BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Consider Alternative-Fueled Vehicle Programs, Tariffs, and Policies.	R.13-11-007 Filed November, 2013

COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE ON ADMINISTRATIVE LAW JUDGE'S RULING SETTING PREHEARING CONFERENCE AND REQUESTING COMMENTS

Donald C. Liddell
DOUGLASS & LIDDELL
2928 2nd Avenue
San Diego, California 92103
Telephone: (619) 993-9096
Facsimile: (619) 296-4662
Email: liddell@energyattorney.com

Attorney for the
CALIFORNIA ENERGY STORAGE ALLIANCE

February 19, 2014

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Consider Alternative-Fueled Vehicle Programs, Tariffs, and Policies.	R.13-11-007 Filed November, 2013

COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE ON ADMINISTRATIVE LAW JUDGE'S RULING SETTING PREHEARING CONFERENCE AND REQUESTING COMMENTS

In accordance with the California Public Utilities Commission's ("Commission's") Rules of Practice and Procedure, the California Energy Storage Alliance ("CESA")[1] hereby submits these comments in response to *Administrative Law Judge' Ruling Setting Prehearing Conference and Requesting Comments*, issued February 5, 2014 ("ALJ's Ruling").

I. INTRODUCTION.

CESA appreciates the opportunity to provide these comments in response to the questions posed in the ALJ's Ruling as discussed below. CESA has previously stated in this proceeding that the Commission should enable all energy storage use cases concurrently. CESA would like to clarify that vehicle-grid integration ("V1G") with intelligent and networked grid-tied charging station control is the necessary starting point] should not preclude immediate attention to key vehicle-to-grid ("V2G") priorities such as grid interconnection with bi-directional power flow that may be handled in parallel, and indeed are already being addressed to some degree, by stationary energy storage systems. CESA cautions that the Commission should avoid potential unintended consequences of inadvertently promoting or prioritizing certain business models over others by prioritizing V1G over V2G. CESA therefore recommends that the Commission

[1] The views expressed in these Comments are those of CESA, and do not necessarily reflect the views of all of the individual CESA member companies. http://storagealliance.org.

consider three EV charging use cases in parallel, namely: (1) V1G, (2) EV charging coupled with stationary energy storage, and (3) V2G.

II. RESPONSES TO SPECIFIC QUESTIONS.

A. What Programmatic Changes Can Be Made To Support VGI as a Resource Within Existing or Proposed State Energy Programs and Policies, Such as Demand Response, Resource Adequacy Requirements, Energy Storage, Interconnection, and Net Energy Metering?

Integration of electric vehicles with the grid, whether V1G or V2G, has the potential to provide a number of valuable grid applications including demand response, frequency regulation, other ancillary services such as spin and non-spinning reserve, flexible capacity, and local emergency backup/support while concurrently reducing greenhouse gas ("GHG") emissions from the grid and transportation sectors. Enabling the value of these grid applications to flow back to EV owners, charging infrastructure owners and distributed energy storage owners in a bankable way is key to EV infrastructure development and consumer EV adoption. A number of these applications/opportunities are discussed below.

Demand Response. Current EV tariffs and rules do not allow demand response ("DR") to happen efficiently. For example, stationary energy storage coupled with EV charging infrastructure cannot simultaneously participate in traditional utility DR programs and provide services to the California Independent System Operator ("CAISO") because DR participants are typically prohibited by tariff from participating in multiple DR programs at the same time. Given that an energy storage resource can be used constantly and that DR events are relatively infrequent (thereby leaving an energy storage resource available for other applications a large portion of the time) there is no reason to limit a single energy storage resource from providing both DR and ancillary services -so long as both services are discreet and separately quantifiable and measurable.

Self-Generation Incentive Program. Current Commission incentive programs, such as the Self Generation Incentive Program, could be amended to encourage and support greater VGI by encouraging VGI-capable grid-tied infrastructure deployment. While V2G provides substantial benefits that drive marketability without additional incentives, at this time, there is no clear pathway to enable or encourage the build out of VGI infrastructure. The current deployed infrastructure elements do not incent or fully enable the potential benefits of VGI. For example, for every possible EV that could be participating there must be a corresponding grid interconnection point capable of supporting VGI functions where the EV is plugged in. Encouraging a supporting role of VGI enables cost efficiencies, increases grid management resources, and spurs EV deployment and VGI by increasing bankable revenue streams for EV owners. Similarly, grid-tied energy storage provides the necessary resource to allow management of early morning and evening peaks without discouraging EV drivers and also preserves the manageability and predictability needed by grid operators. CESA's recommendations for VGI eligibility in the SGIP will be essentially the following:

1. Systems must be capable of V1G -controllable charging rate from a central networked system

2. Systems can be capable of V2G or V1G abilities plus controllable and bidirectional discharge capability from EVs

3. Some fraction of maximum capable charge rate should be credited for the EV system as SGIP-eligible (10% is suggested). For example, if the EV is sized at 10 kW, then it would receive one kW credit toward SGIP sizing. This would account for EV variations and mobility of the EVs resulting in a lower load factor and will encourage cost- effective sizing of the EV infrastructure and electrical service sizing.

4. If the ESVE is V2G capable, the applicable credit of a comparable capacity V1G rating credit towards SGIP would increase to at least 20%. Consistent with VGI Roadmap, and a growing body of related knowledge, V2G has a value that is greater than eight times more valuable than V1G for renewables integration and overall grid benefits. ESVEs providing V2G services should accordingly be compensated at a greater rate than their V1G counterparts.

Energy Storage Procurement Goals. D.13-10-040 calls for 200 MW of behind the meter energy storage. CESA has recommended in R.10-12-007 that certain~~ly~~ stationary energy storage used to augment EV charging stations as well as some portion of on-board vehicle energy storage used to provide grid services should count toward utility procurement requirements. Given that on-board V2G storage resources will not be available for dispatch as often as standalone storage resources, CESA recommends here that the Commission clarify the eligibility requirements for resources with different overall availability factors to count toward the procurement requirement and how this capacity would be contracted for by utilities and tracked over time. CESA notes that the issue of crediting capacity to aggregates of large numbers of small resources with predictable unavailability is one that is treated in most DR programs.

Interconnection. There are a number of interconnection issues that need to be immediately addressed to help facilitate VGI. Above all, utilities should be prohibited from disallowing interconnection of standards-compliant behind-the-meter energy storage systems, including V2G. Instead, these devices should follow the same interconnection procedures as other distributed energy resources, such as solar.

Long Term Procurement Planning and Resource Adequacy. The inevitable electrification of California's transportation sector represents both a significant challenge and opportunity for the State's long-term procurement planning ("LTPP") and resource adequacy ("RA") requirements. Networked EVs and EV charging equipment supported with and without stationary energy storage has the potential to provide highly geographically targeted local and system level energy and capacity resource. CESA recommends that the new potential load and supply characteristics associated with this transformation should be explicitly included in planned LTPP modeling efforts and that appropriate RA accounting rules be developed

aggregated flexible capacity and standard capacity from networked EVs and EV charging equipment.

B. What Immediate, Near-Term Actions Should the Commission Undertake to Support the Development and Implementation of VGI Use Cases and Applications?

Barriers to realizing the multiple benefit streams that are realizable today from VGI should be removed in collaboration with stakeholders and utilities other load serving entities. CESA strongly supports SDG&E's Response to the Order Instituting Rulemaking filed in this proceeding on December 13, 2013, which stated, "Ensuring utility infrastructure is available to meet the AFV energy needs of SDG&E's customers in a manner that provides benefits to all customers is an immediate priority. The growth in and expansion of pricing, technology and business model options should be encouraged." (p. 5). CESA encourages and emphasizes the importance of ensuring expansion of business model options and healthy competition, which may include utility ownership and operation of grid integrated charging facilities while preserving the ability of independent operators who operate within a utility service territory or across utility service territory boundaries to compete with true and fair costs, access to customer information and history, interconnection speed, priority of work, and rights of way. Competition needs to be seen as not just competition in bidding to utilities but as a fair and level playing field between all energy industry participants and encouraging new entrants and innovations. CESA has historically supported multiple ownership models and business models in all of its filings at the Commission and suggests as a next step that the Commission should authorize a pilot to explore greater collaboration between utilities and non-utility EV network service providers. The near term challenge is to find a way to accelerate grid integrated EV adoption that is in the interest of utility ratepayers, and still preserves competition and encourages innovation.

Demand Response. CESA recommends that the DR program rules should assure that EVs and EVSE coupled with and without stationary energy storage can participate in both DR programs and the CAISO's ancillary services markets.

Self-Generation Incentive Program. As pointed out above, CESA's recommends that the SGIP program should allow for the inclusion of a portion of VGI equipment cost to be eligible for SGIP incentives.

Energy Storage Procurement Goals. CESA recommends that the Commission clarify the eligibility requirements for on-board vehicle energy storage to count toward procurement requirement and how this capacity would be contracted for by utilities and tracked over time.

Interconnection. Interconnection of standards-compliant behind-the-meter energy storage systems, including V2G equipment should follow the same interconnection procedures as distributed generation. CESA recommends that the Commission should enable metering of V1G (modulated rate of charge) as well as V2G (bi- directional charge and discharge) for aggregated EVSE systems for the benefit of utilities (distribution system integration) and with CAISO. Importantly, EV charging/storage supported EV charging that provides aggregated services to CAISO should be charged only once for energy and given appropriate value credit for energy releases. CESA further recommends that the Commission work with stakeholders to develop simplified interconnection processes and guidelines for the requirements and costs of related metering equipment and interconnection charges.

Demand response rules need to allow for competition among many aggregators and keep barrier to entry low to allowing many enterprises into the market. Modern networking technology could easily enable many small loads such as EVs distributed energy storage to be efficiently aggregated. The technology is available now but the markets are handicapped by inefficient regulation.

Long Term Procurement Planning and Resource Adequacy. CESA recommends that the new potential load and supply characteristics associated with this transformation be explicitly included in planned LTPP modeling efforts and that appropriate RA accounting rules should be developed aggregated flexible capacity and standard capacity from networked EVs and EV charging equipment.

C. In Consideration of the Use Case Prioritization Proposed in the Whitepaper, Are There Near-Term Actions That the Commission Should Avoid in Order to Not Preclude Progress on Use Cases Considered to Be More Complex?

CESA strongly recommends against focusing exclusively on the single actor use case. To unlock the tremendous VGI potential of EV's, it is important to simultaneously make progress on both V1G and V2G. Of course, the latter is more difficult and requires longer lead times to bring about the most economical EV designs (*e.g.* OEM embedded bi-directional inverters). However those design investments need to start ASAP with clear signals that there will in fact be a market. The Commission should provide leadership in this regard by working with stakeholders to develop working lists of what features V1G and V2G share in common. Completing the same task for V2G and behind the meter energy storage with and without net energy metering should produce a reasonably short list for V2G-specific items.

Meanwhile, it is possible to build on VGI achievements. For example the Commission should prioritize easier to achieve services such as modulated rate of charge, upgrade/encourage VGI-capable EVSE deployment, and encourage higher rate of charge vehicles (DC or AC charged) to participate in VGI offerings. The Commission should also focus on the bulk demand potential to achieve the best value for ratepayer's dollar. Multi-unit residential and workplace destination EV charging can service many vehicles with a lower number of EVSE stations for a much more cost- effective deployment than can be achieved with single family residences.

Utilities have an important role in facilitating the value of DR generally, since that value can be applied at the local distribution system level. Utilities should have an enabling but not necessarily a central role in facilitating VGI. The customer interaction (billing, settlements, etc.) be by way of existing DR programs, rather than VGI-specific; and that rules for technology be as broad as possible, leaving specific technology choices regarding telemetry, digital communications, power conversion, and the like to competition and industry need. The Commission's near term effort must be sensitive to preserving competition not just in bidding to serve a utility but also in offerings to the EV owner and host properties.

Finally, there needs to be consistency and transferability between utilities. EV owners should not have to worry about the ability to charge their EV at a reasonable price just because they have left their "home" utility service territory.

III. CONCLUSION.

CESA appreciates this opportunity to submit these comments, and looks forward to working with the Commission and the parties in this proceeding.

Respectfully submitted,

Donald C. Liddell
DOUGLASS & LIDDELL

Counsel for the
CALIFORNIA ENERGY STORAGE ALLIANCE

Date: February 19, 2014