BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Oversee the Resource Adequacy Program, Consider Program Refinements, and Establish Annual Local Procurement Obligations.	R.11-10-023 Filed October 20, 2011

POST-WORKSHOP COMMENTS OF IMERGY POWER SYSTEMS, INC., PRIMUS POWER, ZBB ENERGY CORPORATION, ENERVAULT CORPORATION AND UNIENERGY TECHNOLOGIES, LLC ON REVISED ENERGY DIVISION PROPOSALS

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BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Oversee the Resource Adequacy Program, Consider Program Refinements, and Establish Annual Local Procurement Obligations.	R.11-10-023 Filed October 20, 2011

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Imergy Power Systems, Inc., Primus Power, ZBB Energy Corporation, EnerVault Corporation and UniEnergy Technologies, LLC (the "Joint LDES Parties") hereby submit these comments on the Revised Staff Proposal on Qualifying Capacity and Effective Flexible Capacity Calculation Methodologies for Energy Storage and Supply-Side Demand Response Resources, dated April 9, 2014 ("Revised ES-DR Staff Proposal"), the Staff Proposal on the Implementation of the Flexible Capacity Procurement Framework dated April 9, 2014 ("Flexible Capacity Staff Proposal") and other materials presented at the workshop on Resource Adequacy ("RA") staff proposals held in this proceeding on April 9, 2014 (the "April 9th Workshop") pursuant to Administrative Law Judge Gamson's ruling from the bench at the April 9th Workshop. The Joint LDES Parties were each granted party status in this proceeding at the April 9th Workshop.

The Joint LDES Parties applaud the Commission's adoption of a flexible capacity framework in D.13-06-024 and the Energy Division staff's hard work to date to develop a flexible capacity program for 2015 and beyond. We offer these comments, along with our previously-filed comments and reply comments on the prior version of the staff proposal on Effective Flexible

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Capacity ("EFC") requirements as applied to energy storage,[1] in order to help ensure that the program rules adopted in this proceeding will be formulated to fulfill the Commission's goals of managing grid reliability during the greatest three-hour ramp each month and reduce ramping needs during these periods, thereby benefitting ratepayers.[2]

I. The Flexible Capacity Procurement Framework Should Be Simplified To Ensure Grid Stability and Prevent Market Gaming

The Joint LDES Parties are concerned that, in order to achieve the grid and ratepayer benefits the Commission intended the flexible capacity program to provide, *i.e.* ensuring grid reliability in a cost-effective manner, a robust set of market rules are needed. These rules must be sufficiently simple and clear that they can be understood, interpreted and applied by LSEs, flexible capacity providers and regulators. We are concerned that the current Flexible Capacity Staff Proposal and the Revised ES-DR Staff Proposal have a "Rube Goldberg" level of complexity that can only be explained in charts and diagrams.[3] The Joint LDES Parties caution the Commission that overly complex rules could incentivize gaming of the system by market players (rather than preventing this problem), which would ultimately result in increased costs of flexible capacity for ratepayers and/or failure of the program to provide this badly-needed ramping support. As we observed with California's energy crisis and in more recent incidents of market manipulation in CAISO's day ahead and real-time markets,[4] market complexity can lead to drastic consequences for

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[1] Post-Workshop Comments of Imergy Power Systems, Inc., Primus Power, ZBB Energy Corporation, EnerVault Corporation and UniEnergy Technologies, LLC on Revised Energy Division Proposals (February 18, 2014) ("Joint LDES Post-Workshop Comments"); Reply Comments of Imergy Power Systems, Inc., Primus Power, ZBB Energy Corporation, EnerVault Corporation and UniEnergy Technologies, LLC on Energy Division Proposals (March 3, 2014) ("Joint LDES Reply Comments").

[2] *See* D.13-06-024 at 2, 63 (Ordering Paragraph 12).

[3] *See* staff's presentation "Revisions: Qualifying Capacity and Effective Flexible Capacity for Storage and Supply-Side DR" presented at the April 9th Workshop.

[4] *See, e.g.* FERC News Release, "FERC, JP Morgan Unit Agree to $410 Million in Penalties, Disgorgement to Ratepayers" (July 30, 2013), *available at*: http://www.ferc.gov/media/news-releases/2013/2013-3/07-30-13.asp#.U03ZqVVdXng.

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ratepayers and grid stability. We offer the following comments on the Revised ES-DR Staff Proposal intended to reduce the likelihood of such potential outcomes.

A. Flexible Resources Must Be Able to Qualify as System RA Resources

The Joint LDES Parties endorse the Revised ES-DR Staff Proposal and the Flexible Capacity Staff Proposal rule that, in order to qualify as flexible capacity, a resource must also qualify as a System RA resource.[5] We strongly agree that a flexible resource must be eligible for Qualifying Capacity ("QC") and that, in order to qualify as a flexible resource, it must be able to ramp and sustain energy output for a minimum of three consecutive hours over three consecutive days. We agree with staff that this policy should not be revised.

We are concerned, however, that the language set forth in the Revised ES-DR Staff Proposal and the Flexible Capacity Staff Proposal is not sufficiently clear in this regard. The Staff Proposals do not define "operate" or "energy output," and so it is unclear whether these terms refer only to discharging, discharging or charging, or a combination of charging and discharging. The rules become increasingly murky when read in tandem with the Case 3 $Pmin_{RA}$ methodology example for storage or DR with both negative and positive output ranges.[6]

The Revised ES-DR Staff Proposal continues to propose that facilities with both positive and negative operating ranges be permitted to meet the 3-hour ramping requirement for EFC by adding 1.5 hours of charging to 1.5 hours of discharging. As discussed in the Joint LDES Post-Workshop Comments and the Joint LDES Reply Comments, and as supported in the post-workshop comments filed by MegaWatt Storage Farms, Inc. and the reply comments filed by Calpine, this rule is inconsistent with the grid's 3-hour ramping needs.[7] We point the Commission

[5] *See* Revised ES-DR Staff Proposal at 2, 6; Flexible Capacity Staff Proposal at 6.
[6] *See* Revised ES-DR Staff Proposal at 11-13.
[7] Joint LDES Post-Workshop Comments; Joint LDES Reply Comments; Comments of MegaWatt Storage Farms, Inc. on the January 24, 2014 Workshop Staff Proposals (February 18, 2014) ("MegaWatt

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to the Joint LDES Post-Workshop Comments, the Joint LDES Reply Comments and the MegaWatt Comments for further background on this issue. We also add that smaller increments of flexible capacity duration under a ramping scenario provide on average a quarter of the output in MWh as longer resources, providing reduced flexibility services.[8]

The Joint LDES Parties believe that this lack of clarity regarding EFC eligibility will lead to market uncertainty and the potential for market manipulation. In the flexible capacity framework to be adopted in the forthcoming decision in this docket, the Commission should make clear that, in order to qualify as a flexible resource, a resource must be able to meet System RA requirements by being capable of either charging for a minimum of three consecutive hours over three consecutive days or discharging for a minimum of three consecutive hours over three consecutive days. The Commission should make clear that a resource that operates in both the negative and positive ranges cannot aggregate charging hours with discharging hours to meet the three hour minimum required for RA eligibility.

B. Negative Generation (i.e. Charging) Should Be Allowed to Qualify for EFC

The Joint LDES Parties endorse staff's proposal to permit the definition of $Pmin_{RA}$ to be a negative number, thereby allowing a resource's charging capability to be eligible for EFC value. We agree with staff that charging is an important way to address the grid's ramping needs. Furthermore, this rule is now consistent with the CAISO's adopted Flexible Resource Adequacy Criteria and Must Offer Obligation ("FRAC-MOO"). This framework correctly captures the full flexibility capability of ES and DR resources and should be adopted by the Commission.

Comments"); Reply Comments of Calpine Corporation on Energy Division Proposals Addressing Resource Adequacy Implementation (March 3, 2014) at 2-3.

[8] For example, three hours of sustained dispatch (either charging or discharging) at 4 MW would equal 12 MWh of flexibility provided to the grid, whereas ramping from -4MW to 0MW over 1.5 hours would equal 3 MWh of flexibility services.

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C. The Must Offer Categories Should be Simplified

The Joint LDES Parties applaud staff's proposed adoption of must offer Category 1 as a simple rule as set forth in the Flexible Capacity Staff Proposal. There are numerous fast-responding technologies capable of bidding in to all 3 categories, however. For this reason, we do not see the practical need or actual grid benefit of inclusion of Categories 2 and 3. If Categories 2 and 3 are adopted by the Commission, then the rules ought to be straightforward to ensure market fairness and to reduce incentives to game the system. The rules should create transparency around the costs to ratepayers associated with permitting Category 2 and 3 resources to provide flexible capacity. The rules should motivate market participants to provide the flexible power required.

D. Operational Costs Associated with Aggregating Category 2 and 3 Resources in Order to Meet EFC Requirements Should Be Factored in to Pricing and Made Transparent

The Revised ES-DR Staff Proposal would permit energy storage resources within a single Sub-LAP to be aggregated in order to form an RA-eligible resource.[9] If this proposal is adopted by the Commission, it should be done in a way that allows the costs associated with such aggregation to be factored in to procurement pricing and made transparent to ratepayers and regulators. Aggregation costs taken into account should include additional interconnections and system costs associated with managing a greater number of smaller resources.

E. The New 45 Minute Break Between Charging and Discharging Should Be Removed from the Staff Proposal and Should Not be Adopted by the Commission

The Revised ES-DR Staff Proposal now permits up to 45 minutes of "transition time" between negative and positive operational modes under the EFC rules.[10] We agree that the 45 minutes of downtime should most certainly not count towards a resource's three hour output requirement, but strongly disagree that this lengthy transition time should be permitted at all. In

[9] Revised ES-DR Staff Proposal at 3.
[10] Revised EFC Staff Proposal at 7.

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response to the question posed in the Revised ES-DR Staff Proposal, the Joint LDES Parties do not believe this is a reasonable transition time.

Resources that would need such lengthy transition times (i.e. pumped hydro projects) would typically be capable of bidding into must offer Category 1 because they are capable of providing energy for a P_{MAX} of up to six hours. By contrast, fast-responding resources would be able to provide a more operationally flexible continuous range Pmin to Pmax, and therefore twice as much flexibility to the grid. The costs of such operational issues must be transparent and not unfairly imposed on ratepayers. Thus, the Joint LDES Parties do not believe that the 45 minute transition time should be permitted.

II. CONCLUSION

The Joint LDES Parties appreciate the opportunity to provide these comments on the materials distributed at the April 9th Workshop. We thank the Commission for its diligence in establishing the flexible capacity framework, and recommend the changes set forth above in order to ensure that the program successfully fulfills California's critical ramping needs at a reasonable cost to ratepayers.

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Respectfullysubmitted,

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