

Clean Cities

Building Partnerships to Cut Petroleum Use in Transportation

The U.S. Department of Energy's (DOE's) Clean Cities program advances the nation's economic, environmental, and energy security by supporting local actions to cut petroleum use in transportation. At the national level, the program develops and promotes publications, tools, and other unique resources. At the local level, nearly 100 coalitions leverage these resources to create networks of stakeholders. The coalitions support fleets by providing technical assistance for implementing alternative and renewable fuels, idle-reduction measures, fuel economy improvements, and emerging transportation technologies.

Clean Cities was established in 1993 in response to the Energy Policy Act of 1992 and is housed within DOE's Vehicle Technologies Office. Since its inception, Clean Cities has saved more than 7.5 billion gallons of petroleum. In doing so, the program has been a catalyst for transportation projects that advance U.S. energy independence, transform local markets, support regional economic development, and reduce harmful vehicle emissions.

Goal and Strategies

Clean Cities is on track to meet its goal of saving 2.5 billion gallons of petroleum per year by 2020. To achieve this goal, Clean Cities employs three strategies:

- Replace petroleum with alternative and renewable fuels, including biodiesel, E85, electricity, hydrogen, natural gas, and propane
- Reduce petroleum consumption through technologies and strategies that improve fuel efficiency
- Eliminate petroleum use through idle reduction and other fuel-saving technologies and practices.



Adams 12 School District in Colorado has successfully implemented a propane project adding 12 propane buses to their fleet. So far the buses have had low maintenance costs and above average reliability, and are a favorite among district school bus drivers.

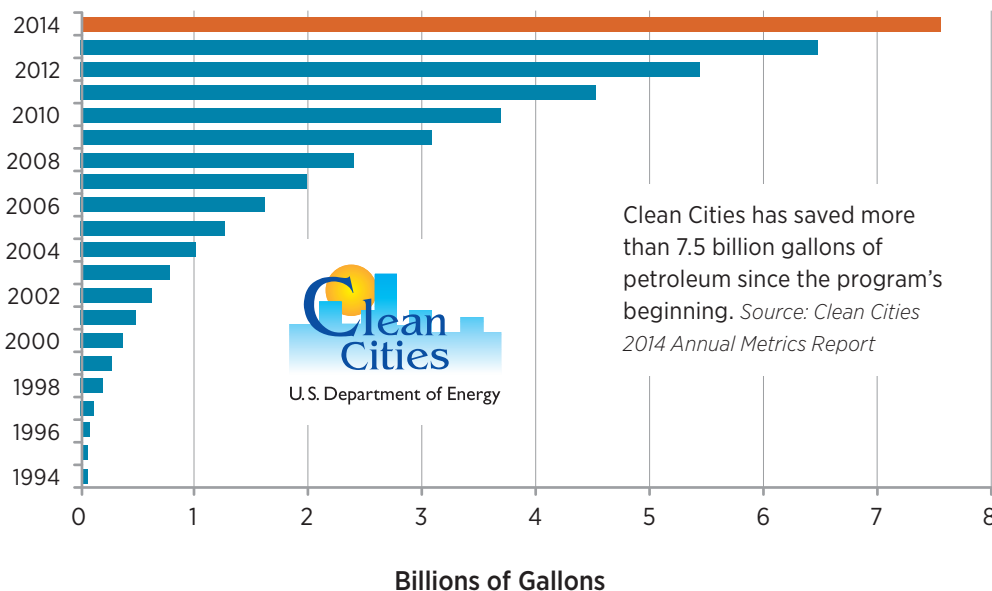
Photo by Dennis Schroeder, NREL 31322

Clean Cities at Work

Clean Cities' efforts support reduced dependence on petroleum at the local, state, and national levels. Clean Cities' activities include:

- Building partnerships with local coalitions of public- and private-sector transportation stakeholders
- Developing unbiased and objective information about alternative fuels, advanced vehicles, and other strategies to cut petroleum use
- Advancing interactive, data-driven online tools to help stakeholders evaluate options and achieve goals
- Collecting and sharing best practices, data, and lessons learned to inform choices and build a strong national network
- Providing technical assistance to help fleets deploy alternative fuels, advanced vehicles, and idle-reduction measures
- Working with industry partners and fleets to identify and address technology barriers
- Empowering local decision makers to successfully implement the best petroleum reduction strategy for their circumstance
- Seeding local alternative fuels markets through projects that deploy vehicles and fueling infrastructure.

Clean Cities Cumulative Petroleum Savings



Geographical Coverage of Clean Cities Coalitions



A National Network of Local Coalitions

Nearly 100 local coalitions serve as the foundation of the Clean Cities program by working to cut petroleum use in communities across the country. Clean Cities coalitions are comprised of businesses, fuel providers, vehicle fleets, state and local government agencies, and community organizations. These stakeholders share information and resources, inform public policy, educate the public, and collaborate on transportation projects. Nationwide, nearly 15,000 stakeholders participate in Clean Cities coalitions, and through their collective efforts they are transforming local and regional transportation markets.

Each coalition is led by an on-the-ground Clean Cities coordinator, who tailors projects and activities to capitalize on the unique opportunities in their region. Stakeholders in Clean Cities coalitions gain access to a wide array of resources, including networking opportunities with fleets and industry partners, workshops, individualized assistance, information resources, funding opportunities, and outreach support. They may also receive public recognition for their efforts to cut petroleum use. To help meet program goals, each coalition has an annual goal to increase its total petroleum savings by 15% over the previous year.



Clean Cities coalitions host events for stakeholders to share information, work with fleets to determine the best fuel/technology options, and collaborate on projects that cut petroleum use. *Photos (left to right): from Clean Fuels Ohio, NREL 27655; from H&S Bakery, NREL 33057; from Peter Weed/Metropolitan Sewage, NREL 33395*

Transforming Transportation Since 1993

Clean Cities strives to reduce U.S. dependence on petroleum. The program's successes include the following:

- Saved more than 7.5 billion gallons of petroleum
- Placed nearly 500,000 AFVs on the road
- Averted more than 6.8 million tons of greenhouse gas emissions in 2014 alone
- Grew from six Clean Cities coalitions in 1993 to nearly 100 today, covering about 80% of the U.S. population
- Convened nearly 15,000 public and private stakeholders as members in local Clean Cities coalitions.

Clean Cities' Accomplishments

Clean Cities has helped deploy hundreds of thousands of alternative fuel vehicles (AFVs) and fueling stations that serve a growing market. The program has also aided in the elimination of millions of hours of vehicle idling and helped accelerate the entry of new transportation technologies into the marketplace.

Increasing Access to Alternative Fuels

Over the years, Clean Cities has provided matching funds and leveraged resources to help communities lay the foundation for alternative fuels and vehicles. The results of those projects have enabled communities to achieve more widespread adoption of AFVs, alternative fuels, and petroleum reduction practices.

DOE projects funded by the American Recovery and Reinvestment Act of 2009 (ARRA) seeded local alternative fuel markets by deploying large numbers of AFVs and establishing new fueling infrastructure across the country. The success of these projects has significantly increased the availability of alternative fuels and enabled a growing number of fleets to choose AFVs. With this increased market penetration, many fleets are now making additional investments or purchasing AFVs for the first time. Clean Cities projects have also helped establish natural gas corridors along heavily traveled routes in California, Utah, and New York; networks of propane fueling stations in many cities; and E85 fueling stations along several corridors such as the I-75 route from Sault Ste. Marie, Michigan, to Miami, Florida.

Partnering With Private Sector Leaders

Clean Cities launched the National Clean Fleets Partnership to help private-sector leaders identify barriers and pursue solutions to cut petroleum use. Through the partnership, Clean Cities provides large private-sector fleets with resources, expertise, opportunities for peer-to-peer information exchange, and technical assistance as they evaluate and incorporate alternative fuels, advanced vehicles, and fuel-saving measures into their operations. The program has 27 partners that have deployed more than 26,000 alternative fuel and advanced technology vehicles.

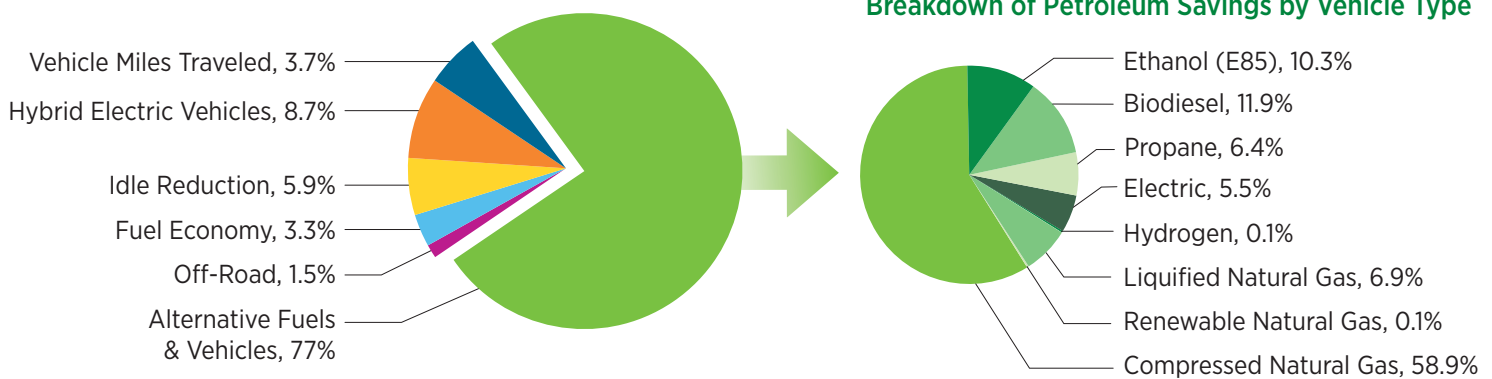
Supporting Community Readiness

Clean Cities' funding opportunities have helped communities address obstacles and plan for and develop strategies to support the adoption of AFVs. The *Community Readiness and Planning for Plug-In Electric Vehicles and Charging Infrastructure* awards and the *Alternative Fuel Market Project* awards resulted in 36 projects supported with \$19.6 million from DOE. Depending on local needs, awardees focused on efforts like streamlining permitting processes, revising codes, training emergency personnel, educating the public, and developing incentives. Through these awards, local public-private partnership stakeholders collaborated on plans to deploy AFVs, enhance local infrastructure, improve fleets, and build community awareness to help reduce U.S. petroleum dependency and build a clean transportation future. To further support community readiness, Clean Cities also launched the Plug-In Electric Vehicle (PEV) Readiness Scorecard (afdc.energy.gov/pev-readiness). The scorecard helps communities assess their readiness for the arrival of PEVs and electric vehicle supply equipment.



Photos (left to right): from City of Chicago, NREL 29548; from Republic Services, NREL 25212; from Denver Metro Clean Cities, NREL 27243

Clean Cities 2014 Petroleum Savings by Technology Type



The majority of Clean Cities' petroleum savings come from the deployment of AFVs that run on natural gas, E85, biodiesel, propane, or electricity. *Source: Clean Cities 2014 Annual Metrics Report*

Online Resources

In addition to your local coalition, the Clean Cities program provides a comprehensive collection of information for fleets, businesses, and the general public. Take advantage of the following online resources to learn more about Clean Cities and the fuels and technologies it supports.

Clean Cities: Visit the Clean Cities website at cleancities.energy.gov to find out more about the program, its accomplishments, and your local coalition.

- **IdleBox Toolkit:** Educate and engage policymakers, fleet managers, drivers, and other decision makers about the benefits of reducing idling with print products, templates, presentations, and information resources (cleancities.energy.gov/idlebox).

Alternative Fuels Data Center (AFDC):

The AFDC, online at afdc.energy.gov, provides a wealth of information and data about alternative fuels, advanced vehicles, and other petroleum-saving technologies. The site features a number of interactive tools, calculators, and mapping applications, including the following:

- **Alternative Fuel and Advanced Vehicle Search:** Find and compare light-, medium-, and heavy-duty alternative fuel vehicles, engines, and hybrid systems (afdc.energy.gov/vehicles/search).
- **Alternative Fuel Price Report:** Find regional fuel prices for biodiesel, CNG, E85, hydrogen, and propane, as well as gasoline and diesel (afdc.energy.gov/fuels/prices.html).
- **Alternative Fueling Station Locator:** Find alternative fueling stations and electric vehicle charging locations in your area by visiting the website (afdc.energy.gov/stations) or downloading the mobile application.

- **Laws and Incentives:** Search this database for federal and state laws and incentives pertaining to alternative fuels and vehicles, air quality, fuel efficiency, and other transportation-related topics (afdc.energy.gov/laws).

FuelEconomy.gov: Use the official U.S. government source for fuel economy information (fuelconomy.gov) to find and compare vehicles, calculate your own fuel economy, and get tips to cut fuel costs.

Alternative Fuel Life-Cycle Environmental and Economic Transportation (AFLEET) Tool: Estimate petroleum use, greenhouse gas emissions, air pollutant emissions, and cost of ownership of light-duty and heavy-duty vehicles using simple spreadsheet inputs (greet.es.anl.gov/afleet).

Clean Cities Technical Response Service: Let seasoned experts help find answers to your questions about alternative fuels, advanced vehicles, fuel economy, and idle reduction (technicalresponse@icfi.com; 800-254-6735). ■

U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy

Clean Cities Technical Response Service
800-254-6735 • technicalresponse@icfi.com

To view this and other Clean Cities publications online, visit cleancities.energy.gov/publications.

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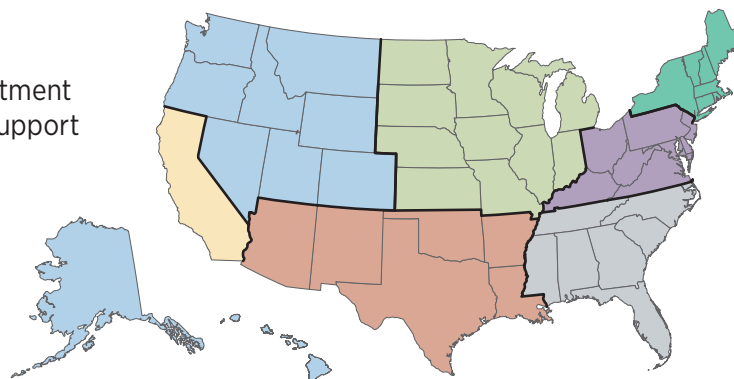
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