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## SCC Comments on 5-9-23 IEPR Workshop -Clean Energy Connection - Dist Grid

*Additional submitted attachment is included below.*

**May 31, 2023**

**To: Patty Monahan, CEC Lead Commissioner**
**Cc: Alice Reynolds, President, CPUC**

**Transmitted via docket at** California Energy Commission : e-comment : Submit Comment

**Subject: Comments on 5/9/23 IEPR Commissioner Workshop on Clean Energy Connection – Distribution Grid**

Dear Commissioner Monahan,

Thank you for hosting this important and productive cross agency / multi-stakeholder IEPR workshop to address Clean Energy Connections overall and especially to better support rapidly growing large project capacity needs for EV infrastructure.

We would like to highlight what we believe are some of the most important next steps that the CEC, CPUC, EVSPs and other stakeholders can take to successfully address our state's bold new transportation electrification clean energy goals.

**Perhaps the highest priority interconnection case that must be dramatically improved is providing adequate capacity to support high capacity DCFC projects for MHD vehicles and large DCFC LD vehicle charging stations in a reasonable time frame as determined by the customers.**

**Why this is necessary** – As Commissioner Monahan noted, more and more people want faster charging. It is highly desired by LD and especially MHD drivers on major transit corridors (time is money). OEMS are responding by increasing the speed of charging supported by their vehicles and charger OEMS are producing and EVSPs are installing chargers with faster speeds. The new industry baseline is approaching 350kW and this could increase further. For MHD vehicles, Megawatt Charging System standard (MCS) chargers are just around the corner and will utilize chargers at about 1.2 -1.5 MW. **The product of increased power per charger and more ports per station to accommodate the rapidly increasing volume of electric vehicles is requiring significantly increased capacity per station**. Even now, PG&E noted anecdotally in the workshop that they are receiving project applications for significant increases in power e.g. 10-20 MW at stations. A Tesla station of e.g. 50 ports at 250 kw requires 13 MW and Tesla is introducing its new version 4 supercharger that will be even faster – e.g. about 350 kW. An example freight corridor charging station for MHD vehicles along I-5 for example may require e.g. 23 MW if it includes 10 350 kW chargers + 10 MCS chargers as suggested in the West Coast

Clean Transit Corridor Project Report.[1]. Increasingly large capacity DCFC publicly accessible charge stations along freight /transit corridors will become the norm and not the exception.

**Regulatory drivers** - CARB has recently adopted the Advanced Clean Fleets rule which requires MHD fleets to transition to ZEVs beginning in 2024 and fully by 2045. CARB's rule will penalize fleets that are not in compliance with the rule's targets and timeframes. The ACF rule recognizes that today the utilities' ability to provide sufficient capacity at a MHD charging depot site or public freight corridor site within the time frame required by the fleets to meet CARB deadlines, e.g. within a year or so of request, may pose a problem. So it will allow an authorized delay of up to three years to the fleet when the delay is due to more than a one year utility delay in delivering capacity. This exemption will be available until 2030 at which time, CARB will no longer allow such exemptions to fleets. ("**ZEV Infrastructure Site Electrification Delays**. Until January 1, 2030, fleet owners may request this extension if their electric utility provider determines it cannot provide the requested power to the site where ZEVs will be charged or refueled before the fleet's next ZEV compliance deadline."[2]) By then, utilities will need to be able to deliver capacity for large projects within a year or so even for large projects in the 10-20 MW or larger size range to prevent fleets from being in non-compliance with CARB's regulation and fined.

**The Regulatory Compact** requires that IOUs provide safe, reliable service in exchange for a reasonable rate of return; they must manage uncertainty and have an "obligation to serve". Currently the IOU's are failing to live up to this compact using traditional processes and procedures in getting large capacity to sites in relatively short periods of time. While this is understandable historically, it is no longer acceptable and must be fixed going forward.

**Set Clear Objectives and Timelines - The objective that must be achieved** is to provide significant capacity for large projects in the time frame requested by the customer – the fleets. It is not appropriate to define this time frame by the best that the utility thinks it can do. The model processes and procedures to meet these business customer needs must be redesigned to meet this new objective. **We recommend that the CPUC develop a clear articulation of the objectives, outcomes and timelines of achieving this objective that the IOUs must then accomplish**.

For example today, if a customer needs e.g.20 MW of capacity at a site, the utility may need to build a new substation and it may take 5-7 years+. Every year that goes by, utilities need to improve their processes so that this timeline is reduced so that for example, by 2027, a similar request could be met in 4 years and by 2030, in 1-2 years.

One way to make this improvement would be for the utilities to streamline their processes in such areas as shortening design and engineering time frames, faster jurisdictional permitting, having a reliably quickly available supply of materials such as transformers, etc. However, while these improvements can and must be achieved, they alone most likely will not be sufficient to accelerate timelines enough to meet fleet needs.

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[1] West Coast Clean Transit

[2] Final Regulation Order Attachement A-2 Advanced Clean Fleet Regulation High Priority and Federal Fleet Requirements (ca.gov)

**We believe that the only real solution is to "get ahead of the need" as the SDG&E rep suggested in the workshop**. This will involve even better long-term e.g 10 year forecasting for these long lead time duration large capacity projects combined with liberally defined "least regrets" planning and construction similar to what was utilized in the RETI program. Utilities need to plan now to have expected new and expanded substations, etc. operational when needed. It may take 3-5 years to begin this forward planning assembly line approach but once started it can be continued so that there are no longer any delays even for new large capacity projects.

**We recommend that the PUC request that the utilities embark on a new program to proactively plan out and build large capacity DG infrastructure in anticipation of need as described in the following**. Utilities can no longer just wait for customers to notify them. Even if customers are educated to contact their utilities at the very beginning of their transportation electrification project they will be able to get the electric vehicles within a year or so and if it takes the utility e.g. 5-7+ years for the project, the utility will have failed be meet the fleet's needs in time. Utilities will need to get more proactive. They can use the CEC's upgraded vehicle and load estimates as a baseline but not the end point. They need to reach out and poll freight related customers in their territories with follow up, and then go beyond all that and make their own estimates to fill the gaps based on where trucks and truck routes currently are for diesel trucks and assume that these will need to be electrified. They can obtain helpful data modeled by the CEC in its upcoming AB 2127 report and/or from the California Transportation Commission in its upcoming "Clean Freight Corridor Efficiency Assessment" report due December of this year as required by AB 671. Based on this comprehensive planning and forecasting, they will need to start designing and building new substations or expansions now to save years in future timelines for these projects. This would be very similar to the least regrets RETI transmission planning program.

The TCO of electric MHD vehicles is significantly lower than for combustion engine vehicles. According to CARB in its regulatory study for the Advanced Clean Fleets rule, "…after accounting for all costs borne by affected fleets operating in California, the proposed ACF regulation is estimated to result in a net savings of over $48 billion between 2020 and 2050"[3] While utilities may be taking some risk, the biggest risk may be underutilized assets for a relatively short period of time but the impact of that vs years of delay, lost economic benefits to fleets, society and climate change most likely would be small.

Resources – It may well be that additional human resources will be needed to do this additional advanced planning and additional capital resources needed for early build out of new substations and DG assets. As Commissioner Shirmona suggested, "Priority Capital Investments" potentially should be allowed to support an advanced DG development buildout. To recover these previously unplanned but necessary costs, the CPUC may need to allow utilities a one-time mid GRC cycle modification to cover the needed bolus of costs for the resources to accelerate this. Or it could create an "Exceptional Project Recovery" program for exceptional projects like what Hawaii's utilities have done. **We recommend the CPUC develop a one-time interim process as needed to enable utilities to recover any additional up front costs they may need to expend to meet these customer needs for timely construction of large capacity infrastructure projects.**

[3] Resolution 23-13 (ca.gov)

**IOU Infrastructure Installation financial support programs –** Each of the three major IOU's have approved financial support programs to help pay a significant portion of charging infrastructure costs for MHD electric vehicles. (SCE – Charge Ready Transport program; SDG&E - Power Your Drive for Fleets; PG&E – EV Fleet Program.) The CPUC has authorized these three programs combined to award a total of up to $1.44 billion through 2030. In all of these programs, the applicant must provide proof of acquisition of electric vehicles that will provide load for the chargers to recover costs of the program to ratepayers. This works well when the applicant may need 6-12 months to acquire the electric vehicles and the utility can provide the needed capacity so that the chargers can be installed in roughly a year. But the problem can arise that if the utility will require two or more years to supply the capacity, then since the applicant cannot afford to buy trucks and have them sit idle for one or more years until the utility can provide the capacity, they are effectively blocked from access to these incentive funds. This is the issue that Henrik Holland of Prologis referred to in the workshop. This is not an uncommon problem. **We recommend that the CPUC request each of the utilities to modify their programs to allow alternative ways of assurance that load will be there when the utilities have provided the capacity.** For example, if the utility will take three years to provide capacity, the applicant could e.g. post a performance bond or use some other method to assure the utility of future load, delaying ordering the vehicles to be delivered until when the infrastructure can be energized.

**Supply chain** – Several speakers referred to supply chain delays. Franchesca Wahl from Tesla noted that transformer shortages could delay projects by 18-24 months. She recommends one solution would be to make more frequent updates to EV forecasts which could better inform manufacturers of the growing need for transformers. Another solution would be to have a state agency such as Go-Biz, the CPUC or the Department of General Services take lead on understanding the problem, and what solutions could solve it. One option would be to see if federal financial aid e.g. from the Inflation Reduction Act could help provide support for transformer manufacturers to expand capacity. This same approach may apply to other critically short materials such as switch gear etc. **We recommend that the CPUC take lead in collaborating with the CEC to identify an agency to take lead responsibility on this approach.**

**California electric infrastructure is at a large inflection point –** The California electrical system is at the beginning of a huge transition in terms of volume of needed energy and complexity from a number of simultaneous factors and programs including:

- Massive rapid electrification of transportation requiring rapid distributed deployment and of numerous large capacity projects
- Electrification of buildings displacing natural gas
- Transition to 100% renewable energy with need of integrated 24 hour and long storage.
- Management of smart charging, V2L and DR systems
- Need for the Smart grid and real time data intelligence to monitor and operate the grid
- Management of increased volume of direct customer interactions with utilities including a massive increase in retail customer interaction in e.g. rooftop solar and storage, residential car charging, V2L, etc.
- Increased demands from customers, legislators, etc.

To successfully manage all this will require new organization structures, increased skilled human resources, new regulations and operational rules, and significant increases in the development of automated systems that are customer and stakeholder facing and interactive.

Examples of where improvements could be made to address interconnection speed include the following:

**Automated Interconnection Project Management Tools and Transparency for utility and customer**. While it seems that some work is already in process on this, it will be important for the IOUs to develop fully functioning online and automated interconnection project management systems. These systems should also allow customer interaction. It should enable customers to submit all information they need to submit online and the ability to track the progress of their projects against their project plan. The utility should disclose their internal timelines on key project milestones they are responsible for and how they are progressing. As a by product of these systems, they could report on overall timeline performance as well as granular data on timelines for each step to help identify where bottlenecks are and then progress on improvement where needed. **We recommend that the CPUC request each IOU to fully develop this type of system. Another potential option would be to have them cooperate on a single commonly system used by all. While a big lift, the benefit of this approach would be a single system that California customers would have to learn how to use.**

**Design and Engineering staff** – several speakers noted that one key bottleneck area for some utilities is delays in the design and engineering step. Some utilities have significant ques that can cause weeks of delay before staff can even begin working on a new project. Further, if there were adequate staff by needed skill set, the work could progress faster. Finally, it may be that if engineers and designers had better automated access tools to the real time status of grid assets and operation, they could move faster. On the staffing issue, one problem that can occur is that with attrition, the department never reaches the full FTE count of approved positions – its always understaffed. One solution would be to create approved "attrition positions" that could be recruited for in anticipation of this expected attrition. Another solution could be to hire third party engineers who have the requisite experience and training or to hire full time staff that are willing to work flex hours to fill gaps.

**Outcomes and Objectives, Metrics, Tracking progress and Performance Based incentives** – We recommend the CPUC work with the utilities to set interconnection timeline goals and outcomes and then measure performance against them. The CPUC's RESOLUTION E-5247 on December 15, 2022 is a great first step for smaller project of 2MW or less to complete energization within an average of 125 business days. However, it does not yet address larger projects.

**We recommend that the CPUC direct the utilities to begin tracking how long it takes to energize projects larger than 2 WM or that are currently exceptions in this resolution and make those results publicly available as a first step toward improving interconnection times**. The results could be subcategorized by project capacity sizes e.g. 2-5 MW, 5-10, 10-

20, and 2-+. Also tracked could be where new substations must be built and where substations must be expanded as well as any other categories that make sense. **We further recommend that the CPUC work with the utilities to begin coming up with standard times such as it just did with the 2 MW and smaller projects and then working with utilities to shorten those times in the future.**

**Performance Based Incentives (PBI)** – **We recommend that the CPUC develop PBIs for larger capacity projects exceeding 2 MW to encourage creative solutions for decreasing interconnection times of these large capacity projects.**

**Dashboards** – We commend the continuing efforts of the CEC to further develop actual results of key electrification metrics on publicly available dashboards on its website. **We recommend that the CEC take a next critical step which would be to report actual results against plan results to track how well we are doing compared to where we need to be.** For example, currently the infrastructure dashboard reports quarterly actuals for total number of installed level 2 and DCFC chargers that are public or shared private chargers. But how are we doing compared to where we need to be? It would be good to post planned chargers needed from the AB 2127 reports or IEPR. Then a "budget variance" form of report could be posted that shows planned chargers, actual, variance and percent variance at least by quarter so we can identify where there is a shortage and take corrective action. Separate sub reports could also be created by utility.

**Temporary Power** – Prologis suggested that temporary power solutions could be allowed to fill in needed power while the utility works to provide the permanent capacity needed. **We support using zero emission interim solutions but oppose "near zero" solutions.**

Thank you for considering our suggestions,

Sincerely,

Ray Pingle
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