



Zero-Emission Forklift Rulemaking Workshop

March 22, 2023

Agenda


- Meeting Logistics
- Rulemaking Status Update
- Staff Goals for this Workshop
- Background
- Draft Regulatory Concept
- Concept Changes Being Considered
- Environmental Analysis
- Feedback Requested
- Next Steps
- Questions/Comments

Meeting Logistics

- Materials on Website: <https://ww2.arb.ca.gov/our-work/programs/zero-emission-forklifts/zero-emission-forklifts-meetings-workshops>

Meeting Logistics

Providing Comments or Questions

- Staff will respond to your comments and questions at the end of the workshop presentation.
- Written comments and questions can be typed by opening the Q&A window in ZOOM.
 - The host will read any questions out loud and answer your comment or question verbally.
 - Please reference the page number of the slide you are discussing, if applicable.
 - After you enter your question into the Q&A box, click send.
- For verbal comments or questions, you may raise your hand  to be added to the speaking queue.
 - If you're on the phone, press #2 to raise your hand.

Rulemaking Status Update

- First zero-emission (ZE) forklift workshop held on October 7, 2020
- Three public meetings have been held since the first workshop:
 - August 17, 2021
 - February 22, 2022
 - January 24, 2023
- Updated draft regulatory language released March 17, 2023
- Standardized Regulatory Impact Assessment (SRIA) to be submitted to Department of Finance in April 2023
- Board consideration in September 2023

Staff Goals for the Workshop

- Gather feedback on the draft regulatory concept and potential changes being considered.
- Consider suggestions for alternative approaches/provisions that could achieve equivalent outcomes.
- Discuss any stakeholder concerns.

Background

- Purpose: Accelerate deployment of zero-emission technology in forklifts to reduce oxide of nitrogen (NO_x), fine particulate matter (PM_{2.5}), reactive organic gas (ROG), and greenhouse gas (GHG) emissions and help meet federal air quality standards.
- Identified in the 2016 State Strategy for the State Implementation Plan (State SIP Strategy), the 2022 State SIP Strategy, the 2016 Mobile Source Strategy (MSS), the 2020 MSS, and the Sustainable Freight Action Plan.
- Aligns with Governor's Executive Order N-79-20.
 - Goal of the State: transition to 100 percent zero-emission off-road vehicles and equipment by 2035 where feasible.

Forklift Types*

- Electric Forklifts
 - Class I counterbalanced rider trucks
 - Class II narrow-aisle trucks
 - Class III pallet jacks & walkies
- Internal Combustion Forklifts
 - Class IV cushion tire
 - Class V pneumatic tire
 - Class VII rough terrain forklift



*Categorized based on the classification system used by the Occupational Safety and Health Administration for powered industrial trucks (web link: <https://www.osha.gov/etools/powerd-industrial-trucks/types-fundamentals/types/classes>)

Draft Regulatory Concept

Draft Regulatory Concept: Affected Forklifts

- The proposed regulation would apply to “Affected Forklifts,” which is defined as:
 - Class IV and Class V forklifts,
 - Equipped with a large spark-ignited engine (e.g., a propane or gasoline-fueled engine), and
 - With a Rated Capacity of up to 12,000 pounds.
- Staff estimates the proposed regulation would impact approximately 95,000 Class IV and V forklifts

Draft Regulatory Concept: Excluded Forklifts

- **Excluded from the proposed regulation are:**
 - Rough Terrain Forklifts
 - Combat and Tactical Support Equipment
 - Pallet Jacks
 - Forklifts with telescoping booms
 - Forklifts owned or operated by facilities subject to the Mobile Cargo Handling Equipment at Ports and Intermodal Rail Yards Regulation

Draft Regulatory Concept: Definition of Rated Capacity

- Rated Capacity of a forklift rated in accordance with section 7.4 of ANSI/ITSDF B56.1, issued March 27, 2020 or equivalent methodology, in units of weight, as inscribed on the nameplate, as specified by section 7.5 of ANSI/ITSDF B56.1, and stated in the forklift's specification sheet.
- The Rated Capacity used for determining regulatory applicability shall be the rating derived using forks at a 24 inches or greater load center at the maximum load elevation for that load center.
- If the lift capacity of a forklift is not rated with forks, the highest lift capacity rated for the forklift shall be considered the Rated Capacity for the purposes of this regulation.

Draft Regulatory Concept: Applicability

- Fleet Operators (private and public)
- Forklift Dealers
- Forklift Rental Agencies
- Forklift Manufacturers

Draft Regulatory Concept: Fleet Operator Requirements

- Fleet operators would not be allowed to purchase new Affected Forklifts (LSI) starting in 2026.
- Fleets would be subject to a model-year-based phase-out of 2025 model year (MY) and older Affected Forklifts starting in 2028.
- Fleet Operators would be allowed to purchase a used 2025 MY and older Affected Forklift so long as the MY has not been phased out yet.

Draft Regulatory Concept: Model Year Phase-Out Requirements

Draft Regulatory Concept: Fleet Size

- MY phase-out requirements differ based on fleet size.
- Fleet size designations:
 - A Small Fleet is composed of 25 or less forklifts owned by the same entity.
 - A Large Fleet is composed of 26 or more forklifts owned by the same entity.
- All Affected Forklifts and zero-emission forklifts (ZEF)* are included in the fleet size count.

* Excluding pallet jacks.

Draft Regulatory Concept: Model Year Phase-Out Schedule for Class IV Affected Forklifts

Compliance Date@	Large Fleets	Small & Agricultural Fleets
Jan 1, 2026	---	---
Jan 1, 2027	---	---
Jan 1, 2028	2018 MY & Older	---
Jan 1, 2029	---	2016 MY & Older
Jan 1, 2030	---	---
Jan 1, 2031	2019 – 2021 MY	---
Jan 1, 2032	---	2017 – 2019 MY
Jan 1, 2033	2022 & 2023 MY	---
Jan 1, 2034	---	2020 & 2021 MY
Jan 1, 2035	2024 & 2025 MY	---
Jan 1, 2036	---	2022 & 2023 MY
Jan 1, 2037	---	---
Jan 1, 2038	---	2024 & 2025 MY

Draft Regulatory Concept: Model Year Phase-Out Schedule for Class V Affected Forklifts

Compliance Date	All Fleets
Jan 1, 2026	---
Jan 1, 2027	---
Jan 1, 2028	---
Jan 1, 2029	---
Jan 1, 2030	2017 MY & Older
Jan 1, 2031	---
Jan 1, 2032	---
Jan 1, 2033	2018 – 2020 MY
Jan 1, 2034	---
Jan 1, 2035	2021 & 2022 MY
Jan 1, 2036	---
Jan 1, 2037	---
Jan 1, 2038	2023 – 2025 MY

Draft Regulatory Concept: Rationale for the Model Year Phase-Out Approach

- Would provide fleets with more time to work through potential infrastructure challenges.
- Would provide fleets with more flexibility on how they phase-out Affected Forklifts.
- Would provide fleets with more time to better manage the acquisition of zero-emission forklifts.

Large Fleet Phase-Out Example

- Fleet Size: 40 Forklifts
 - 30 Class IV Forklifts
 - 10 Class V Forklifts
- 2016 – 2025 MY (1-10 years old); Even Distribution
 - Class IV Forklifts: Three of each MY
 - Class V Forklifts: One of each MY

Large Fleet Phase-Out Example (cont'd)

Compliance Date	Class IV Schedule	Class IV Turnover	Class V Schedule	Class V Turnover
Jan 1, 2026	---		---	
Jan 1, 2027	---		---	
<u>Jan 1, 2028</u>	<u>2018 MY & Older</u>	<u>9</u>	---	
Jan 1, 2029	---		---	
<u>Jan 1, 2030</u>	---		<u>2017 MY & Older</u>	<u>2</u>
<u>Jan 1, 2031</u>	<u>2019 – 2021 MY</u>	<u>9</u>	---	
Jan 1, 2032	---		---	
<u>Jan 1, 2033</u>	<u>2022 & 2023 MY</u>	<u>6</u>	<u>2018 – 2020 MY</u>	<u>3</u>
Jan 1, 2034	---		---	
<u>Jan 1, 2035</u>	<u>2024 & 2025 MY</u>	<u>6</u>	<u>2021 & 2022 MY</u>	<u>2</u>
Jan 1, 2036	---		---	
Jan 1, 2037	---		---	
<u>Jan 1, 2038</u>	---		<u>2023 – 2025 MY</u>	<u>3</u>

Small Fleet Phase-Out Example

- Fleet Size: 10 Class IV Forklifts
- 2011 – 2020 MY (6-15 years old); Even Distribution
 - One of each MY

Small Fleet Phase-Out Example (cont'd)

Compliance Date	Class IV Schedule	Class IV Turnover
Jan 1, 2026	---	
Jan 1, 2027	---	
Jan 1, 2028	---	
<u>Jan 1, 2029</u>	<u>2016 MY & Older</u>	<u>6</u>
Jan 1, 2030	---	
Jan 1, 2031	---	
<u>Jan 1, 2032</u>	<u>2017 – 2019 MY</u>	<u>3</u>
Jan 1, 2033	---	
<u>Jan 1, 2034</u>	<u>2020 & 2021 MY</u>	<u>1</u>
Jan 1, 2035	---	
Jan 1, 2036	2022 & 2023 MY	
Jan 1, 2037	---	
Jan 1, 2038	2024 & 2025 MY	

Draft Regulatory Concept: Compliance Extensions

Draft Regulatory Concept: Forklift Delivery Delay Extension

- Designed to address delays in the delivery of ZEFs due to issues outside the Fleet Operator's control.
- Extension could be granted if certain conditions are met, which would allow a fleet to delay the compliance date for the Affected Forklift to be replaced.
- Allows for continued use of an existing LSI forklift for up to one year. Could be renewed annually until ZEF is delivered.

Draft Regulatory Concept: Forklift Delivery Delay Extension (cont'd)

- Conditions:
 - Must have ordered ZEF at least one year prior to the applicable compliance date.
 - Must submit signed purchase order.
 - Must submit documentation substantiating delay.
 - Must request at least 45 days before compliance date.

Draft Regulatory Concept: Infrastructure Extensions Guiding Principles

- Recognize circumstances beyond the Fleet Operator's control
- Extension if fleet cannot otherwise comply
- Fleets must act in good faith to meet project deadlines
- Fleets must deploy all zero-emission forklifts that are feasible
- Consider fleet locations
- Consistent with existing planning processes
- Coordinate with Advanced Clean Fleets team to achieve, as practicable, consistency across CARB programs

Draft Regulatory Concept: Infrastructure Construction Delay Extension

- To address construction delays that are outside the Fleet Operator's control in getting infrastructure installed on the facility side of the meter.
- Eligible reasons include: change of a general contractor, delay in manufacture and shipment of zero-emission charging and fueling infrastructure equipment, delay obtaining power from a utility, unexpected safety issues, discovery of resources described in the California Environmental Quality Act, or natural disasters.
- A one-year extension will be initially granted with the possibility of a second one-year extension.

Draft Regulatory Concept: Infrastructure Construction Delay Extension (cont'd)

- Conditions
 - Must deploy ZEFs that can be supported by site before the compliance date.
 - Executed contract in place for the infrastructure installation with permit issued at least one year prior to compliance date.
 - Must submit explanation/documentation substantiating the delay.
 - Must request at least 45 days before compliance date.

Draft Regulatory Concept: Infrastructure Site Electrification Delay Extension

- To address utility delays in providing adequate power for charging ZEFs, i.e., electric utility provider determines it cannot provide the requested power to the site where ZEFs will be charged before the next compliance deadline.
- Extension for up to five years:
 - Initial extension up to 3 years depending on utility estimate on when power will be delivered to the site.
 - An additional two-year extension may be granted.

Draft Regulatory Concept: Infrastructure Site Electrification Delay Extension (cont'd)

- Conditions
 - Must deploy all ZEFs that can be supported by site before the compliance date.
 - Executed utility contract in place or signed attestation from the utility stating they will proceed with the project.
 - Documentation indicating reason for delay.
 - Utility's response showing that the project will take longer than a year.
 - Initial request must be submitted at least 45 days before compliance date and before January 1, 2031.
- Each site evaluated separately.

Draft Regulatory Concept: Exemptions

Draft Regulatory Concept: Low-Use Exemption

- \leq 200 hours/year
- Must be 2013-2025 MY Forklift
- No limit on the number of low-use forklifts in a fleet
- Annual operating-hours reporting required (with photo of hour meter)
- Forklift label required
- Exemption sunsets January 1, 2031, except for Microbusinesses, which would be allowed to maintain one low-use forklift indefinitely.

Draft Regulatory Concept: Microbusiness

- Additional Flexibility: Allows Microbusiness to maintain one low-use forklift indefinitely
- Criteria
 - Annual gross receipts of \$5M or less, and
 - 25 or fewer employees.
- To qualify, entity must:
 - Provide annual attestations that entity meets criteria, and
 - Maintain tax returns and Quarterly Contribution Return & Report of Wages (Continuation) Forms onsite and make them available upon request.

Draft Regulatory Concept: Dedicated Emergency Forklift Exemption

- For Affected Forklifts operated by or under the authority of a government agency dedicated to supporting emergency operations during declared emergency events.
- Non-emergency operation limited to 200 hours per year.
- Annual reporting required.
- Forklift label required.
- Dedicated Emergency Forklifts do not need to be included when determining fleet size for the purposes of the Phase-Out Schedules.

Draft Regulatory Concept: Exemption for Affected Forklifts Transported for Delivery Out-of-State

- For new Affected Forklifts transported through California for delivery out-of-state.
- Conditions
 - Bill of lading certified by shipper indicating ultimate delivery address and estimated date of delivery.
 - Ultimate delivery address is located outside of California.
 - Forklift shall only be operated for the purpose of preparing the forklift for final delivery or its transportation to the Ultimate Purchaser.
 - Affected Forklift does not remain in California for more than three months.

Draft Regulatory Concept: Exemption for the Temporary Storage of Non-Compliant Affected Forklifts

- For non-compliant Affected Forklifts temporarily stored onsite while awaiting sale, scrap, or relocation.
- Conditions
 - Forklift has the following removed: forks or any other work attachment, propane tank (if applicable), battery, seat, and steering wheel.
 - Forklift is not operated after its phase-out date.
 - Forklift is stored no longer than six months.

**Draft Regulatory Concept:
Deployment of Zero-Emission Forklifts
with a Rated Capacity of Greater than
12,000 Pounds**

Draft Regulatory Concept: Compliance Credit for Deployment of Heavy Zero-Emission Forklifts

- Compliance credit for a Fleet Operator or Rental Agency for replacing a large-spark ignition forklift with a rated capacity greater than 12,000 pounds with a zero-emission version of equal or greater rated capacity.
- Each credit allows entity to delay the phase-out of one Affected Forklift until 2038.
- Reporting required.
- Reporting must be submitted at least 45 days prior to the phase-out date of the Affected Forklift.

**Draft Regulatory Concept:
Requirements for Rental Agencies, Dealers,
and Manufacturers**

Draft Regulatory Concept: Forklift Rental Agencies and Dealers

- Rental Agencies
 - Subject to same model-year phase-out schedule and associated requirements applicable to Fleet Operators.
 - Allowed to purchase new Class V Affected Forklifts until 2029.
- Forklift Dealers
 - Affected Forklift sales restrictions
 - Reporting and recordkeeping requirements

Draft Regulatory Concept: Forklift Manufacturers

- Restriction on the production of Affected Forklifts to be sold in California
 - No Class IV Affected Forklifts starting January 1, 2026
 - No Class V Affected Forklifts starting January 1, 2029
- Annual production and sales reporting requirements

Draft Regulatory Concept: Reporting Requirements

Draft Regulatory Concept: Reporting Requirements for Affected Forklift Phase-Out

- Applicable to Fleet Operators and Rental Agencies
- Required Reporting
 - Initial Report between September 1 and October 31, 2025:
 - Entity information, such as name, address, contact person, and Responsible Official.
 - For small fleets, forklift information (necessary to verify fleet size).
 - Annual Reports between January 1 to April 30 each year:
 - Updates to previously reported information.
 - Attestation by the Responsible Official that he/she understands the fleet's obligations under the regulation
 - Final Report confirming of completion of the phase-out.
- Labeling not required.

Draft Regulatory Concept: Reporting Requirements for a Forklift Dealer

- Reporting
 - Initial Report between September 1 and October 31, 2025:
 - Entity information, such as name, address, contact person, and Responsible Official.
 - Attestation by the Responsible Official that he/she understands the fleet's obligations under the regulation
 - Annual Reports between January 1 and April 30 each year:
 - Updates to previously reported information.
 - Attestation by the Responsible Official that he/she understands the fleet's obligations under the regulation
- Recordkeeping of sales and lease transactions required. Maintain for five years.

Draft Regulatory Concept: Other Required Reporting

Reporting is also required for:

- A Fleet Operator to qualify as a Microbusiness;
- The low-use forklift exemption and the dedicated emergency forklift exemption; and
- Compliance extensions.

Concept Changes Being Considered

Concept Changes Being Considered: Rated Capacity As Basis for Scope

- Should staff consider another criterion besides Rated Capacity on which to base the scope of the regulation?
- Rated Capacity can vary depending on several factors, such as lift elevation, attachment weight, tire width, etc.
- Would forklift weight be a more appropriate criterion?
 - Less impact by variables
 - Verifiable by the nameplate
- Other options?

Concept Changes Being Considered: Regulatory Scope

- Should the scope of regulation be expanded to include forklifts with a Rated Capacity greater than 12,000 pounds?
- Currently, approximately 90 models/configurations of zero-emission forklifts with a Rated Capacity of over 12,000 pounds are eligible for funding in CARB's Clean Off-Road Equipment Voucher Incentive Project (CORE Program).
- To date, the CORE Program has funded roughly 40 forklifts with a Rated Capacity of over 12,000 pounds.



Concept Changes Being Considered: Infrastructure Site Electrification Delay Extension

- Staff seeks feedback and input on the Infrastructure Site Electrification Delay Extension.
- Current draft language is aligned with most-recent language from the Advanced Clean Fleets rulemaking.
- Staff understands fleets that would be subject to the proposed Zero-Emission Forklift rule could face different circumstances and challenges.
- Therefore, staff continues to seek feedback and input on the proposed extension provisions.
 - Extension Time
 - Process
 - Other Concerns

Concept Changes Being Considered: Feasibility Extension

- Staff seeks comment on a potential extension to allow fleets and manufacturers to address feasibility issues.
- Concept was presented by staff at its previous workshop.
- Not included in current draft because staff believes the flexibility within the current proposal would provide sufficient time and opportunity for fleets and manufacturers to address issues and improve zero-emission products as necessary:
 - Phase-out is now by grouped MYs instead of individual MYs.
 - Proposal allows the purchase of used forklifts during phase-out.
 - Fleet operators would be able to rent spark-ignited forklifts until 2038.

Concept Changes Being Considered: Allowing Small Government Agencies to Qualify as a Microbusiness

- Should proposed regulation allow small government fleets to qualify as a Microbusiness and maintain one low-use forklift indefinitely?
- Do small government agencies face similar challenges as Microbusinesses?
- What criteria should be used to categorize a government agency as small?
 - Annual Budget?
 - Fleet Size?
 - Population of County of Jurisdiction?

Environmental Analysis

Proposed Regulation Environmental Analysis

- Environmental Analysis (EA) being prepared analyzing potentially significant adverse impacts caused by reasonably foreseeable actions.
- Meets requirements of CARB's certified program under the California Environmental Quality Act (CEQA).
- The CEQA Environmental Checklist (CEQA Guidelines Appendix G) is used to identify and evaluate potential indirect impacts.
- The EA will be an appendix to the Staff Report.

Proposed Regulation Environmental Analysis to be prepared

- The EA will include:
 - Description of reasonably foreseeable actions taken in response to the proposal.
 - Programmatic level analysis of potential adverse impacts caused by reasonably foreseeable actions
 - Beneficial impacts
 - Feasible mitigation measures to reduce/avoid significant impacts
 - Alternatives analysis
- Input invited at this early stage on appropriate scope and content of the EA.
- Draft EA will be released for 45-day public comment period.

Feedback Requested

- Remote worksite exemption or extension needed?
 - Very little feedback so far.
 - Suggests such an exemption or extension may not be needed.
- Specific exclusion for Combat and Tactical Support Equipment needed?
- Any benefit from establishing a certification process for ZE forklifts?
- Any input on the Environmental Analysis to be prepared?
- Any comments or concerns regarding the draft regulatory concept?

Next Steps and Contact Information

Next Steps

- Obtain feedback/information from stakeholders through individual meetings and emails.
- Finalize regulatory proposal language in the Spring of 2023.
- Submit Standardized Regulatory Impact Assessment to Department of Finance in April 2023.
- Possible additional public meetings
- Board consideration in September 2023

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Webpage & Email Sign-Up

- Webpage:
 - <https://arb.ca.gov/zeforklifts>
- Sign-Up for Zero-Emission Forklifts Email Updates
 - https://public.govdelivery.com/accounts/CARB/subscriber/new?topic_id=zeforklifts
- General Information on Existing Off-Road Equipment Regulations: <https://ww2.arb.ca.gov/OffRoadZone>

Questions/Comments