

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



R.11-10-023 Energy Division Resource Adequacy Proposals

[Jaime Gannon, Megha Lakhchaura, and Donald Brooks]

January 14, 2013

[The purpose of this straw proposal is to provide CPUC staff's initial vision of how to evolve the Resource Adequacy capacity procurement process to ensure an adequate amount of flexibility characteristics are procured within the contracting and management of generation resources.]

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1. Summary of Current Rules and Proposed Remedies

Energy Division presents these three proposals to parties in the Resource Adequacy (RA) proceeding for 2014 RA compliance year.

D.12-06-025 issued by the Commission for 2013 RA compliance year changed the rounding conventions to be more precise with allocations and RA obligations, which allows the California Independent System Operator (ISO) to more precisely meet their WECC reliability standards. The first proposal is to recognize a portion of the old rounding conventions that were not superseded by the RA decision, that LSEs with Local RA obligations less than 1 MW are exempted from Local RA obligations.

Resources under construction can count for Local RA, but only if replacement capacity is provided to ensure that existing capacity continues to be available until the new unit comes online.¹ Currently, Energy Division has interpreted this decision to require LSEs to commit the replacement unit as RA in the Year Ahead RA Filing, and guarantee the identical unit remains available until the new unit comes online. Proposal 2 specifies that LSEs should be able to find replacement capacity during the course of the compliance year, and commit replacement capacity more flexibly in Month Ahead Filings.

There will be an increasing need for flexible operation of generating resources to integrate renewable resources, particularly solar resources. Proposal 3 is Energy Division's proposal to augment the MCC bucket structure around flexible capacity and base requirements on CAISO studies of flexibility needs.

2. Energy Division Proposal – Retaining Previous Counting Convention

Background:

The current rounding convention for both local and system RA obligations was adopted in the most recent RA decision, D.12-06-025 at OP 5. “The resource adequacy program is modified so that load serving entities shall round to 0.1 MWs for resource adequacy compliance.”

Prior to D.12-06-025, the rounding convention for local and system RA obligations was to the closest megawatt and was adopted in D.06-06-064. D.06-06-064 also adopted an exemption for local RA obligations less than 1 MW: “LSEs should be exempted from procurement obligations of less than 1 MW in a particular local area. In addition, [Resource Adequacy Requirements] RARs of 0.5 and greater should be rounded up to the next highest MW and RARs of 0.49 or lower should be rounded down to the prior MW; provided, however, that this rounding

¹ D.08-06-031 section 4.2

convention does not supersede the local area exemption of less than 1 MW.”²

The reason for changing the rounding convention from the whole megawatt to the .1 MW was to reduce the discrepancies between the CAISO and the CPUC local RA requirements. The CAISO had argued that the CPUC’s rounding convention could lead to a lower local requirement than if the CAISO’s rounding convention were used. The CAISO argued that the discrepancy could lead to violations of WECC reliability requirements.

In response to the CAISO’s concerns, Energy Division proposed rounding to the 0.5 MW instead of the 1.0 MW level in the 2012 RA proceeding. As an alternative the CAISO proposed that the rounding convention should be modified to be consistent with the CAISO’s 0.1 MW rounding requirements.

In D.12-06-025 the CPUC adopted the CAISO’s 0.1 MW rounding convention, stating: “This approach is much closer to the CAISO’s convention, will lead to a minimum of discrepancies between Energy Division and ISO reviews, and will not require different Commission standards for different LSEs.”³ However, D.12-06-025 did not end the exemption established in D.06-06-064, which eliminated local obligations for local RA requirements less than 1 MW.

Throughout the 2013 YA filings Energy Division became more aware of how difficult it was for LSE to procure to the 0.1 MW. LSEs were forced to purchase whole MW’s since transactions less than 1 MW were not commercially reasonable. For an LSE that has a very small amount RA requirement, say 1.1 MW, they would have to procure 2 MW, because no generator will contract for .1 MW.

Proposal/clarification:

Energy Division understands that the newly adopted rounding convention has just been implemented for the 2013 compliance year and may take some time for the market adjusts to it. It is therefore too early to determine the effect that the proposal will have. However, it may also become clear during the 2013 compliance year that the rounding convention is not reasonable. This Proposal/clarification clarifies the current policy and the logic that lead to it.

3. Energy Division Proposal –Resources under construction should count towards meeting LSEs Local RA requirements

Background:

Energy Division proposes to allow LSE’s to count resources under construction towards meeting their Year-ahead local RA obligation. On October 22, 2012 Energy Division staff issues a letter

² D.06-06-064 COL 13 pg84

³ D.12-06-025 Page 30

notifying LSE's of a change to the interpretation regarding how to list substitute capacity in the Local RA filings for resources under construction.

Prior to the 2009 RA compliance year, resources needed to be online and delivering in order to count for Local RA; this meant that resources that were to come online during the compliance year were not allowed to count. This led to inefficient procurement. D.08-06-031 created a mechanism for LSEs to count a resource under construction, so long as the LSE commits another single resource to fill in the other months of the year, and the LSE counts all of the capacity of the new unit towards their RA obligation. This policy was enacted provisionally for 2009 RA compliance year. In section 4.2 of D.09-06-028 the Commission made the policy permanent, and modified the rules to facilitate counting resources under construction. D.09-06-028 allowed LSEs to use a combination of resources because “[r]equiring that the substitute capacity come from a single resource in the local area would reduce the options available to the LSE for fulfilling its compliance obligation, which would further drive up costs.”

Since 2009, Energy Division staff has interpreted the 2009 decision as requiring the LSE to specify and commit the unit or combination of units that the LSE would use or rely upon until the new resource became operational. An LSE would list a combination of one or more existing units to fill in the months until the new unit achieves commercial operation, with the firm contractual commitment that if the new resource was delayed, that exact combination of units would take the place of the new unit in the meantime. This meant that the LSE would not have the flexibility during the year to change that arrangement or substitute other units in the place of what was listed, and importantly, if the new unit did not come online as planned, the existing unit or combination of units would be extended until the new resource came online.

Shortly before the 2013 RA Year-ahead (YA) filing staff became alerted to the fact that a significant amount of local capacity was coming online in 2013. It is important to make use of the resources that will soon be available so as to avoid over-procurement and excessive costs. However, there are complications caused by the uncertainty of whether these new resources will come online as planned. On October 22, 2012 Energy Division sent LSEs a letter clarifying the policy, and modifying the requirement for LSEs to commit the existing unit or combination of units in the year ahead filing, and specifically allowing LSEs the flexibility to substitute other units in the event that the new unit does not come online as planned. This is consistent with the intent of the provisions cited in D.09-06-028 as it increases flexibility and cost effective use of new resources towards meeting RA obligations. In the event the unit under construction determines that it will fail to achieve commercial operation as planned, the LSE may insert a new combination of units for the interim months until the new unit becomes operational and may procure that capacity during the compliance year as needed.

Proposal:

Energy Division proposes to allow LSE's to count resources under construction towards meeting their YA local RA obligation. From 2013 on, Energy division will interpret the policy adopted in D.09-06-028 to no longer require LSEs to commit the existing unit or combination of units in the YA filings, instead allowing LSEs the flexibility to substitute other units in the event that the resource under construction does not come online as planned.

D.08-06-031 and D.09-06-028 are to be interpreted in this manner.

4. Energy Division Proposal - Flexible Capacity Procurement Proposal

The state's electric grid is rapidly changing, and maintenance of grid reliability is becoming more complex. The ISO agreed that securing operational flexibility is critical due to the increasing unmanageability of certain supply resources and changing load patterns. In this phase of the RA proceeding, Energy Division Staff (staff) proposes to direct Load Serving Entities (LSEs) towards explicit procurement obligations relative to flexibility needs, and to modify the rules to address flexibility issues; Energy Division proposes to address the following issues raised by Parties that will contribute to reliability concerns in the near future:

- the retirement of generation resources that use once-through cooling (OTC).
- the need to modify RA rules to address market concerns that relatively new generation facilities cannot remain online without long term capacity contracts.
- the effects on the grid from the charging of electric vehicles.

Recent studies, including CAISO and Energy Division staff analysis of load shapes net of wind and solar generation presented to parties over the last year, indicate that as the level of intermittent resources increases to meet Renewable Procurement Standard (RPS) requirements, so too will the need for more flexibility in operating new and existing generating resources to integrate RPS resources. For example, in morning hours the pattern of decreasing intermittent non-dispatchable generation exacerbates the challenges to grid operation posed by increasing load. Later in the morning, increasing solar generation ramps and displaces thermal generation through the midday load peaks. Conversely, while load is still high in the late afternoon solar energy decreases rapidly necessitating rampable resources to increase generation to meet load at the end of the day. In the future the combination of changing load characteristics and generation fleet composition will likely increase reliability risk during off-peak times and non-summer months. This evolving situation necessitates an increased effort to dispatch supply and demand resources whenever possible, and planning for more sophisticated ways to procure and manage the resource fleet.

Unlike some previous grid planning efforts, which focused on preparing for low probability high

impact contingencies at time of system peak load, the difficulties discussed in this paper will likely occur frequently, as much as every day in some months of the year, and these difficulties become more extreme in offpeak months. There are many ramifications to be thought through, such as how load is managed, how conventional resources are operated in the future, and if there is a way for non-dispatchable resources can be operated more flexibly.

On August 13, 2012 staff led a workshop to discuss viable definitions of resource flexibility, determine measurable attributes or proxies for flexibility, methods for determining flexibility needs, and the capabilities of the generation fleet to fulfill these needs. On October 29, 2012 the ISO and two of the three Investor Owned Utilities (IOUs) issued a proposal, “Resource Adequacy and Flexible Capacity Procurement Joint Parties’ Proposal” (Joint Proposal). The Joint Proposal recommends the Commission establish a monthly interim⁴ flexible capacity procurement obligation based on ISO projected annual flexible capacity needs and contingency reserves as part of the CPUC’s annual resource adequacy program. The proposal consists of several recommendations they believe are integral to implementing a flexible capacity procurement framework.

On 6 December 2012, the Commission released a scoping ruling in the RA proceeding R.11-10-023. The scoping ruling included the Joint Proposal and questions developed by staff on the proposal. To go along with the Joint Proposal, the CAISO issued a straw proposal on December 13, 2012 titles “Flexible Resource Adequacy Criteria and Must-Offer Obligation.” This new CAISO straw proposal includes changes to the Must Offer Obligation (MOO) which will change the way RA resources participate in the energy market. This proposal focuses on RA program modifications and the compliance framework required for implementing the procurement of flexible capacity if the Commission approves flexible procurement obligations for LSEs.

5. Objective of staff proposal

D.12-06-025 directed parties to define “flexibility” and develop implementation details to require LSEs to procure “flexible” capacity as part of the RA obligations beginning in the 2014 RA procurement process. Other objectives include

- Determining an efficient and effective definition of flexibility that facilitates reliable grid operation.
- Defining RA Program features and compliance mechanisms.
- Establishing a path to evolve the RA program to account for flexible RA products
- Strive to reduce regulatory uncertainty through a simple proposal that does not create inefficiency and waste in procurement contracting.

⁴ The Joint Proposal intends the interim period to expand RA capacity procurement for years beginning in 2014 through 2017

6. Existing Maximum Cumulative Capacity Buckets

The policy framework of the Commission's RA program guides resource procurement by requiring that Load Serving Entities procure capacity so that it is available to the ISO when and where needed. During the development of the Resource Adequacy program in 2004 and 2005, concerns surfaced that LSEs would meet their RA obligations by procuring a large number of resources that were either contractually or operationally limited. This would have had an adverse impact on the reliability of grid operations by ISO. To ensure that LSEs restricted their dependence on limited availability contracts, staff created four resource categories, known as the Maximum Cumulative Capacity (MCC) buckets based on the hours of contractual availability. For example, Bucket 1 resources are available up to 87 hours each month during the five summer months, while Bucket 4 resources are available at all hours of the month. LSEs can procure all resources in Bucket 4, but are limited in procurement of resources from the other three buckets. Energy Division routinely checks the monthly Resource Adequacy filings to validate whether LSEs have secured contracts that conform to the prescribed MCC buckets. As part of the 2012 RA proceeding, the MCC buckets were recalculated and re-adopted for the first time since 2005, and a new bucket for DR was added.

7. Determining Individual LSE Compliance Obligations

D.04-10-035 established an LSE-based procurement obligation. In subsequent RA proceedings, the Commission has gradually added new features and expanded obligations; the Commission created Local RA obligations, obligations relative to Path 26, and other obligations. The Joint Proposal recommends that the Commission extend RA obligations to flexibility characteristics by allocating flexible capacity procurement obligations to LSEs based on each LSE's relative share of monthly system peak. Local RA obligations are currently allocated in this manner, and CAM capacity is allocated similarly. However, staff disagrees with using this approach for determining each LSE's flexibility obligations, instead proposing to create specifications around an LSE's procurement portfolio based on the portfolio restrictions currently utilized by the Maximum Cumulative Capacity (MCC) bucket structure. The flexible buckets would replace the existing MCC bucket structure in entirety.

Staff proposes three buckets, one for flexible capacity, one for non-flexible capacity, and one for demand response. LSEs will be limited in the amount of "non-flexible" capacity that they are able to procure for RA capacity purposes.

1. Proposed Structure for MCC buckets

The three proposed buckets are as follows-

1. **Flexible Bucket** – The flexible capacity bucket will have no limit, meaning that LSEs can meet 100% of their total RA obligation from the "Flexible" bucket. Dispatchable hydro would

be included in this category after necessary eligibility criteria have been established. More work is needed to determine how hydro resources can best participate.

2. **Demand Response Bucket**- All qualified demand response will be reported in this bucket. This bucket has no maximum limit.

3. **Non-Flexible resources** – This bucket will have a maximum size that is calculated based on a ratio of flexibility capacity needs (in MW from the ISO study) to maximum RA obligations forecasted for the upcoming year from the off-peak months of October through April. This results in a percentage that is appropriate to meet flexibility needs in the off-peak months.

8. Use of resource to satisfy flexible capacity obligation

In this proposal, there are two major qualifications that separate resources that can be listed in the “Flexible” bucket from those that cannot. Resources must be capable of operating flexibly and must be contractually mandated to operate flexibly. Thus flexibility has both a technical distinction and a contractual distinction. The ISO will distinguish resources in the NQC list based on the operational distinction; In agreement with the Joint Parties proposal, Energy Division proposes, that resources capable of starting up and ramping to Pmin, then sustain either the ramping capabilities or output for three hours may be eligible to provide flexibility⁵. The dispatchable tag identifies the resource as capable of operating flexibly.⁶ Energy Division supports this distinction; identifying a resource as “dispatchable” in the ISO file indicates that the resource is capable of changing its output based on an ISO dispatch instruction and in meeting flexibility and load following needs.

In addition to operational characteristics that are quantitatively determined, Energy Division proposes that LSEs satisfy their flexibility needs with contractually “flexible” resources, which are contractually required to operate flexibly; qualifying “flexible” resources would be economically bid into the CAISO markets, and are prohibited from self-scheduling. All qualified flexible resources, except hydro resources and use limited resources, would be required to submit economic bids into the energy market between 5 AM and 10 PM every day to cover the maximum 3 hour ramping requirement. Staff recognizes that a sufficient transition period is essential for generators and LSEs to alter existing contracts, particularly since generators will be subject to different must-offer obligations for “flexible” and inflexible portions of their capacity. System changes will be needed at the ISO to modify their masterfile to recognize the difference between “flexible” and non-flexible capacity and structure default mechanisms to enter economic bids into associated markets for those resources. Beginning 2014, all qualified flexible resources should submit bids in the market between 5 AM and 10 PM for the flexible portion of their capacity. Beginning with the 2015 compliance year, a resource that is procured and listed

⁵ Joint Parties’ Proposal, October 29, 2012 (section 5.3.3)

⁶ Joint Parties’ Proposal, October 29, 2012 (Section 5.2)

in the flexible bucket would be subject to a new ISO tariff. This tariff should distinguish a flexible resource from a non-flexible resource based on bidding requirements. Additionally the tariff should extend the same CAISO reliability requirement penalties to the flexible requirement accordingly.

At this time, Staff's opinion is that the must-offer requirement in the Joint Proposal for flexible capacity is overly restrictive for use-limited resources such as hydro, and rules out the opportunity for many of these valuable resources to participate as flexible capacity resources in the markets. Therefore staff supports PG&E's proposal that use-limited (e.g. flexible hydro or any other resource that can meet these criteria) resources should be required to submit economic bids as much as possible, within environmental constraints such as mandatory water deliveries and start up restrictions. There are different ways a resource can be use limited. For example, hydro resources have limits on available energy, while peakers have limit on start ups. Staff supports further discussion through workshops and comments to explore this rule.

Additionally, more discussion is required regarding whether there should be a limit on the amount of use-limited resources that should qualify under these criteria. If a limit or cap should be implemented, what criteria should be used to determine the limit, and should those criteria depend on temporal conditions in the market (e.g. day, month, proportion to other flexible resources, and/or amount of non-flexible resources or DR). Another bucket could be needed to separate use limited resources from other flexible but unrestrained resources. More discussion is needed to account for these concerns. The ISO will determine the need for monthly system flexible capacity for the forward year.⁷ A resource can count in the flexible bucket for its total NQC, consistent with the "Count all" approach in the Joint Proposal. Energy Division requests that in ISO's study of maximum three hour ramping requirements, the ISO determine how much additional flexibility will be needed to account for the fact that some of the capacity is not accessible within the 90 minute start up time. This will inform how much if any additional flexible capacity must be procured to account for the fact that some resources counting as flexible will be inflexible while ramping to PMin.

9. Implementation and Contracting

The LSE flexible capacity procurement obligations would represent a type of system RA obligation. The LSE would be responsible for negotiating flexible capacity provisions within their capacity contracts with generators.

Staff supports the Joint Proposal's "Count All Option" to count a resource's flexible capability although the option is not supported by the Joint Parties⁸. ; . A generator could sell as flexible all capacity up to their NQC value, provided the resource was physically able to be dispatched

⁷Need as calculated in the Joint Parties' Proposal, October 29, 2012 (Section 3.2) and subject to potential modifications arising from stakeholder processes

⁸ Joint Parties' Proposal, October 29, 2012 (Section 5.3.2.1)

by CAISO via economic bidding and clearing.

For showing and for procurement purposes, the flexible capacity a resource offers must remain “bundled” with the generic capacity for the specific megawatt. Staff agrees with the Joint Proposal that allowing unbundling of flexible capability of that megawatt of capacity and generic capacity for each megawatt will lead to numerous implementation complexities that will likely require complicated and time consuming resource capacity tracking solutions”⁹ as well as increase potential for market manipulation and exercise of market power.

In order to implement this option, staff proposes the following rules.

1. A generator may chose not to sell the flexible portion and instead sell the resources entire capacity as generic capacity. However, should a generator decide to sell any flexible capacity from its resource then it must bundle the generic capacity with the associated flexible capacity for each specific megawatt. So it may not sell generic capacity to one buyer and the associated flexible capacity to another buyer.
2. Flexible RA capacity can be used to satisfy system and local RAR given it meets all the established qualifications for system and local RAR.
3. Energy Division will continue to evaluate penalty and enforcement issues associated with flexible capacity procurement during this proceeding: no enforcement options are proposed at this time

10. Tabulation of qualifying resources for filings

The Joint Proposal envisioned the creation of two lists, one that lists the MW quantity of flexible capacity a resource was able to provide, and a list that would provide the NQC of each resource¹⁰. Staff disagrees with this approach, and instead, consistent with the Count All approach, believes that a flexibility flag should be folded into the current list produced by the CAISO and CPUC which is posted to the ISO and CPUC websites. The list will include a column indicating whether a generator is flexible based on established criteria.

11. Validation Process

Staff proposes that the validation process be as follows:

1. By May of each year the ISO issues flexible capacity study together with the LCR study, which lists flexible capacity need for each month of the year ahead. Stakeholders vet the studies and submit comments. By June the CPUC adopts final study results, which

⁹ Joint Parties’ Proposal, October 29, 2012 (Section 5.2)

¹⁰ CAISO Straw Proposal, December 13, 2012 –Flexible Resource Adequacy Criteria and Must- Offer Obligation (Section 2)

consists of aggregate monthly flexible obligations along with the LCR.

2. An LSE's flexible capacity obligation would be a percentage of their RA requirement. In July of each year, the CPUC will notify the LSEs of their annual system and Local RA obligations in preparation for the year ahead RA showing.
3. Validation- LSEs will list the flexible resources it is relying upon to satisfy the annual and monthly flexible resource adequacy showing required by the CPUC and identify these resources in the accurate resource bucket. Staff will verify filings with the system plans filed by the generators at the ISO and issue correction notices and deficiency notices if necessary.