



# Los Angeles International Airport (LAX) Zero-Emission Ground Support Equipment Policy

## I. Goals

Ongoing reductions in emissions from ground support equipment (GSE) at LAX through the use of phased in Zero-Emission (ZE) GSE requirements with the goal that all GSE at LAX be ZE models by 2033. This LAX Zero-Emission Ground Support Equipment Policy (ZE GSE Policy) complements, but does not replace or supersede, the LAX Ground Support Equipment Emissions Policy (GSE Emissions Policy) adopted by the LAWA Board of Airport Commissioners (BOAC) in 2019. Implementation of the ZE GSE Policy will support GSE Operators' ability to continue reducing GSE emissions at LAX and achieve the 2031 LAX GSE Emissions Goals set forth in the GSE Emissions Policy.

The continued efforts to reduce GSE emissions is consistent with LAWA's ongoing commitment as the airport operator to improve air quality at LAX and enhance sustainability, including greenhouse gas reduction and the ability to achieve Carbon Neutrality by 2045. It is also supportive of US Environmental Protection Agency, California Air Resources Board, and South Coast Air Quality Management District efforts to bring the South Coast Air Basin into attainment with federal and state ambient air quality standards, particularly as related to ozone.

## II. Definitions

"Additional" shall mean a GSE that would increase the total number of GSE in the Applicant's fleet at LAX.

"Air Operations Area (AOA)" is the area of the airport dedicated to the movement, maintenance, servicing, loading, and unloading of aircraft and related support equipment. The AOA is a restricted area; only individuals and vehicles/ground equipment with proper permission are allowed.

"Applicant" shall mean the person or entity applying to LAWA for a GSE Permit or GSE Permit renewal.

"Commercially Available" and "Commercial Availability" shall mean that a Zero Emission GSE or Zero Emission on-road vehicle, or Near Zero Electric Vehicle (GSE or on-road vehicle), can be procured at reasonable cost (taking into consideration purchase price, operating costs, and pay-back period) on a reasonable timetable within the United States from more than one manufacturer and/or distributor with a proven industry track record for producing and supporting such equipment. Commercially Available equipment recognized by LAWA are identified on an LAX Commercially Available Ground Support Equipment List developed in consultation with airport stakeholders (see Section VI.A. below relative to formation of a Technology Working Group, as related to identification of Commercially Available ZE and Near Zero Electric GSE/vehicles) and maintained by LAWA. The list will be updated each year and published by June 30<sup>th</sup>, with applicability to begin on January 1<sup>st</sup> of the following year. In addition to identification of ZE and Near Zero Electric GSE/vehicles recognized as being Commercially Available for the next calendar year, the list will include a draft projection of ZE and Near Zero Electric GSE/vehicles with the potential to become Commercially Available in the next 3 to 5 years, based on information available to LAWA and input obtained from the Technology Working Group. The updated List and 3 to 5-year projection will be made available on LAWA's website.



“Conventional” shall mean equipment with an internal combustion (ICE) engine, including hybrids and alternative fuel vehicles (e.g., propane, CNG).

“Existing” shall mean a GSE with a valid LAWA GSE Permit to operate on the AOA.

“Ground Service Equipment (GSE)” for the purposes of this policy as related to eliminating air pollutant emissions that occur from internal combustion engines shall mean the following equipment that are subject to annual permit requirements at LAX: self-propelled equipment/vehicles and non-motorized equipment/vehicles that are equipped with powered equipment. Categories of GSE include air conditioners, air start units, aircraft tractors/tugs, baggage tractors/tugs, belt loaders, bobtails, cabin service trucks, cargo/deck loaders, cargo tractors/tugs, carts (i.e., personnel carts), catering trucks, deicers, forklifts, fuel trucks, generators (i.e., light stands, portable units), ground power units, hydrant carts/trucks, lavatory carts/trucks, lifts, passenger stands, service vehicles that are exclusive to the AOA (i.e., vans, box trucks, pickup trucks, and SUVs, which are less than 8,500 pounds Gross Vehicle Weight Rating and are not licensed to operate on public roads), sweepers, and water trucks. GSE that are completely non-motorized (i.e., are not self-propelled and are not equipped with powered equipment) will still require a GSE Operating Permit (i.e., decal or plate), but are not subject to the emission-related requirements of the ZE GSE Policy.

“GSE Operator” shall mean the same as Applicant defined above.

“ICE” shall mean internal combustion engine.

“Low-Use Equipment” shall mean a GSE that is used in the AOA less than 200 hours in a 12-month period as set forth in the FAA’s Aviation Environmental Design Tool (AEDT) model.

“Near-Zero Emission Vehicle (NZEV)” shall mean a hybrid electric vehicle with externally rechargeable energy storage systems that allow for an all-electric range (i.e., a plug-in hybrid electric vehicle (PHEV)).

“Operationally Feasible” and “Operational Feasibility” shall mean a ZE or NZEV GSE determined by LAWA to be capable of safely performing the same tasks as its Conventional equivalent.

“GSE Operating Permit” shall have the same meaning as set forth in Section 15.9 of LAX Rules and Regulations (Ground Service Equipment [GSE] Operating Permits). See Attachment A.

“Replacement” shall mean a GSE that is proposed to replace an Existing GSE.

“Small Equipment” shall mean a Conventional GSE with an internal combustion engine that is less than 25 horsepower (less than 19 kilowatts).

“Zero-Emission” (ZE) shall mean no exhaust, which would include battery electric technologies and hydrogen fuel cell technologies.

### III. Applicability

#### A. Covered GSE

This Policy applies to any GSE, as defined above, operating on the AOA at LAX.

#### B. Exemptions

- i. Low-Use Equipment  
GSE: Used less than 200 hours per year, as equipped with a non-resettable hour meter and the annual usage is reported to LAWA.
- ii. Small Equipment: GSE with an ICE that is less than 25 horsepower (Less than 19 kilowatts)
- iii. Conventional GSE that are subject to a lease with an original effective date earlier than January 1, 2025 are exempt from Sections IV.B. and IV.C. through 2033. This exemption does not apply to GSE that are subject to lease amendments, modifications or extensions entered into after January 1, 2025. Starting January 1, 2034, Conventional GSE under this Section III.B. shall be subject to Sections IV.B. and IV.C..
- iv. If an operator purchases a new conventionally fueled GSE because a ZE or NZEV GSE equivalent is not Commercially Available, that GSE equipment is exempt from Sections IV.B. and IV.C. (i.e., is “grandfathered”), so long as the subject GSE meets the most stringent state or federal emissions standards applicable at the time for new equipment/vehicles when registered with LAWA for use at LAX, and does not need to be replaced by 2034. Rather that equipment shall be replaced at the end of its useful life or 15 years (whatever comes first).

### IV. Phased Requirements

#### A. 2026 Annual Permit Requirement

- i. Beginning January 1, 2026, all motorized GSE operating at LAX must be registered with the LAWA Airfield Permits Unit, and such registration must be renewed on an annual basis. Similar to the LAX Annual Motor Vehicle Operating Permit (MVOP) program, no GSE shall operate on the AOA at LAX unless a valid LAX Annual GSE Operating Permit (GSEOP) decal or, in the case of some GSE a plate, is permanently affixed, as set forth in Section 15.9 of LAX Rules and Regulations (*presumed new/additional section of the LAX R&Rs-See Attachment A*). Registering new motorized GSE and the annual renewal thereof will be subject to meeting the ZE/NZEV requirements of this Policy. The GSEOP registration process/system will be coordinated with that of other existing registration systems, such as that of the MVOP, as feasible. The GSEOP registration system will become available for use beginning July 1, 2025.

#### B. 2028 ZE/NZEV GSE Requirement

- i. Starting July 1, 2028, GSE being registered for the first time (i.e., GSE that are being added to, or will be a replacement for, existing GSE within the Operator’s GSE fleet at LAX) shall be ZE or NZEV unless: ZE or NZEV models are not Commercially Available, or the Applicant demonstrates (on forms to be provided by LAWA) that ZE or NZEV models are not Operationally Feasible, or sufficient charging/refueling equipment for ZE or NZEV models does not exist.

- ii. The Replacement GSE will be the same type of GSE as the Existing Conventional GSE that it is replacing (e.g., baggage tug shall replace a baggage tug).

C. 2030 ZE/NZEV GSE Requirement

- i. Starting January 1, 2030, Conventional GSE in the categories of carts, baggage tractors/tugs, belt loaders, and aircraft tractors/tugs shall not be allowed to operate at LAX unless specifically exempt, or are not Commercially Available, or the GSE Operator demonstrates to the satisfaction of LAWA (on forms to be provided by LAWA) that ZE or NZEV GSE models are not Operationally Feasible, or sufficient charging/fueling equipment for ZE or NZEV GSE models does not exist.

D. 2033 ZE/NZEV GSE Requirement

- i. Starting January 1, 2033, Conventional GSE in all categories shall not be allowed to operate at LAX unless specifically exempt, or ZE or NZEV GSE models are not Commercially Available, or the GSE Operator demonstrates to the satisfaction of LAWA (on forms to be provided by LAWA) that ZE or NZEV GSE models are not Operationally Feasible, or sufficient charging/fueling equipment for ZE or NZEV GSE models does not exist.

V. Reporting

A. Reporting System

Reporting for LAX ZE/NZEV GSE compliance will use the same basic system, forms including information requirements, and portal as currently used relative to LAX GSE Emissions Policy reporting. Similarly, the reporting submittal review process by LAWA, including Auto Check, staff review, and feedback to each submitter is anticipated to remain the same.

B. Annual Reports

The Online Annual Report shall be due on or before January 22<sup>nd</sup> of each year for the prior year, reporting for the fleet as it was on December 31<sup>st</sup> of the previous year. The first reporting year is 2027.

VI. Commercial Availability, Operational Feasibility, Sufficient Charging/Fueling Equipment

A. Commercial Availability.

“Commercially Available” and “Commercial Availability” shall mean that Zero Emission GSE or Zero Emission on-road vehicle, or Near Zero Electric Vehicle (GSE or on-road vehicle), can be procured at reasonable cost (taking into consideration purchase price, operating costs, and pay-back period) on a reasonable timetable within the United States from more than one manufacturer and/or distributor with a proven industry track record for producing and supporting such equipment.

Commercially Available equipment recognized by LAWA is identified on an LAX Commercially Available Ground Support Equipment List developed in consultation with airport stakeholders and

maintained by LAWA. The evaluation and acceptability of Commercially Available NZEV GSE approved for use at LAX will pay particular attention to the anticipated range that the equipment will operate in the all-electric mode before switching to the ICE mode and take into account supply chain issues and schedule. The list will be updated at least annually. In addition to identification of ZE and Near Zero Electric GSE/vehicles recognized as being Commercially Available for the next calendar year, the list will include a draft projection of ZE and Near Zero Electric GSE/vehicles with the potential to become Commercially Available in the next 3 to 5 years, based on information available to LAWA and input obtained from the Technology Working Group. The updated List and 3 to 5-year projection will be made available on LAWA's website.

B. Technology Working Group. LAWA will convene a Technology Working Group (TWG) to promote coordination between LAWA and GSE Operators. The TWG will consist of representatives from LAWA and GSE Operators that are subject to the requirements of this Policy.

i. Meetings. LAWA may convene the TWG periodically throughout the year for LAWA and GSE Operators to exchange information on technological and market developments in ZE and NZEV GSE; performance of such vehicles at LAX and other airports; and issues relating to charging/fueling infrastructure use, performance, and availability/accessibility at LAX. LAWA shall convene an annual meeting of the TWG to evaluate the Commercial Availability of ZE and NZEV GSE ("ZE/NZEV CA Meeting"). The agenda for the annual ZE/NZEV CA Meeting may include: a summary of the TWG preceding meetings, activities, and findings (if any);

presentations on ZE and NZEV GSE that are Commercially Available; developments and trends related to additional ZE and NZEV GSE anticipated to become available in the next 3 to 5 years; open discussion; and new/future matters.

## VII. Operational Infeasibility

A. Staff Feasibility/Infeasibility Determination.

It is possible for a GSE Operator to demonstrate that use of a ZE or NZEV GSE is Operationally Infeasible based on submittal of supporting information required by LAWA and LAWA's review and approval of the information. LAWA's determination of Operational Feasibility/Infeasibility will be based on whether the Applicant has provided an objective factual basis, supported by the required information and a certification that a ZE or NZEV model of the GSE at hand is not Operationally Feasible. Information required from an Applicant will include: a written statement on the issue of Operational Infeasibility, maps showing the area(s) in which the equipment/vehicle is to be operated and charged/fueled; figures and photographs supporting the



applicant's assertion; equipment/vehicle operating data; the email address to which the Staff Infeasibility/Feasibility Determination shall be sent; and any other information the applicant asserts supports an Infeasibility Determination. Key elements to be considered in evaluating Operational Infeasibility include, safety, performance, endurance, space, availability of charging equipment, compatibility with charging/fueling stations, and existing contractual obligations that predate the effective date of this Policy requirement. LAWA's Feasibility/Infeasibility Determination will be made in writing and provided to the email address the Applicant provided with its application.

B. Appeal.

An Applicant may appeal LAWA's Staff Determination of Operational Feasibility to the LAWA Director of Operations or his/her designee.

C. Process.

The Applicant must initiate the appeal in writing within 10 business days of the date upon which LAWA Staff sent the Feasibility/Infeasibility Determination email to the Applicant set forth in Section VII A. The Director of Operations ruling shall be based on the information provided by the applicant and any other information the LAWA Director of Operations deems relevant and reliable. The LAWA Director of Operations Appeal Determination shall be issued pursuant to written procedures to be promulgated by LAWA. Those procedures will, among other things: (1) permit the Applicant to make a submission of written materials, (2) permit consultation between the LAWA Director of Operations and the Applicant and/or any others, to the extent the LAWA Director of Operations deems useful, and (3) provide the Applicant an opportunity to review and comment on any written materials, not submitted by the Applicant, that the LAWA Director of Operations considers as part of his or her review/determination.

## VIII. Incentives for Additional ZE/NZEV GSE

LAWA's ultimate goal is to continuously reduce GSE emissions at LAX. To that end, LAWA supports and encourages the use of ZE and NZEV technology, which can serve a key role in achieving reduced GSE emissions at LAX.

To encourage the GSE Operators to reduce emissions and meet the requirements of this Policy, LAWA adopted the LAX Electric Ground Support Equipment Incentive Program in both 2019 and 2023 with \$500,000 from LAWA's own funds to accelerate the use of ZE GSE at LAX. LAWA will continue this program if/as additional funding from third party sources, such as CARB, the SCAQMD, or other state, local or federal agencies are identified.



To encourage the GSE Operators to transition from ICE GSE to ZE GSE, the availability of, and application approach to, funding sources related to acquisition of ZE GSE and the provision of charging/fueling systems for ZE GSE, will be included as a standing agenda item in the TWG meetings and the ZE CA Meetings described above.

## IX. Enforcement

A. **Non-Compliance.** The following circumstances shall constitute non-compliance for purposes of this Section IX:

- i. Operation of a GSE or vehicle on the LAX AOA without a valid Annual GSE Operating Permit
- ii. Failure to submit an Annual Report pursuant to Section V.B. above.

B. **Notice of Non-Compliance.** GSE Operators found not to be in compliance with the ZE Policy as set forth in Section IX.A. above will be given a notice of non-compliance.

- i. Any GSE or vehicle found to be operating on the AOA without a valid Annual GSE Operating Permit must be immediately taken out of service and remain out of service until a valid Annual GSE Operating Permit is obtained.
- ii. In the case where an Annual Report was not submitted pursuant to Section V.B. above, the GSE Operator will have 15 days following issuance of the notice of non-compliance to provide the subject Annual Report.

C. **Default.** Three or more instances of non-compliance with the LAX ZE GSE Policy as defined in Section IX.A above shall be considered a default of the applicable LAX permit, license, contract, lease, Non- Exclusive License Agreement (NELA), concessionaire agreement, and/or Certified Service Provider (CSP) Program. LAWLA's Chief Executive Officer or his/her designee may, pursuant to the applicable terms provided therein, suspend or cancel a permit, license, contract, lease, NELA, concessionaire agreement or certified provider certification of non-compliant GSE Operator.



ATTACHMENT A

DRAFT ADDITION TO LAX RULES AND REGULATIONS:

SECTION 15.9 ANNUAL GROUND SUPPORT EQUIPMENT (GSE) OPERATING PERMIT

15.9 Annual Ground Support Equipment (GSE) Operating Permit

- 15.9.1. No GSE, both motorized and non-motorized, and motor vehicles that are exclusive to the Air Operations Area (AOA) and are not licensed to operate on public roads, shall operate on the AOA unless a valid LAX Annual GSE Operating Permit (GSEOP) decal or plate is permanently affixed.
- 15.9.2. All permitted GSE and motor vehicles shall permanently affix and display a valid GSEOP decal in the lower-left area of the windshield, if so equipped, or with a decal or plate affixed to the left side of the equipment in a readily visible location.
- 15.9.3. Issuance of the Annual GSEOP for motorized GSE and associated vehicles is subject to the requirements of the LAX Zero Emission (ZE) GSE Policy.
- 15.9.4. GSEOP decals are non-transferable.
- 15.9.5. GSEOP requests are processed by the Airfield Permits Unit at (424) 646-5880.