WPGA
WESTERN PROPANE GAS ASSOCIATION

1107 9TH ST, SUITE 540, SACRAMENTO, CA 95814
P: (916) 447-9742 | F: (916) 447-9740
WESTERNPGA.ORG | USECALIFORNIAPROPANE.COM

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California Air Resources Board
1001 I Street
Sacramento, CA 95814
VIA ONLINE SUBMISSION

RE: Zero-Emission Forklifts – Proposed Regulation

WPGA is providing additional commentary on the proposed Zero-Emission (ZE) Forklift rulemaking at CARB set to be considered in 2024. While the proposed regulation has been amended to address some industry concerns, there are still significant issues with the rulemaking that must be acknowledged including cost, feasibility of implementation, and inaccuracies of data in CARB's analysis. Our main points of contention are as follows:

Actual impacted forklifts far exceed CARB estimate: CARB has modelled the total affected forklifts of approximately 95,000, though this inventory count is less than a third of the values produced from a 2017 study commissioned by CARB through the Social Science Research Center at CSU, Fullerton. Additionally, CARB has not updated the 95,000 figure since expanding the scope of the rulemaking's impact in the latest draft of the regulation. CARB assumes that the internal combustion engine (ICE) forklift population remains stagnant though time has shown an increase in forklifts in the state due to an increase in goods movement. After evaluating forklift fleet owners and operators, CARB's proposal will realistically impact over **390,000 ICE forklifts** – over three out of every four forklifts in the state.[1]

Technical challenges of run time & operational loads could impact overall cost: While CARB staff noted that "opportunity charging" may resolve use needs for battery electric forklifts during workshops, manufacturers and industry experts remain skeptical that there is a one-to-one replacement for ICE forklifts versus battery electric. Considering an 8-hour use period, 8-hour charge period, and 8-hour battery cool down period for the bulk of existing battery electric forklifts, the rulemaking could actually require a **three-to-one replacement** for businesses utilizing 24-hour shifts such as warehousing, goods movement, and agricultural services during harvest season. Such ratios would significantly increase the total financial impact of this regulation and are not accounted for in the cost analysis. In addition, lift capacities of battery electric units can make real-world runtimes for heavier loads much lower than rated capacities. An exemption for fleets that require 24-hour on-site operations would protect fleet owners and operators from having to significantly increase the size of their fleets to meet their current operational needs.

Burdensome costs to forklift owners and operators: CARB's Standardized Regulatory Impact Assessment (SRIA) estimates that the proposed regulation will result in cumulative savings of over $13.9 billion (though CARB provided 3 differing values for their cumulative savings). Unfortunately, analysis undertaken by Andrew Chang & Company, a consultant hired to determine the potential savings or costs from the rulemaking, has shown quite the opposite,

[1] Social Science Research Center at CSU, Fullerton, "Survey of Large Spark-Ignited (LSI) Engines operating within California" (2017). https://ww2.arb.ca.gov/sites/default/files/ 2020-08/ssrc_2017.pdf

even accounting for assumptions made about the market by CARB staff in the SRIA. The report will be released to the public in early-January 2024.

In total, the proposed regulations will cost forklift owners and operators as much as **$28 billion** in extra expenses. With that same amount of money, the state could reduce greenhouse gas (GHG) emissions by over six and a half times of the proposed emissions reduction through the installation of solar panels and wind turbines. This demonstrates that this forklift regulation is not a cost-effective method of reducing GHG. Even under midpoint estimates, owners and operators must bear nearly $20 billion in costs, including the following:

– $14.1 billion for the replacement of ICE forklifts, even after factoring salvage value;
– $6.4 billion in lost utilization for the premature retirement of currently functional ICE forklifts;
– $2.1 billion for the cost of EV charging stations. Note that these costs are conservative and do not factor in the cost of installation, building power supply upgrades, or infrastructure upgrades for the generation, transmission and delivery of electricity;
– only $2.7 billion in operational savings (operation savings are negative for the majority of the regulation period).

There are additional costs to the state and local governments that have not been accounted for. Utilizing the Department of General Service's fleet data, the **California state government will incur direct costs exceeding $25 million**. This conservative estimate does not yet include costs to the University of California or California State University systems. Any costs of this rulemaking on local governments would also constitute **an unfunded state mandate** that would have to be borne by local taxpayers.

CARB obscured fuel cost methodology in their calculation: ICE forklift fuel costs decrease substantially when propane fuel costs are utilized. When propane is used as the fuel of choice for ICE forklifts, ICE forklift fuel costs are reduced by approximately 55%. Cumulative fuel savings when using propane add up to $1.87 billion. Utilizing propane as the main source of fuel for ICE forklifts provides a more accurate depiction of ICE forklift fuel costs, as most forklifts in use are propane-powered. Considering that the fuel savings generated by CARB make up approximately 47% ($8.2 billion) of CARB's cumulative regulation benefits, transparency on their fuel cost methodology is essential—critical, since savings rely partially on Low Carbon Fuel Standard (LCFS) funding, which cannot be guaranteed for the duration of the phase-out period.

Renewable propane drastically reduces GHG emissions without significant financial investment: The propane industry has made extraordinary strides to expand production of low carbon renewable fuels for the transportation sector within California. These strides have been made in part thanks to the work of CARB in its implementation of LCFS. Renewable propane carbon intensities range from half- to one-quarter of the carbon intensity of California's current electric grid.[2] With current blending and transitions to all-renewable fuels, propane has outpaced carbon emissions for California's electric sector in transportation – particularly off-road forklifts. With approximately 17% of all propane in transportation being renewable today, the industry is set to reach 100% renewable propane across our transportation segment by 2035 or sooner which again outpaces transportation electrification targets.

Alternative compliance can achieve similar emissions reductions for a fraction of consumer impact: There is a pathway to make similar (or better) reductions in criteria pollutants and

[2] LCFS Pathway Certified Carbon Intensities:
https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/fuelpathways/current-pathways_all.xlsx

greenhouse gas emissions from the forklift segment within California that do not obligate an expensive, forced transition to a singular technology solution:

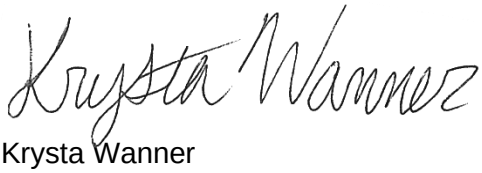
1) Current generation propane forklifts outperform California's marginal and average grid emissions for total NOx emissions per kilowatt-hour. Accelerating a phase-out of older, less efficient lifts – those built before the 2011 emissions standards were first required – for newer lifts can provide an immediate improvement in local air quality and reduce carbon intensity. By CARB's own estimation, approximately 75% of the Population Weighted Average Hours Per Unit in 2020 was from pre-2009 propane forklifts. If those forklift-hours were to be shifted to a new model propane forklift operating under the current lowest standard, it would be an **81% reduction** in total emissions from current-day conventional propane forklifts alone.

2) The state has no data to accurately assess the true market size of the regulated market under the ZE Forklift rulemaking for Large-Spark Ignited (LSI) engines. CARB's own calculations show wildly different figures for the potentially affected portion of the forklift market. Establishing a most robust reporting mechanism to determine the true size of the market can also provide insight into how ingrained forklifts are to every sector of the California economy and give stakeholders a better pathway to understanding the true emissions from this sector before acting on future rulemakings.

3) Increasing NOx and other criteria pollutant targets for future equipment – paired with the pending updates to LCFS – can incentivize even further improvements to air quality and carbon emissions without the technical, logistical, and infrastructure challenges that would arise from a mandated phase-out. This change would allow businesses subject to other reporting requirements from CARB or other air districts to determine how best to meet their compliance obligations in a way that achieves true reductions in GHG and criteria pollutants without significant financial obligation.

WPGA appreciates the opportunity to submit this document on behalf of numerous industry, labor, and governmental partners regarding the rulemaking in hopes of adopting an equitable solution for forklift owners and operators.

Sincerely,



Krysta Wanner
Manager of Government Affairs, WPGA
krysta@westernpga.org