

In an effort to reduce air emissions and save on fuel costs, PHL sought funding through the FAA's Voluntary Airport Low Emissions (VALE) program to cover 75% of the costs of the following projects, resulting in approximately \$15 million in funding support and significant air emission reductions:

- * Purchase and installation of over 200 charging stations for airline-owned and operated electric Ground Support Equipment (eGSE)
- * Purchase and installation of Preconditioned Air units for passenger boarding bridges at Terminal A-East and Terminal F, which allow aircraft to turn off onboard power units and use electricity at the gates
- * Purchase and installation of portable Ground Power Units for American Airlines maintenance hangar
- * Purchase of gas/electric hybrid vehicles for Division of Aviation use



VALE

American Airlines (previously US Airways) and United Airlines have purchased 141 pieces of Electric Ground Support Equipment (eGSE), including baggage tractors and belt loaders to reduce air emissions and to save on fuel and maintenance costs. As part of this partnership, the Division of Aviation purchased and installed over 200 charging stations throughout the terminal complex. The airlines' commitment to purchase zero emissions electric equipment is helping PHL reduce greenhouse gas emissions and other harmful air pollutants. Additional airlines have expressed interest in adding eGSE to their current fleet. The program has helped to achieve the following:

- * Reduce nitrogen oxides, volatile organic compounds, particulate matter, and other emissions associated with conventional fuel sources (i.e. diesel, gasoline)
- * Assist in meeting General Conformity Requirements since the Airport is in a Nonattainment area for ozone and Particulate Matter (PM_{2.5})
- * Offset emissions from future airport expansion plans
- * Average annual fuel avoided since program inception in 2009 = 520,000 gallons



Electrification of Ground Support Equipment

PHL has initiated several programs to improve ground circulation, reduce air emissions, and reduce dependence on fossil fuels and single-occupancy vehicles. Future expansion plans will result in air emission reductions on both the airside and landside. The airfield layout will be improved to reduce aircraft idling and taxiing times, and future landside improvements, including an Automated People Mover or similar service, will eliminate numerous shuttle operations.

A Consolidated Rental Car Facility is planned that will also consolidate rental car shuttle fleets and reduce traffic on airport roadways.



PHL Ground Transportation Improvements

Charging stations for electric vehicles (EVs) were added in 2015 to PHL's public parking facilities operated by the Philadelphia Parking Authority. Designated parking spaces are located on Level 1 of Short-Term Garages C and D and in the Long-Term Economy Parking lot as identified by green striping and posted signage. The charging stations are Level 2 units and are tied into the ChargePoint network. Users can activate the charger by using the ChargePoint smartphone app, by ChargePoint "Charge Pass," or with an RFID-enabled credit card. By being EV-friendly, PHL will continue to encourage sustainable methods of transportation to and around the airport.

The Airport is accessible by public transit (SEPTA trains and buses serve the Airport) and badged employees are offered discounted transit passes.

PHL employees and passengers also have the option to bike to the Airport. Bicycle racks have been installed in four locations and bicycle access maps and directions are available online [here](#).



Sustainable Transportation



In support of the Transportation Research Board's Airport Cooperative Research Program (ACRP), PHL volunteered to serve as one of five test airports for ACRP Project 02-23, Alternative Fuels as a Means to Reduce PM_{2.5} Emissions at Airports.

The objective of this report was to estimate the PM_{2.5} contribution of airports, evaluate the impact alternative fuels may have in reducing PM_{2.5} emissions, and identify the opportunities and challenges that alternative fuels present in reducing airport-related PM_{2.5} emissions.

The final version of this report was submitted in April 2012. According to the results of this study, the largest emission reductions and air quality impact occurred when alternative jet fuel was used in aircraft and auxiliary power units (APUs), replacing diesel-fueled ground support equipment (GSE) with GSE powered by electricity, biodiesel, LPG or CNG equivalents; and gate electrifications. PHL's eGSE program, gate electrification project, and APU projects are good examples of how to use alternative fuels in order to reduce emissions.

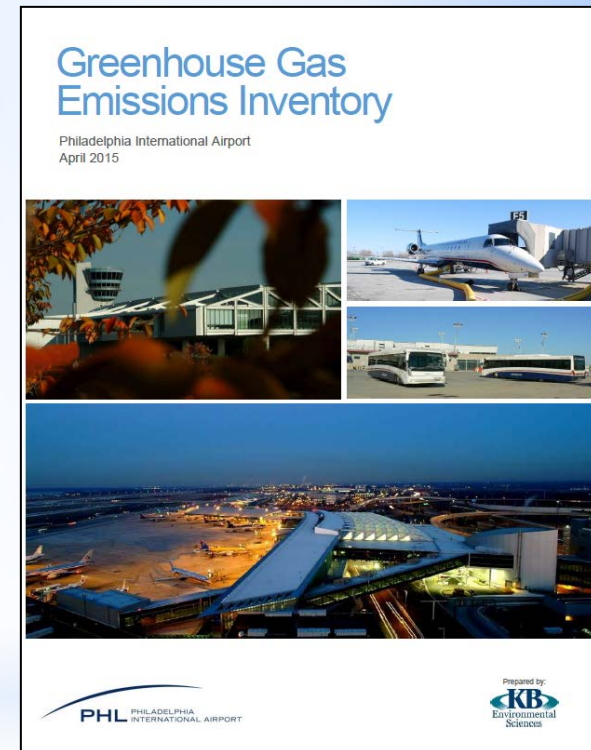
Alternate Fuels Case Study

In 2014, PHL updated its greenhouse gas (GHG) emissions inventory using 2013 as the baseline year as an update to the previous inventory done for 2006 baseline year. Overall, GHG emissions have decreased by approximately 3 percent since 2006, in part due to a decrease in aircraft operations. The inventory was organized by source - Airport, tenants, and public sources of emissions. Aircraft emissions fall under the tenant category and represent the largest source of greenhouse gas emissions.

In 2013, the Division of Aviation, US Airways (now American Airlines), and Marketplace Philadelphia Management's combined recycling efforts resulted in a reduction of greenhouse gas emissions by 5,800 metric tons CO₂ equivalent (MTCO₂E).

The recently completed Greenhouse Gas Emissions Inventory and other ongoing monitoring efforts will help track future progress in the Airport's efforts to reduce the use of fossil fuels.

To view the latest Greenhouse Gas Emissions Inventory [click here](#).



Greenhouse Gas Inventory

PHL has recently installed new equipment that will reduce air emissions from stationary equipment such as boilers and generators. Recent upgrades include three new boilers in 2014 in the Central Utility Building, and a new generator with an emissions control device installed in 2010 that is used during peak shaving events.

During the 2014 summer season, the Division of Aviation (DOA) exceeded its committed peak load reduction by 250% during the PJM demand response program. For this effort, the DOA received an award from Mayor Nutter and the Mayor's Office of Transportation and Utilities in February 2015 for "Outstanding Energy Performance".



Equipment Upgrades