BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to consider policy and implementation refinements to the Energy Storage Procurement Framework and Design Program (D.13-10-040, D.14-10-045) and related Action Plan of the California Energy Storage Roadmap.	Rulemaking 15-03-011 (Filed March 26, 2015)

CLEAN COALITION COMMENTS ON TRACK 1 ISSUES

Brian Korpics
Staff Attorney

Kenneth Sahm White
Economics & Policy Analysis Director

Clean Coalition
16 Palm Ct
Menlo Park, CA 94025
brian@clean-coalition.org
(708) 704-4598

July 8, 2015

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to consider policy and implementation refinements to the Energy Storage Procurement Framework and Design Program (D.13-10-040, D.14-10-045) and related Action Plan of the California Energy Storage Roadmap.	Rulemaking 15-03-011 (Filed March 26, 2015)

CLEAN COALITION COMMENTS ON TRACK 1 ISSUES

I. INTRODUCTION

On March 26, 2015, the California Public Utilities Commission ("Commission") filed an Order Instituting Rulemaking to address policy and implementation refinements to the energy storage program under AB 2514 and Decisions 13-10-040 and 14-10-045, which established the Energy Storage Procurement Framework Program and approved the utilities' applications in implementing the Program. On July 12, 2015, the assigned Commissioner and Administrative Law Judges released a ruling seeking party comment on Track 1 issues. The Clean Coalition appreciates this opportunity to comment on the energy storage program. Below we offer input on procurement best practices in the energy-storage specific request for offer ("RFO") process, refinements to the Consistent Evaluation Protocol ("CEP"), and coordination across other Commission proceedings.

The Clean Coalition is a nonprofit organization whose mission is to accelerate the transition to renewable energy and a modern grid through technical, policy, and project development expertise. The Clean Coalition drives policy innovation to remove barriers to procurement and interconnection of distributed energy resources ("DER")—such as local renewables, advanced inverters, demand response, and energy storage—and we establish market mechanisms that realize the full potential of integrating these solutions. The Clean Coalition also collaborates with utilities and municipalities to create near-term deployment opportunities that prove the technical and financial viability of local renewables and other DER.

II. COMMENTS

1. Procurement Best Practices

Transparency generally improves market efficiency—providing clear signals for suppliers to compete to deliver products with characteristics most valued by buyers. To promote transparency in the energy-storage specific RFO process, the RFOs should clearly identify the use cases and services needed from energy storage projects in particular grid locations, and developers should simply compete on cost. Achieving this goal will require greater integration with the distribution resources plans proceeding, which is discussed further below, but the Clean Coalition also respectfully urges the Commission to implement several interim modifications immediately.

Although the investor-owned utilities ("IOUs") allow for consideration of locational value in the RFOs, these values should be better emphasized. Certain distribution circuits experience outsized benefits from DER that reduce peak load,[1] and the Commission should seek to monetize these benefits. The IOUs should improve subsequent RFOs by referencing maps on local capacity requirements in order to show all areas that require increased capacity. The RFOs should also reference transmission maps showing areas with high line losses or significant congestion charges. Energy storage facilities will likely realize the majority of their value from location-specific targeting and use case application. Providing clarity to market participants on these factors will focus capacity and competition on those areas of greatest benefit to the utility and ultimately to ratepayers. For example, Southern California Edison ("SCE") identified a local capacity constrained area in their recent All Source RFO and successfully offered prioritized bid selection for capacity within this area. Utilities may also offer specific locational price bonuses based on anticipated avoided cost benefits—providing greater clarity to the market.

We further urge the Commission to require all future RFOs to allow developers to submit multiple variations of a single proposed project. This would enable the most efficient selection of contract terms and facility operation. Pacific Gas and Electric

[1] *See, e.g.*, M.A. Cohen, P.A. Kauzmann & D.S. Callaway, Effects of Distributed PV Generation on California's Distribution System, Energy Institute at Haas working paper (June 2015), *available at* http://ei.haas.berkeley.edu/research/papers/WP260.pdf.

("PG&E") and SCE's RFOs allowed developers to submit multiple variations of one project,[2] and we urge the Commission to formally adopt the level of flexibility offered in SCE's RFO—allowing each project to offer up to twenty contract variations. Variations may specify different project attributes such as delivery term, price, commercial operation date, duration of charge/discharge, capacity, or operational characteristics like ramp rates. Variations may also include different financing arrangements, including flat versus escalating pricing or 10- versus 15-year project terms.

2. Refinement of the Consistent Evaluation Protocol

In order to ensure that the Consistent Evaluation Protocol ("CEP") conforms with the Commission's guiding principles, the Clean Coalition respectfully urges the Commission to revise the CEP to more fully account for the costs and benefits of energy storage resources. Under AB 2514, three purposes guide the Commission's energy storage procurement program:

i. The optimization of the grid, including peak reduction, contribution to reliability needs, or deferment of transmission and distribution upgrade investments;
ii. The integration of renewable energy; and
iii. The reduction of greenhouse gas ("GHG") emissions to 80 percent below 1990 levels by 2050.[3]

As the Commission recognized in its decision approving the IOU storage applications, this proceeding is an appropriate venue to refine the CEP to further these aims.[4]

---

[2] *See* Pac. Gas & Elec., Energy Storage Request for Offers Solicitation Protocol at 24 (Jan. 27, 2015); S. Cal. Edison, Request for Offers for Energy Storage: RFO Participant Instructions at 2 (Jan. 28, 2015).

[3] *See* Pub. Util. Code § 2835(a)(3); Decision Approving San Diego Gas & Electric Company, Pacific Gas and Electric Company, and Southern California Edison Company's Storage Procurement Framework and Program Applications for the 2014 Biennial Procurement Period at 8–9, Cal. Pub. Util. Comm'n Decision 14-10-045 (Oct. 16, 2014).

[4] Decision Approving San Diego Gas & Electric Company, Pacific Gas and Electric Company, and Southern California Edison Company's Storage Procurement Framework and Program Applications for the 2014 Biennial Procurement Period at 69–70, Cal. Pub. Util. Comm'n Decision 14-10-045 (Oct. 16, 2014) ("While there may be merit to some of the points that parties raise, such as more explicitly evaluating how the IOU's storage procurement impacts the

The Commission should incorporate costs and benefits extending beyond ratepayer issues in the CEP, including GHG and other criteria emissions reductions, water use, and other societal and environmental factors. The CEP should quantify GHG impacts of energy storage projects both in terms of direct emissions and avoided emissions. Further, quantitative data and performance metrics should be included in the CEP in order to evaluate how storage improves inefficiencies caused by solar intermittency, avoided photovoltaic curtailment, and avoided photovoltaic overgeneration.

The CEP should also include the full range of costs and benefits to ratepayers, including all quantifiable transmission and distribution benefits. The Clean Coalition proposes that the Commission modify the CEP to include: (1) transmission upgrade deferral or avoidance value, (2) avoided transmission access charges, (3) avoided line losses and congestion costs, and (4) voltage support.

Deploying appropriately located energy storage projects that alleviate energy transmission constraints during peak demand periods avoids the need to increase transmission capacity, which allows existing transmission investments to depreciate and defers future investment. While individual storage projects will not replace and may not defer a transmission project, they will contribute proportionately to avoiding or deferring other projects and this value should be recognized. CAISO transmission planning is based upon scenarios including all planned procurement in each load area.

Reduced demand on the transmission system will reduce or defer the need for additional investment to expand transmission capacity, slowing the growth in transmission access charge ("TAC") rates that is driven by the need to recoup new investment costs. Reducing the need for new investment in transmission infrastructure will reduce charges across the board for all energy utilizing the system in a Merit Order Effect.[5]

---

environment, the best venue to accomplish any needed changes to the CEP is via the 2016 evaluation and/or upcoming storage rulemaking.").

[5] The Clean Coalition has described the average value of avoided transmission costs in detail in prior testimony. *See* Clean Coalition Rebuttal Testimony Regarding Pacific Gas and Electric Company's and San Diego Gas and Electric Company's Applications to Establish Green Tariff Shared Renewables Programs, Cal. Pub. Util. Comm'n Applications 12-01-008 & 12-04-020 (Jan. 10, 2014).

The use case values of energy storage also include peak capacity, energy arbitrage, service and system reliability, and renewables integration, as recognized in the January 4, 2013, Commission Interim Staff Report.[6] Energy storage with advanced inverters can provide voltage support services, including:

- Increased grid resilience and reliability by providing reactive power where it is needed most during a contingency, for example when a transmission path is lost;
- Integration of higher levels of intermittent distributed renewable generation by smoothing out voltage fluctuations; and
- Enabling conservation voltage reductions ("CVR") by maintaining consistent voltage levels along feeder lines, allowing operators to reduce average voltage.

CVR—supported independently by advanced inverter equipped storage or in conjunction with other distributed energy resources—offers the opportunity to realize energy savings and demand reductions of 3% or more on a continual basis, including reductions in both energy usage and line loss.

The Commission and the IOUs are in the process of developing and implementing advanced inverter standards within the Rule 21 proceeding, Rulemaking 11-09-011, with the intention of harmonizing Federal Energy Regulatory Commission jurisdictional interconnection requirements within California to these same standards. These standards include voltage support functionality. As the use of advanced inverter capabilities are implemented, the value of these services provided through energy storage deployment should be recognized in evaluating cost effectiveness of procurement.

3. Coordination Across Proceedings/Agencies

a. Distribution Resources Plans Proceeding

Coordinating this proceeding with the Distribution Resources Plans ("DRPs") proceeding is essential to strengthen the energy storage market. The IOUs released draft DRPs on July 1, 2015, and parties will submit comments on these applications. As part of this initial process, the IOUs will create Distributed Energy Resource Development

[6] Administrative Law Judge's Ruling Entering Interim Staff Report Into Record and Seeking Comments, Attachment A, Cal. Pub. Util. Comm'n Rulemaking 10-12-007 (Jan. 18, 2013).

Zones that identify locational values for energy storage and other types of DER. The IOUs will define DER portfolios in these zones using a process of value optimization. The methodology will compare DER alternatives to traditional distribution infrastructure investments, including operations and economic factors.

The IOUs will then file more complete DRPs in 2017 for Commission approval in 2018. These DRPs should include the optimal uses, amounts, and locations for storage to avoid or defer transmission investments. Plans should determine the most cost-effective balance between local and remote resources, after accounting for avoided or deferred transmission costs for addressing transmission constraints or remote renewable generation. Utilities should then procure distribution storage in alignment with the DRPs and the Storage Procurement Targets. Distribution level storage should be assigned a proportionate share of the avoided or deferred costs of transmission, based on an average value per unit of capacity.

b. Demand Response Proceeding

In addition to providing other services, energy storage may be utilized in a demand response ("DR") role. In the DR proceeding, the Load Modifying Demand Response Valuation Working Group, which was established following a recent settlement agreement,[7] has recommended methods and approaches to quantify the benefits resulting from some applications of DR. The Report of the Load Modifying Resources Demand Response Working Group, filed with the Commission on May 1, 2015, identified several factors worth the Commission's consideration.[8] These findings may be extended to capture energy storage services and the interaction of multiple types of DER performing additional services. The Clean Coalition urges the Commission to update the cost-effectiveness protocol to fully account for the benefits from energy storage identified in the Valuation Report.

[7] Motion for Adoption of Settlement Agreement Between and Among Pacific Gas and Electric Company et al., on Phase 3 Issues, Cal. Pub. Util. Comm'n Rulemaking 13-09-011 (Aug. 4, 2014), *available at* http://www.clean-coalition.org/site/wp-content/uploads/2014/08/clean_ Motion-for-Adoption-of-Settlement-Agreement_FINAL_CPUC_ Settlement-attached.pdf.

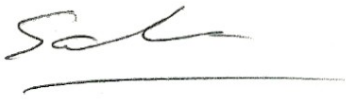
[8] Load Modifying Resource Demand Response Valuation Working Group Compliance Report, filed in compliance with Ordering Paragraph ("OP") 4, f. (ii) of Decision 14-12-024.

III. CONCLUSION

The Clean Coalition appreciates this opportunity to comment on Track 1 issues of the energy storage program.

Respectfully submitted,

/s/ Brian Korpics
Brian Korpics
Staff Attorney
Clean Coalition
16 Palm Ct
Menlo Park, CA 94025
brian@clean-coalition.org



Kenneth Sahm White
Economics & Policy Analysis Director
Clean Coalition
16 Palm Ct
Menlo Park, CA 94025
sahm@clean-coalition.org

Dated: July 8, 2015