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Joint Comments of Siemens and Veloce Energy on AB2127 Report

Additional submitted attachment is included below.

VIA ELECTRONIC FILING

February 26, 2021

California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

Re: Comments on Implementation of AB 2127 Electric Vehicle Charging Infrastructure Assessment, Docket No. 19-AB-2127

Siemens and Veloce Energy, together the "Joint Parties", appreciate the opportunity to file these comments on the AB 2127 Electric Vehicle Charging Infrastructure Assessment ("Report").

Siemens is a leading provider of EV charging infrastructure technology, including chargers, make-ready equipment, software, and services. We are committed to supporting California's transition to electrified transportation, including electrifying our own fleet. We have adopted a corporate goal of net zero carbon emissions by 2030. A primary reason for our support of electrification is the economic benefits accruing to all citizens, including those in disadvantaged communities.

Veloce Energy (Veloce) is a California-based provider of EV charging solutions, committed to accelerating the electrification of transportation through technology and business model innovation. Veloce's solution supports modular and flexible charging infrastructure, with the intent to streamline deployment and provide resiliency. Veloce's interoperable charging technologies utilize open standards and ensure that site hosts, utilities, and facility operators can dynamically manage charging loads to create a grid resource.

General Comments

The Joint Parties appreciate the effort and analysis that went into the Report. We believe it is not only a valuable, but also an essential tool for California to utilize in achieving its transportation electrification targets. The findings should be considered by state and local agencies as they develop and implement relevant infrastructure plans, including the California Energy Commission, California Public Utilities Commission, Air Resources Board, and Air Quality Management Districts.

The Joint Parties specifically support the Report's seven recommended actions to bolster further EV charging infrastructure deployment. These range from public support for charger deployment to supporting local efforts to plan for electrification to prioritizing charger connector and communications interoperability.[1]

[1] - Report at pp. 91-92.

Charging Infrastructure Needed

The Report addresses the critical need for additional charging infrastructure. The lack of sufficient access to charging – and the resulting range anxiety – is one of the largest barriers to EV adoption. Alleviating this shortage is essential to achieve the desired levels of EV adoption in California and meet the 2035 goals. The Report specifically, and helpfully, addresses particular charging scenarios such as intra- and inter-regional travel by LDVs, as well as different market segments such as Transportation Network Companies and MDHD vehicles. Another critical segment is MUDs, where obtaining the benefits of electrification is an equity issue in DAC MUDs, and where landlord investment or other incentives are needed for EV charger deployment. This information will help regulators and policymakers understand the different challenges and different solutions required for the different scenarios and market segments.

Load Impacts

EV charging increases the load on the electric grid. On the positive side, this load is incremental and pushes more electrons through an infrastructure that is largely bought and paid for, being primarily fixed costs (specifically transmission and distribution networks). The fees paid for delivering electricity through the grid increase revenues to utilities, while the costs remain largely the same. Over the life of an EV, the extra grid revenue is estimated to be over $3,500.[2] This net revenue then becomes available to slow the pace of rate increases needed for other reasons.

However, these benefits can be realized only if additional costs are not imposed on the grid through increased peak loads. If the peaks go up, then utilities have to invest in grid reinforcement, thus offsetting some or all of the financial benefit of increased throughput. Critically, the Report documents the potential load impacts on the grid, and, therefore, establishes the essential basis for policies to shift those loads away from the peak.

Smart Charging

Smart charging is also addressed in the Report, which describes its many benefits. Smart charging is the combination of financial incentives and technology capabilities to shift charging away from the peak hours. Utilities (and their ratepayers) benefit from lower grid reinforcement costs, while EV drivers benefit from lower fueling costs. Financial incentives include time-of-use rates and dynamic pricing. While the technology component can be addressed through simple timers, a far more future-proof approach is for chargers to be equipped with communications that allow for remote control and for providing data to EV owners and utilities. Remote control allows for ongoing adjustment of charging strategies as potential grid impacts change over time; for example, the potential for a new midnight peak noted in the Report[3] can easily be managed by staggering charger start times. The data is valuable to EV drivers to understand how much their fuel is costing and to utilities to understand detailed grid conditions.

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2 - Chris King and Tim Echols, Chair – Georgia Public Service Commission, *The Compelling Economic Benefits of Electric Vehicles*, Power, March 14, 2020.

3 - Report at p. 3.

Another benefit of smart charging mentioned in the Report is targeting charging times to further enhance environmental benefits. One strategy is to charge vehicles when excess solar or wind energy is available, energy that is otherwise curtailed. Another approach is to charge when the grid mix has a higher proportion of renewables.

V2G and V2H/B

Beyond the economic and environmental benefits of replacing petroleum with electricity as vehicle fuel, the batteries used to power EVs offer additional advantages. These include using EVs to provide energy at times of grid shortages, such as what happened in California in summer 2020. V2G pilots have shown that EVs can successfully provide ancillary services as well. These V2G capabilities can result in significant financial benefits to EV owners, while simultaneously reducing investments needed to maintain grid reliability.

V2H/B – where an EV provides backup power to a home or building – is valued highly by consumers, with their level of interest continuing to increase. One reason is the PSPS outages that occur periodically; another is traditional outages. With increased reliance on electricity in all aspects of life, even short outages are disruptive. V2H pilots in Europe and Japan are demonstrating the practicality of this solution.

Tailored Solutions

As noted above, there are many different EV charging situations and market segments. The Report accurately notes[4] that a wide variety of technologies is needed to address these differences. One example is on-site battery storage, with multiple advantages – from managing the peak demand, to shifting load off-peak to reducing the need for expensive make-ready upgrades. The Report notes – and we support – the CEC's initiative to explore "funding approaches that better recognized and account for avoided cost benefits."[5]

Interoperability

Virtually throughout, the Report promotes the goal of interoperability in EV charging for its many benefits. First, interoperability reduces the risk of stranded assets, because a new EVSP can take over installed chargers if the original EVSP exits the market. There are examples in Pennsylvania and elsewhere of stranded expensive, DC fast chargers due to the EVSP exiting the market. Second, interoperability protects customer choice; the charger owner can change their EVSP in the future if prices are raised or for other reasons, or can purchase chargers from other manufacturers while keeping the same EVSP. In short, interoperability prevents vendor lock-in and the risk of stranded assets. Third, interoperability lowers costs through the increased competition between manufacturers.

To be clear, we use the following definition:

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4 - Report at p. 61.
5 - *Ibid.*

> Interoperability means the ability of hardware, software, or a communications network provided by one party, vendor or service provider to interact with or exchange and make use of information, including payment information, with the hardware, software or communications network provided by a different party, vendor or service provider of chargers, meaning that chargers from one vendor can be connected to the network of another vendor.

It is a common deployment experience in the industry as is noted in the Report "about the lack of interoperability and the need to coordinate certain vehicles with specific chargers."[6] At the same time, we take note of the benefits of standards as mentioned in the report; for example, that "Open Charge Point Protocol (OCPP) gives charger operators and site hosts greater flexibility and control over their chargers" and, "With widespread charger-network interoperability, hosts are free to manage a mixed portfolio of charging hardware under a single networking solution, regardless of the model or manufacturer of each charger."

Conclusion

We commend the CEC on a well-analyzed, well-written report that provides recommendations for EV infrastructure deployment in California essential to meet the state's EV adoption goals.

Siemens and Veloce Energy appreciate the opportunity to comment.

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6 - Report at p. 55.