



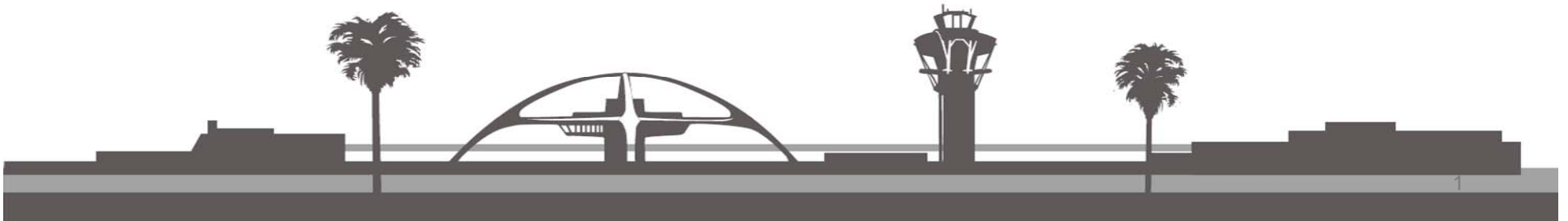
Los Angeles World Airports



Preliminary Greenhouse Gas Inventory for Los Angeles Int'l Airport

Trade, Commerce, & Tourism Committee

December 1, 2015



Sources of Airport Emissions and GHG Scopes

- **Sources of emissions at airports include:**
 - Aircraft and Auxiliary Power Units (APUs)
 - Ground Support Equipment (GSE)
 - Stationary equipment (HVAC, generators, etc.)
 - Ground Access Vehicles (on-road travel)
 - Construction activities
- **LAWA owns/controls its fleet vehicles, a portion of GSE, and stationary sources**
- **LAX Preliminary Inventory only covers Scope 1 and 2 emissions – those emissions that LAWA owns or controls**
 - Does NOT cover Scope 3 indirect emissions associated with Airport-related activities from sources owned or controlled by others (e.g., aircraft, passenger travel to/from the airport, and more)

Scope 1 Emissions

- Stationary sources – such as direct fuel burn to heat/cool buildings
- Vehicles – LAX owned and operated

Scope 2 Emissions

- LAWA purchased electricity

Scope 3 Emissions

- Aircraft emissions
- Non-LAWA GSE
- Passenger travel to /from the airport
- Life-cycle emissions from procured products

2014 Scope 1 and 2 GHG Emissions at LAX



Source	CO _{2e} Emissions (metric tons)	Percentage of Total Scope 1 and 2 CO _{2e} Emissions
Scope 1		
Fleet Vehicles/ Rolling Stock	11,175	12.6%
Buildings (natural gas)	14,123	15.9%
Emergency Generators	301	0.3%
Subtotal	25,599	28.9%
Scope 2		
Purchased Electricity	63,099	71.1%
Total Scope 1 and 2	88,698	100%
Annual Aircraft Operations	636,706	
Annual Passengers	70,662,212	

*Source: Synergy Consultants, using ACERT, Nov. 2015

Past Emissions Inventories for LAX

Scope 1 and 2 emissions at LAX have decreased by 21% since 1990



Emission Source	Year and Emissions (CO2e, metric tons)	
	1990	2005
Scope 1		
Stationary Combustion	41,860	49,450
GSE	4,219	12,532
Subtotal	46,079	61,982
Scope 2		
Purchased Electricity	65,781	101,035
Subtotal	65,781	101,035
Total Scope 1 and 2	111,860	163,017
Scope 3		
Scope 3	14,669,323	16,828,283
Grand Total Scope 1, 2, and 3	14,781,183	16,991,300
Annual Aircraft Operations	668,816	653,534
Annual Passengers	44.6 million	58.7 million

*Source: Los Angeles World Airports, *Greenhouse Gas Inventory Report*, unpublished March 27, 2009

GHG Emission Reduction Goals at Other Airports

Hartsfield–Jackson Atlanta (ATL)	Reduce per-passenger GHG emissions by 20% from 2008 levels by 2020.
O'Hare (ORD)	No specific reduction goal for the airport. The Sustainable Chicago 2015 plan commits to reducing GHG emissions by 25% below 1990 levels by 2020 and by 80% by 2050.
San Francisco (SFO)	25% below 1990 levels by 2017; 40% by 2025; and 80% by 2050.
Portland (PDX)	15% below 1990 baseline levels by 2020.
Seattle (SEA)	15% below 2005 levels by 2020.

City GHG Emission Reduction Goals

- **City GHG Emission Reduction Goals**
 - Sustainable City pLAn seeks 45% reduction below 1990 levels by 2025, 60% reduction by 2035, and 80% reduction by 2050
 - Proprietary Departments can lead the way by working with City and other local agencies.
- **LAWA is developing its goals in conjunction with SCAQMD's AQMP/SIP Update for 2016**
 - Submitted inventories to AQMD in 3Q 2015
 - Developed Baseline scenarios for 2024 and 2032
 - LAWA and AQMD currently working on control strategies and targets
 - AQMD Board Approval of AQMP expected April 2016
 - SIP Submittal due July 2016

Challenges and Restrictions Over Airport Emissions

- Aircraft are the single largest source of CO_{2e} emissions at any airport
- Per Federal law, LAWA cannot control aircraft
 - Cannot prohibit any aircraft from landing
 - Cannot mandate emissions levels
 - Cannot dictate aircraft operation
 - Cannot impose fees
- Aviation activity forecasted to grow significantly by 2050 leading to a corresponding increase in emissions
- Federal Aviation Administration regulates nearly all airport activity, including expenditures
- LAWA must work with stakeholders to develop rules governing non-LAWA controlled emission sources



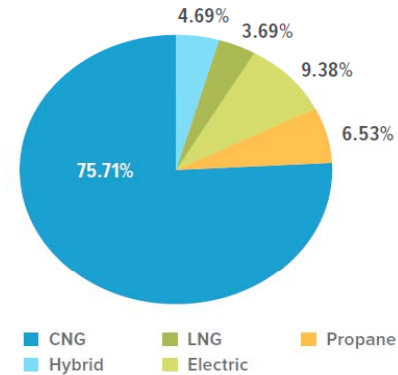
Air Quality Initiatives

Improve Air Quality/Reduce Emissions

- **Alternative Fuel Programs**
 - Vehicle Fleet
 - Ground Service Equipment
 - EV Chargers
 - CNG stations
 - Commercial Vehicles over 8,500 lbs



LAX Alternative Fuel Vehicle Fleet



Over 75% of LAX Fleet Vehicles are CNG

100% of LAX Courtesy Shuttle Fleet powered by natural gas

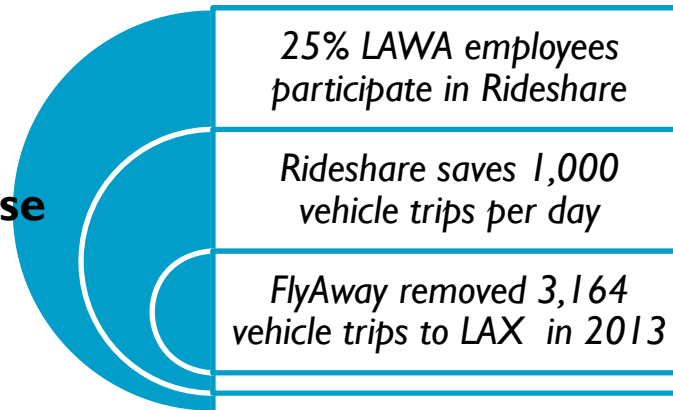
GSE Emissions Reduction Policy expected to decrease GSE emissions 49% by December 2021

Air Quality Initiatives

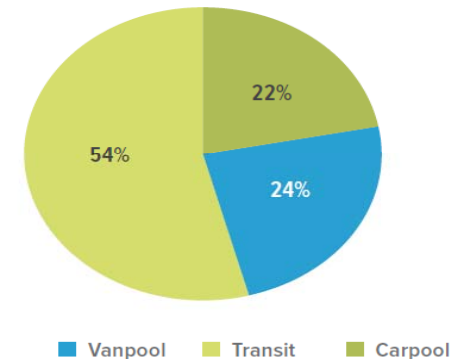
- **Trip Reduction Programs**
 - LAMP and Metro Connector
 - Rideshare/Vanpool and expansion campus-wide
 - FlyAway



- **Clean construction equipment**
- **Ground Power to offset use of Auxiliary Power Units (APUs)**
 - Gate/RON electrification
 - Pre-conditioned air



LAX Rideshare Breakout



Energy Conservation Initiatives

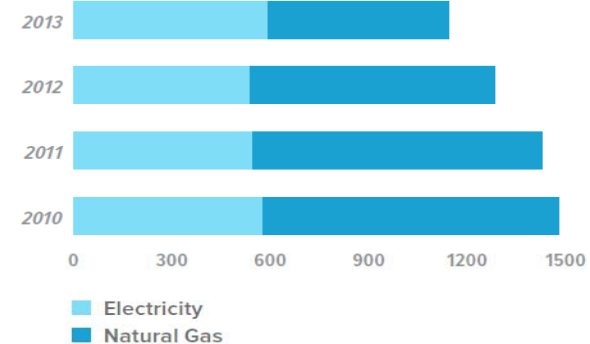
- Introduce renewable energy sources (e.g., solar)
- Implement energy efficiency
 - Lighting (LED)
 - HVAC
 - Temperature control (CUP)



Reduced energy use
28% from 2010 -
2013, saving \$8.5m

- Upgrades to HVAC
- Replacement of lighting systems (29,000 bulbs replaced at LAX)
- Training employees

Total Energy Use at LAX
(million kBTU)



Next Steps

Recent Actions

- Awarded contract to explore opportunities for solar power generation at LAX
- Approved GSE Emission Reduction Policy, which is expected to decrease emissions from GSE by 49% by 2021
- New Central Utility Plant (CUP) became fully operational; is more efficient than the old CUP it replaced and is expected to reduce operational GHG emissions by 6%

Next Steps

- Develop achievable targets in partnership with AQMD, CARB, FAA, and other stakeholders
- Complete GHG inventory for Van Nuys, Ontario and quantify Scope 3 emissions
- Join the Airport Carbon Accreditation (ACA) program

