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Response to 19-TRAN-02

comments are included in the attached document.

Additional submitted attachment is included below.

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January 21, 2025

California Energy Commission

715 P Street Sacramento, California 95814

Subject: Request for Information, Medium- and Heavy-Duty Zero-Emission Vehicle Public Charging, Docket # 19-TRAN-02

To whom it may concern,

We appreciate the opportunity to submit our response to California Energy Commission's (CEC) Medium- and Heavy-Duty Zero-Emission Vehicle Public Charging Request for Information. The CEC has been a national leader in the zero-emission transition. We appreciate and commend your unwavering leadership.

With over 60 years of experience in fueling all types of vehicles, Love's Travel Stops and Trillium Energy understands how important the EV experience is for new and current EV drivers. Founded in 1964 and headquartered in Oklahoma City, Love's Travel Stops & Country Stores has more than 650 locations in 42 states, providing professional truck drivers, motorists, and commuters with 24-hour access to clean and safe places to purchase gasoline, diesel fuel, Electric Vehicle Charging, Compressed Natural Gas (CNG), travel items, electronics, snacks, restaurant offerings, and more. The Love's Family of Companies has more than 40,000 employees staffing our travel stops, Speedco locations, and our corporate offices in Oklahoma City and Houston. Love's network includes 16 travel stops in California.

The Love's family of companies includes Trillium Energy. Trillium provides design build and operations and maintenance services for alternative energy systems, including EV charging, compressed natural gas (CNG), renewable natural gas facilities, hydrogen, and solar arrays.

As we strategize about the future of fueling, which includes MD and HD EV charging, we understand some things will change, but we urge the CEC to keep in mind the things that must remain the same. This includes impeccable uptime, amenities that are right sized for each location, and transparent fueling pricing the customers can depend on. As infrastructure providers navigate this maturing market, we should be given the flexibility to try out different operation and business models. This gives us the ability to work with customers to determine the best fit for this emerging sector. Determining an operational

model too early without real world experience could be detrimental to the market and may not only slow the market down, but cause frustration. Infrastructure developers are incentivized to figure it out and get it right. Afterall, the better experience a customer has, the higher likelihood that they will become a returning customer. Creating strict mandates or guidance on how the fueling sector must operate will limit the infrastructure owner's ability to prioritize the customer.

This is an intriguing conversation. We look forward to continuing the discussion. Please feel free to reach out to me if you have any questions, comments, or would like to discuss more. My contact information is provided below. Thank you again for your leadership and commitment to empowering the transportation sector.

Best Regards

Kim Okafor
General Manager, Zero Emission Solution
Love's Travel Stop
713-332-5706
Kimberly.Okafor@Loves.com

- **What does the CEC need to consider when developing "public" / en route charging eligibility criteria for CEC funding opportunities?**

The CEC should take into account both the current and emerging needs of drivers as they refuel. Presently, a few of the needs of drivers include high uptime, sufficient space to maneuver their vehicles, and, in some cases, amenities such as showers, food, and restrooms. Looking ahead, some of the new needs will include longer dwell times and significantly higher energy demands, thus expanding the range of needs as current vehicles will still be on the road. When evaluating applicants for funding opportunities, the CEC should assess the applicants understanding of driver's overall needs, including fueling needs, and their plans to address them.

- **How should the CEC plan for the state's future MDHD charging needs to both accommodate fleets that will need access to chargers while en route to a destination (similar to the diesel truck stop model where the ports are fully publicly accessible first-come-first-served) vs. fleets that need certainty that charging will be available and accessible when it comes time to charge (the reservation system model)?**

Ensuring that public, over-the-road chargers are available for drivers when they are needed will require time and experimentation to fully understand and evaluate the optimal operation method (i.e., first-come-first-serve vs. reservation, or some combination and variation of those boundary options).

While it might seem that a charger reservation model is the answer, it's impossible to say with certainty that it is the definitive solution. Charger infrastructure owners should be encouraged and have the flexibility to try different operational methods to determine which best meets the over-the-road charging needs of drivers.

It's worth noting that there is a potential downside to a reservation system if it doesn't function as envisioned. The reputational damage to EV functionality is real and could damage the growth of MDHD EVs in the market if fleets that rely on a reservation and then have that space not be available. Additionally, there's nothing more damaging than a truck showing up to a charger, seeing it empty, and waiting for 30 minutes before the truck with a reservation shows up. It may be very difficult to manage a reservation system given the variabilities of the driver/vehicle showing up on time and leaving the spot on time. Then factor in a reservation system that knows what size battery is on each vehicle, the initial state of charge, the initial battery temperature and thermal management capabilities, the acceptable charge rate, temperatures outside, and other factors, This dynamic aspect can't be underestimated and will take real world experience to sort through.

- **Is a reservation system for use of public chargers needed to meet the needs of the trucking industry?**

It is too early to confidently determine the necessity of a reservation system for public chargers in the truck fueling space. While it may be tempting to establish a definitive operational system, the market is not yet mature enough, and there is not enough data to make a final determination. As the market evolves, charging infrastructure providers should be encouraged and given the flexibility to test different operational systems to identify the optimal mode of charger for the over-the-road truck charging market.

- **Should there be a certain percentage of chargers available to the public at all times? Should there be a certain percentage of chargers available for reservation at all times?**

Like the current public traditional fueling market of MD/HD vehicles, the private over-the-road fueling infrastructure market strives to provide fleets with optimal service and performance. Afterall, a great customer experience translates to continued business. Because of this inherent desire, the private sector will naturally collaborate with customers to identify the ideal balance between reservation-only charging and first-come, first-served charging. Attempting to establish or mandate this balance solely based on theoretical analysis, without practical real-world experience, risks hindering market development and could inadvertently slow progress.

- **If a portion of chargers must remain first-come-first-served, what ratio for reservation vs. first-come-first-served chargers would you recommend?**

It does not seem necessary to establish, standardize, or mandate a ratio between reservations and first-come, first-served charging. The private fueling infrastructure market is inherently driven to meet the needs of the driving public. Consequently, whether the strategy involves reservations, a first-come, first-served model, or a combination of both, the market will naturally identify the most effective approach to address customers' charging needs.

- **Which configuration would be preferred**:

  a. A site where all chargers can be reserved but can also be used on a first-come-first- served basis if a charger is not reserved or in use?

  b. A site where a portion of the chargers are reservation only and another portion first- come-first-served only? In this configuration, is there an optimal percentage of chargers that are always available (not available for reservation)?

The most effective public, en-route charging strategy for fleets is one that reliably meets their fueling needs. At this early stage of electric MD/HD truck adoption, it remains too soon to determine—either definitively or conceptually—whether a first-come, first-serve model or a reservation-based approach is preferable for over-the-road public charging. Collaboration between fueling infrastructure providers and fleets will be essential to identifying the optimal charging methodology to support the market's evolving needs.

- **The CEC's Clean Transportation Program administers public funding, which must provide a benefit to the state. How does a project with a reservation system benefit the state of California?**

The support provided by the CEC's Clean Transportation Program has been instrumental in advancing the zero-emission industry. We deeply appreciate the team's commitment to driving progress. However, we strongly recommend against mandating whether a charging station should include a reservation system. One of the key advantages of public funding is the flexibility it gives recipients to test different business and operational strategies to identify what best serves the public's needs. Charger infrastructure owners should be encouraged and have the flexibility to try different operational methods to determine which best meets the over-the-road charging needs of drivers. For instance, funding for a heavy-duty charging station could enable the implementation of a reservation model for a period, followed by a first-come, first-served approach, followed by a mixture of both. This flexibility and experimentation allow for a thorough analysis of customer preferences and the operational requirements of each method. The freedom to conduct this experimentation should left to the station owners as they will be the ones checking the pulse of the customers. If one method is working fine for both the station owner and the customers, then they should not be required to switch to a different method. Imposing a specific system as a funding prerequisite would limit this critical experimentation, which is invaluable at this stage of market development.

The state of California benefits most when fleets can charge efficiently, effectively, and safely—a goal shared by all fuel providers, regardless of the type of fuel they offer. A reservation system in theory seems to be the fastest way to get a vehicle charged and back on the road quickly if it works perfectly. This means that the system will have to understand exactly the amount of power demand and energy needed for a specific reservation. It also means that a driver cannot be late for their reservation or stay longer than their allotted reservation time. It also means that while the charger is idle, the system would have to decide if it should allow another vehicle to charger while the next reservation is on the way. Additionally, the system would have to be able to move vehicles once their reservation is complete, whether they've received a full charge or not. So, while the reservation system

seems to be the best theoretical solution, quite a bit of detail needs to be figured out both technically and operationally.

- **Are there driver safety or equipment protection issues that the CEC must consider when determining whether a charger should be "public"? Could a charging site be open to the public without attendees on site?**

Charging stations must follow both nation and state electrical and building codes. Charging station can be open to the public without attendees on site.

- **Please describe your optimal public charging network that is a mix of first-come-first-served and reservation systems throughout CA.**

The ideal charging network provides tailored charging solutions strategically located to seamlessly align with fleet routes. It guarantees 100% uptime and offers amenities designed to maximize fleet operational efficiency. Moreover, it ensures transparent and competitive pricing. Whether stations operate on a first-come, first-serve basis or through a reservation system depends on the charger provider. At this stage, it's too early to definitively determine which of these two systems is optimal.