BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

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Order Instituting Rulemaking to Oversee the Resource Adequacy Program, Consider Program Refinements, and Establish Annual Local and Flexible Procurement Obligations for the 2019 and 2020 Compliance Years.

Rulemaking 17-09-020
(Filed September 28, 2017)

COMMENTS OF THE CENTER FOR ENERGY EFFICIENCY AND RENEWABLE TECHNOLOGIES ON TRACK 1 PROPOSALS, WORKSHOP, AND FEBRUARY 26 ALJ'S RULING

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For: CENTER FOR ENERGY EFFICIENCY AND RENEWABLE TECHNOLOGIES

Dated: March 1, 2018

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The Center for Energy Efficiency and Renewable Technologies (CEERT) respectfully submits CEERT's Comments on the Track 1 Proposals, Track 1 Workshop, and the Administrative Law Judge's (ALJ's) Email Ruling on options for addressing "late LCR and FCR studies" issued on February 26, 2018 (February 26 ALJ's Ruling). These Comments are filed and served pursuant to the Commission's Rules of Practice and Procedure, the Scoping Memo and Ruling of Assigned Commissioner and Administrative Law Judge (ALJ) issued in R.17-09-020 (RA) on January 18, 2018 (Scoping Memo), and the February 26 ALJ's Ruling.

I.
CEERT COMMENTS ON TRACK 1 PROPOSALS AND WORKSHOP.

By both the Scoping Memo and the February 26 ALJ's Ruling, parties have been given the opportunity to comment on the Track 1 Proposals filed on February 16, 2018, and the Track 1 Workshop held on February 22 and 23, 2018. The February 26 ALJ's Ruling also permits parties to address options for the Commission to address late Flexible Capacity Requirements (FCR) and Local Capacity Requirements (LCR) Studies that were included in a presentation made by the Energy Division at the February 23 Workshop, which was attached to and summarized in that ruling.

In its Track 1 Proposals filed on February 16, CEERT focused on the issue of "Top Priority Modifications to the Resource Adequacy Program" included in the scope of Track 1.[1] In response, CEERT's central Track 1 Proposal seeks Commission adoption of a multi-step process for the adoption and evaluation of interim rules that will apply to two key local capacity requirement (LCR) procurements to be conducted this year by Southern California Edison Company (SCE) and Pacific Gas and Electric Company (PG&E) and that will be designed to "fairly count and price preferred resources" and "accommodate the unique attributes of preferred resources" that are to be part of these procurements.[2] By doing so, and treating these procurements as "pilots," valuable information and knowledge can be achieved and can lead to durable rule revisions based on real data obtained by competitive processes in real situations that will avoid over-reliance on gas-fired resources to meet LCR needs.

CEERT has reviewed the other Track 1 Proposals filed on February 16 and participated in both days of the Workshop on the Track 1 Proposals held on February 22 and February 23, 2018, including making a presentation on CEERT's own Track 1 Proposal. Most of the presenters at this two-day workshop opened with the thought that Resource Adequacy was near the beginning of a transition away from near exclusive reliance on natural gas fired resources to provide capacity services for the grid.

However, since this was a Track 1 Workshop with issues prioritized for the 2018 RA year, there was little mention of what that transition might look like and when it might occur in earnest. Most of the discussion concerned how to bridge use of existing resources until that ephemeral transition actually occurred. Regrettably, there was little discussion of what actions might be

[1] Scoping Memo, at pp. 5-6.
[2] CEERT Track 1 Proposals, at pp. 2-3.

taken in 2018 to ease that transition or gain early knowledge that would be useful to make it more cost effective while maintaining reliability throughout its course.

CEERT's presentation focused, however, on potential actions to be taken in Track 1 to "pilot" options in the two LCR RA preferred resource procurements that will take place in 2018, which certainly would begin the "transition" process necessary in RA. CEERT was disappointed that such steps toward a meaningful transition away from gas-fired resources was not evident in the California Independent System Operator's (CAISO's) February 23 Workshop Presentation entitled: "CAISO proposal for local capacity use-limited resource characteristics." (CAISO Presentation). [3]

Instead, sadly, the CAISO Presentation represents a major step backwards in the essential and needed transition in RA, and, if adopted, and unless affirmatively corrected, will frustrate California's over-arching policy goal to decarbonize the electric grid and use that low carbon grid to decarbonize the entire economy. CAISO made no specific recommendations for Track 1 adoption in the CAISO Presentation other than adoption of its study methodology. CEERT strongly disagrees with this proposal. Rather, after almost two years of effort to define use-limited resource characteristics for LCR purposes in this Commission's RA Rulemakings and companion proceedings at the CAISO,[4] the picture painted of prospects for reliance on use-limited preferred resources for LCR purposes was bleak, complex, and unimaginative.

This outcome is evidenced by the following statements made by CAISO in its February 23 Workshop Presentation, most of which also appear in the description of CAISO studies in its February 16 Track 1 Proposals filing:

[3] "CAISO proposal for local capacity use-limited resource characteristics", Commission Workshop to Discuss Resource Adequacy Proposals, Delphine Hou, February 23, 2018.
[4] See, e.g., 2017-2018 CAISO TPP SEC 6.6 . Characteristics of Slow Response Local Capacity Resources, pp. 315-324, February 1, 2018.

- So called "slow response Demand Response" is worthless for LCR purposes unless activated pre-contingency because its response time is greater than the 10 minutes required to provide spinning reserve for an N-1 (called a P2 contingency) or the 20 minutes necessary to provide operating reserves to reposition the grid for a second contingency (N-1-1 or P6). If activated pre-contingency, DR would be expensive and quantities limited due to unwillingness of customers to endure the expense and/or inconvenience of voluntarily dropping load on the numerous occasions where there was relatively high loads but no actual grid emergency.
- "Fast response" DR with sufficient duration to deal with the contingency period on most peak days is limited in quantity.
- Solar PV has little value for LCR purposes because its marginal ELCC derived NQC is very low. In lay terms, its output is zero or very low during the evening load peaks that define LCR needs.
- Four-hour battery storage is not of sufficient duration to mitigate contingencies that may average 9-10 hours per day and can last more than twenty hours per day. Plus, opportunities to recharge these batteries to prepare for the next day's peak are not available during the transmission contingency. Further, the CAISO's "optimizer" cannot deal with, say, three separate 4-hour batteries to cover a 10-hour contingency.
- Locationally defined Energy Efficiency targeted at peak demand reduction was not even mentioned as a viable option.
- Opportunities to reduce, if not completely eliminate, LCR needs through cost effective transmission upgrades were not mentioned as a viable option.[5]

In the discussion that followed this bleak assessment, CAISO opined that it was leaning towards taking actions to, e.g., place quotas on use of preferred resources with current counting characteristics, such as duration and activation time, and/or, increase minimum duration for

[5] These points represent a summary of statements made by CAISO in its February 16 Track 1 Proposal filing, its Workshop Presentation, and orally at the Workshop.

storage and/or demand response to be eligible for LCR. This direction is quite simply intolerable and flat wrong to boot.

The fundamental error that CAISO makes here is treating each individual preferred resource in isolation and in not thinking about how to tweak its "optimizer" to deal with use-limited characteristics of a portfolio. It is the MWh of on-peak energy and the duration of the delivery of this energy that matters for LCR mitigation with use limited resources, not the net qualifying capacity (NQC) of the individual elements. To the extent that its "optimizer" is not currently configured to deal with this fact, then, perhaps, the CAISO needs a new optimizer. This is clearly a beyond Track 3 proposal.

What is legitimate about CAISO's angst over use-limited preferred resources as LCR mitigation is the need to develop study protocols for planning and verification of use-limited resource portfolios[6] and, perhaps most important, operations oriented protocols to allow commitment, dispatch, and settlement of these portfolios. This is where CAISO and stakeholders should be spending time and energy, rather than continuingly beating heads against the wall trying to fit the square peg of use-limited preferred resources with zero marginal costs into the round hole of protocols and "optimizers" designed for perfectly dispatchable fossil resources with high variable costs, while ignoring risks such as forced outages or fuel supply risks such as Aliso Canyon.

CEERT completely understands that grid operators faced with a pending grid emergency in the heat of the moment cannot be shuffling papers and fitting pieces of a jigsaw puzzle together. Clearly, all pieces of a common portfolio should have the same Scheduling

[6] The CAISO has made significant progress on this matter in the last year. With the exception of revising modeling inputs for individual resource eligibility criteria and counting rules to appropriately deal with hybrid resources combining storage and demand response in the same package, the transition has largely been accomplished.

Coordinator who bears some of the responsibility for solving the jigsaw puzzle and handling settlement issues. Clearly, all sub-pieces of the portfolio that directly depend on each other to present the required characteristics[7] should at least have the same resource ID. Clearly, the effectiveness factors of portfolio elements in different locations need to be accounted for. Clearly, LCR showings for RA purposes would have to consider the MW, MWh, and resiliency of the portfolio rather than the NQC of individual elements.[8]

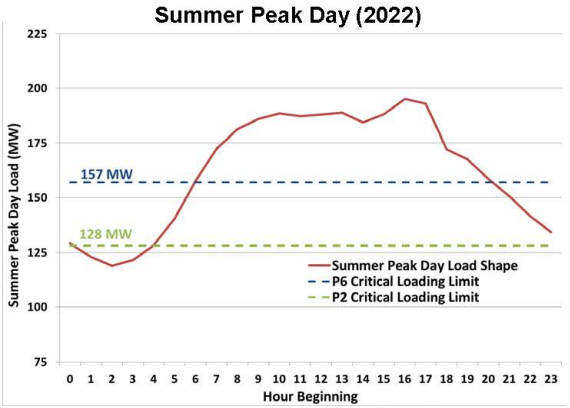
These are, therefore, the issues that deserve full attention in Track 2 and Track 3. *However,* addressing those issues must start now in Track 1.

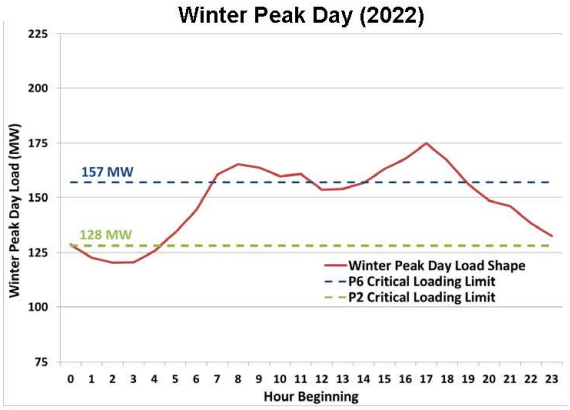
In its presentation on February 23, CEERT demonstrated how preferred resources can work to effectively mitigate LCR needs by reference to the PG&E Oakland Clean Energy Initiative. That initiative, as described in CEERT's February 16 Track 1 Proposals filing, is a ~ 67 MW LCR need in downtown Oakland to allow retirement of the long standing Reliability Must Run (RMR)-supported, but obsolete, inefficient, and polluting Dynegy Oakland Peaking Plant.[9] This procurement will take place in 2018 for a 2021 COD. The following screen shot is from PG&E's September 2017 presentation to the CAISO Transmission Planning Process:[10]

[7] For now, pending further experience, CEERT believes this would apply to DR resources with storage-enabled enhancements to provide spinning or operating reserves.
[8] CEERT believes it would be prudent to have a "procurement margin" for preferred resources that would account for less than perfect performance or, e.g., lower PV output in October vs. June. Such a margin could be reset from time to time based on experience.
[9] CEERT Track 1 Proposals (February 16, 2018), at pp. 2, 6-7.
[10] Id., at n. 6, p. 6; PG&E's 2017 Request Window Proposals, CAISO 2017-2018 Transmission Planning Process, PG&E, September 22, 2017, Oakland Reliability Proposal.

Pacific Gas and Electric Company

Technical Need Definition





- **Single contingency event (P2)**
  - Cause: Loss of single element
  - To meet need: Resources must be instantaneously available.
- **Multiple contingency event (P6)**
  - Cause: Two overlapping single events (N-1-1), where operators have 30 minutes following the first outage to prepare the system for a second outage
  - To meet need: Resources must be instantaneously available or able to be dispatched within 30 minutes

Summary of Technical Need

	Summer P2	Summer P6	Winter P2	Winter P6
Peak	67.1 MW	38.1 MW	47.0 MW	18.0 MW
Duration	21 hrs.	15 hrs.	20 hrs.	9 hrs.
MWh	842 MWh	352 MWh	515 MWh	70 MWh

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The first step in PG&E's plan to meet this LCR need is to plan breaker and bus upgrades within the plot limits of existing substations in the Oakland area to raise the Critical Loading Limit (the dotted horizontal line on the Summer and Winter charts) to roughly 175 MW. This essentially eliminates the Winter LCR need (represented by the area under the curve formed by the Peak Day Load Shape and the Critical Loading Limit) and reduces the Summer Peak Day LCR need to roughly 20 MW/150 MWH with a duration of roughly 11 hours starting at about 7 a.m. and ending at about 6 p.m. Then, PG&E proposes a stand-alone 10 MW/40 MWH battery for spinning reserve that, post contingency, would meet both the morning ramp from say ~7 am to ~10 am and the afternoon ramp from say ~3pm to 6pm.

In turn, PG&E proposes an RFO to determine the most cost effective and resilient mix of targeted Energy Efficiency (EE), solar PV, and demand response (DR) to fill in the rest of the

jigsaw puzzle of LCR need. The EE would lower the load curve with an emphasis on the late afternoon peak, and the solar PV would provide on-peak energy to supply the residual LCR need from, say ~10 am to ~2pm plus energy to recharge the batteries after their morning use to prepare them for spinning reserve duty in the afternoon/evening. DR would provide any residual on-peak energy to clean up around the edges and complete the jigsaw puzzle. The only "enhancement" CEERT recommends to PG&E's plan would be to allow the DR provider to bid an embedded short duration battery option in lieu of pre-contingency dispatch to lubricate its customer load drop and bridge the activation time to provide that response as spinning reserve.

Interestingly enough, despite CAISO's February 23 Workshop Presentation, CAISO itself has approved this PG&E plan subject only to CAISO Board approval at its March 2018 meeting, with verification of the preferred resource portfolio package following the PG&E RFO.[11] Cost recovery of the substation upgrades and the stand-alone battery storage installation would be treated as a reliability network upgrade funded by the PG&E Federal Energy Regulatory Commission (FERC) jurisdictional low voltage Transmission Access Charge. The CAISO has even proposed to subsequently explore the possibility of allowing the stand alone battery installation to be used for other purposes in a "value stacking" arrangement,[12] such as energy arbitrage or customer demand reduction, during the roughly 90% of the time that it is not needed for LCR duty.

This plan is precisely what CEERT had in mind in its Track 1 Proposals filed on February 16, which plan would be applied to this PG&E procurement and the analogous SCE RFP in Ventura/Santa Barbara County to meet the Santa Clara sub-area LCR need and the

[11] CAISO 2017-2018 Draft TPP, February 1, 2018, at p. 129, as revised with presentation on Feb 8, 2018 Northern Area – Reliability Assessment, Binaya Sherestha, at p. 33.
[12] Oral statement by Neil Millar (CAISO) at Stakeholder Meeting on 2017-2018 Draft TPP held on February 8, 2018. This treatment would be analogous to current "Condition 2" RMR contracts and "value stacking" principles for storage installations in D.18-01-003.

Goleta resiliency need. The plan includes the Moorpark/Pardee 230 kv transmission upgrade, which has also been approved by the CAISO subject only to CAISO Board approval at the same March 2018 meeting.[13] The only enhancement to this RFP that CEERT recommends is to allow DR providers to bid an embedded short duration battery option in lieu of pre-contingency dispatch to lubricate its customer load drop in so called "Stand By DR" configuration.

CEERT is fully aware that neither the Oakland Clean Energy Initiative nor the SCE Goleta/Santa Clara RFP meets the letter of current RA protocols for required LCR showings for 2020 and beyond in the respective areas. That is the reason CEERT's Track 1 Proposal is that the Commission should deem the LCR obligations satisfied by these two procurements subject only to the concurrence of the CAISO and Commission approval of Advice Letters by PG&E and SCE respectively utilizing current Cost Allocation Mechanism (CAM) protocols for cost allocation purposes. The knowledge gained from these procurements would be used to inform Track 2 and Track 3 proposals to ease the transition to generically reduce reliance on gas-fired resources for LCR needs.

CEERT believes that, rather than expending further energy on proving that the glass on use limited preferred resources is three quarters empty, time and energy should instead be spent on filing that glass. In addition, there needs to be explicit recognition in Track 1 that other initiatives relevant to the ultimate transition away from gas fired resources, from the use of preferred resources to supply a significant and growing fraction of LCR needs and enhancements to arrangements that allow significant increases in supply of RA resources from Pacific

[13] Draft 2017-2018 TPP, at pp. 195-196.

Northwest hydro resources,[14] are appropriate. Again, however, this work must begin now with direction in Track 1 related to the PG&E and SCE procurements as described above.

II.
CEERT'S POSITION ON OPTIONS FOR RA COMMISSION DECISIONS

As noted above, the February 26 ALJ's Email Ruling also directed parties to address options for the Commission to address late FCR and LCR Studies that were included in a presentation made by the Energy Division at the February 23 Workshop, which was attached to and summarized in that ruling. While the timing of decisions on these studies is important, it is equally important that any Commission decision issued in Track 1 of this proceeding, whether in June or July 2018, include CEERT's Track 1 Proposals, especially as related to the SCE and PG&E LCR procurements and as described in CEERT's February 16 Track 1 Proposals filing, its February 23 Workshop Presentation, and these Comments. CEERT's specific Proposals are restated in the Conclusion below.

III.
CONCLUSION

Again, as supported by these Comments, CEERT's February 16 Track 1 Proposals filing, and its February 23 Workshop Presentation, CEERT again states that the transition to RA Rules that appropriately value preferred resources and diminish over-reliance on gas-fired resources requires improved understanding based on actual experience. CEERT, therefore, urges the Commission to adopt CEERT's Track 1 multi-step proposal detailed in its February 16 Track 1 Proposals filing for the SCE and PG&E LCR procurements and, in doing so, also take the following specific actions:

[14] Robert Weisenmiller, Michael Picker: "Request for Sensitivity Case in CAISO 2018-2019 TPP – Increased Capabilities for Transfers of Low Carbon Electricity between the Pacific Northwest and California" February 15, 2018.

1. Clarify that, for the proposed SCE procurement plan, "Stand-By Demand Response" paired with short duration battery storage is allowed for bidding into the RFP for both the Goleta resiliency need and the Santa Clara LCR need.[15]

2. Revise the PG&E "procurement plan" to strike the asterisk requiring pre-contingency dispatch of demand response.[16]

3. Confirm that cost allocation of both of these procurements will be governed by the current CAM (cost allocation mechanism) protocols at the time the Advice Letters are adjudicated.

4. Conclude that, if the CAISO determines that the resource portfolio that results from these procurements satisfies the particular LCR needs in Santa Clara and Oakland respectively, each will satisfy the LSE LCR obligations regardless of how they score by current RA protocols.

Respectfully submitted,

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[15] As noted in CEERT's February 16 Track 1 Proposals filing, as originally filed, the SCE procurement plan allowed so called "Stand By DR" to be bid for solving the Goleta resiliency need, but not for the Santa Clara LCR need because Stand By DR does not currently count for LCR purposes but would otherwise meet grid requirements. In the "final" procurement plan posted on February 8, 2018, footnote 56, at page 28, states this distinction was struck making it unclear whether the intent is to disallow Stand By DR in both cases or allow it in both cases.

[16] PG&E's 2017 Request Window Proposals, CAISO 2017/2018 Transmission Planning Process, Pacific Gas and Electric Company, September 22, 2017, Oakland Reliability Proposal.