

2017 Transportation Technology Deployment Report:

State of West Virginia Clean Cities

Expanded Edition

March 2018



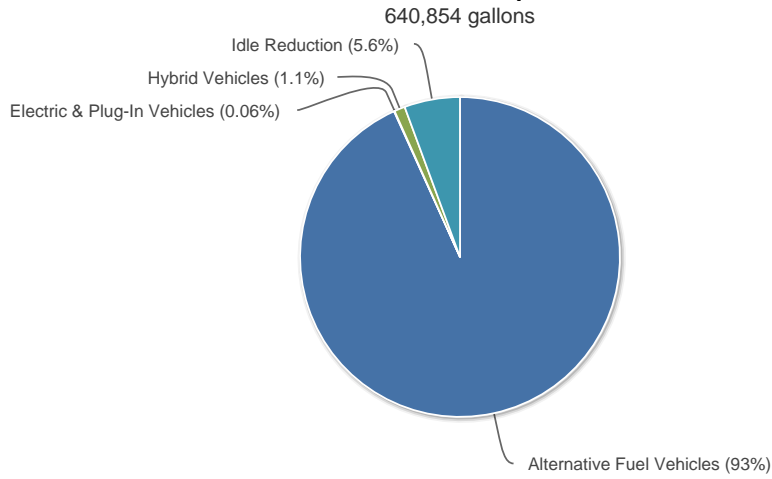
U.S. Department of Energy

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.

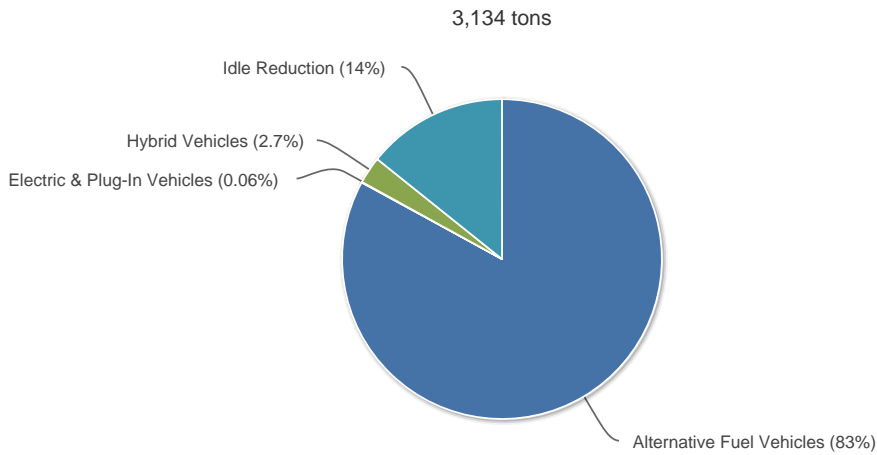
Every year, each Clean Cities coalition submits to DOE an annual report of its activities and accomplishments for the previous calendar year. Coalition coordinators, who lead the local coalitions, provide information and data via an online database managed by the National Renewable Energy Laboratory (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 cleancities.energy.gov/accomplishments.

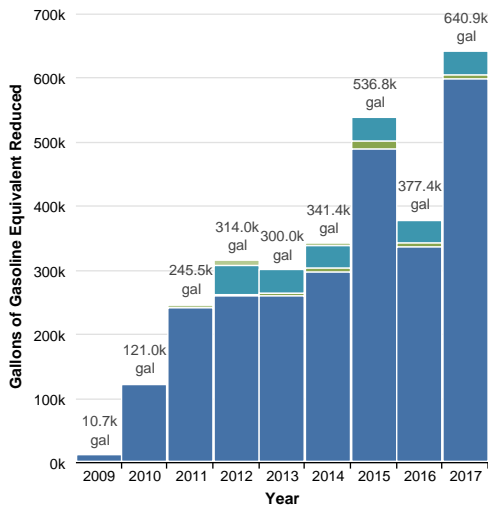
2017 Gallons of Gasoline Equivalent Reduced



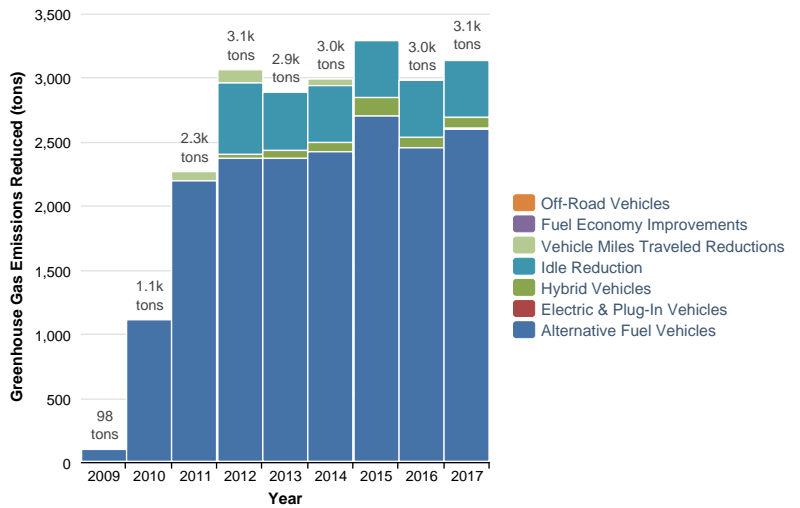
2017 Greenhouse Gas Emissions Reduced



Historical Gallons of Gasoline Equivalent Reduced



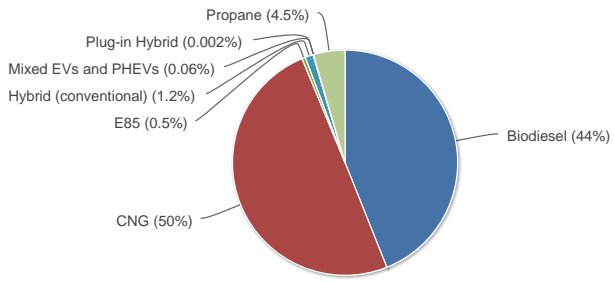
Historical Greenhouse Gas Emissions Reduced



- Off-Road Vehicles
- Fuel Economy Improvements
- Vehicle Miles Traveled Reductions
- Idle Reduction
- Hybrid Vehicles
- Electric & Plug-In Vehicles
- Alternative Fuel Vehicles

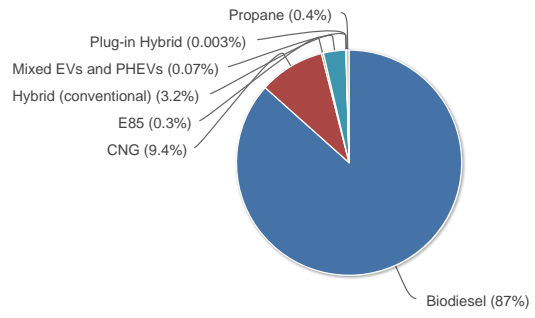
2017 Gallons of Gasoline Equivalent Reduced by Fuel Type for Alternative Fuel Projects

604,854 gallons



2017 Greenhouse Gas Emissions Reduced by Fuel Type for Alternative Fuel Projects

2,688 tons



Criteria Pollutant Emissions Reduced

Criteria pollutants are chemicals that have been linked to human health effects and therefore regulated in the Clean Air Act of 1970. The Clean Cities annual report calculates them using the same assumptions and default values as AFLEET 2016, with some adjustments to fit specific data inputs. They are quantified at vehicle tailpipes, as those are the emissions contributing to the regulated “ambient” air quality of a given city. This means that they omit emissions from sources such as electric power plants, refineries, and biofuel feedstock farms (where emissions are sufficiently removed from populations in order to minimize health effects). When a specific pollutant surpasses a given threshold for a given area, the area is considered to be in “nonattainment” for that pollutant. Nonattainment areas for given pollutants can be viewed at www.epa.gov/green-book. To learn more about what your emissions numbers mean, please take the Understanding Emissions or Emissions Compliance courses at Clean Cities University.

Reductions by Fuel Type*	NOx	VOC	CO	PM10	PM2.5
Biodiesel	0 lb	0 lb	0 lb	0 lb	0 lb
CNG - Compressed Natural Gas	16,238 lb	0 lb	-16,674 lb	0 lb	0 lb
E85 - 85% Ethanol	112 lb	-7 lb	-186 lb	1 lb	0 lb
Hybrid (conventional)	3 lb	9 lb	0 lb	0 lb	0 lb
Mixed EVs and PHEVs	1 lb	1 lb	21 lb	0 lb	0 lb
Plug-in Hybrid	0 lb	0 lb	3 lb	0 lb	0 lb
Propane	1,327 lb	-220 lb	-5,882 lb	0 lb	1 lb
Total:	17,682 lb	-217 lb	-22,718 lb	1 lb	1 lb

* This table accounts for criteria pollutants from alternative fuel vehicle, hybrid vehicle, and VMT reduction projects only. It does not include fuel economy, idle reduction, or off-road projects. Negative values indicate an increase in emissions.

COALITION

State of West Virginia Clean Cities - WV

<http://www.energywv.org/alternative-fuels-and-vehicles/clean-state-program>

Designated: 10/18/1994

Boundaries: Entire state of West Virginia

COORDINATORS

	Address	Telephone	Fax
Tiffany Bailey	West Virginia Office of Energy 1900 Kanawha Blvd E, Bldg 3, Ste 2 Charleston, WV 25301		
Kelly Bragg	West Virginia Office of Energy 1900 Kanawha Blvd E, Bldg 3, Ste 2 Charleston, WV 25301		

Number of coordinators	2
Coordinator(s) hours per week on Clean Cities	15 hours
Other staff hours per week on Clean Cities	1 hours
How long have you been the coordinator?	11 years

OPERATING INFORMATION

Host organization	Government - State
Stakeholders	
Number of stakeholders	64
Number of private stakeholders	40
Does the State Energy Office provide any financial support to the coalition or stakeholders?	Yes
Explain State Energy Office's support	The W.Va. Office of Energy supplies computers, phones, office supplies, office space, accounting services.
How would you rate the quality of the data on your survey?	Excellent
How do you obtain most of your data for the survey?	Paper, e-mail, or spreadsheet questionnaire to stakeholders, Phone calls to stakeholders
Has your coalition registered with www.grants.gov?	Yes

2017 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 2017	\$3,334,120
Total non-DOE or ARRA funding in 2017	\$5,834,120

VEHICLE & FUEL INVENTORY

Alternative Fuel & Vehicles

Fleet/Station Name	Vehicle Class	Fuel	Number of Vehicles	Fuel Used	GGE Reduced	GHG Reduced
State of WV CNG - 2017 <i>Market: Government - State Vehicle type: Truck: No Trailer Percentage from coalition: 75% National Clean Fleets Partnership: No</i>	Heavy-Duty	CNG	17	1,491 GGE	1,007 gal	0.8 tons
State of WV ethanol - 2017 <i>Market: Government - State Vehicle type: Truck: No Trailer Percentage from coalition: 75% National Clean Fleets Partnership: No</i>	Heavy-Duty	E85	17	8,263 gal	2,985 gal	7.3 tons
UPS - Heavy-duty CNG <i>Market: Corporate Fleet Vehicle type: Unknown/Other Percentage from coalition: 100% National Clean Fleets Partnership: Yes This includes class 4-6 package delivery trucks and class 7-8 tractors</i>	Heavy-Duty	CNG	49	333,615 GGE	300,254 gal	252.8 tons
West Virginia county school bus fleet - biodiesel <i>Market: Government - Local Vehicle type: Bus: School Percentage from coalition: 100% National Clean Fleets Partnership: No</i>	Heavy-Duty	Biodiesel (5%)	2,844	4,987,438 gal	265,830 gal	2,327.9 tons
West Virginia county school bus fleet - propane <i>Market: Government - Local Vehicle type: Bus: School Percentage from coalition: 100% National Clean Fleets Partnership: No</i>	Heavy-Duty	Propane	15	40,260 gal	27,429 gal	10.8 tons
Total:			2,942		597,505 gal	2,600 tons

Electric, Hybrid & Plug-in Vehicles

Fleet/Station Name	Vehicle Class	Fuel	Number of Vehicles	GGE Reduced	GHG Reduced
C&H Taxi <i>Average vehicle fuel economy: 45 MPG Miles traveled per vehicle per year: 55,732 mi Market: Taxis Vehicle type: Car Percentage from coalition: 100% National Clean Fleets Partnership: No Workplace Charging Challenge: From stakeholder C&H Taxi: For 2017 one Prius put on 50,633 and the other 60,831 for a total of 111,464 miles. At an average of 45 MPG, gallons used would be 111,464 / 45 = 2,476.98 gallons. Compared to the Crown Victoria which averages 15 MPG so the gallons used would be 111,464 / 15 = 7,430.93 gallons. Thus the gallons saved would be estimated at 7,430.93 - 2,476.98 = 4,953.95.</i>	Light-Duty	HEV	2	4,954 gal	61.0 tons
Kanawha Valley Rapid Transit Authority <i>Average vehicle fuel economy: 5 MPG Miles traveled per vehicle per year: 33,230 mi Market: General/Unknown Vehicle type: Bus: Transit Percentage from coalition: 65% National Clean Fleets Partnership: No Workplace Charging Challenge: By 1/15/2018 all hybrid bus batteries were replaced with new batteries. Buses H301, H302 & H352 were out of service for over 30 days for battery switch out. KVRTA paid \$38,325.01 per bus for the replacement batteries.</i>	Heavy-Duty	HEV	3	2,042 gal	25.1 tons

Fleet/Station Name	Vehicle Class	Fuel	Number of Vehicles	GGE Reduced	GHG Reduced
NAFTC PHEVs	Light-Duty	PHEV	2	14 gal	0.1 tons
<p>Average vehicle fuel economy: 69 MPG Miles traveled per vehicle per year: 317 mi Market: Government - State Vehicle type: Car Percentage from coalition: 75% National Clean Fleets Partnership: No Workplace Charging Challenge:</p> <p><i>West Virginia University's National Alternative Fuels Training Consortium now has two plug-in hybrids: a 2011 Volt and a 2013 Prius. The NAFTC stopped charging these vehicles as of July of 2017 as its new facility does not have an EV charging station.</i></p>					
Shepherd University EVSE	Light-Duty	EV-PHEV	45	339 gal	1.8 tons
<p>Electricity used: 2,377 kWh Market: General/Unknown Vehicle type: Car Percentage from coalition: 100% National Clean Fleets Partnership: No Workplace Charging Challenge:</p> <p><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></p>					
Total:			52	7,349 gal	88 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
<p>Type of project: Policies Type of vehicle: Heavy-Duty - Bus: School Percentage from coalition: 80% National Clean Fleets Partnership: No</p> <p><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></p>					
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	22	-
Electric Charging Outlets	24	-
Hydrogen	-	-
LNG - Liquefied Natural Gas	-	-
Propane	-	-
Total:	46	0

OUTREACH ACTIVITIES

Activity Name	Dates	Activity Type	Percentage from Coalition	Persons Reached
Twin Falls State Park EVSE reveal Technology: Electric vehicles Audience: General Public, Government <i>The W.Va. Clean State Program provided technical assistance to the W.Va. Division of Natural Resources as it installed EVSE at nine lodged state parks. WVDNR is a stakeholder.</i>	01/20/2017	Media Event	100%	18
WV International Auto Show Technology: E85, Electric vehicles, Hybrid electric vehicles Audience: General Public <i>Co-coordinator provided 150 attendees at the 1/27-29 WV International Auto Show with information on electric/hybrid vehicles, a focus on ethanol with the Biofuel Infrastructure Partnership project at Sheetz stores, Clean Cities Now, and the WV Division of Natural Resources state parks EVSE project.</i>	01/27/2017, 01/28/2017, 01/29/2017	Conference participation	75%	150
WV Electric Auto Association Technology: Electric vehicles Audience: General Public <i>Coordinator presented information on the VW settlement to the WV Electric Auto Association's meeting on 3/16.</i>	03/16/2017	Meeting - Other	75%	5
Alternative Fuel Vehicles in WV Technology: Biodiesel, E85, Electric vehicles, Hybrid electric vehicles, Natural gas vehicles, Propane Audience: General Public <i>Coordinator and co-coordinator presented "Alternative Fuel Vehicles in WV" to 41 attendees at 3/22 workshop, "Building Alternative Fuel Vehicle Infrastructure" as part of the 2017 WV Construction and Design Exposition. WV Clean State Program staffed an exhibit booth 3/22 and 3/23, both days of the expo, and provided literature on electric vehicles, ethanol and the upcoming Odyssey Day event slated for May 19.</i>	03/22/2017, 03/23/2017	Workshop held by coalition	75%	100
"ABCs of AFVs" Odyssey Day workshop and vehicle display Technology: E85, Electric vehicles, Fuel economy improvements, Hybrid electric vehicles, Natural gas vehicles, Propane Audience: General Public, Government, Private Fleets <i>On 5/19, coordinator and co-coordinator led "ABCs of AFVs" Odyssey Day workshop with 22 in attendance. About 60 people visited the alternative fuel vehicle display, which included two Chevy Volts, three Priuses, and a propane truck from Bluebird of Pittsburgh plus the cutaway Prius from WVU's National Alternative Fuels Training Consortium.</i>	05/19/2017	Workshop held by coalition	100%	82
W.Va. Clean State Program newsletter Technology: Electric vehicles Audience: Delivery, General Public, Government, Private Fleets, Transit, Utility <i>On 6/29, co-coordinator issued the summer edition of the W.Va. Clean State Program newsletter. On 12/6, co-coordinator distributed the winter edition of the W.Va. Clean State Program newsletter.</i>	06/29/2017, 12/06/2017	Social Media	100%	140
EVSE site visits Technology: Electric vehicles Audience: Government <i>Co-coordinator did site visits on 7/31 to Chief Logan State Park and 8/7-8 to Canaan Valley Resort for EV chargers State Energy Program grant to W.Va. Division of Natural Resources.</i>	07/31/2017, 08/07/2017, 08/08/2017	Meeting - Other	75%	10
WV Electric Auto Association's National Drive Electric Week event Technology: Electric vehicles Audience: General Public <i>Co-coordinator attended the WV Electric Auto Association's National Drive Electric Week event 9/9 in South Charleston with eight vehicles displayed and approximately 75 attendees. The WVEAA is a stakeholder.</i>	09/09/2017	Media Event	100%	75

Activity Name	Dates	Activity Type	Percentage from Coalition	Persons Reached
Electric vehicle display at the Huntington Mall Technology: Electric vehicles Audience: General Public <i>Coordinator participated in an electric vehicle display at the Huntington Mall with WVU's National Alternative Fuels Training Consortium with a plug-in Prius and a Chevy Volt on display. About 150 people participated.</i>	09/23/2017	Media Event	100%	150
MotorWeek Technology: Electric vehicles Audience: General Public <i>Co-coordinator worked extensively with MotorWeek to facilitate filming at three state parks that now have EVSE. The work culminated in the actual shoot from Nov. 13-15. The show airs on 92% of PBS stations nationwide, and can also be seen on cable's Velocity and V-me Spanish-language network.</i>	11/13/2017, 11/14/2017, 11/15/2017	Media Event	100%	50,000
Total:				50,730

GRANTS

Grantor	Total Grant Amount	Total Matching Funds	Total Project Funding	Grant Amount Spent in 2017	Matching Funds Spent in 2017	Total Project Funding Spent in 2017
Biofuel Infrastructure Partnership - USDA Additional grant money added since start \$0 Additional matching funds added since start \$0 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 <i>A U.S. Department of Agriculture Biofuel Infrastructure Partnership Grant to West Virginia in the amount of \$2.5 million expands the use of ethanol blends E85 and E15 through the installation of 107 dispensers at 22 fueling stations throughout the state. All 107 dispensers were installed in 2017. Monitoring of this grant will continue through February 2022.</i>	\$2,500,000	\$834,120	\$3,334,120	\$2,500,000	\$834,120	\$3,334,120
Total:	\$2,500,000	\$834,120	\$3,334,120	\$2,500,000	\$834,120	\$3,334,120