

2016 Transportation Technology Deployment Report:

State of West Virginia Clean Cities

Expanded Edition

March 2017



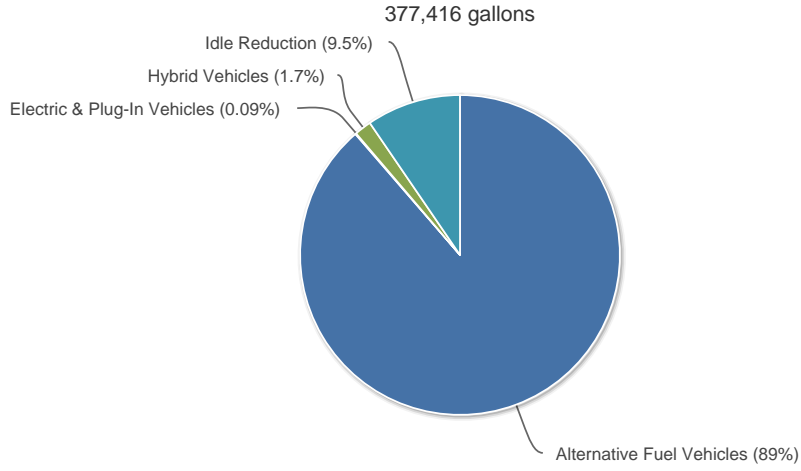
U.S. Department of Energy

The U.S. Department of Energy's (DOE) Clean Cities program advances the nation's economic, environmental, and energy security by supporting local actions to reduce petroleum use in transportation. A national network of nearly 100 Clean Cities coalitions brings together stakeholders in the public and private sectors to deploy alternative and renewable fuels, idle-reduction measures, fuel economy improvements, and new transportation technologies, as they emerge.

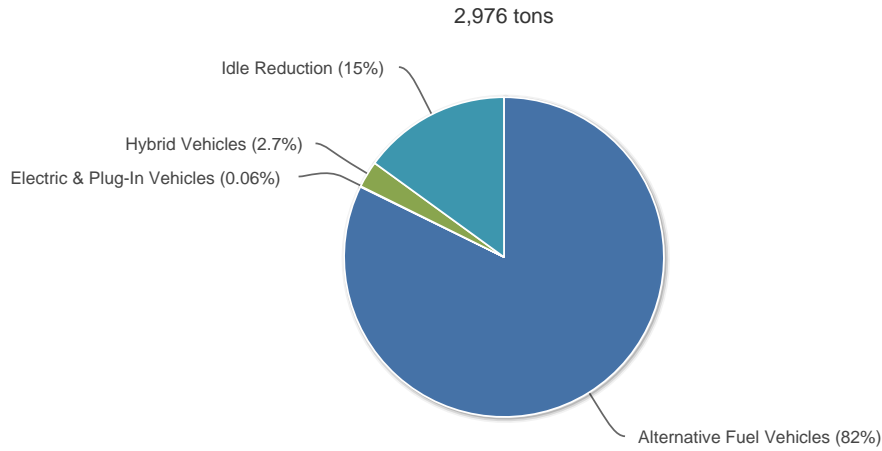
Every year, each Clean Cities coalition submits to DOE an annual report of its activities and accomplishments for the previous calendar year. Coalition coordinators, who lead the local coalitions, provide information and data via an online database managed by the National Renewable Energy Laboratory (NREL). The data characterize membership, funding, projects, and activities of the coalitions. The coordinators also submit data on the sales of alternative fuels, deployment of alternative fuel vehicles and hybrid electric vehicles, idle-reduction initiatives, fuel economy activities, and programs to reduce vehicle miles traveled. NREL and DOE analyze the data and translate them into petroleum-use and greenhouse gas reduction impacts for individual coalitions and the program as a whole. This report summarizes those impacts for State of West Virginia Clean Cities.

To view aggregated data for all local coalitions that participate in the Clean Cities program, visit www.eere.energy.gov/cleancities/accomplishments.html.

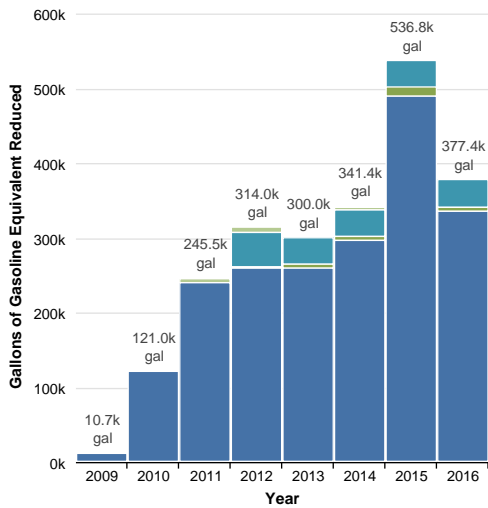
2016 Gallons of Gasoline Equivalent Reduced



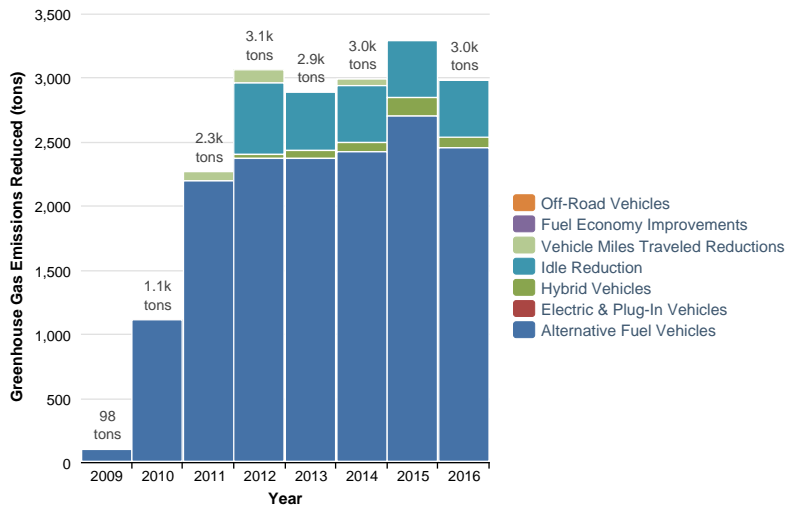
2016 Greenhouse Gas Emissions Reduced



Historical Gallons of Gasoline Equivalent Reduced

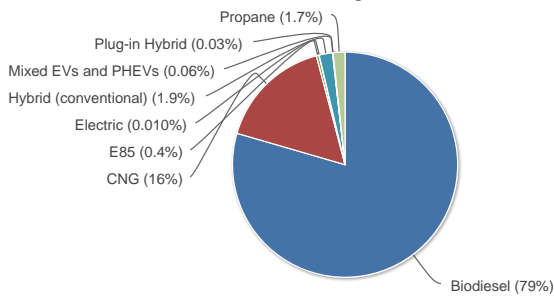


Historical Greenhouse Gas Emissions Reduced



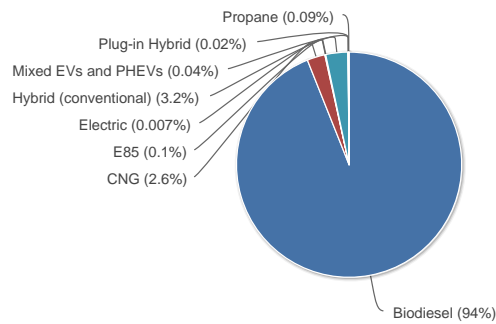
2016 Gallons of Gasoline Equivalent Reduced by Fuel Type for Alternative Fuel Projects

341,416 gallons



2016 Greenhouse Gas Emissions Reduced by Fuel Type for Alternative Fuel Projects

2,529 tons



COALITION

State of West Virginia Clean Cities - WV

http://www.wvcommerce.org/energy/alternative_fuels/default.aspx

Designated: 10/18/1994

Boundaries: Entire state of West Virginia

COORDINATORS

	Address	Telephone	Fax
Tiffany Bailey	1900 Kanawha Blvd E Bldg 6, Rm 620 Charleston, WV 25305		
Kelly Bragg	1900 Kanawha Blvd E Bldg 6, Rm 620 Charleston, WV 25305		

Number of coordinators	2
Coordinator(s) hours per week on Clean Cities	10 hours
Other staff hours per week on Clean Cities	1 hours
How long have you been the coordinator?	10 years

OPERATING INFORMATION

Host organization Government - State

Stakeholders

Number of stakeholders	62
Number of private stakeholders	37
Does the State Energy Office provide any financial support to the coalition or stakeholders?	Yes
Explain State Energy Office's support	
Office space, computers, phone, financial tracking	
How would you rate the quality of the data on your survey?	Excellent
How do you obtain most of your data for the survey?	Estimates, Paper, e-mail, or spreadsheet questionnaire to stakeholders, Phone calls to stakeholders

Has your coalition registered with www.grants.gov?

Yes

2016 Outside Funding

Stakeholder dues collected	\$0
How much funding is obtained from other sources to cover coalition operating expenses?	\$2,500,000
Non-DOE or ARRA grant and matching funds spent in 2016	\$0
Total non-DOE or ARRA funding in 2016	\$2,500,000

VEHICLE & FUEL INVENTORY

Alternative Fuel & Vehicles

Fleet/Station Name	Vehicle Class	Fuel	Number of Vehicles	Fuel Used	GGE Reduced	GHG Reduced
Antero Resources Market: Corporate Fleet Vehicle type: Pickup/SUV/Van Percentage from coalition: 100% National Clean Fleets Partnership: No	Light-Duty	CNG	58	41,686 GGE	39,602 gal	51.3 tons
State of WV CNG - 2016 Market: Government - State Vehicle type: Truck: No Trailer Percentage from coalition: 75% National Clean Fleets Partnership: No	Heavy-Duty	CNG	17	4,178 GGE	2,820 gal	2.4 tons
State of WV ethanol - 2016 Market: Government - State Vehicle type: Truck: No Trailer Percentage from coalition: 65% National Clean Fleets Partnership: No	Heavy-Duty	E85	17	4,406 gal	1,379 gal	3.4 tons
UPS - Heavy-duty CNG Market: Corporate Fleet Vehicle type: Unknown/Other Percentage from coalition: 5% National Clean Fleets Partnership: Yes <i>This includes class 4-6 package delivery trucks and class 7-8 tractors</i>	Heavy-Duty	CNG	49	301,171 GGE	13,553 gal	11.4 tons
West Virginia county school bus fleet - biodiesel Market: Government - Local Vehicle type: Bus: School Percentage from coalition: 100% National Clean Fleets Partnership: No	Heavy-Duty	Biodiesel (5%)	2,952	5,091,725 gal	271,389 gal	2,376.6 tons

Fleet/Station Name	Vehicle Class	Fuel	Number of Vehicles	Fuel Used	GGE Reduced	GHG Reduced
West Virginia county school bus fleet - propane	Heavy-Duty	Propane	3	8,524 gal	5,807 gal	2.3 tons
Market: Government - Local Vehicle type: Bus: School Percentage from coalition: 100% National Clean Fleets Partnership: No						
Total:			3,096		334,551 gal	2,447 tons

Electric, Hybrid & Plug-in Vehicles

Fleet/Station Name	Vehicle Class	Fuel	Number of Vehicles	GGE Reduced	GHG Reduced
C&H Taxi	Light-Duty	HEV	2	3,571 gal	44.0 tons
Average vehicle fuel economy: 45 MPG Miles traveled per vehicle per year: 40,177 mi Market: Taxis Vehicle type: Car Percentage from coalition: 100% National Clean Fleets Partnership: No Workplace Charging Challenge: No <i>From stakeholder C&H Taxi: For 2016 one Prius put on 33,131 and the other 47,223 for a total of 80,354. At an average of 45 MPG, gallons used would be 80,354 / 45 = 1,785.64 gallons. Compared to the Crown Victoria which averages 15 MPG so the gallons used would be 80,354 / 15 = 5,356.93 gallons. Thus the gallons saved would be estimated at 5,356.93 - 1,785.64 = 3,571.29.</i>					
Kanawha Valley Rapid Transit Authority	Heavy-Duty	HEV	4	2,771 gal	34.1 tons
Average vehicle fuel economy: 5 MPG Miles traveled per vehicle per year: 26,120 mi Market: General/Unknown Vehicle type: Bus: Transit Percentage from coalition: 65% National Clean Fleets Partnership: No Workplace Charging Challenge: No <i>KVRTA is fast approaching time to switch out battery packs on buses. The drop in MPG is being studied to determine if that indeed is the factor affecting the decline in fuel efficiency on bus H301& H352 which severely affected the overall fleet efficiency from 5.3 MPG in 2015 to 4.9 MPG in 2016.</i>					
NAFTC EV	Light-Duty	Electric	1	33 gal	0.2 tons
Electricity used: 308 kWh Market: Government - State Vehicle type: Car Percentage from coalition: 75% National Clean Fleets Partnership: No Workplace Charging Challenge: No <i>West Virginia University's National Alternative Fuels Training Consortium reported metrics for four vehicles in 2016. One is an EV, a 2013 Leaf, reported here. The other three include two PHEVs and one conventional hybrid, reported separately. All are state fleet vehicles.</i>					
NAFTC hybrid	Light-Duty	HEV	1	77 gal	0.9 tons
Average vehicle fuel economy: 49 MPG Miles traveled per vehicle per year: 3,469 mi Market: Government - State Vehicle type: Car Percentage from coalition: 75% National Clean Fleets Partnership: No Workplace Charging Challenge: No <i>West Virginia University's National Alternative Fuels Training Consortium reported metrics for four vehicles in 2016. One, a 2010 Prius, is reported here. The other three include two PHEVs and one EV, reported separately.</i>					
NAFTC PHEVs	Light-Duty	PHEV	2	109 gal	0.6 tons
Electricity used: 1,015 kWh Market: Government - State Vehicle type: Car Percentage from coalition: 75% National Clean Fleets Partnership: No Workplace Charging Challenge: No <i>West Virginia University's National Alternative Fuels Training Consortium reported metrics for four vehicles in 2016. Two are plug-in hybrids, reported here: a 2011 Volt and a 2013 Prius. The other vehicles are a 2013 Leaf and a 2010 Prius, reported separately. All are state fleet vehicles.</i>					

Fleet/Station Name	Vehicle Class	Fuel	Number of Vehicles	GGE Reduced	GHG Reduced
Shepherd University EVSE	Light-Duty	EV-PHEV	35	216 gal	1.1 tons
Electricity used: 1,510 kWh Market: General/Unknown Vehicle type: Car Percentage from coalition: 100% National Clean Fleets Partnership: No Workplace Charging Challenge: No <i>These chargers were purchased with State Energy Program funds. W.Va. Clean State Program interacted with stakeholder to determine that new chargers were needed and recommended the project to the host agency.</i>					
W.Va. Department of Environmental Protection (Prius)	Light-Duty	HEV	1	88 gal	1.1 tons
Average vehicle fuel economy: 50 MPG Miles traveled per vehicle per year: 5,063 mi Market: Government - State Vehicle type: Car Percentage from coalition: 75% National Clean Fleets Partnership: No Workplace Charging Challenge: No					
Total:			46	6,865 gal	82 tons

IDLE REDUCTION

Idle Reduction

Project Name	Number of Vehicles	Idling Reduced per Vehicle	Fuel Saved per Vehicle	GGE Reduced	GHG Reduced
WV county school bus fleets	3,000	10 mins/day 180 days/year	1 gal/hr	36,000 gal	446.4 tons
Type of project: Policies Type of vehicle: Heavy-Duty - Bus: School Percentage from coalition: 80% National Clean Fleets Partnership: No <i>From Policy 4336, West Virginia School Bus Transportation Policy and Procedures Manual: School bus operators are prohibited from idling the buses for more than 10 minutes unless defrosting of windows is needed; in this case idling shall be limited to thirty minutes. Estimates for this annual report are based on information from the WV Department of Environmental Protection - Division of Air Quality. Using a baseline that idling a bus for 1 hour wastes 1/2 gallon of diesel fuel, the division calculates that idling 1/2 hour less saves 45 gallons of fuel per bus annually. Conservatively, the program reduces idling by 10 minutes per day, which would be 15 gallons of fuel per bus annually. With 3,000 buses in the fleet, the fuel savings are estimated at 45,000 gallons.</i>					
Total:		3,000		36,000 gal	446 tons

FUEL STATIONS

New Stations

Fuel	Public Stations	Private Stations
Biodiesel	-	-
CNG - Compressed Natural Gas	-	-
E85 - 85% Ethanol	10	-
Electric Charging Outlets	7	-
Hydrogen	-	-
LNG - Liquefied Natural Gas	-	-
Propane	-	-
Total:	17	0

OUTREACH ACTIVITIES

Activity Name	Dates	Activity Type	Percentage from Coalition	Persons Reached
W.Va. Division of Natural Resources kick-off meeting Technology: Electric vehicles Audience: Government <i>This was the kickoff meeting with W.Va. state parks that led to a project to install EVSE at 10 lodges at nine state parks. The project was supported with U.S. DOE State Energy Program funding. W.Va. Clean State Program provided technical assistance throughout the project. Bhaskaran.Gopalakrishnan, director of West Virginia University's Industrial Assessment Center in the Benjamin M. Statler College of Engineering and Mineral Resources did an energy and EVSE assessment at Pipestem Resort State Park on Feb. 23-24.</i>	01/27/2016	Meeting - Other	100%	9
Electric Vehicle Technologies workshop presented at W.Va. Construction & Design Exposition Technology: Electric vehicles Audience: General Public <i>The State of Play for EVs in WV was presented by W.Va. Clean State Program coordinator, followed by Fundamentals of EV Charging Infrastructure from WVU's National Alternative Fuels Training Consortium. A panel discussion/audience Q&A moderated by Director Jeff Herholdt of the W.Va. Division of Energy, WVCS's host agency included Bill Davis, director, National Alternative Fuels Training Consortium, West Virginia University; Bhaskaran Gopalakrishnan, professor of WVU's Industrial and Management Systems Engineering and director of the Industrial Assessment Center, West Virginia University and Marty Weirick, a member of the West Virginia Electric Auto Association.</i>	03/24/2016	Conference participation	100%	40
Earth Day at W.Va. State University Technology: Electric vehicles, Hybrid electric vehicles Audience: General Public <i>The W.Va. Electric Auto Association secured W.Va. Clean State Program's participation in this event where coordinator and co-coordinator distributed 2016 AFV guides, stickers, bookmarks and copies of a Nissan fact sheet about the Leaf. A Leaf, two Volts and a Tesla were on display.</i>	04/25/2016	Literature Distribution	100%	25
Making It Happen in WV: Electric Drive Vehicles and Electric Vehicle Supply Equipment Workshop Technology: Electric vehicles Audience: Government <i>This workshop in Hinton, W.Va., first publicly revealed West Virginia's plan to install EVSE at 10 lodges at nine state parks. Coordinator presented an overview of electric drive vehicles. WVU's NAFTC presented "Electric Vehicle Supply Equipment (EVSE) and Considerations Before Installing followed by Dr. Bhaskaran Gopalakrishnan, who presented "EVSE Impact on Facilities' Energy Use/Costs." Marty Weirick of the W.Va. Electric Auto Association presented "Electric Autos and West Virginia Energy." The group crossed the street to the Hinton Technology Center to view an EV and charging in display. The workshop closed with a roundtable discussion.</i>	06/15/2016	Workshop held by coalition	100%	32
W.Va. Clean State Program e-newsletter Technology: E85, Electric vehicles, Propane Audience: Delivery, General Public, Government, Private Fleets, Transit, Utility <i>WVCS has distributed two editions of its electronic newsletter.</i>	08/05/2016, 11/01/2016	Social Media	100%	62
2016 WV Department of Transportation/ Metropolitan Planning Organization/ Federal Highway Administration Planning Conference Technology: Electric vehicles Audience: Government <i>On 9/21/16, W.Va. Clean State Program participated in the 2016 WV Department of Transportation/Metropolitan Planning Organization/Federal Highway Administration Planning Conference at Chief Logan Conference Center in Logan, WV, with around 70 people in attendance. The presentation focused on on alternative fuels and vehicles in the state with an emphasis on electric vehicles,</i>	09/21/2016	Conference participation	10%	70
2016 Governor's Energy Summit Technology: Electric vehicles, Hybrid electric vehicles Audience: General Public <i>WVCS presented an exhibit booth at the 2016 Governor's Energy Summit.</i>	10/06/2016, 10/07/2016	Literature Distribution	10%	200
Total:				438

GRANTS

Grantor	Total Grant Amount	Total Matching Funds	Total Project Funding	Grant Amount Spent in 2016	Matching Funds Spent in 2016	Total Project Funding Spent in 2016
Biofuel Infrastructure Partnership - USDA	\$2,500,000	\$834,120	\$3,334,120	\$0	\$0	\$0
<p>Length of grant: 3 Year grant began: 2015 Sources of the grant: Foundation or Nonprofit, USDA Biofuel Infrastructure Partnership (BIP) Partners: Growth Energy, USDA BIP Technologies: E85 - 85 percent Ethanol Purpose: To expand the use of ethanol blends E85 and E15</p> <p><i>A U.S. Department of Agriculture Biofuel Infrastructure Partnership Grant to West Virginia in the amount of \$2.5 million will expand the use of ethanol blends E85 and E15 through the installation of 107 dispensers at 22 fueling stations throughout the state. Construction on this project began November 2016 and is slated to be completed by June 30, 2017. Monitoring of this grant will continue through February 2022.</i></p>						
Total:	\$2,500,000	\$834,120	\$3,334,120	\$0	\$0	\$0