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Clean Cities Are Smart Cities

By Shannon Brescher Shea

The idea of a "clean city" can bring a number of images to mind: communities with convenient public transportation, walkable downtowns, renewable energy sources, and robust recycling programs. Transportation is a key part of this picture, whether it includes buses retrofitted to produce fewer emissions or automobiles running on clean-burning fuels. Because of transportation's essential role, the U.S. Department of Energy's (DOE) Clean Cities partnership in the Office of Energy Efficiency and Renewable Energy's Vehicle Technologies Program focuses on providing smart transportation options. For 15 years, the program has partnered with a variety of local stakeholders to reduce America's petroleum consumption by more than two billion gallons.^[1] Clean Cities is committed to transforming our transportation sector into being more efficient, environmentally friendly, and less dependent on petroleum than ever before.

Like smart growth programs, Clean Cities is based on the idea that local knowledge should drive local decision making. As such, the program supports 86 coalitions nationwide, which carry out their own voluntary, community-based programs to reduce the use of oil.^[2] Coalitions work with a variety of stakeholders including local and state agencies, commercial fleets, transit agencies, auto manufacturers, car dealers, fuel and equipment suppliers, public utilities, and nonprofit organizations. Coalitions often assist stakeholders in their sustainable transportation efforts by providing technical knowledge, coordinated strategies, and grant assistance. In addition, coalition meetings bring stakeholders together, providing them the opportunity to network, learn from each other, and plan joint projects.

Clean Cities was established by the 1992 Energy Policy Act as an outreach program for alternative fuels. In 2004, the portfolio was broadened to include alternative fuels and vehicles, hybrid vehicles, idle reduction, fuel blends, and fuel economy. The alternative fuels include ethanol (E85), biodiesel, hydrogen, electricity, propane, and natural gas. Stakeholder and coalition projects draw from the technologies included in the expanded Clean Cities portfolio. These projects include everything from truck-stop electrification to eco-driving courses for fleets. From the variety of options available, coalitions and stakeholders can choose from the technologies that best meet their community's needs.

Over the past 15 years, the Clean Cities program has developed a number of resources that are available to the public, coalitions, stakeholders, states, and local communities to help guide their choices to reduce petroleum use. The Alternative Fuels and Advanced Vehicle Technology Data Center (www.afdc.energy.gov) is the one-stop shop for information on Clean Cities' technologies, and provides tools and resources to help fleets and consumers reduce their petroleum use and emissions.

- Pages on a variety of [vehicles](#) and their [fuels](#), including biofuels, electricity, natural gas, hydrogen and diesel, provide basic introductions to these technologies. Along with diagrams and explanations of these technologies, the pages also describe available vehicle models, emissions improvements, purchasing incentives, and experiences of fleets that have used them.
- The [Petroleum Reduction Planning Tool](#) helps business owners, consumers, and fleets calculate what approaches, including reducing vehicle miles traveled and buying fuel efficient vehicles, can help them meet their petroleum reduction goals.^[3]
- The [Alternative Fuel Station Locator](#) allows owners of alternative fuel vehicles to find fueling stations near them, making it more likely that they will fill up. A trip planner is available and a [mobile version](#) of the locator was launched last month to make this data easily available via mobile devices.^[4]

In addition, Clean Cities cosponsors the Fuel Economy Guide with the U.S. Environmental Protection Agency. The guide's Web site, FuelEconomy.gov, provides the EPA ratings for fuel efficiency, air pollution, and carbon footprint, as well as fuel-efficient driving tips. A [mobile version](#) of the fuel economy guide is also available.^[5]

Although focusing on vehicles may seem to contradict smart growth, many Clean Cities' projects nicely complement smart growth initiatives. After all, they share the goals of producing cleaner air, developing regional economic opportunities, and lowering emissions. Both also embrace a holistic approach to addressing their respective problems. Beyond providing information, coalitions help stakeholders purchase alternative fuel and advanced technology vehicles, build fueling infrastructure to support those vehicles, and institute sustainable transportation policies.

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One area where the goals of Clean Cities programs and smart growth initiatives particularly dovetail is in public transit. To reduce congestion while maintaining mobility, many smart growth programs aim to increase bus transit. However, traditional diesel buses produce a number of harmful emissions, including particulates, NO_x, and volatile organic compounds (VOCs). The traditional bus fleet also uses a tremendous amount of petroleum - 550 million gallons of diesel annually.^[6] Alternative fuels and advanced technologies can reduce both of these issues, leading to cleaner air and fewer greenhouse gases. Since 1998, Clean Cities has brought over 8,000 alternative-fueled buses onto the roads, over 10 percent of the entire fleet. Most of these run on compressed natural gas (CNG), which when burned, produces substantially less local pollution and fewer greenhouse gases than diesel. In addition, an increasing number of transit authorities are adopting hybrid buses. These vehicles, which take advantage of buses' stop-and-go routes, also use less diesel fuel and produce fewer emissions. The introduction of these greener buses often helps improve rider perception and increase ridership. In addition, some alternative fuels, such as natural gas, can actually be cheaper than diesel in the long-run.

- Boston, MA: Through information sharing, the Massachusetts Clean Cities Coalition and Massachusetts Bay Transportation Authority will have saved the city over \$7.4 million dollars by December 2009^[7]. After the Massachusetts Clean Cities coordinator heard from another stakeholder about a major tax credit for CNG vehicles, he told his contacts at the Transportation Authority. As a result, the Authority will save 50 cents per gasoline gallon equivalent for the fuel used in its 360 CNG buses.^[8]
- Portland, ME: Maine Clean Communities and the Portland Transit District worked to bring stakeholders together to achieve a common goal: replacing nearly half of the city's diesel bus fleet with CNG buses. The coalition helped obtain the transit board's permission, SEP and CMAQ funding, support from the utility, and the vehicles themselves.^[9]
- Los Angeles, CA, and Atlanta, GA: These regions' coalitions, along with the Transit Bus Users Group supported by Clean Cities, helped these cities adopt large-scale CNG transit fleets. Los Angeles has the largest CNG fleet in North America and Atlanta uses five million diesel-equivalent gallons of natural gas annually.

In the future, the Clean Cities partnership looks forward to transforming our fleets through the newest and cleanest technologies. The advent of electric and plug-in hybrid electric vehicles offers cities new opportunities to reduce their local pollution and greenhouse gas emissions. But cars alone are not enough. Electrifying transportation requires charging stations, smart grids, renewable energy, financial resources, and government support. Fortunately, Clean Cities coalitions can bring together the relevant stakeholders, including utilities, nonprofit organizations, car manufacturers, local governments, fleet managers, and consumers.

As Clean Cities coalitions are committed to making their local transportation systems more environmentally sustainable, more efficient, and less dependent on petroleum, a local coalition can be a valuable partner in improving a city's environmental strategy. The contacts made at Clean Cities stakeholder meetings can lead to new ideas and prospects. The Clean Cities' technologies and approaches often complement other transportation projects, such as public transit. When an agency or business must buy a vehicle, Clean Cities' resources can inform these decisions. Lastly, coalitions can be essential partners on local projects that are supported by federal funding. Although the Clean Cities partnership focuses on vehicle transportation, it can, and should be, an important part of an overall sustainability effort.

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[1] What is Clean Cities factsheet. January 2009, available at: <http://www1.eere.energy.gov/cleancities/pdfs/44929.pdf>

[2] Coalition Locations Map. March 9, 2009. Available at: http://www.afdc.energy.gov/cleancities/progs/coalition_locations.php

[3] <https://www.afdc.energy.gov/afdc/prep/index.php>

[4] Alternative Fuel Station Locator: http://www.afdc.energy.gov/afdc/fuels/stations_locator.html; Mobile version: <http://www.afdc.energy.gov/stations/m/>

[5] <http://www.fueleconomy.gov/m>

[6] Derived from: American Public Transportation Association, *2007 Public Transportation Fact Book*, Washington, DC, May 2007, Tables 7, 11, and 17.

[7] Communication Key to Building Partnerships, Securing Funding. Clean Cities Now, Vol 12, Number 1, January 2008. http://www.afdc.energy.gov/cleancities/ccn/archive/ccn_12_1.html

[8] United States (Federal) Incentives and Laws Alternative Fuel Excise Tax Credit. Obtained March 9, 2009.

http://www.afdc.energy.gov/afdc/progs/view_ind_fed.php/afdc/319/0

[9]Portland, Maine Transit District Adds CNG Buses, Infrastructure. Obtained March 9, 2009. http://www.afdc.energy.gov/afdc/progs/ddown_exp.php/TBUS/163



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