

Dr. Cheryl Laskowski Chief, Transportation Fuels Branch

California Air Resources Board Low Carbon Fuel Standard Program 1001 I St. Sacramento, CA 95814

March 15, 2023

TeraWatt Infrastructure Comments on the February 22, 2023 LCFS Workshop – Potential Future Changes to the LCFS Program

Dear Dr. Laskowski,

TeraWatt Infrastructure, Inc. (TeraWatt) appreciates the opportunity to submit comments on the potential future changes to the Low Carbon Fuel Standard (LCFS) program. TeraWatt is a project developer and long term owner of high powered EV charging infrastructure for light, medium and heavy duty commercial fleets.

Introduction

The following are a summary of TeraWatt feedback to CARB after the February 22, 2023 workshop:

- Fast Charging Infrastructure (FCI) Credits for Medium- and Heavy- Duty Electric Vehicles (MHD) should be should be created through this amendment cycle to support proactive MHD ZEV Infrastructure build out
- The Draft Regulatory Text should be modified to incorporate necessary changes that better align with MHD ZEV sector

Feedback on CARB Staff Proposal

Incentives for ZEV Infrastructure Build Out

TeraWatt strongly supports Staff's recommendation for the creation of a Fast Charging Infrastructure (FCI) mechanism specific to Medium- and Heavy Duty (MHD) electric vehicle charging infrastructure. The adoption of a MHD FCI mechanism is critical to

supporting California's current and anticipated policy targets for MHD Zero Emission Vehicles (ZEV). Preemptively deploying significant EV charging infrastructure dedicated to the refuelling of MHD vehicles ahead of current fleet adoption timelines is a necessary component to delivering the operational confidence fleet operators need to make the investments in transitioning their fleets in line with, and even ahead of the targets included in policies such as the Advanced Clean Trucks and anticipated Advanced Clean Fleets regulations. TeraWatt would also like to commend CARB staff for the thorough process of industry outreach and incorporating stakeholder feedback on the development of the MHD FCI proposal. The proposal, with the inclusion of recommended modifications, has the ability to provide the proper market signals to spur private sector investment in MHD EV charging infrastructure in the state.

Specific Feedback on Draft Regulatory Text

Location

The draft regulatory language currently states¹ that eligible FSE projects:

"must be located in California within one mile of a Federal Highway Administration Alternative Fuel Corridor".

TeraWatt recommends modifying this requirement to expand eligibility for FSE to within at least 2 miles of an FHWA designated alternative fuels corridor (AFC), or within 12 miles of a designated port of entry.

This modification is necessary to account for location constraints that inhibit deployment of significant high-powered EV charging infrastructure in certain areas. Optionality around locations is critical to address varying utility capacity constraints that may severely limit the total amount of infrastructure that can be deployed throughout the state without more flexibility in where these projects need to be located to meet the requirements. This also recognizes that significant truck traffic occurs in regions that are corridor adjacent but not entirely corridor oriented, while still concentrating traffic near major truck arteries.

In addition to the locational flexibility around highway corridor deployments, TeraWatt recommends the inclusion of eligibility for FSE locations serving ports of entry, whether or not they are tied to a specific AFC, as those corridor designations were not intended to specifically account for all forms of goods movement throughout the state.

¹ § 95486.3.(b).(1).(B) Generating and Calculating Credits and Deficits for Medium- and Heavy-Duty ZEV Fueling Infrastructure Pathways

California-specific ZEV requirements around drayage trucks, such as those outlined in the proposed Advanced Clean Fleets regulation, should be reflected in the consideration of eligibility for FCI projects and support the necessary build out of EV charging infrastructure in the locations that drayage operators are most actively going to rely on them. The specific duty cycles of drayage trucks vary widely, including operational routes that do not include transport along major interstates, and instead go through specific urban and logistic zones within metro areas. These fleet applications will require charging to be located within the areas that they operate, rather than the vehicles having to be forced to go outside their normal routes just to seek charging along major interstates. For this reason, along with the potential utility constraints, the geographic eligibility for FCI should be expanded.

Site Access

TeraWatt recommends that the MHD FCI regulatory language include the same principle requirement, with modification, around site access as what has already been proposed in the draft regulatory text for the MHD HRI²:

"The **site** must be open to at least two different trucking companies, meaning that no obstructions or obstacles exist to preclude these vehicles from entering the **site** premises, and no formal or registered station training shall be required for individuals to use the **electric vehicle charging infrastructure**."

The inclusion of the relevant language will ensure alignment with the two pathways - FCI and HRI - in the regulation.

EVSE Power Levels

TeraWatt recommends that the minimum nameplate power rating of each FSE be 150kW. Setting the minimum at this level ensures that all FSE being deployed under the FCI mechanism have a sufficient power level to support a broad range of MHD vehicles, while also accounting for a variety of operational use cases for EV charging. This includes MHD vehicles with duty cycles that allow for longer dwell times and do not require the highest possible power rating for their charging sessions. TeraWatt also does not believe it is necessary to set a maximum power rating at this time due to continued technological advancements in charging technology that will allow for higher-powered charging, such as the MegaWatt Charging Standard (MCS) that will be commercially available within the FCI program term.

² § 95486.3.(a).4.B Generating and Calculating Credits and Deficits for Medium- and Heavy-Duty ZEV Fueling Infrastructure Pathways

Site Limits

The draft regulatory text currently contemplates limits to both the total number of individual FSEs at a single site, as well as a total nameplate power rating for all FSE claiming FCI credits as a single site. TeraWatt does not see the necessity in setting a cap on the total number of FSEs if there is also going to be an overall site power rating cap. If the intent is to provide limitations on the total amount of FCI credits an individual site can receive, then a total site power rating limit and minimum EVSE kW should be sufficient to achieve this programmatic objective, regardless of the actual count of FSEs receiving credits at the site. In line with this, TeraWatt recommends that the site power rating maximum be set at 10MW.

Cumulative MDH-FCI Credits Generation Maximums

The proposed draft regulatory text specific to the MHD FCI states³ that

"estimated cumulative value of FCI credits generated for the FSE (based on average credit prices from the quarter when generated) cannot exceed (capital expenditure minus grants or other non-charging funding)".

This language differs significantly from what is currently in the adopted regulation for the LDV FCI program⁴, under While changes to several areas of the requirements are justified to account for the business and operational differences between LDVs and MHDVs, this is an area where there is justification on alignment between the two mechanisms as the cost of capital expenditures and necessary return in investment required for these projects to be financially viable does not differ by weight and class of vehicle. For this reason, TeraWatt suggest the inclusion of the following language in the MHD FCI regulatory text under §95486.3.(b).(4).(H):

"The cumulative credit value generated for each FSE will be tracked as the sum of all quarterly credit values in constant dollar for the year in which the FCI application was approved using an annual discount rate of 10%."

If CARB does not include the language aligning the LDV and MHD programs on cumulative credit value, TeraWatt would then recommend that CARB clarify that for MHD FCI, eligible capital expenditures incorporate the on-going cost of capital (i.e. interest) over life of a project while it is receiving FCI credits.

³ §95486.3.(b).(4).(H) Generating and Calculating Credits and Deficits for Medium- and Heavy-Duty ZEV Fueling Infrastructure Pathways

⁴ §95486.2.(b).(4).(H).(2) Generating and Calculating Credits for ZEV Fueling Infrastructure Pathways

Payment Requirements

The operational use for MHD FCI locations will differ significantly from LDV locations, and this includes the method that fleet operators pay for individual charging sessions. For locations where multiple fleets have a contracted commitment to access and fuel at a location, there may not be any specific Point of Sale (POS) transaction "at the pump". For these locations where all commercial charging transactions are governed through contractual commitments rather than a pay-per-session model, TeraWatt would recommend no requirement for an FSE to have to support a public POS system. Additionally, for any locations that would need to meet requirements for an FSE to support a public POS system capable of accepting credit cards as a form of payment, TeraWatt urges CARB to allow multiple compliance mechanisms, including the use of a separate kiosk system capable of supporting multiple FSEs, and acceptance of contactless payments. This recommendation would ensure that the FCI program is aligned with the FHA's recently released final *National Electric Vehicle Infrastructure Standards and Requirements*⁵, which state:

"...charging stations must provide a contactless payment method that accepts major credit and debit cards and accept payment through either an automated toll-free phone number or a short message/messaging system (commonly abbreviated as SMS)."

Individual Applicant Caps

TeraWatt appreciates the need to put in place certain mechanisms to prevent a single entity from capturing a significant portion of the program if the consequence is limiting broader program participation and restricting EV charging infrastructure build out. The consideration of specific individual applicant limits may address this objective, though TeraWatt would encourage CARB to consider multiple factors when instituting applicant limits at the outset of the program. First, the inclusion of a strict definition of "applicant" that would address potential loopholes or "gaming" of the system if entities are able to incorporate each application under a unique DBA. The second consideration if an initial cap is to be put in place, would be to have a method of adjustments that tracks quarterly program demand, and allows for flexibility on a rolling basis based on overand under- subscription. With those considerations, TeraWatt recommends an initial individual applicant cap of an aggregate 25% [of the 2.5%] of deficits in the most recent quarter for which data is available.

 ⁵ "National Electric Vehicle Infrastructure Standards and Requirements", Federal Highway Administration, February 28, 2023. <u>https://rb.gv/f9ekas</u>

Operability Period

TeraWatt supports the initial timeline of 24 months for FSE to achieve operability to begin the crediting period. Additionally, CARB should consider a mechanism similar to what is present in the LDV FCI programs that allows for re-application within a specified timeframe, with a reduction in remaining crediting years. Given the nascent state of MHD EV infrastructure deployment, along with constraints that may arise from utility interconnection and permitting processes, TeraWatt would recommend that the initial program allow for re-application with the same FSEs with additional 12 months to achieve operability, then the FSE would have 6 years of eligibility remaining (inclusive of the 12 months).

Conclusion

TeraWatt applauds Staff and the Board for the innovation and progress of California Low Carbon Fuel Standard program to date and looks forward to the amendment process to enhance the Regulation to deliver material carbon reductions directly in California and as a model regulation for other jurisdictions.

Sincerely,

Anthony Harrison Head of Policy and Communications