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COMMENTS OF NUVVE AND ENEL X ON THE DRAFT 2020

INTEGRATED POLICY REPORT UPDATE

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COMMENTS OF NUVVE AND ENEL X ON THE DRAFT 2020 INTEGRATED POLICY REPORT UPDATE

Introduction

Nuvve and Enel X appreciate that the Commission included our submissions in the Draft 2020 Integrated Energy Policy Report update (IEPR). It is encouraging to see that the Commission considering the views of innovative market entrants, paving the way for new technologies and business models to contribute to the evolution of California's energy ecosystem. Nuvve and Enel X are Electric Vehicle Service Providers (EVSP) working to commercialize vehicle-grid integration (VGI) and vehicle-to-grid (V2G) technologies in California, and have participated extensively in interconnection, demand response, and Transportation Electrification (TE) proceedings at the Commission and Public Utilities Commission.

Industry segments related to EVs have long anticipated 2021 as the year when multiple new EV models would become available from a variety of manufacturers. From this year on, we anticipate a continual expansion of options for both consumers and businesses in the light, medium, and heavy-duty categories. The EV industry is approaching an inflection point, and so too is the electric grid and the broader energy ecosystem that will facilitate this revolution in mobility. The Draft 2020 IEPR update lays out the stakes: decisions the State of California makes now will determine the extent to which these new EVs integrate with the other loads and resources on the system. EVs, solar, storage, and controllable loads may compliment and optimize one another, producing a more reliable, resilient, and cost-effective system, or not.

"Moving from a Public and Utility-Dependent Funding Model to Market Sustainability"

We support the IEPR assertion that regulatory and market frameworks that encourage new business models and attract private investment are key to creating a self-sustaining market for EV charging infrastructure that enables the state to meet its EV deployment goals.[1] VGI

[1] Draft 2020 IEPR Update, Volume 1, p. 102

applications can help reduce the lifetime cost of ownership for EVs and EV charging infrastructure, enable new upfront financing options for customers, decrease infrastructure costs for both customers and ratepayers (or the taxpaying public), and create opportunities for private industry to lead the push for transportation electrification. Unfortunately, the current frameworks for TE programs overseen by the CPUC and CEC can have the opposite effect.

Although SB 350 includes provisions intended to minimize the overall cost of TE programs and maximize the consumption of renewable energy, SB 350 programs include few enabling elements to actually facilitate the use VGI and V2G to these ends. There are a number of reasons for this, not the least of which is the long-time cost-of-service regulatory structure for the California IOUs, which does not provide an incentive to minimize capital costs. As the Commission recognized in Nuvve's previous IEPR comments, the SB 350 programs themselves are in fact typically designed to be structurally prohibitive to realizing efficient use of ratepayer capital. The prevailing framework of SB 350 programs – to install a separate service drop/metered account with which to take service on an EV-specific rate – may make apportionment of capital costs and calculation of relevant metrics such as LCFS and GHG emissions easier, but it also isolates EV loads and creates inefficiencies in the following ways:

- No other loads or resources can be placed on the same meter, so the EV cannot self-consume solar PV output or stationary battery storage to minimize operational costs. Solar carports that are on the same electrical connection as the EVs would not be possible;
- The lack of other co-mingled site loads means there is nothing other than EV load to establish a usage baseline, against which demand response load curtailment can be measured;
    - If EVs are on a C&I EV TOU rate, they have already been incentivized not to charge at peak times, so there is likely no baseline to curtail against during RA availability assessment hours (4-9 PM);

- There is no other building or site load to optimize or mitigate, because EVs are separated from the primary site load both physically and from an accounting standpoint;
- Aside from distribution deferral contracts, CAISO and the CPUC do not compensate exports for RA capacity or demand response at the facility level. Without other loads to offset, there is thus no external demand response revenue stream bi-directional EVs can access;
    - Similarly, there is no net metering or other credit for export on retail bills that applies to V2G; and
- Customers cannot use their EVs for emergency back-up on separately connected / metered service. Any emergency back-up application would have to be at another designated site.

Transportation electrification in and of itself cannot be viewed in isolation as the only end goal. Without major changes in TE program design, new tariffs for supporting distribution infrastructure, allowances to build new resources and loads at TE host sites, redesign of CAISO's market models, and reforms that properly compensate BTM resources for capacity, we have difficulty seeing how it will be possible to optimally integrate EV loads to the grid, in a manner that maximizes utilization of renewable energy and the existing grid and extends the reach of the state's infrastructure investments. If TE tariffs or programs are structured to install new, separately metered service drops as a matter of course, without evaluating the potential for sites to utilize available capacity on existing service, co-mingled with other loads and resources, this would contravene the finding and directive in P.U. Code Sec. 740.16 (a)(2) (established by SB 676) that,

> "It is, therefore, the policy of the state and the intent of the Legislature to maximize net ratepayer and grid benefits from transportation electrification and reduce costs or mitigate cost increases for all ratepayers due to increased usage of electric vehicles by accelerating electric vehicle grid integration and by ensuring that any investments in transportation electrification do not foreclose the electric vehicle grid integration potential of these investments."

The EVI-Pro, EVI Road Trip, and HEVI-LOAD modelling in this IEPR update show that there is noticeable bias toward day-time charging in the MD-HD sectors. It may make sense to explore co-siting of solar resources with these EVs for self-consumption to minimize connection costs, contribute to smoothing of load profiles, and generate LCFS credits, but customers in SB 350 TE programs largely do not have that option due to requirements to utilize separate service drops. We do not yet know if this will have an impact on equity as a goal of TE, but we have already seen the chilling effect these programs have on private investment in VGI technologies, requiring that investors and EVSPs seek out customers who are either not part of TE programs or willing to leave those programs in order to implement VGI capabilities. Even in the case this dynamic can be avoided or fixed, we encourage tracking of use of VGI solutions in AB 841 and SB 350. The CPUC and CEC should also be carefully watching the path that is being established for transportation electrification and related technologies.

The design of AB 841 is similarly flawed through the lens of implementing VGI strategies and precludes V2G for the reasons stated above. If AB 841 implementation follows the precedent of SB 350 program design, requiring separate service drop and separate meter, AB 841 would effectively prohibit a number of VGI applications, including certain types of demand response participation, and multi-DER installations that enable on-site consumption and resiliency solutions. This in turn prohibits the development of related enabling industries such as smart charging, aggregators, DERMS developers, non-wire solutions providers, and third-party financing. This industry segment and these functionalities cannot be encouraged later; they must be fostered now if they are to effectively assist in the cost-effective integration of 6 million EVs to the California grid.

Through this lens, AB 841 seems to be in conflict with SB 676, which requires the CPUC to establish strategies to maximize the use of cost-effective VGI through 2030. Careful attention should be paid when planning the design and implementation of TE programs at the CEC and CPUC to reconcile this conflict, and to encourage program design that enables all VGI applications to be possible at customer sites. We do not mean to imply that all VGI use cases

must or should be pursued at every location as a matter of policy; our concern is that the majority of them *cannot* be pursued at any of these sites, now or in the foreseeable future.

The Electric Vehicle Infrastructure Training Program (EVITP) is important and should be retained. But the AB 841 framework must be carefully implemented to make it more in-line with state transportation electrification and climate goals, especially those set out in SB 350 and SB 676.

"MD and HD BEVs Can Improve Air Quality in Disadvantaged Communities But Inclusion is Key"

Our comments above lay out the reasons that entities such as schools who participate in transportation electrification programs are unlikely to have any associated functionalities or capabilities other than TOU pricing compliance and LCFS credit generation. The first priority is clearly to ensure access to EV school buses, box trucks, transit buses, and other vehicles that can improve air quality in disadvantaged communities, and if that is their preference, programs should respond to their input as stated in the IEPR.[2] But it should again be noted that these customers, if charging on a separate service drop, will not be able to choose to install solar PV on the same account, engage in demand response activities, or utilize bi-directional school buses funded by the CEC for resiliency purposes at that site. Their choices regarding the use of the bus will thus be somewhat restricted compared to schools able to cover some of the installation costs or to attract private investment. The ambition copied below from this IEPR update will similarly not be possible:

> "CEC-funded efforts have shown the potential for VGI in larger vehicles, particularly school buses. With specialized rates, electric school buses can flexibly charge and reduce demand charges, as well as offset TOU electricity use at the school site (V2B) during the summer, when bus operations are on a reduced schedule. The results suggest that VGI can save or offset $2,052 per EV bus in electricity costs annually.[208] Additional grid services, integration with solar

[2] Draft 2020 IEPR Update, Volume 1, p. 60

> photovoltaic (PV) on site, and usage at other times throughout the year could increase this benefit."[3]

ALM and Avoided Cost of Charging

Absent performance-based rate-making, ALM can go some of the way toward mitigating potential inefficiencies in grid planning and build-out. The avoided cost of charging reverse auction scheme described in the IEPR workshop and therein referred to as "TERPA" would be a complimentary element to ALM in pursuit of efficient use of ratepayer resources, in as much as ALM can be used to limit the overall cost of EV charging installations at a given site. TERPA introduces competitive forces to the process of right-sizing public investments in charging infrastructure, which can bring us closer to the true cost of providing infrastructure, both on the private and publicly-funded sides.[4] As we understand the proposal, TERPA would also encourage appropriate sizing and deployment of ALM systems as part of the transportation electrification process, adding another layer of scrutiny to a new technology whose stated goal is increasing utilization of the existing system and limiting distribution upgrade costs.

While the re-working of transportation electrification programs to allow for co-location with other loads and resources should be the focus going forward as new programs are designed, the TERPA idea is a workable way to begin addressing these inefficiencies quickly.

[3] Draft 2020 IEPR Update, Volume 1, p. 99
[4] Draft 2020 IEPR Update, Volume 1, p. 90