clarity on what, if any, benefits that the CAISO believes this would provide. RA is a monthly product, and as such should be assessed on a monthly basis. Furthermore, the standard availability range proposed by the CAISO is based on historical *monthly* average availabilities. It is therefore inappropriate to compare a resource's daily availability to that standard, as daily availability will have a greater degree of variability. A daily assessment is potentially more restrictive, as a resource would not be able to average out days of poor availability with days of high availability within the month.

Also, on any given day, there may not be resources both below and above the standard availability range. A daily assessment and settlement would increase the likelihood that underperforming resources are charged while no well-performing resources exist to credit, or vice versa.

b. Comments on design features

i. Bid-based assessment

The CAISO has proposed moving away from the current outage based availability assessment to a bid-based assessment, to facilitate the availability assessment of flexible and use-limited resources. If a resource is required to bid into both the day-ahead and real-time markets, the availability assessment will be based on the minimum of the day-ahead and real-time availability. PG&E requests that the CAISO provide explain why this approach is preferable to an assessment based on an average of day-ahead and real-time availability, or having separate pools for real-time and day-ahead assessments.

We request that the CAISO clarifies in its next draft of the proposal that resources without an obligation to bid in real-time will be assessed only on their day-ahead availability.

We also request that the CAISO clarify how a resource will be assessed if it has provided the necessary bids in accordance with its must offer obligation, but does not ultimately follow the CAISO's dispatch instructions. Would the resource still be deemed available in this situation for purposes of the availability incentive mechanism?

ii. Fixed availability percentage band

CAISO has proposed to use the same fixed availability standard range throughout the year, rather than varying the range each month. PG&E is willing to move forward with the fixed range, but would like CAISO to establish a methodology to periodically reevaluate this range to understand if the fixed range is providing adequate incentives to the capacity that the CAISO needs, and adjust as necessary (with a 3-year rolling average for example).

iii. Single assessment for flexible and generic overlapping capacity

For any hours where a resource's system and flexible RA obligations overlap, CAISO has proposed to assess the availability of that unit based on the flexible must offer requirement. PG&E finds this to be a reasonable and simple approach for assessing overlapping capacity. We recognize the CAISO's need to assess against the more stringent criteria, as flexibility is likely to be a key reliability need going forward.

iv. Other features

The current SCP process includes a cap on the Availability Incentive Payment rate that can be paid to a resource for its eligible capacity within a given month equal to 3 times the monthly Non-Availability Charge rate, as outlined in section 40.9.6.3. PG&E supports this cap on the incentive payment rate in order to not over-value capacity provided in excess of the monthly upper threshold. For example, if the CAISO assesses $100,000 in Non-Availability Charges for a given month, but then only has 1 MW of eligible capacity to then allocate these funds to, it is clear that the benefit provided to the system by this 1 MW of capacity is not equal to the full burden created by the total non-availability. CAISO should clarify whether such a cap will also be part of the new AIM design.

c. Comments on price

Linking Backstop Offer Cap and AIM Price

The CAISO proposes to create an offer cap for the backstop competitive solicitation bids which could also serve as the AIM price. PG&E supports maintaining a linkage between the AIM price and the backstop price, and is open to discussing what type of relationship is appropriate (e.g. other than a 1:1 ratio).

If a generator does not perform and the CAISO is required to make a CPM call for replacement capacity, the CAISO will be valuing the missing capacity at the CPM price, but penalizing the non-performing generator at the AIM. Consideration of efficiency and fairness would require the AIM to be least as large as the CPM price. Setting the AIM to the CPM offer cap may be an appropriate solution.

AIM Price for Flex v. Generic RA

CAISO has proposed a single availability incentive price for flexible and generic RA. PG&E recognizes that appropriately valuing the flexible and generic attributes of a resource is a complex issue. As such, this seems like a reasonable approach given its simplicity, and alignment with the proposed combined assessment methodology.

d. Comments on capacity and resource exemptions

Exempt Capacity
PG&E supports AIM exemptions for resources on a planned outage that did not require replacement, and for forced outages "beyond the control" of the resources as outlined in the proposal. PG&E also supports assessing the replacement resource for availability where applicable to ensure CAISO has sufficient RA capacity. This is consistent with current exemptions.

Exempt Resources
Tariff section 40.9.2 identifies the resources that are currently exempt from the SCP availability incentive mechanism, including Qualifying Facilities (QFs). CAISO has proposed to limit the exemptions under the new AIM to a smaller group of resources- those that are unable to fully comply with their must offer obligations. While PG&E recognizes the CAISO's need to limit exemptions, the exemption for QFs should continue. At times, PG&E is able to negotiate amendments to existing QF agreements to increase the availability of dispatch to

the CAISO from the existing agreement, but potentially not to the extent of the current must offer obligation. In such cases, the exemption should also be extended since failure to do so would be a disincentive to amendment existing contracts to bring these resources closer to market.

e. Other Comments

PG&E supports assessing the availability of Variable Energy Resources (VERs) against their forecast (as described by CAISO staff during the stakeholder call 6/23/2014), rather than against the minimum of their forecast and the amount shown for RA (as described in the proposal).

3. <u>Please provide feedback on Part 3: Replacement and Substitution.</u>

    a. Comments on scope

    b. Comments on replacement and substitution issues

        i. Complexity

        PG&E appreciates the CAISO's willingness to examine the RA replacement and substitution rules, and reduce complexity where possible. We make the following recommendations:

        - CAISO should change the deadline for substitution from 6:00 AM to 8:00 AM. This will allow load serving entities (LSEs) more time for ensuring proper submission in CAISO's system, while still providing CAISO with several hours to evaluate the substitution before the Day Ahead market runs at 10:00 AM.

        - CAISO should provide more clarity on when replacement will be needed. Once an outage is excused from replacement, that decision should not be revisited and overturned. This would allow for more structure and certainty in the replacement process. Currently, Tariff Section 9.3.1.3.3.1 and Section 9.3.6.4.1 authorize CAISO to require replacement of resources in the operating month that were excused from replacement at T-25. This allows the CAISO Outage Coordination Office discretion to change their minds on whether a replacement can be excused, and places uncertainty on the scheduling coordinator (SC) that would need to replace.

        - For approved maintenance outages submitted to the CAISO after 45 days prior to the compliance month, CAISO can provide clarity on whether it is the responsibility of the Scheduling Coordinator to provide the flexible replacement.

ii. CPM designation risk

PG&E understands that CAISO is concerned about resources receiving a double payment for their capacity – once through capacity contracts with LSEs withheld from showings, and once from a CPM designation. PG&E recommends CAISO evaluate whether this issue be best addressed through the proposed competitive solicitation process. Resources that already have an RA contract should not be eligible to offer into the competitive solicitation process, and therefore would not be able to receive a double payment.

iii. Resource leaning

Given the already large scope of the RSI, PG&E does not recommend addressing the resource leaning issue in Phase 1. The CAISO should focus on the other critical issues in this proposal, and allow stakeholders time to gain experience with the new rules put in place through this initiative before addressing this issue. It may be appropriate for the CAISO to examine this issue at a later time.

iv. Other issues

PG&E supports local and flexible resources that are shown as system resources being replaced with system resources.

Many-to-Many Substitution resources
PG&E supports the CAISO's efforts to expand its systems to allow for many-to-many and one-to-many substitutions. We encourage the CAISO to provide these capabilities as soon as possible, as they will facilitate the replacement and substitution changes contained in this proposal.

Real-time substitution for non-local resource adequacy resources
Allowing Real-time substitution for pre-qualified flexible and system resources is an idea worth exploring. This could provide benefits to both the CAISO (in the form of greater reliability) and LSEs (who would avoid unavailability penalties). Further discussion is needed on the prequalification criteria.

c. Comments on flexible replacement proposal

PG&E supports subjecting flexible resources to similar replacement requirements as system resources.

CAISO provides two options for replacing a flexible resource: 1) require all replacement resources to be Category 1; or 2) require replacement resources to be in the same Category or one with more availability hours. PG&E supports Option 2 as it allows LSEs more options for replacement resources, while providing CAISO with the capabilities necessary to maintain reliability.

d. Comments on flexible substitution proposal

e. Other comments

4. <u>Please provide feedback on Part 4: Capacity Procurement Mechanism.</u>

a. Comments on index price

PG&E appreciates the CAISO presenting multiple approaches to replacing the CPM, and recognizes the drawbacks of an index price derived from the RA bilateral market that the CAISO has laid out – namely that these bilateral market does not have standardized products, prices would likely be outdated, and the price may not be enough to cover the cost of resource that receives a CPM designation. However, PG&E also recognizes that no CPM replacement option is without drawbacks, and an index price would have the benefit of simplicity.

b. Comments on competitive solicitation process

PG&E is supportive of exploring the competitive solicitation process as a means to incorporate market-based prices into the CPM. The viability of this pay-as-bid option will largely depend on the CAISO's ability to institute sufficient supply side market power mitigation measures.

We request that the CAISO provide more details on the possibility of not having sufficient resources bid into the solicitation. As we understand it, there are usually a small number of units, and sometimes only one unit, that can fulfill the operational and reliability needs of the CAISO during a system or transmission issue that would result in an Exception Dispatch CPM. If this was the case, and that particular unit had not bid in to the monthly solicitation, how would the CAISO procure the needed backstop capacity and how would it be compensated?

CAISO has stated that it will apply the same CPM evaluation criteria currently in its tariff to the resources that offer into the competitive solicitation. PG&E would like to understand how these evaluation criteria will be applied now that different resource costs will be considered. Will the CAISO look at resource effectiveness and cost separately (in sequence), or will the tradeoffs of effectiveness and cost be evaluated together? For example, Resource 1 is most effective at meeting the CAISO's needs but has a high bid; Resource 2 is slightly less effective at meeting the CAISO's needs but has a much lower bid. What resource might the CAISO choose for backstop capacity in this situation?

c. Comments on other changes potentially needed to CPM

PG&E is open to exploring a change in the current 30 day CPM designation period for significant events and exceptional dispatches and what benefits that may provide to the market. It may sometimes be the case that a resource that receives a CPM designation for an unsystematic event is only needed to ensure reliability for a few days, yet receives CPM payments for 30 days. PG&E recognizes that this is a complex issue. As an alternative, CAISO should also consider allowing partial unit commitments through the new CPM design to tailor the backstopped capacity to the ISO's reliability need.

d. Comments on CPM price

e. Comments on supply-side market power mitigation measures

Implementing appropriate supply-side market power mitigation measures are crucial to ensure that market participants are not able to manipulate the competitive solicitation process. PG&E supports CAISO's proposal to assess market power within the competitive solicitation process through a 3-pivotal supplier test for local and capability market power. PG&E also supports creating an offer cap on all capacity offers.

PG&E agrees that a resource should not be able to change its bid price for the annual or monthly solicitations once it has been submitted. However, we do not support freezing a resource's bid across the annual and all monthly solicitations. This would be too restrictive, as the cost of providing RA is different in different months.

f. Comments on demand-side market power mitigation measures

g. Other comments