e-Mission Control

June 6, 2023

Oregon Department of Environmental Quality
Attn: Cory-Ann Wind
700 NE Multnomah Street, STE 600
Portland, OR 97232-4100

RE: Comments regarding the Proposal for a Forklift Estimation Methodology

Dear Ms. Cory-Ann Wind and DEQ CFP Team,

Thank you for the opportunity to comment on the estimation methodology for electric forklifts proposed during the recent stakeholder meeting on May 30th. As we have consistently affirmed in our correspondence with DEQ over the years, e-Mission Control believes the accuracy of the energy consumption data is centrally important to the integrity of the Clean Fuels Program, and that all reasonable measures should be taken to ensure resulting credit generation reflects real GHG-reductions achieved by the regulation.

Equally important is the ability for small and medium-sized businesses to access the Clean Fuels Program so as to more effectively turn-over their ICE fleets to zero-emission equivalents, or invest into conversion of other fleet assets that have not yet transitioned. This was the original impetus for the California Air Resources Board to issue Guidance 17-02 in April of 2017, easing the burden of entry for material handling fleets that did not have access to metered data, subsequently returning high-important revenue to be reinvested in future electrification efforts.

We offer additional background on typical MHE industry practice, information on the current state of affairs on electric forklift fleet participation, and request the following adjustments to the proposed amendments:

1. ***We propose a conservative approach of Depth of Discharge of 70% for Class I and II lifts, and 50% for Class III lifts.***

   The typical depth of discharge (DoD) for electric forklift batteries in warehouse operations can vary, especially if operations and duty cycles change over time, although major operations changes over the span of a forklift battery are relatively rare. However, almost all operations are sizing battery capacities appropriately so as to fit business energy duty cycle requirements, especially with Class I and Class II lifts. Fleet operators are incentivized to right-size their battery capacities, as not doing so will result in either under-performing units, or too much capital expenditure for extra unused battery capacity. While lithium batteries are slowly becoming more cost-effective, lead acid batteries remain significantly more prevalent in fleets due to their lower upfront cost and familiarity with technology. Industry practice is to utilize an estimated 80% DoD when sizing operations and battery capacities.

Class III lifts (powered pallet and rider jacks) are more difficult to perfectly right size, as physical battery packages are largely standardized across lift models, integrated directly, or are in operations that vary. A conservative approach of 50% on Class III lifts will address many of the subjective concerns surrounding poor estimates of DoD, while a reduced, but still representative of in-use utilization of 70% for Class I and Class II lifts is appropriate.

2. ***We propose a start of direct metering for the Q1 2024 reporting period.***

Again, while e-Mission Control recognizes the importance of ensuring data submission accuracy across all electrification categories, we are also sensitive to the reality of metering implementation in an industry where the need for sub-metering is practically guaranteed.

In commercial facilities, sub-metering allows for better energy management and provides insights into specific areas of high usage, enabling targeted efficiency improvements, however despite its benefits, the process can be complex and it presents several potential complications that require time to navigate.

There are several steps processes of sub-metering:

Assessment: The first step is to conduct an audit of the facility's energy usage and identify areas where detailed consumption data is required. This includes many different isolated locations, chargers, or other granular specificity on the electrical systems, auxiliary load analysis, network capability, physical building insulation and construct, locale, and more. Site walk assessments can take anywhere between one and several days.

Planning and Design: The next step is to design the sub-metering system. This includes selecting appropriate meters, procurement of meters, gateways, routers, and other electrical components, deciding where and how installation takes place, designing around building codes, scheduling electrical contractors and on-site stakeholders, and a host of other considerations.

Installation: Meters are then physically installed and connected to the electrical system, spanning a few days to a few weeks, depending on the complexity and operational constraints of the site host. Costs are typically in the many-thousands to complete.

Cost and other technical challenges are hurdles for many small-business owners that will be required to install sub-metering solutions to maintain participation in the Clean Fuels Program. These challenges are not insurmountable, but do need appropriate time to be addressed. A Q3 2023 reporting period implementation would require metering installations to be complete in three weeks from the due date of this comment period, a very high-bar to ensure uninterrupted Clean Fuels Program participation.

3. ***We propose small fleets be grand-fathered into the calculated methodology.***

Based on e-Mission Control's extensive field experience, we estimate that it takes at least two full quarters of credit generation based on current market conditions for 40% of all companies currently participating in the Clean Fuels Program to recoup the costs of installing just a single network-connected submeter. Such a cost-burden is not one likely to be taken by many small businesses, driving them away from a revenue generating opportunity in a sector regularly shown as the hardest to transition.[1]

Fleets with less than 24 units in operation (a roughly-typical sub-meter panel volume) should be able to continue accessing the Clean Fuels Program with very little risk to over-estimation concerns, especially if paired with suggestions in Section 1 above.

4. ***Shift operations are already appropriately accounted for, no need for capping shift operations is necessary.***

Finally, the conservative suggestions made in the Depth of Discharge discussion in Section 1 should sufficiently address any worries about an overestimation of energy consumption. However, it is important to understand the adverse impacts the limitation on shift operations will have on heavy duty-cycle fleets, especially those that employ Class I and Class II lifts.

In our current competitive business climate, many industries—such as warehousing, logistics, and manufacturing—run operations 24 hours a day, seven days a week, often necessitating a three-shift model to meet the demands of round-the-clock operations. This is particularly true for those industries that have to meet critical supply chain needs or that experience high customer demand. In such scenarios, fleets are often tasked to run three shifts daily to maintain production or service schedules. By limiting shift operations to two shifts per day, the energy consumption calculation significantly underestimates the real-world energy usage of these industries. This could lead to imprecise planning, resource allocation, and decision-making for these fleets, which are aiming to be energy-efficient while also meeting their operational demands.

Moreover, the proposed restriction fails to consider the dynamics of shift variations. It is not uncommon for organizations to operate three shifts during peak periods, then scale back to one or two shifts during quieter times. The ability to consider three shifts in energy consumption calculations allows for more accurate assessments and forecasting of energy requirements, especially for companies that fluctuate between different shift operations throughout the year. This flexibility also supports energy planning efforts and contributes to overall energy conservation goals.

In addition, a three-shift model can often lead to more efficient use of forklift fleets, reducing the total number of lifts required and consequently, the overall energy consumption on a per lift basis. By only allowing for one or two shift calculations, the agency's proposal may inadvertently promote less efficient fleet utilization.

[1] https://smeclimatehub.org/sme-survey-barriers-to-climate-action/

Therefore, it is paramount to consider the full spectrum of operational practices, including one, two, and three-shift models, in the calculation of energy consumption. Doing so will provide a more realistic reflection of the actual energy needs and practices of fleets and will support businesses in their strategic planning and energy management efforts. It is through such an inclusive and realistic approach that we can encourage and facilitate the more sustainable operation of our heavy duty-cycle fleets.

Thank you for your consideration and for your continued work on the Clean Fuels Program.

Sincerely,

Energy Mission Control, Inc.

CC: Todd Trauman, CEO
Colby Green, Director of Business Development
Elaine O'Byrne, Director of Operations