

Argonne rolls out new version of alternative fuels and advanced vehicles analysis tool

May 10 2016, by Katie Elyce Jones



A school bus is fueled with propane in Alvin, Texas as part of an AFLEET case study. Credit: Texas Railroad Commission

A rising number of options for alternative fuels, such as natural gas, and advanced vehicles, like electric vehicles, are offering consumers more ways to shrink their environmental "tire tracks," so to speak. Despite the potential benefits, being one of the first businesses or individuals to embrace a new product or technology can be daunting. That's why the

U.S. Department of Energy (DOE's) Argonne National Laboratory this week is releasing an updated version of its AFLEET tool to reflect the latest advances in alternative fuels and advanced vehicle technologies and updated emissions data.

Sponsored by the [DOE Clean Cities program](#), AFLEET stands for the Alternative Fuel Life-Cycle Environmental and Economic Transportation Tool. The free, publicly available tool provides users with a roadmap for assessing which types of vehicles and fuels are right for them. The 2016 AFLEET Tool and user guide are available [online](#). Although anyone can download and use the tool, AFLEET was designed for managers that purchase and maintain a fleet of vehicles.

The latest version includes, for the first time: gaseous hydrogen [fuel cell vehicles](#), state-based (rather than national-based) fuel pricing, private station fuel pricing and fueling infrastructure costs. Updates to existing inputs include new light-duty vehicle costs; vehicle air pollutant emission factors derived from the U.S. Environmental Protection Agency's emissions modeling system, MOVES 2014a; and petroleum use and greenhouse gas and relative air pollutant emissions from the [2015 GREET model](#), Argonne's leading fuel life-cycle analysis model that is now in its twentieth year.

The Clean Cities program aims to support local actions to reduce petroleum use in transportation. There are nearly 100 coalitions of stakeholders, including state and local government agencies, businesses, fuel providers and community organizations. Also, the Clean Cities program develops public resources to inform consumers on the environmental and cost benefits of a range of fuels and vehicles that cut down on petroleum use, and AFLEET is an important resource for this effort.

The Clean Cities program is responsible for displacing 7.5 billion gallons

of petroleum over the last 23 years. Since its initial release in 2013, AFLEET has been downloaded more than 5,000 times, expanding its influence beyond the Clean Cities coalitions.

"There really isn't a tool out there to look at [alternative fuels](#) and advanced vehicles in this way," said Andrew Burnham, Argonne principal environmental scientist. "We're bringing the unique expertise Argonne has in vehicle and fuel life-cycle analysis to provide environmental information like petroleum use and greenhouse gas and air pollutant emissions, as well as cost analysis, so users have as much information as possible."

In case studies conducted by AFLEET developers, the tool has evaluated the environmental benefits of vehicles under a range of circumstances—from fleets of Chicago-based, propane-operated bakery [delivery trucks](#), to propane-fueled [school buses](#) in Texas and Virginia, to refuse trucks running on compressed natural gas in Milwaukee, Chicago and Boise, Idaho. In each of the propane-operated vehicle case studies, use of propane displaced well over a thousand gallons of diesel fuel per vehicle annually on average, reducing [greenhouse gas emissions](#) by several tons per vehicle annually. Case study results on compressed natural gas-operated refuse trucks showed even higher averaged gallons of displaced diesel, at more than 7,000 gallons per vehicle annually and reduced [greenhouse gas](#) emissions at about 25 tons per [vehicle](#) annually.

Provided by Argonne National Laboratory

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