



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

ZERO-EMISSION FORKLIFTS – PROPOSED REGULATION

Ted Olsen
2125 W 17th St
Santa ANA, CA 92706

December 18, 2023

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 the 2017 CARB/SSRC Study. 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 actually impact over **390,000 ICE forklifts** – over three out of every four forklifts in the state.

Technical challenges of run time & operational loads could impact overall cost: While CARB noted that “opportunity charging” may resolve use needs, 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, it would actually be a **three-to-one replacement** for businesses utilizing 24-hour shifts. Such ratios would significantly increase the total financial impact of this regulation. In addition, lift capacities of battery electric units can make real-world runtimes for heavier loads much lower than rated capacities.

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. 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. In total, the proposed regulations will cost forklift owners and operators as much as **\$28 billion** in extra expenses. Even under midpoint estimates, owners and operators must bear nearly \$20 billion in costs.

Propane-powered forklifts are the more affordable fuel option: 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 go down by approximately 55%. Cumulative fuel savings when using propane add up to \$1.87 billion, while cumulative fuel savings

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





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when using gasoline amount to \$5.25 billion. Utilizing propane as the main source of fuel for ICE forklifts provides a more accurate depiction of ICE forklift fuel costs as the majority of forklifts 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.

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 the Low Carbon Fuel Standard. Renewable propane carbon intensities range from half- to one-quarter of the carbon intensity of California's current electric grid. 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.

Ferrellgas appreciates the opportunity to submit this document regarding the rulemaking in hopes of adopting an equitable solution for forklift owners and operators.

Sincerely,

Ted Olsen

Account Manager

¹ CA-GREET3.0 model: https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/ca-greet/lut_update_2023_2.pdf

