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)

CALPINE CORPORATION COMMENTS ON THE EFFECTIVE LOAD CARRYING CAPACITY AND TRACK 3 PROPOSALS

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Pursuant to the January 29, 2019 *Amended Scoping Memo and Ruling of Assigned Commissioner* ("Scoping Ruling") and the February 13, 2019, *Administrative Law Judge's Ruling on Effective Load Carrying* Capacity ("Ruling"), Calpine Corporation ("Calpine") submits the following comments on Energy Division's updated and corrected Effective Load Carrying Capacity ("ELCC") proposal and parties' Track 3 proposals.

I. COMMENTS ON ENERGY DIVISION PROPOSALS

A. ELCC Proposal

Calpine greatly appreciates Energy Division's updates to its ELCC estimates. In particular, the estimates now appear to appropriately reflect the impact of behind-the-meter ("BTM") solar, albeit indirectly through its impact on the load profiles that are used in the analysis.

Calpine's primary concern about the proposal relates to its treatment of diversity. Calpine acknowledges that diversity exists, i.e., that the ELCC of a portfolio of resources may exceed the sum of the ELCCs of the component parts. Energy Division's analysis calculates standalone ELCCs for wind, solar, and storage and then a portfolio of all three resources. It finds that the ELCC of the portfolio of the three resources exceeds the sum of the standalone ELCCs in certain months. Energy Division then allocates this diversity benefit to the individual

resources in proportion to their standalone ELCCs.[1] The proposal then argues that any diversity benefit associated with storage is not due to the storage itself but to the resources that can charge the storage so that it is capable of discharging when it is most needed. The proposal asserts incorrectly, however, that the storage diversity benefit should be allocated to solar, which is just one of the specific resources that might be used to charge the storage. Many resources potentially facilitate storage charging, including ones for which Energy Division has not explicitly modeled ELCCs. For example, gas generation also may facilitate storage charging.

Absent a more rigorous demonstration that it is actually solar that facilitates storage charging—for example, an analysis that also models the ELCC of gas and other resources—Calpine recommends that Energy Division allocate storage diversity to all resources. One interim method to implement this approach might be to reduce overall system requirements to account for storage diversity.

B. Staff Proposal B: Updates to the Resource Adequacy Enforcement and Waiver Processes

1. Revised Local Waiver Prices

Under current rules, load-serving entities ("LSEs") may seek waivers from local resource adequacy (RA) requirements if they are unable to find local RA capacity below the waiver trigger price, which is currently $40/kW-year. If an LSE obtains a waiver, it is exempted from Commission penalties for the resulting deficiency but may still be exposed to the costs of any California Independent System Operator ("CAISO") backstop procurement needed to cure the deficiency. Energy Division is proposing to increase the waiver trigger price to $51/kW-year.[2]

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[1] Subject to a cap on storage's ELCC at its nameplate capacity. *See* Ruling, at Slide 12.

[2] *See* Energy Division Proposals for Proceeding 17-09-020: Order Instituting Rulemaking to Oversee the Resource Adequacy Program, Consider Program Refinements, and Establish Annual Local and

Calpine supports Energy Division's proposal to raise the waiver trigger price to reflect changed market conditions; however, Calpine believes that it would be more logical to link the trigger price to CAISO backstop pricing. For example, the Capacity Procurement Mechanism (CPM) soft-offer cap is currently $6.31/kW-month. Linking the waiver trigger price to the cost of CAISO backstop procurement would provide LSEs and suppliers greater incentives to avoid backstop procurement.

2. Flexible Penalty Not Additional to System Penalty

Calpine also supports the element of the Energy Division's proposal that would limit the compounding of compliance penalties for failures to procure both flexible RA capacity and system RA capacity. Given that flexible RA capacity generally does not trade at a meaningful premium to system RA capacity, it does not make sense to penalize failures to procure sufficient flexible and system RA capacity significantly more harshly than failures to procure system RA capacity alone. Calpine requests clarification of the element of the proposal that specifies that "the penalty will be based on whichever MW amount is greater, not the sum of the two deficiencies."[3]

Calpine understands that under Energy Division's proposal, deficiencies of system RA capacity that are matched by deficiencies of flexible RA capacity would be penalized at the system RA penalty price and the corresponding flexible RA capacity deficiency would not be penalized independently. To the extent an LSE's flexible RA capacity deficiency exceeds its system RA capacity deficiency, the excess would be penalized at the flexible RA capacity penalty price of $3.33/kW-month. Conversely, to the extent that an LSE's system RA capacity

Flexible Procurement Obligations for the 2019 and 2020 Compliance Years ("Energy Division Track 3 Proposals"), at 24.

[3] *See* Energy Division Track 3 Proposals, at 24.

deficiency exceeds its flexible RA capacity deficiency, the excess would be penalized at the system RA capacity penalty price of $6.66/kW-month.

3. Advice Letter Process for Waiver Request

Calpine supports an advice letter process for waiver requests so that waiver requests are more transparent.

II. COMMENTS ON THE CALIFORNIA ENERGY STORAGE ALLIANCE'S (CESA) PROPOSALS

A. RA Counting of Solar-Plus-Storage Resources

Calpine does not object to developing separate ELCCs for solar plus storage.[4] However, developing such estimates will require further consideration of (a) how storage modifies the generation profile of solar resources that may be highly resource specific, and (b) the extent to which the storage is dispatchable.

Calpine does not agree with CESA that the Commission should make a determination now that solar plus storage resources will count indefinitely at their "Year 0" values (i.e. the values for the year in which they were first modeled).[5] CESA's proposal is similar to other previous vintaging proposals.[6] While there may be legitimate reasons to vintage (*e.g.*, to allow for some stability in the way that specific resources count prospectively), if the Commission adopts a vintaging approach, it should do so for all resources at once, not just solar plus storage.

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[4] *See* Track 3 Proposal of the California Energy Storage Alliance in Response to the Amended Scoping Memo and Ruling of Assigned Commissioner ("CESA Proposals"), at 3.

[5] *See* CESA Proposals, at 4.

[6] *See e.g.*, Calpine Corporation Preliminary Phase 3 Proposal (R.14-10-010), Attachment A at 10-11 (Dec. 16, 2016) (Calpine and Energy + Environmental Economics's ELCC proposal contained a vintaging element).

B. Changing the Definition of Effective Flexible Capacity ("EFC")

Calpine does not support changing the definition of EFC.[7] First, the CESA proposal contains no rigorous analytic basis for its recommendation to quantify EFC based on a resource's ability to ramp over a shorter window than the 3-hour window that is the basis for the current definition. Second, changes to the definition are within the scope of the CAISO's current RA Enhancements stakeholder initiative.[8] The Commission should not get ahead of the CAISO's efforts to refine the entire flexible RA framework.

C. Workshops on RA Counting and Participation Requirements for Distributed Energy Resources ("DERs")

Calpine does not object to workshops on how DERs count towards RA requirements and performance/participation requirements for DERs providing RA capacity.[9] However, as discussed below in relation to the Sunrun, Inc. ("Sunrun") and the Center for Energy Efficiency and Renewable Technologies ("CEERT") proposals, there are numerous complex issues associated with interconnection, compensation, and performance requirements that would have to be addressed before allowing DERs to provide additional RA capacity.

III. COMMENTS ON WELLHEAD ELECTRIC COMPANY, INC.'S ("WELLHEAD") PROPOSAL

For the same reasons Calpine opposes CESA's proposal to change the definition of EFC, Calpine opposes Wellhead's Fast Flex RA proposal.[10] The Commission should not get ahead of the CAISO's efforts to overhaul flexible RA rules in its RA Enhancements stakeholder initiative.

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[7] *See* CESA Proposal, at 6.

[8] *See* CAISO, *Resource Adequacy Enhancements* (last visited Mar. 19, 2019), *available at* http://www.caiso.com/informed/Pages/StakeholderProcesses/ResourceAdequacyEnhancements.aspx.

[9] *See* CESA Proposal, at 6.

[10] *See* Wellhead Electric Company, Inc.'s Track 3 Proposal, at 2-3.

IV. COMMENTS ON SUNRUN'S PROPOSALS

The Sunrun proposal includes four separate elements to allow BTM solar paired with storage to count more generously towards RA requirements, either as supply or a load modifier. Calpine is particularly concerned about the element that would allow exports from BTM storage systems to count as supply.

A. Allow Exports from BTM Storage to Count as RA Supply

For capacity associated with exports from BTM storage to count towards RA requirements, it would need to be deliverable. Given the interconnection requirements for most/all BTM storage, most current systems probably are not deliverable. As indicated by Southern California Edison Company's ("SCE") representative at the March 12th workshop, BTM storage systems would require Wholesale Distribution Access Tariff ("WDAT") interconnections rather than the Rule 21 interconnections that they typically utilize for their exports to be deliverable. This issue is not just a bureaucratic/ministerial concern; there are genuine physical constraints on distribution systems that may limit the use of exports from BTM systems to address upstream reliability issues.

In addition, the sale of wholesale RA capacity raises legal/jurisdictional issues. The Federal Energy Regulatory Commission ("FERC") generally regulates the wholesale sale of electricity products. FERC recognizes two broad classes of wholesale suppliers: (1) Exempt Wholesale Generators ("EWGs"), which are entities engaged exclusively in the business of owning or operating facilities that sell electricity at wholesale; and (2) Qualifying Facilities ("QF"), which is a classification for certain types of generating facilities that receive special rate and regulatory treatment. Under the Sunrun proposal, it is unclear whether BTM storage system or aggregations of multiple systems would become EWGs or QFs.

Further, notwithstanding Sunrun's characterization of net energy metering ("NEM") compensation,[11] Calpine remains concerned that allowing exports from BTM storage systems to be compensated for wholesale sales of RA capacity might also lead to excessive compensation. Calpine understands that under the Sunrun proposal, exports would still be compensated through retail netting even while receiving separate wholesale payments for RA capacity (and possibly energy). The retail rates that are the basis for netting reflect all generation costs, including the cost of RA capacity. As a result, these rates would provide potentially duplicative compensation for RA capacity on top of the direct payments for RA capacity that Sunrun is seeking.

Finally, it is unclear that exports from BTM storage could actually satisfy RA performance requirements if, for instance, the same storage systems are used to optimize customer bills and potentially address distribution reliability issues. In addition, because BTM storage connected to NEM solar is generally limited to charging from the associated NEM solar, there may be instances in which NEM-solar paired storage would not be sufficiently charged to respond to the types of system-level reliability issues that RA is designed to address. Consequently, to the extent export capacity from BTM storage is allowed to count towards RA requirements, it should be subject to rigorous counting and performance requirements to ensure that its potential multiple uses and operating characteristics do not conflict with the provision of RA capacity.

B. Provide Clear Direction on Incrementality for Resources Providing RA Capacity

Sunrun proposes to determine what portion of a resource's capacity and/or performance is incremental to the capacity/performance that is already induced through other mechanisms,

[11] *See* Track 3 Proposal of Sunrun Inc. ("Sunrun Proposals"), at 15 (footnote 25).

such as NEM. For example, Sunrun proposes analyzing whether an RA obligation would induce NEM BTM solar paired with storage to be operated differently than it might be in response to NEM incentives alone.[12] Calpine has no objection to greater consideration of this type of incrementality issue.

C. Clarify the Current Methodology for Counting BTM DERs within Load Forecasts

Sunrun proposes more clarity on how BTM DERs are reflected in the load forecast.[13] To the extent BTM DERs are already reflected in the load forecast, they reduce RA requirements and claiming separate RA credit for the same resources might result in double-counting. On the other hand, if BTM DERs are already included in the load forecast, it may be difficult for suppliers or the LSEs that procure BTM DERs to obtain credit for their investments in BTM DERs.

As Calpine understands it, Sunrun's proposed approach to this problem involves removing DERs entirely from the load forecast (i.e. the load forecast would reflect consumption, not load net of the impact of DERs). DERs would then be treated as supply and receive explicit RA credit. This is potentially similar or complementary to Pacific Gas and Electric Company's ("PG&E") proposal to treat BTM photovoltaic ("PV") as supply for RA purposes. Calpine believes this approach merits further consideration. It might lead to greater transparency on how DERs are being used to meet (or reduce) RA requirements. On the other hand, it might not address the issue that is the focus of the previous aspect of the Sunrun proposal, *e.g.*, who gets to claim the RA credit for a NEM resource.

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[12] *See* Sunrun Proposals, at 13-15.

[13] *See* Sunrun Proposals, at 16-20.

D. Establish Reasonable ELCC Values for Combinations of BTM Solar and Battery Storage and Clarify Application of those Values

Conceptually, Calpine does not object to this aspect of the Sunrun proposal. In practice, as discussed above in reference to a similar CESA proposal, establishing ELCC values for BTM solar paired with storage will require assumptions about how the associated storage will be operated and the extent to which it is dispatchable.

V. COMMENTS ON PG&E'S PROPOSALS

A. Revisions to the Load Forecast Methodology

Calpine supports PG&E's proposal to remove the impacts of BTM PV from the load forecast, treat BTM PV as RA supply, and set RA requirements based on forecast consumption rather than sales.[14] The reasons for these changes are well articulated in the PG&E proposal.

These changes would result in more comparable treatment of BTM and supply-side solar for RA counting. Currently, BTM PV reduces RA requirements through its impact on the load forecast. This estimated impact may be similar but not identical to how it would count as supply if its ELCC was estimated in a similar fashion to supply-side resources.

In addition, Calpine agrees with PG&E that treating BTM PV as load modifying potentially undermines reliability because to the extent that BTM PV is forecasted to reduce peak load, it reduces RA requirements by not only its direct impact on the load forecast but also by an assumed avoided planning reserve margin. By reducing RA requirements by more than its direct impact on peak load, it disproportionately reduces the volume of supply side resources that must be purchased to meet reliability requirements and potentially results in less overall supply (including BTM PV) to meet RA requirements. Calpine also notes that treating BTM PV as supply might address some of the concerns articulated by Sunrun and others about transparency

[14] *See* Track 3 Proposals of Pacific Gas and Electric Company (U 39 E) ("PG&E Proposals"), at 2-3.

with respect to exactly how BTM PV and storage impacts reliability requirements by forcing the clear specification of assumptions about consumption and load modifiers in the development of the load forecast.

B. Seasonally Varying Local Capacity Requirements ("LCRs")

As with other similar/identical proposals from previous years, Calpine does not support PG&E's proposal for seasonal LCRs.[15] PG&E proposes to reduce LCRs outside of the summer in proportion to forecast peak load outside of the summer. Seasonal or monthly LCRs should have an analytic basis. In response to previous similar proposals, the CAISO has indicated repeatedly that it does not intend to conduct seasonal or monthly LCR studies. Even if it did conduct such studies, because the configuration of the transmission system and the availability of certain generators may vary seasonally, requirements outside of the summer may not be lower. Until there is an actual analysis that quantifies LCRs outside of the summer, Calpine continues to oppose ad hoc approaches to reducing LCRs outside of the summer, including this latest PG&E proposal.

C. Refinements to Qualifying Capacity ("QC") Counting Rules for Hydro Resources

Calpine generally supports potential modifications to QC counting rules for hydro resources to reflect the availability of water and other potential constraints on hydro generation. At the March 13th workshop, PG&E raised the possibility of using an exceedance approach to determine QCs of hydro resources. An exceedance approach would base QCs on past production. Calpine is not convinced that such as approach would adequately capture prospective limitations on hydro generation. For example, a resource might have a high

[15] *See* PG&E Proposals, at 6-8.

exceedance value based on wet weather in recent years, but if the next year is dry the resource may not be able to perform up to the level of its exceedance-based QC.

In addition to considering changes to QC methodologies for hydro, Calpine also would like to better understand the role of availability penalties in potentially discouraging LSEs from showing resources at levels that exceed their capability to generate consistently. For example, it is conceivable that appropriately structured incentives/penalties would encourage LSEs to adjust the capacity they show from hydro resources to reflect the availability of water (and other constraints) without needing to modify QC counting rules.

VI. COMMENTS ON SAN DIEGO GAS AND ELECTRIC COMPANY'S ("SDG&E") PROPOSAL

Calpine does not support SDG&E's proposal to clarify how the waiver trigger price would apply to transactions of less than a full year.[16] Under the SDG&E proposal, for transactions of less than 12 months, the Commission would assess whether a transaction exceeds the waiver trigger price by effectively converting the transaction into a 12-month transaction by assuming that equivalent capacity would be purchased in the missing months at an average local RA price.

Calpine believes this approach may inappropriately constrain local RA procurement. For example, a specific resource may be needed for only a few months—perhaps because it is expected to be replaced by some other resource within the year. Consequently, it may need to recover its costs over the subset of months for which it is procured. Under the SDG&E approach, an LSE might be relieved of the obligation to procure this resource inappropriately by ascribing costs to the transaction from other months that are not germane to the assessment of

[16] *See* San Diego Gas & Electric Company (U 902 E) Track 3 Proposal, at 3-4.

whether the transaction is competitive. Further, it is not clear that SDG&E's approach of converting sub-annual transactions to annual using the same price for all missing months is accurate. In Calpine's experience, local RA is generally more expensive in peak summer months because it also counts towards system requirements and system prices tend to be higher in the peak summer months. In addition, because the proposal would leave discretion with Commission staff over what waivers to approve, it is unclear what practical impact the proposal would have.

VII. COMMENTS ON SCE'S PROPOSALS

A. System and Flexible Waivers

Calpine does not support SCE's proposal to introduce a waiver process for system and flexible RA.[17] The waiver process for local RA was introduced to address concerns about local market power. Notwithstanding the tightening system load and resource balances referenced in SCE's proposal, there has been no conclusive demonstration that market power exists for system or flexible RA.

In the event the Commission introduces a waiver for system or flexible RA, to encourage LSEs and suppliers to avoid backstop procurement the Commission should set the associated waiver prices at least as high as recommended by SCE (i.e. the CPM soft offer cap price). In addition, the Commission and CAISO should remain mindful of the fact that as the state potentially becomes more reliant on imports, and supply and demand balances outside of California tighten, low waiver and/or backstop prices may not be sufficient to induce external suppliers to provide capacity given other opportunities to sell capacity (and energy) in other parts of the West.

[17] *See* Southern California Edison Company's (U 338-E) Track 3 Proposals, at 15-17.

VIII. COMMENTS ON CEERT'S PROPOSAL

Calpine does not object to further consideration of CEERT's proposal on how portfolios of preferred resources might be used to meet LCRs.[18] Calpine believes there are important details of the proposal that would need to be explored in more depth before considering implementation, including the following: *First*, the Commission would need to explore how the portfolios would be represented as resources in CAISO markets (*e.g.,* would a portfolio have one or a few resource IDs?). In addition, as the DERs underlying the portfolios change, it is unclear whether the Master File values for the portfolios would change as well. *Second*, it is unclear how the CAISO would commit and dispatch those resources in combination with other resources in CAISO markets. The proposal suggests that the CAISO would commit the resources through Residual Unit Commitment but the CAISO might prefer to commit them through the Integrated Forward Market along with other resources. *Third,* how performance of the portfolios would be quantified and ultimately enforced would need to be explored. *Lastly*, the proposal suggests that any LSE could avoid cost allocation mechanism ("CAM") allocations and charges (and help other LSEs avoid CAM allocations and charges) by developing its own portfolio of DERs.[19] However, CEERT's proposal appears to be inconsistent with the state law that is the basis for CAM, which allows electrical corporations alone to recover the costs of local reliability investments on behalf of all benefitting customers on a fully non-bypassable basis.[20]

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[18] *See* Track 3 Proposals of the Center for Energy Efficiency and Renewable Technologies ("CEERT Proposals"), at 3-4.

[19] CEERT Proposals, at 4.

[20] *See* Pub. Util. Code § 380 ("[a]n electrical corporation's costs of meeting or reducing resource adequacy requirements . . . shall be fully recoverable from those customers on whose behalf the costs are incurred . . . on a fully nonbypassable basis."); *see also* Pub. Util. Code §365.1(c)(2)(A).

Respectfully submitted,

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