African American Farmers of America
Agricultural Council of California
Agricultural Energy Consumer Association
American Pistachio Growers
Associated Equipment Dealers
California Apple Commission
California Blueberry Commission
California Citrus Mutual
California Cotton Ginners and Growers Association
California Farm Bureau
California Fresh Fruit Association
California Rice Commission
California Strawberry Commission
California Wild Rice Advisory Board
Fresno County Farm Bureau
Holt of California
JM Equipment
Madera County Farm Bureau
Milk Producers Council
Nisei Farmers League
Olive Growers Council of California
Tulare County Farm Bureau
Western Agricultural Processors Association
Western Growers Association

December 18, 2023

Mr. David Chen
Air Resources Engineer, Staff Lead
California Air Resources Board
P.O. Box 2815
Sacramento, CA 95814

Re: **Zero-Emission Forklift Fleet Requirements – Regulatory Concept**

Dear Mr. Chen,

On behalf of the above listed agricultural organizations, we wish to provide our collective comments on the proposed regulation for Zero-Emission Forklift Fleet Requirements (Proposed Regulation) as outlined in the most recent release of November 7, 2023. As stakeholders representing the agricultural industry, we believe it is imperative to contribute our insights on this Proposed Regulation. Our collaborative efforts aim to provide constructive feedback and recommendations that align the Proposed Regulation with the unique and diverse needs of the agricultural industry. By sharing our concerns, we hope you will consider ways to modify the Proposed Regulation that balances the objectives of the California Air Resources Board (CARB) and the broader effects it has upon the agricultural industries we represent.

Section 3000 Purpose, Applicability, Non-Compliance, and Severability
We fully support the exclusion of rough terrain forklifts, as rough terrain forklifts operate in rugged, uneven, and sometimes wet environments where the existing technology for electric forklifts does not exist. Excluding these from the Proposed Regulation provides businesses the necessary flexibility to continue operations effectively while maintaining compliance.

The 2016 Large Spark-Ignition (LSI) Engine Fleet Requirements Regulation recognized the necessity to exclude in-field forklifts from the previous regulations[1] and we highly recommend the same consideration for the Proposed Regulation. Forklifts are an essential part of many on farm/in-field operations during harvest and many of these forklifts operate with diesel and/or propane. These forklifts have a distinct operational use primarily during the harvest seasons, many times only being used two to three months out of the year. It is important to acknowledge the unique demands and dynamics of in-field usage; the precedent has been set and should be continued in this new regulation.

Section 3001 Definitions
The current challenge with the rough terrain forklift definitions lies in the requirement of a specific label from the manufacturer designating it is a rough terrain forklift to be on the lift itself. The manufacturer currently does not provide this distinctive label on the equipment. Requiring a label poses a challenge especially older equipment. Most rough terrain forklifts will bear a label with the make, model of the forklift, which should suffice as a classification for a rough terrain forklift. The requirement for this label should be deleted.

Section 3003 Dealer Requirements
Equipment dealers should not be required to obtain and disclose detailed information regarding the sale or lease of an LSI forklift, as the confidentiality of such transactions and information should be of top priority. Requiring equipment dealers to access and possibly disclose specific data about the sale or lease of LSI forklifts could compromise the privacy of businesses and individuals involved in these transactions.

Section 3004 Rental Agency Requirements
Renting a forklift becomes a complicated challenge when the Proposed Regulation prohibits or significantly restricts access to newer LSI forklifts. In situations where a company does not have the electrical infrastructure to support the rental of a ZEV forklift, this requirement impedes the business from maintaining standard business practices during harvest when the need for rentals is essential to a successful operation. Maintaining a balance between regulatory compliance and the practical requirements of operating a seasonal operation is crucial to ensure a smooth and unhindered flow of operations. The useful life of an LSI forklift rental is notably diminished when it operates in a manner where it transitions from one harvest operation to the next. As such,

[1] https://ww2.arb.ca.gov/sites/default/files/classic/msprog/offroad/orspark/largesparkappa-clean.pdf

the rental agency will frequently need to replace LSI forklifts at a much faster pace and will need access to new LSI forklifts. The nature of rentals in agriculture are unique and should allow for more flexibility and an extended amount of time allocated to rental services as we transition to ZEV fleets. Limiting the access to rental agencies directly affects businesses reliant on forklift rentals and our ability to function effectively.

Section 3006 Fleet Phase-Out Provisions for Fleet Operators and Rental Agencies
The proposed regulation should incorporate a pragmatic phase-out approach by considering the unique operational characteristics of agricultural businesses, whose useful life for forklifts often exceeds the conventional lifespan due to their seasonal nature. Unlike year-round operations, many agricultural businesses function only for a few months out of the year, leading to reduced overall forklift usage. Given this, a set phase-out schedule can cause undue financial strain on these companies, requiring them to replace a disproportionate number of forklifts during the initial phase-out year. According to our survey of the tree nut and cotton industries, a substantial number of operations would be required to replace a significant portion of their fleet. Of the surveyed businesses, we anticipate most companies must phase-out a substantial number of their forklift fleet. A staggering 55 percent of their forklifts will be retired in the initial phase-out year and 96 percent by the second compliance date. About 35 percent of these agricultural operations anticipate the need to phase out their entire fleet of forklifts within the first compliance date. To address this concern, we strongly recommend a flexible phase-out schedule with a cap of 25 percent to be phased out, in any given compliance year. This approach recognizes the differences in agricultural businesses versus year-round operations, by preventing a devastating capital expenditure that could potentially jeopardize their economic viability.

As it stands, the proposed phase-out schedule poses a significant challenge for agricultural operations, requiring them to retire a substantial portion of their fleet disproportionately. Compounding this issue is the underdeveloped infrastructure in rural areas, where the majority of our members are situated. The electrical infrastructure in these regions is not yet equipped to meet the demands of charging these fleets, and unfortunately, our rural operations are at the bottom of the priority list for utility providers when it comes to upgrades or additional services. Meanwhile, electricity rates persist as some of the highest in the United States, escalating each year. In the most recent general rate case presented to the Public Utilities Commission (PUC) by PG&E and SCE, both utility providers have proposed a substantial 45 percent increase in rates. This places us at a distinct economic disadvantage, hindering our competitiveness in the global market. This unique situation creates an inherent significant challenge for agricultural operations. Given these circumstances, it is crucial to extend the compliance timeline for agricultural operations by 5-6 years, allowing them to allocate this significant compliance expense over an expanded period of time.

Moreover, the forklift Model Year should correspond to the calendar year in which the forklift was manufactured, rather than the engine model year. Utilizing the engine model year would reduce the useful life of forklifts, especially those with an engine model year a year or more earlier than the year the forklift was manufactured.

Section 3007 Exemptions, Extensions

Low-Use LSI Forklift Exemption

Requiring facilities to invest significantly in new forklifts for sporadic operations amounts to a substantial expense for such a limited use equipment, presenting an economic challenge for many agricultural businesses. When evaluating the limited emission reductions relative to the associated costs, it is unreasonable to have a sunset date of December 31, 2030 for this type of limited use forklifts. As written, a low use LSI forklift must be a model year 2013 or newer however, most of our facilities would need to purchase a new LSI forklift in 2026, only to use it for less than 1,000 hours and having to sunset the list in 2031. The investment would be too high for the intended short useful life. We recommend a revision of this exemption, specifically proposing the elimination of the sunset date and requiring a model year 2013 or newer.

ZEV Forklift Delivery Delay

Recognizing today's economy, the extended timelines that will be necessary to secure forklifts can be significant with much uncertainty. We urge you to reconsider the requirements to qualify for the delay extension. Requiring a purchase order to be drawn at least 2 years in advance is unreasonable. Today, businesses face a 12-month waiting period for the delivery of new equipment after placing an order. When placing an order, there is no assurance of a fixed price, and the cost may experience significant increases by the time the forklift is delivered. Most dealers will not provide a cost over 90 days ahead of delivery. It is extremely difficult to run a successful business when you don't know your cost of operation. In order to apply for the delay extension, a purchase or lease agreement is required. We strongly suggest CARB reevaluate and potentially eliminate this requirement for a formal contract. This leaves businesses in a risky position, with uncertainty regarding both delivery timelines and equipment costs. We propose replacing the contract requirement with a letter of intent, providing a more flexible approach, given the current market. In addition, the delay request requires a specific delivery date to be made at least 45 days prior to a compliance date. This is unreasonable given no vendor can actually commit to that a specific time period for delivery given long lead times and manufacturer delays.

The conversion to electric forklifts involves various considerations beyond the purchase of the equipment itself. Ensuring the necessary infrastructure and support for charging is equally imperative. Purchasing or phasing out forklifts according to proposed schedules becomes useless if the infrastructure for charging is lacking or not there. Past examples have demonstrated that simply connecting to utility services can take several years. This can mean newly purchased equipment that a company is legally contracted to purchase can sit idle for an extended period of time. No business can sustain the capital cost expenditure and afford to have equipment sitting idle for years.

Moreover, why would the purchase order need to specify the delivery to be made at least 45 days prior to a compliance date? This requirement seems impractical, as no vendor can reliably commit to a specific delivery timeframe, especially considering extended lead times and potential manufacturing delays. This requirement must be removed. Additionally, the demand for

submitting delay requests within a 45 to 90-day window may also be unworkable. Notification of equipment delays could arise from the manufacturer at any point throughout the year due to material shortages, as evidenced by supply chain challenges experienced by dealers. This requirement must also be removed. A request should be allowed to be submitted and extended as necessary prior to the compliance date.

Technical Infeasibility Delay

The sunset date included in the technical infeasibility delay set for the end of 2037 does not take into account that this may not be sufficient time for technology to meet the demands or needs of all operations. There needs to be an understating and additional flexibility in these situations. An extension must be allowed beyond 2037 until a feasible solution is available.

Infrastructure Delay

The permitting process for constructing or upgrading facilities can encounter various obstacles. A notable example can be found in Amador County, where the fire marshall expressed significant concerns with fire hazards associated with electric batteries and ultimately denying the building permit for a facility. In such instances, there is a crucial need for recognition and the establishment of a suitable avenue for companies to navigate this unique situation. The addition of ZEV forklifts into a fleet will require physical infrastructure at many facility (e.g. roofed areas for forklift charging and battery storage). The proposed regulation must include an extension for facility upgrades needed, when delays occur beyond the operations control such as building permitting delays. A physical infrastructure delay extension is necessary and should be included in the regulation be added. In circumstances beyond the company's control, there needs to be an extension that is not limited to two years and should allow for renewal when necessary.

Electrical Infrastructure Delay

The current statewide electrical infrastructure shortfall we are facing poses a challenge to the state's transition to ZEV forklifts. We must consider and recognize the simultaneous regulations pushing for the widespread adoption and conversion of electric trucks, commercial vehicle, appliances, etc. will only further exacerbate the electrical infrastructure shortfall. The proposed electrical infrastructure delay provides some recognition of these challenges however falls short to understand the significant actual time it currently takes for utility providers to connect or meet the companies demands. While the proposed delay acknowledges these challenges to some extent, it falls short of grasping the true magnitude of the time currently required for utility providers to fulfill or accommodate the demands and needs of agricultural operations, many of which are locating in rural areas. An example of the prolonged timelines faced with utility providers is evident in Fresno County, where a routine connection for a farm shop to electrical power through PG&E took over six years. This case mirrors numerous instances, particularly in rural areas where most agricultural operations are located. Facilities in rural areas often find themselves at the bottom of the priority list for upgrades or modifications to infrastructure such as substations or simple upgrades or interconnections. Another example is an almond processing facility located within city limits, facing challenges in connecting to the electrical grid requiring them to resort to operating the entire facility on natural gas generators due to the uncertainty of

when or if they could get connected any service. Whether dealing with new business developments or existing ones, the statewide infrastructure currently lacks the support needed for the state's electrification initiatives.

During our meetings with utility providers, we discovered the completion and operation of a new substation can take up to 13 years. The California Energy Commission (CEC) is in the process of conducting a study to identify the infrastructure needs, it will identify how much infrastructure will be needed, where it will be needed and when it will be needed. Unfortunately, our facilities mostly located in rural areas are slated to be last on the priority list for upgrades. Utility providers are currently directing their efforts and resources toward addressing other concerns such as wildfire mitigation, with extensive projects like undergrounding thousands of miles of transmission lines which will take precedence over projects like ours. In recognizing these challenges, we recommend a reconsideration of the proposal, advocating for an extended initial exemption from three years to a minimum of eight years minimum timeline for agricultural operations.

Lastly, the requirements and information mandated for requesting an extension delay far surpass the essential details necessary to demonstrate the necessity for such an extension. Preserving the confidentiality of business information should be of utmost importance. We firmly believe that furnishing documents such as a year's worth of billing statements from the electrical utility provider is excessive. This information on a company's overall usage is irrelevant and poses a potential threat to the privacy and security of the business. A more streamlined approach, such as an attestation from the utility provider stating their inability to provide the required service along with an estimated date, should be deemed sufficient for the extension request process.

Section 3009 Reporting and Recordkeeping
Maintaining the privacy of business information is of utmost importance. The safeguarding of personal data, addresses, contact information, fleet size, tax information, communication between utility provider, utility usage, financial records, and other sensitive information is integral to ensuring a company's safety, competitive advantage and long-term success. Confidentiality shields businesses from potential threats; these types of threats have occurred at agricultural operations in the past when critical and private information becomes accessible. We must prioritize the confidentiality of business information and would suggest an attestation from a company stating they have converted over the fleet within the appropriate phase-out period. As agriculture has proven in the past with the previous LSI regulation, we can work towards the same goals while maintaining the privacy and safety of the agricultural businesses in California.

Section 3011 General Requirements
The ability of a business to make independent decisions regarding the selection of equipment is vital for its overall success and operational efficiency. Every company operates within a unique environment, facing specific challenges, goals, and operational requirements. The choice of equipment, whether it be diesel forklifts, operating equipment, technology, or tools, directly impacts productivity, cost-effectiveness, and the quality of goods produced. Ultimately, the

diesel forklift restrictions proposed clearly violate the nonroad engine and vehicle preemption in the Clean Air Act (CAA) and the provisions of the Off-Road Mobile Diesel Regulation. The freedom to make independent decisions regarding equipment selection should be maintained and driven by the company's needs and operating preferences. This section and reference in Section 3007 must be removed for the reasons stated above.

Incentives

A proven strategy in enhancing air quality involves the utilization of incentives, particularly for source categories where achieving compliance is economically challenging. An outstanding example of successful implementation is evident in the Funding Agricultural Replacement Measures for Emission Reductions (FARMER) Program, focusing on the replacement of agricultural tractors and harvesters. This substantial achievement not only meets the State Implementation Plans (SIP) goals, accounting for 11 tons of emissions reductions, but also exemplifies the effectiveness of incentive programs in addressing air quality concerns. Given this proven and successful example where the agricultural industry, the state and federal agencies came together to work on the same air quality goals, we strongly advocate for funding sources and propose the consideration of expanding programs, such as the Carl Moyer Program, to encompass the replacement of propane forklifts.

Standardized Regulatory Impact Assessment (SRIA) and Initial Statement of Reasoning (ISOR)

The Standardized Regulatory Impact Assessment (SRIA) relies on data that inadequately reflects the realities of our businesses. The report's analysis of forklift charging infrastructure costs is found lacking due to several critical issues. CARB relies solely on a 2018 report about electric car chargers, assuming its relevance for projecting costs for forklift chargers. However, this approach overlooks key factors: the significant increase in construction costs between 2018 and 2023, the facility space requirements for charging forklifts indoors, the omission of crucial elements like battery rooms and changeout equipment, and the oversight of potential panel and service upgrades in older or rural facilities. The study's focus on metropolitan locations for electric car chargers further disregards the distinct needs of agricultural forklift users, who operate on a round-the-clock basis during harvest seasons. Consequently, the estimated costs for electric forklift charging infrastructure are likely understated by 3 to 5 times. CARB's cost analysis must undergo a more comprehensive evaluation, especially concerning agricultural forklift fleets, to be deemed accurate and meaningful.

In addition, and as discussed below, CARB staff have routinely underestimated the current and future cost of electricity in the analysis of the cost impacts of this program. Using a historically justifiable electricity cost escalator would likely add $1.5 - $2 billion to the program's cost. The LCFS Credit Revenue is purely speculative, particularly in the later years, and removing it from the analysis subtracts $515 million from the program's benefits. Considering these issues, the program is estimated to have a "Net Cost" ranging from $60 million to $1.8 billion. The claimed $30,000 net benefit per forklift in the Executive Summary is deemed unlikely, with most

facilities expected to incur a potentially significant additional costs per forklift if the regulation is implemented.

The recommended adjustments to the total costs involve an increase by $2.1 to $4 billion, while simultaneously reducing cost savings by $0.5 billion. These adjustments yield a lower Benefit-Cost Ratio ranging from 1.45 to 1.73. However, these calculations are contingent on the validity of the claimed health benefit of $7.5 billion.

Zero-Emission Infrastructure

On page 32 a comment is made that about half of the forklift population in California is already using ZE technology. We cannot confirm this claim as a reference was not provided. Furthermore, we have surveyed the tree nut and cotton industries and that is most certainly not the case. Our data shows less than 16% of the forklift population in the ag community are ZE technology.

Rural Charging Infrastructure

On page 33 comments are made regarding "the dispersed nature of rural communities may not currently have additional capacity beyond what is already in use." We couldn't agree more and have provided numerous examples of where utility providers have already reported system capacity issues and situations where agricultural operations have told they cannot expand or for some new operations not provided electrical power at all. While the CPUC may have utilities to implement mitigation strategies to help in these situations, absolutely nothing has been done. This lack of infrastructure greatly affects the ability of agricultural operations to comply with this new regulation and must be considered in the final rulemaking.

Infrastructure Installation Timing

On page 34 CARB acknowledges the issues with infrastructure delays and that sufficient time is necessary. However, we strongly disagree with the comment that "utilities have indicated that project phasing commonly allows fleets to deploy ZEVs quickly using existing infrastructure and that electrical infrastructure upgrades can be make while a fleet expands its ZE deployments over time." In many situations the agricultural industry has brought to the attention of CARB. In one example an almond processor was told it had to drop an entirely new transformer service to expand at all. Similarly, a walnut processing operation in the Sacramento Valley was told the exact same thing. Again, the agricultural industry reminds CARB of the lack of electrical infrastructure and the problems associated with it and respectfully asks CARB to adjust the proposed regulation further to allow for sufficient time to address these concerns.

Remote Locations

On page 35 of the ISOR, CARB recognizes remote locations and suggests that these operations could bring in "mobile power units" to charge forklifts. How does bringing in a diesel-powered generator to charge an electric forklift create any emission reductions beyond a simple propane forklift? The agricultural industry uses this opportunity to once again remind CARB of the unique nature of rural agricultural operations and the problems associated with expanding the

electrical infrastructure to accommodate our needs and asks CARB to further adjust the proposed regulation to allow for even more time.

Electrical Grid Load Expansion

Another problem with the California electrical grid is the acknowledged lack of sufficient power. On page 37, CARB highlights the "vehicle-to-grid technology" where the grid can pull power from vehicles while they are being charged. That simply does not work in the agricultural community where equipment must be ready to go when the shift begins, especially with perishable commodities needing to be packed, processed, shipped, or stored. This would be devastating to the agricultural industry if these units are not ready to operate after their charging time, because they had been drained back into the grid. The agricultural community adamantly opposes this concept and once again urges CARB to consider further adjustments to the regulation to allow sufficient time for the state's electrical infrastructure to be fully built out and able to adequately accommodate the needs without pulling back power.

Zero-Emission Infrastructure Coordination and Buildout

CARB states on page 41 that the "CPUC has already approved utility investments for upgrading the electric grid along with electricity rate changes to fund those investments." We cannot verify this and have not seen any of those investments. Rather, we have seen tremendous rate increases, with more on the way, but little to no movement on infrastructure upgrades. Can CARB provide any specific examples? We have only seen the utilities focus their infrastructure upgrades on the undergrounding of power lines for fire safety purposes. We adamantly disagree with the statements made here and believe CARB is being misled by the CPUC on this matter, unless we can be shown specific examples of where the utilities have made any upgrades to the electric infrastructure that would help compliance with this regulation in any form.

Forklift Population

Beginning on page 116 of the ISOR, CARB makes various comments regarding the existing and projected forklift population. Many of the comments made stem from a read of the "Machinery Trader" website. While this could provide some useful information, we are concerned with making any conclusive decisions or comments based on that time limited information.

Forklift Costs

For this analysis, the CARB staff operated under the assumption of today's complete incremental cost of ZEFs throughout the entire regulatory transition. Given the current historical inflation rates, how can one undertake a financial forecast without factoring in an inflationary component? Contrary to the statement in the opening paragraph on page 125, Section 8 (a), indicating a decline in prices, there has been no such decrease. Since the commencement of the ISOR draft, dealers have witnessed a minimum of three price increases, estimating an overall surge of 28%.

The interest rate, which stood at 5% at the draft's inception, has now averaged 8%. We anticipate this figure to rise further, particularly given the challenging remarketing of used electric vehicles (with deteriorated batteries).

We have significant reservations about CARB's calculations, finding them to be underestimated for smaller lifts and overstated for larger machines. This is a critical issue due to the disproportionately higher number of small lifts compared to larger units. Additionally, it seems that the total count of affected lifts is considerably underestimated.

Regarding page 127, the specific concern centers around Column C for the following reason: The pricing of a lithium-ion battery electric lift can vary significantly depending on the model being compared, such as pneumatic electric or cushion electric. The pricing for these models differs substantially, with pneumatic electric models being much higher. Moreover, there can be a significant divergence in the cost of lithium-ion batteries themselves. For a single unit with a capacity ranging from 3000 lbs. to 12,000 lbs., suitable for a single-shift application, and one battery and one charge, the estimated acquisition cost for this lithium project falls within the range of $50,000 to $120,000. The end user would need to have 480-volt 3 phase input which could require a 50amp electrical breaker for every charger. CARB has made it clear that the technology exists and that would include the Lithium component. However, not every end user has this type of input power and would require an additional infrastructure upgrade. It is impossible to predict that cost as it is materially different in each county based on many differentials. Attempting to support an average cost per transaction is not possible.

CARB seems to be relying on data supplied by the utilities and not actual cost data. Even if the utilities could narrow down those values to supply the necessary power to a location adjacent to the end user's facility, they could not predict the expense to "drop" a sufficient breaker to the location specified by the end user at the site. This does not include the added expense of additional battery(s) and/or chargers in many multiple shift applications. The estimated cost could multiply dramatically.

In addition, related to on site requirements for safety and accessibility. Most end users would have to significantly upgrade an area/building to accommodate the necessary venting needs of a charging facility. Not all batteries are sealed and have minimal gassing characteristics. Not every end user has an area to park and charge their fleets. Many would need to add or free up significant production space to accommodate the process. CARB is relying on insufficient data that all forklifts would not need to be charged at the same time.

Another consideration is the maintenance costs. While it is true that EV units are less to maintain from required maintenance, they require a much more experienced operator for proper refueling (charging). Again, many variables depending on lead acid batteries or the more expensive Lithium product.

One size does not fit all. It is inappropriate to require all Class 5 forklifts as potential EV replacement. True for some Class 4 applications. CARB should be considering how to incentivize replacement and not create an undue strain on businesses in California. Afterall, our industry over a very short period converted our already clean burning propane units from 16

grams per brake horse power to point 6 (.6). By original calculations provided by CARB this was going to eliminate enough emissions. Our industry has been negatively impacted by the added costs to comply.

Infrastructure Costs

The cost analysis of forklift charging infrastructure is inadequate in this report. CARB cites a report on electric car chargers as the singular resource used for these cost estimates. The assumption is made that these dated (2018) costs for installing "Level 2 electric car chargers" is adequate for projecting infrastructure costs for forklift chargers. Here are the issues with this:

1. Construction costs have increased dramatically between 2018 and 2023. In some cases, costs can be double or worse. This is well documented and not considered by CARB.
2. Electric car chargers do not require allocation of additional indoor space for charging parked forklifts and batteries and the fire and life safety equipment required to do this inside a warehouse.
3. Battery rooms and battery changeout equipment were not included as stated on page 129. Agricultural forklift users who have a "harvest" season will need round-the-clock use of forklifts during these periods so this infrastructure is absolutely required and should be included in the analysis for agricultural fleets.
4. The study is based on metropolitan locations for electric car chargers. There is no consideration for panel and service upgrades in older facilities and rural areas that will likely be required for many agricultural forklift users.

The actual cost for electric forklift charging for agricultural users will likely be 3 to 5 times what CARB is estimating. CARB should try to evaluate these costs in a more meaningful way if their cost analysis should be considered accurate, particularly for agricultural forklift fleets.

Maintenance costs

It is unclear how CARB staff used six online forklift calculators to determine this cost. It should be noted that five of the six websites are geared to promotion of electric forklifts so this may not be a good source of unbiased information. In addition, CARB doesn't state how these maintenance costs are to be escalated over the period of the regulation.

LCFS Credits

It is currently unclear that any future benefit of LCFS credits will be available to forklift operators. This section is very speculative and adds about 18% to the "net benefit" being claimed for forklift operators.

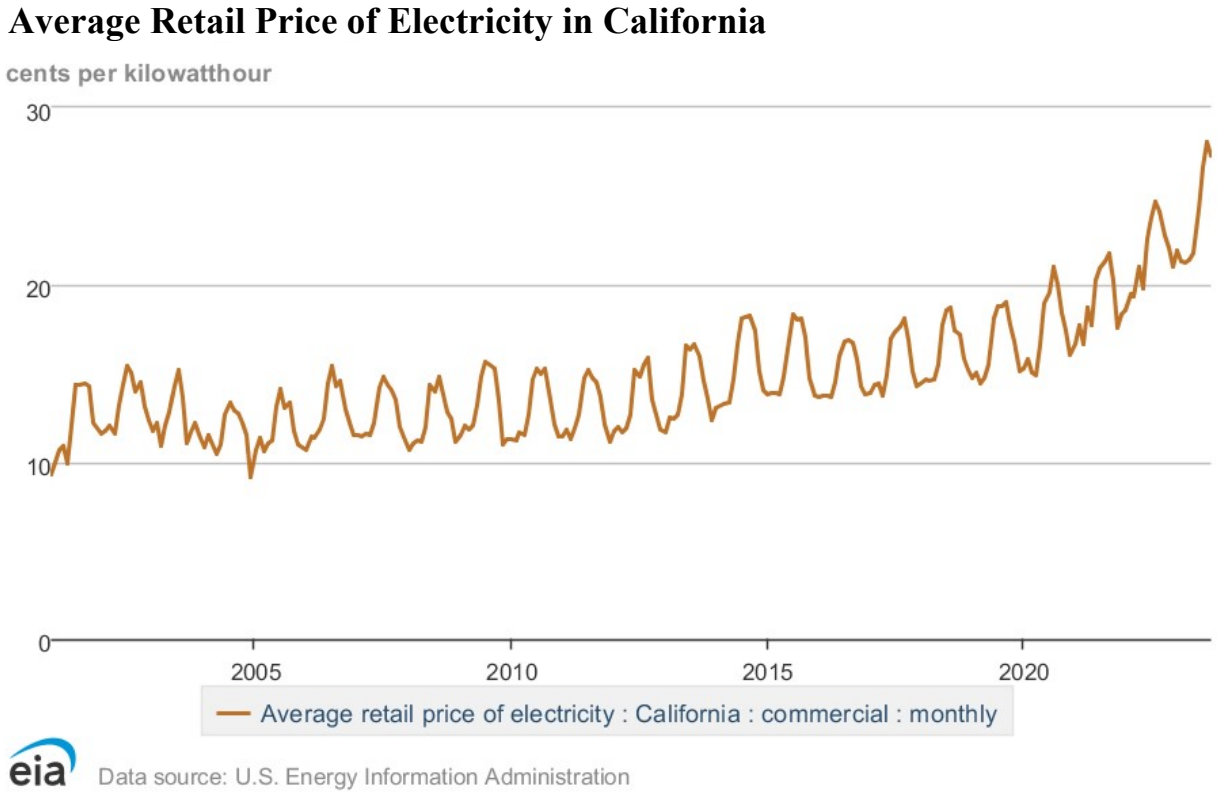
The analysis presented by CARB has issues with cost assumptions that favor their conclusion that the program is a benefit to forklift fleets. The infrastructure and electricity cost and LCFS credit projections are not realistic and should be corrected. While larger metropolitan commercial facilities that can easily transition to all-electric fleets may see a per-forklift benefit to this program, most facilities, especially those that are smaller more rural, and with seasonal forklift use are likely going to see increases in cost. That is not properly reflected in the current staff report.

Ongoing Costs

CARB continues to underestimate and underreport the cost of electricity. In Table 17 on page 132 of the ISOR, it is reported that the weighted average of electricity for PG&E is 17 cents per kilowatt hour. This is grossly underestimated for the agricultural industry and is not in any way reflective of what agricultural customers will pay to comply with this regulation. We have provided actual tariff data in prior comments clearly showing that electrical rates paid by our members will be as much as two times the rates reported in the ISOR. We once again provide the tariff information as an attachment and respectfully ask CARB to revise this report to reflect actual electric rates. We believe this will support our ask for more time to comply with the proposed regulation as the economic impact to the agricultural industry will be significant.

The costs and cost escalation for electricity and propane are improperly handled in this report and need to be called into question. The entire premise of CARB staff that there is a "net fleet cost savings" to this regulation is mostly due to projected fuel cost savings over the 18 years of the regulation. Here are the issues:

1. The baseline electricity cost CARB has estimated is too low and not based on rigorous analysis by economists. The US EIA publishes information on electricity rates including average commercial rates. From this data, electricity prices are soaring in California and commercial rates currently sit at an average of 27.34 cents/kWh. For 2021, EIA estimated an average commercial rate of 19.18 cents/kWh. This data source is very easy for CARB and the public to access so we would recommend that CARB use it to amend this report. A chart of average commercial rates in California is provided below. The recent price escalation should be of concern to everyone impacted by these regulations.



2. The reference cited for the escalation of electricity and propane prices for the 18 years of the regulation is a slide deck from a presentation given at a California Energy Commission workshop. We question if this represents a peer-reviewed study because we have identified some issues of concern regarding the use of this data to reach balanced conclusions. Our concerns are the following:
    a. The study shows three scenarios for escalation of fuel prices: high, medium, and low transportation electricity demand cases. CARB does not specify which case they used in the cost analysis. We suspect the "high" case was used and question whether that is appropriate for reaching a balanced conclusion.
    b. The "high" electrical demand case concludes the lowest rate of cost increase for retail electricity and the highest rate of increase in propane cost. This contradicts the basic laws of supply and demand in markets and should be called into serious question. The opposite would be expected to be true. The study attributes a less that 0.5% annual escalation factor in electrical prices which is unsupported by any historical data that we have seen.
    c. The study only goes through 2035. CARB does not state how it continued to project cost escalation between 2036 and 2043. From the charts that appear later in the ISOR, it looks like CARB is showing a *decline* in price in these years. This would be absolutely unprecedented in California history and, therefore, we question if these conclusions are valid.

3. As an alternative to this study and estimates, CARB should be using US EIA data that show a very clear trend and escalation in electricity costs in California. A study by One-Energy of the California historical data (1999-2018, prior to the inflation of the pandemic) shows that commercial and industrial rates have increased by an average of 2.8% to 3.8% per year. See: California-CA.pdf (oneenergy.com). Using these escalators would be more realistic in the CARB study but still might be too low. It can be seen from the above chart that in the past three years, electricity costs have been escalating at a rate of well over 10% per year in California. The future price for electricity is essential to determining the cost of this program as this regulation would be requiring the use of this resource.

20 YEAR HISTORICAL ELECTRICITY RATE ANALYSIS: INDUSTRIAL AND COMMERCIAL BY STATE
1999-2018

ONE ENERGY

California (CA)

	ELECTRICITY RATES ($/kWh)			
	INDUSTRIAL		COMMERCIAL	
Year	Rate	% Change	Rate	% Change
1999	$ 0.063	--	$ 0.094	--
2000	$ 0.071	+13.9%	$ 0.103	+8.6%
2001	$ 0.092	+29.3%	$ 0.122	+18.5%
2002	$ 0.098	+6.3%	$ 0.134	+10.0%
2003	$ 0.096	-2.2%	$ 0.125	-6.6%
2004	$ 0.093	-3.3%	$ 0.116	-6.7%
2005	$ 0.096	+3.0%	$ 0.119	+2.4%
2006	$ 0.101	+5.7%	$ 0.129	+8.2%
2007	$ 0.100	-1.1%	$ 0.128	-0.6%
2008	$ 0.101	+1.1%	$ 0.125	-2.2%
2009	$ 0.104	+3.3%	$ 0.133	+5.8%
2010	$ 0.098	-6.0%	$ 0.131	-1.4%
2011	$ 0.101	+3.2%	$ 0.131	-0.3%
2012	$ 0.105	+3.8%	$ 0.134	+2.8%
2013	$ 0.114	+9.1%	$ 0.142	+5.9%
2014	$ 0.123	+7.9%	$ 0.156	+10.0%
2015	$ 0.122	-1.4%	$ 0.157	+0.7%
2016	$ 0.119	-2.1%	$ 0.151	-4.2%
2017	$ 0.127	+6.8%	$ 0.158	+4.6%
2018	$ 0.132	+3.7%	$ 0.163	+3.7%

SOURCE: US EIA Report: 1999-2018 (See methodology page for details)

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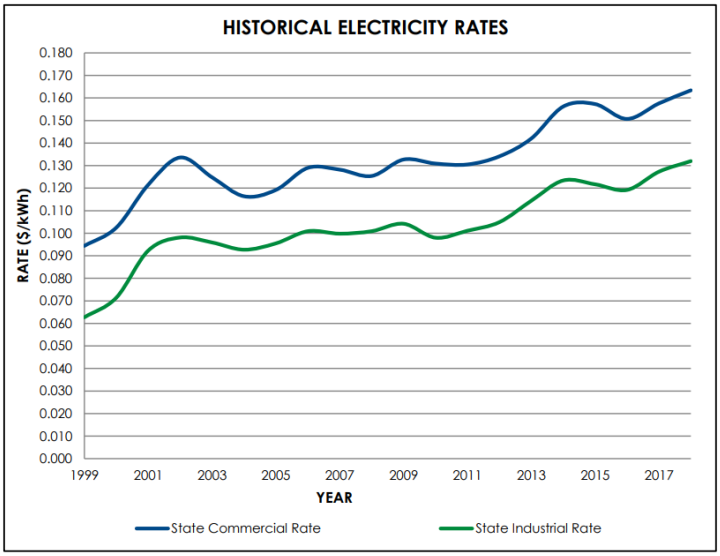

ELECTRICITY RATE SUMMARY ($/kWh)					
	1999 RATE	2018 RATE	AVERAGE ANNUAL INCREASE	TOTAL INCREASE	PREDICTED 2038 RATE
INDUSTRIAL	$0.063	$0.132	3.8%	110.5%	$0.278
COMMERCIAL	$0.094	$0.163	2.8%	73.1%	$0.283

4. If a more realistic escalation factor in the range of 2.8-3.8% is applied to the electricity price over the term of the regulation, the "net fleet cost savings" become a "net fleet loss" and tells a much different story about the expected economic impact of this regulation.

Total Costs

The total costs are problematic because of all the reasons stated above. While difficult to replicate the table without knowing all of CARB's assumptions, we note the following major issues:

- Infrastructure cost is underestimated by a factor of 2 to 4 for the statewide cost because these costs are based on electric car chargers in metropolitan areas. We expect much higher costs especially for rural and agricultural facilities. Using more realistic costs would add $750 million -$2 billion to the cost of the program.
- Electricity cost is completely unbelievable in this analysis. For example, the years 2038-2043 show a declining electricity cost with constant consumption (by 2038 all forklifts should be ZEVs). There is no historical precedent in California for an annual drop in electrical costs. This analysis should be redone using a historically justifiable escalator. This would add $1.5 - $2 billion to the cost of the program.
- LCFS Credit Revenue is purely speculative, especially in the later years of the program. This is not something a forklift operator can rely on as a revenue stream. Removing this from the analysis removes $515 million to the benefits of the program.

Considering all the issues noted above, our conclusion is that the program is likely to have a "Net Costs" of $60 million to $1.8 billion. There is unlikely to be a $30,000 net benefit per forklift as claimed in CARB's Executive Summary. Some facilities with the right conditions may see some benefit, but most will likely experience a significant cost per forklift as a result of this regulatory action by CARB.

Thank you for the opportunity to provide comments and considering our input, and we look forward to engaging in further communication with CARB staff on the Proposed Regulation. Should you have any questions on our comments, please feel free to contact Priscilla Rodriguez at (559) 455-9272 or via email at priscilla@agprocessors.org.

Sincerely,

African American Farmers of America
Agricultural Council of California
Agricultural Energy Consumer Association
American Pistachio Growers
Associated Equipment Dealers
California Apple Commission
California Blueberry Commission
California Citrus Mutual
California Cotton Ginners and Growers Association
California Farm Bureau
California Fresh Fruit Association
California Rice Commission
California Strawberry Commission
California Wild Rice Advisory Board
Fresno County Farm Bureau
Holt of California

JM Equipment
Madera County Farm Bureau
Milk Producers Council
Nisei Farmers League
Olive Growers Council of California
Tulare County Farm Bureau
Western Agricultural Processors Association
Western Growers Association

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