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Date: October 24, 2018

To: Mr. Mark Williams, California Air Resources Board

Subject: Siemens Comments, Electrify America's Cycle 2 ZEV Investment Plan

Siemens is pleased to provide comments on Electrify America's Cycle 2 ZEV Investment Plan ("Plan"). We respectfully urge the Air Resources Board to approve the Plan.

Siemens is a global leader in eMobility™ and considers eMobility to be a critical element in driving economic benefits from new investments and job opportunities, at the same time achieving the societal benefit of a cleaner environment. We operate in 180 countries and are the first corporation of our size to commit to being carbon-neutral by 2030. Siemens therefore, is a strong supporter of California's SB 350 and Governor Brown's electrification goals.

Siemens operates through 83 locations in California generating $1.9 billion in in-state sales and employing over 4800 personnel. We have facilities in Pomona that manufacture and assemble EV infrastructure components and chargers.

Siemens is a leader in eMobility technologies. Our Plug-to-Grid™ solutions include the following:

- hardware for charging light, medium, and heavy duty vehicles;
- software and services in support of EV charging, including utility software to plan, operate, and manage the grid, as well as integrating EV charging into system operations ;
- make-ready equipment ranging from transformers to service drops;
- battery storage and microgrid systems for DC fast charging installations; and
- building management and operations software that can integrate EV charging operations.

Our customers span a wide range of participants in the eMobility ecosystem. We serve utilities, federal and state governments, cities, site owners (both residential and commercial, including for workplace charging), transit authorities, non-utility charging network providers, and others. We have delivered over 100,000 EV chargers globally.

There are a number of barriers to EV adoption, but one of the largest is availability of charging infrastructure. According to a 2016 survey conducted by Altman Vilandrie & Company, 85 percent of Americans interested in EV purchase believe EV charging infrastructure is inadequate.[1]

Given that this is a nascent market, EV charging infrastructure today has not attracted sufficient investment to establish sufficient public charging stations, including at workplaces and multi-family dwelling units. In turn, the lack of charging stations continues to stunt the adoption of EVs. This is a serious issue for California in our quest to have 5 million EVs on the road by 2030 – the pace of charging infrastructure deployment is far too slow.

Consider Morgan Stanley's prediction that 2025 could be a turning point for EVs. In its base case, it predicts that EVs will constitute 10 percent of new car sales in 2025, grow to 30 percent in 2035, and reach 70 percent in 2049. It prepared a more aggressive scenario putting EVs at 90 percent of new car sales by 2045. However, it also presented a bearish model – one that could be the result of insufficient charging infrastructure – that saw EVs at or below 10 percent of new car sales for the foreseeable future.[2]

Siemens believes the Plan provides a compelling strategic step toward spanning this critical charging infrastructure gap.

The largest component of the Plan – about 50% - is oriented toward "Metro" charging in cities and communities. This focus is consistent with several things. First, a large part of the Cycle 1 investment has already been on highways and corridors, which should result in a meaningful reduction in range anxiety. Second, the vast majority of charging will occur in Metro areas – 89% of the vehicles will be located there. Third, this investment will support MUDs. Finally, shared mobility is increasing rapidly, especially as a proportion of total vehicle miles traveled, and the Plan's Metro allocation includes ride share and taxis as a key target.

We have seen from global experience, especially in Europe, how difficult MUDs are to serve because of the lack of incentive of landlords to invest in charging infrastructure. Home ownership in California is a low 55.1% of households,[3] meaning almost half of Californians must rely on their landlord to have access to a Level 2 charger at their residence. Looking at dwelling type, 38.9% of Californians live in MUDs.[4] Those residents have the double challenge of relying on a landlord (or homeowner's association, in the case of condominiums) and the typically higher costs associated with installing chargers in those locations.

At the same time, the Plan continues Electrify America's commitment to highway and corridor charging, an essential element in alleviating range anxiety. The Plan builds on the Cycle 1 investment with additional significant installations in this space.

[1] http://www.businesswire.com/news/home/20161208005809/en/High-Costs-Lack-Awareness-Threaten-Short-Electric
[2] https://electrek.co/2017/05/05/electric-vehicle-sales-vs-gas-2040/#jp-carousel-43397
[3] http://journal.firsttuesday.us/californias-rate-of-homeownership-2/30161/
[4] https://www.infoplease.com/us/california/housing-statistics-237

Siemens is especially supportive of the proposed allocation to Residential charging. Residences are where most charging does and will occur. This is a result of EV owner choice and convenience, as well as low electricity costs during the night. We understand and support the need for workplace charging as well, to capture abundant solar power during mid-morning hours in the spring; the low-cost nighttime opportunity is even larger. Siemens is a market leader in selling chargers to homeowners and therefore, is acutely aware of the user experience with regard to the challenges in installation and maintenance of Level 2 chargers. We see the Plan's "no-money-down" option as having particular promise.

The Plan includes further allocations for Buses and Shuttles, Rural Communities, and Autonomous Vehicles. While these allocations are modest, they reflect initiatives that make meaningful contributions in serving these segments.

Regarding education and marketing, Siemens sees a strong need for a brand-neutral "go-to" source for EV information for consumers that would address an urgent gap that exists in this arena. Electrify America is well positioned to act as such a source, given its role and responsibilities under the Settlement Agreement, as well as its independence and focus on EV charging infrastructure. Therefore, we support the proposed marketing and education investments.

In conclusion, Siemens respectfully encourages the Board to consider all of the aforementioned needs in reviewing and approving the Plan.

Thank you,

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