2022 Transportation Technology Deployment Report:

Middle-West Tennessee Clean Fuels Coalition

Expanded Edition

March 2023





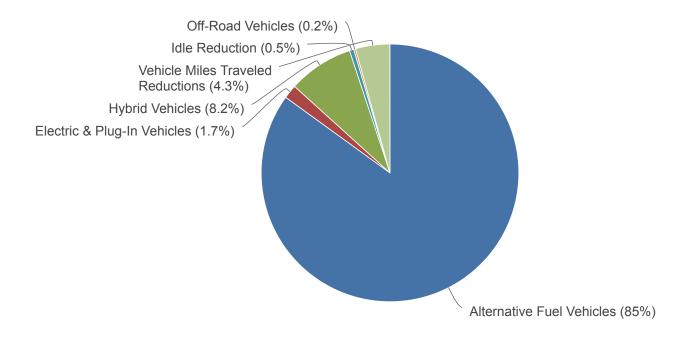
The U.S. Department of Energy's (DOE) Clean Cities Coalition Network fosters the nation's economic, environmental, and energy security by working locally to advance affordable, domestic transportation fuels, energy efficient mobility systems, and other fuel-saving technologies and practices. A national network of more than 75 active coalitions serve as the foundation of Clean Cities by working in communities across the country to implement alternative fuels, fuel-saving technologies and practices, and new mobility choices.

Every year, each Clean Cities coalition submits to DOE an annual report of its activities and accomplishments for the previous calendar year. Coalition directors, 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 coalition directors also submit data on the sales of alternative fuels, deployment of alternative fuel vehicles, idle-reduction initiatives, fuel economy activities, and efforts to reduce vehicle miles traveled. NREL and DOE analyze the data and translate them into energy use impact, greenhouse gas reduction, and other metrics to show progress supporting the Clean Cities mission for individual coalitions and the network as a whole. This report summarizes those impacts for Middle-West Tennessee Clean Fuels Coalition.

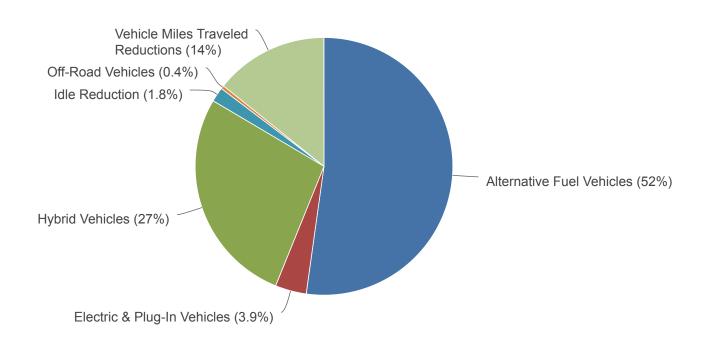
To view aggregated data for all local coalitions in the network, visit <u>cleancities.energy.gov/accomplishments</u>.

2022 Gallons of Gasoline Equivalent Reduced

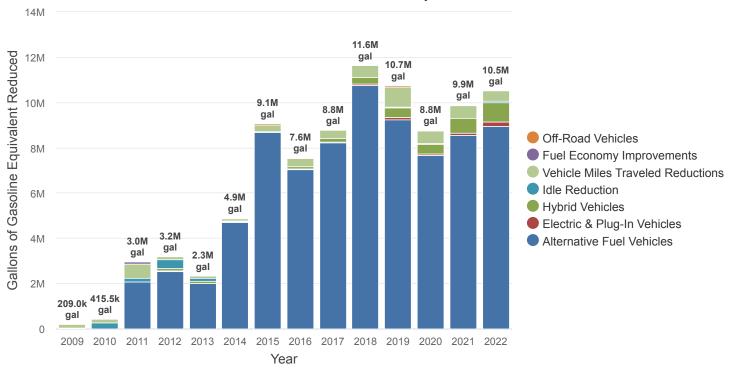
10,530,643 gallons



2022 Greenhouse Gas Emissions Reduced 37,417 tons

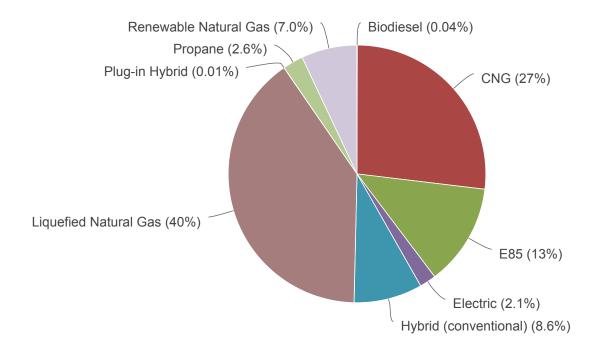


Historical Gallons of Gasoline Equivalent Reduced

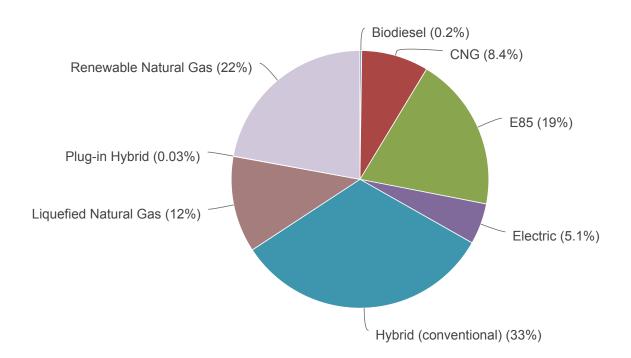


Historical Greenhouse Gas Emissions Reduced

2022 Gallons of Gasoline Equivalent Reduced by Fuel Type for Alternative Fuel Projects 10,019,762 gallons



2022 Greenhouse Gas Emissions Reduced by Fuel Type for Alternative Fuel Projects 31,402 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. Criteria pollutants include nitrogen oxides (NOx) and volatile organic compounds (VOC), both precursors to ozone pollution or smog. They also include particulate matter (PM) grouped into 10 and 2.5 micron sizes. 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. Upstream emissions from electric power plants, refineries, and biofuel feedstock farms are not included in this summary since those operations typically do not take place in or near population centers where the vehicles are operated and health effects can be documented. 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 <a href="https://clean.cities.citie

Reductions by Technology	co	NOx	VOC*	PM10	PM2.5
Alternative Fuel Vehicles - Biodiesel	-136 lb	-15 lb	155 lb	0 lb	0 lb
Alternative Fuel Vehicles - CNG	57,022 lb	3,782 lb	2,254 lb	355 lb	190 lb
Alternative Fuel Vehicles - E85	-141 lb	-6 lb	1,142 lb	-1 lb	0 lb
Alternative Fuel Vehicles - LNG	118,538 lb	7,153 lb	4,474 lb	817 lb	400 lb
Alternative Fuel Vehicles - Propane	1,690 lb	187 lb	162 lb	2 lb	5 lb
Alternative Fuel Vehicles - Renewable Natural Gas	10,118 lb	617 lb	2,712 lb	69 lb	34 lb
Electric, Hybrid & Plug-in Vehicles - Electric	28,316 lb	1,259 lb	2,478 lb	90 lb	59 lb
Electric, Hybrid & Plug-in Vehicles - HEV	166,576 lb	7,799 lb	7,334 lb	1,398 lb	576 lb
Electric, Hybrid & Plug-in Vehicles - PHEV	235 lb	11 lb	10 lb	1 lb	0 lb
Idle Reduction	10,910 lb	510 lb	498 lb	92 lb	38 lb
Off-Road Vehicles	4,864 lb	228 lb	213 lb	8 lb	8 lb
Truck Stop Electrification	159 lb	7 lb	7 lb	1 lb	1 lb
Vehicle Miles Traveled Reductions	70,432 lb	3,127 lb	6,224 lb	610 lb	244 lb
Total:	468,582 lb	24,660 lb	27,665 lb	3,441 lb	1,554 lb

^{*} VOC is interchangeable with NMOG (non-methane organic gases) and NMHC (non-methane hydrocarbons) for all purposes relevant to the Clean Cities suite of technologies.

COALITION

Middle-West Tennessee Clean Fuels Coalition - TN

http://www.tncleanfuels.org

Designated: 10/13/2004

Boundaries: Counties: Bedford, Benton, Carroll, Cheatham, Chester, Crockett, Davidson, Decatur, Dickson, Dyer, Fayette, Gibson, Giles, Hardeman, Hardin, Haywood, Henderson, Henry, Hickman, Houston, Humphreys, Lake, Lauderdale, Lawrence, Lewis, Lincoln, Macon, Madison, Marshall, Maury, McNairy, Montgomery, Moore, Obion, Perry, Robertson,

Rutherford, Shelby, Smith, Stewart, Sumner, Tipton, Trousdale, Wayne, Weakley, Williamson, Wilson

DIRECTORS

	DII/LOTOI/O		
	Address	Telephone	Fax
Alexa Voytek	Tennessee Department of Environment and Conservation William R. Snodgrass TN Tower, 2nd Floor, 312 Rosa L. Parks Ave. Nashville, TN 37243	615-613-1096	
Number of coalition of	directors		2
Coalition director(s)	nours per week on Clean Cities		16 hours
Other staff hours per	week on Clean Cities		15 hours
How long have you b	een the coalition director?		8 years
	OPERATING INFORMA	TION	
Coalition organizatio	nal structure	Hosted in a	state government agency
Does the coalition ha	ve a non-profit governing board?		Yes
Does the coalition ha	ve a non-governing advisory committee?		No
Stakeholders			
Number of stakehold	ers		1,050
Number of private sta	akeholders		500

Stakeholder counting notes

We used our email list as a baseline for counting our stakeholders. We have over 1,000 people we reach between direct local members and those who receive FuelsFix newsletters. Middle-West Tennessee Clean Fuels newsletters, and DriveElectricTN newsletters. After that we have many fleets and industry/other contacts that we work with that are not on one of our email lists. The total number as well as private sector stakeholders number are our best estimates based on our known stakeholders and communication channels.

Does the State Energy Office provide any financial support to the coalition or stakeholders?

Yes

Explain State Energy Office's support

The director, staff, and Clean Cities University Workforce Development Program intern all work out of the State Energy Office (SEO). The SEO provides administrative support in the form of office space, computer and phone access, printing services, etc. Additionally, the SEO cross-promotes many Middle-West Tennessee Clean Fuels events and initiatives via its external communications.

How do you obtain most of your data for the survey?

Coalition records, Estimates, Paper, email, or spreadsheet questionnaire to stakeholders, Phone calls to stakeholders

Has your coalition registered with www.grants.gov?

Non-DOE or ARRA grant and matching funds spent in 2022

Yes

2022 Outside Funding

Stakeholder dues collected

-

How much funding is obtained from other sources to cover coalition operating expenses?

\$2,560

Total non-DOE or ARRA funding in 2022

\$2,560

VEHICLE & FUEL INVENTORY

Alternative Fuel & Vehicles

			Number of			
Fleet/Station Name	Vehicle Class	Fuel	Vehicles	Fuel Used	GGE Reduced	GHG Reduced

Flack/Odedien News	Valsiala Ola	Food	Number of	F111	005 B. J	
Fleet/Station Name	Vehicle Class	Fuel	Vehicles	Fuel Used	GGE Reduced	GHG Reduced
Fleet B Market: Government - Local Vehicle type: Bus: School Percentage from coalition: 100% National Clean Fleets Partnershi Energy Efficient Mobility System	p: No	Propane	4	7,834 gal	4,943 gal	N/A
This is a school district in TN that of	pperates propane s	chool buses.				
* GHG emissions for this project are vehicle type from HDV to LDV.	re not estimated to	be less than ar	equivalent diesel f	leet. If LPG vehicle	es replace gasoline, p	please change
Fleet C	Heavy-Duty	CNG	1	784 GGE	500 gal	0.4 tons
Market: Utility Vehicle type: Unknown/Other Percentage from coalition: 75% National Clean Fleets Partnershi Energy Efficient Mobility System	•)				
This is a utility operating a heavy-o	luty CNG truck.					
Fleet C	Light-Duty	CNG	1	784 GGE	559 gal	1.1 tons
Market: Utility Vehicle type: Unknown/Other Percentage from coalition: 75% National Clean Fleets Partnershi Energy Efficient Mobility System	•)				
This is a utility operating a light-dut	ty CNG truck.					
Fleet D	Heavy-Duty	CNG	2	89 GGE	76 gal	0.1 tons
Market: Government - Local Vehicle type: Unknown/Other Percentage from coalition: 100% National Clean Fleets Partnershi Energy Efficient Mobility System	p: No)				
This is a local government operatir	ng CNG heavy-duty	vehicles.				
Fleet D	Light-Duty	CNG	15	665 GGE	632 gal	1.2 tons
Market: Government - Local Vehicle type: Unknown/Other Percentage from coalition: 100% National Clean Fleets Partnershi Energy Efficient Mobility System	p: No)				
This is a local government operatir	ng CNG light-duty v	rehicles.				
Fleet F Market: Government - Local Vehicle type: Unknown/Other Percentage from coalition: 100% National Clean Fleets Partnershi Energy Efficient Mobility System	p: No	CNG	13	1,547 GGE	1,470 gal	2.8 tons
This is a local government operatir	-					
Fleet G	Heavy-Duty	Propane	77	254,879 gal	160,822 gal	N/A
Market: Government - Local Vehicle type: Bus: School Percentage from coalition: 100% National Clean Fleets Partnershi Energy Efficient Mobility System	p: No	·	11	25 1 ,013 gal	100,022 yal	INP

* GHG emissions for this project are not estimated to be less than an equivalent diesel fleet. If LPG vehicles replace gasoline, please change

This is a school district that operates propane school buses.

vehicle type from HDV to LDV.

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Fleet/Station Name	Vehicle Class	Fuel	Number of Vehicles	Fuel Used	GGE Reduced	GHG Reduced
Fleet J	Heavy-Duty	Renewable Natural Gas	14	348,312 GGE	313,481 gal	3,113.4 tons

Renewable natural gas source: Landfill gas Renewable natural gas location: Off-site

Market: Corporate Fleet

Vehicle type: Truck: Semi-trailer Percentage from coalition: 100% National Clean Fleets Partnership: Yes

Energy Efficient Mobility Systems Partnership: No

This is data from FritoLay (owned by PepsiCo), who fill their heavy-duty CNG trucks at a local ANG station that dispenses 100% RNG. The data source could not provided updated data for 2022, so this data is from a previous year (multiplied by 0.8, only counting 80% of the old total).

Fleet JJ Heavy-Duty Propane 14 49,966 gal 31,527 gal N/A

Market: Government - Local Vehicle type: Bus: School Percentage from coalition: 100% National Clean Fleets Partnership: No

Energy Efficient Mobility Systems Partnership: No

This is a school district that operates propane school buses.

* GHG emissions for this project are not estimated to be less than an equivalent diesel fleet. If LPG vehicles replace gasoline, please change vehicle type from HDV to LDV.

Fleet M Heavy-Duty CNG 16 7,560 GGE 4,820 gal 4.2 tons

Market: Utility

Vehicle type: Unknown/Other Percentage from coalition: 75% National Clean Fleets Partnership: No

Energy Efficient Mobility Systems Partnership: No

This is a utility operating CNG heavy-duty vehicles.

Fleet MM Heavy-Duty Propane 7 16,721 gal 10,551 gal N/A

Market: Government - Local Vehicle type: Bus: School Percentage from coalition: 100% National Clean Fleets Partnership: No

Energy Efficient Mobility Systems Partnership: No

This is a school district that operates propane school buses.

* GHG emissions for this project are not estimated to be less than an equivalent diesel fleet. If LPG vehicles replace gasoline, please change vehicle type from HDV to LDV.

Fleet N Heavy-Duty Propane 13 25,676 gal 16,201 gal N/A

Market: Government - Local Vehicle type: Bus: School Percentage from coalition: 100% National Clean Fleets Partnership: No

Energy Efficient Mobility Systems Partnership: No

This is a school district that operates propane school buses.

* GHG emissions for this project are not estimated to be less than an equivalent diesel fleet. If LPG vehicles replace gasoline, please change vehicle type from HDV to LDV.

Fleet O Light-Duty CNG 13 9,213 GGE 6,564 gal 12.5 tons

Market: Utility

Vehicle type: Unknown/Other Percentage from coalition: 75% National Clean Fleets Partnership: No

Energy Efficient Mobility Systems Partnership: No This is a utility that operates light-duty CNG vehicles.

Fleet/Station Name	Vehicle Class	Fuel	Number of Vehicles	Fuel Used	GGE Reduced	GHG Reduced
Fleet P	Heavy-Duty	Renewable Natural Gas	78	15,761 GGE	10,048 gal	98.6 tons
Renewable natural gas sour	ce: Landfill gas					

Renewable natural gas source: Landfill gas Renewable natural gas location: Off-site

Market: Utility

Vehicle type: Unknown/Other Percentage from coalition: 75% National Clean Fleets Partnership: No

Energy Efficient Mobility Systems Partnership: No

This is a utility operating CNG heavy-duty vehicles. They own and operate their own public fueling stations, which dispense RNG sourced from a

local landfill.

Fleet P Light-Duty Renewable 45 15,761 GGE 11,230 gal 111.3 tons
Natural

Gas

Renewable natural gas source: Landfill gas Renewable natural gas location: Off-site

Market: Utility

Vehicle type: Unknown/Other Percentage from coalition: 75% National Clean Fleets Partnership: No

Energy Efficient Mobility Systems Partnership: No

This is a utility operating CNG light-duty vehicles. They own and operate their own public fueling stations, which dispense RNG sourced from a

local landfill.

Fleet Q Heavy-Duty Propane 2 1,803 gal 1,138 gal N/A

Market: Government - Local Vehicle type: Bus: School Percentage from coalition: 100% National Clean Fleets Partnership: No

Energy Efficient Mobility Systems Partnership: No

This is a school district that operates propane school buses.

* GHG emissions for this project are not estimated to be less than an equivalent diesel fleet. If LPG vehicles replace gasoline, please change vehicle type from HDV to LDV.

Fleet S Heavy-Duty CNG 22 342,719 GGE 291,311 gal 254.0 tons

Market: Airport

Vehicle type: Bus: Shuttle Percentage from coalition: 100% National Clean Fleets Partnership: No

Energy Efficient Mobility Systems Partnership: No

This is a fleet operating CNG shuttle buses for the local airport.

Fleet T Light-Duty E85 145 3,958 gal 1,636 gal 7.8 tons

(blender pump)

Market: Utility Vehicle type: Car

Percentage from coalition: 75% National Clean Fleets Partnership: No

Energy Efficient Mobility Systems Partnership: No

This is a utility operating light-duty flex fuel vehicles. On average, their vehicles are rarely refueled with E85. This explains the low utilization of

the fuel compared to the number of flex fuel vehicles in the fleet.

Fleet U Light-Duty E85 1,847 49,094 gal 27,055 gal 128.8 tons (blender pump)

Number of Vehicle Class Fleet/Station Name **Fuel Fuel Used GGE Reduced GHG Reduced Vehicles** Market: Government - Local Vehicle type: Car Percentage from coalition: 100% National Clean Fleets Partnership: No Energy Efficient Mobility Systems Partnership: No This is a local government light-duty flex fuel vehicles. On average, their vehicles are rarely refueled with E85. This explains the low utilization of the fuel compared to the number of flex fuel vehicles in the fleet. Fleet W Heavy-Duty 8 20,746 gal 13,090 gal N/A Propane Market: Government - Local Vehicle type: Bus: School Percentage from coalition: 100% National Clean Fleets Partnership: No Energy Efficient Mobility Systems Partnership: No This is a school district that operates propane school buses. * GHG emissions for this project are not estimated to be less than an equivalent diesel fleet. If LPG vehicles replace gasoline, please change vehicle type from HDV to LDV. Fleet X Heavy-Duty Renewable 55 51,709 GGE 32,964 gal 323.6 tons Natural Gas Renewable natural gas source: Landfill gas Renewable natural gas location: On-site Market: Utility Vehicle type: Unknown/Other Percentage from coalition: 75% National Clean Fleets Partnership: No Energy Efficient Mobility Systems Partnership: No This is a utility with multiple sites operating heavy-duty CNG vehicles. They are also a public fueling provider and consume/dispense 100% RNG. Fleet X Light-Duty Renewable 120 112,820 GGE 80,384 gal 796.6 tons Natural Gas Renewable natural gas source: Landfill gas

Renewable natural gas location: On-site

Market: Utility

Vehicle type: Unknown/Other Percentage from coalition: 75% National Clean Fleets Partnership: No

Energy Efficient Mobility Systems Partnership: No

This is a utility with multiple sites operating light-duty CNG vehicles. They are also a public fueling provider and consume/dispense 100% RNG.

Fleet Y 1 Light-Duty **CNG** 2,450 GGE 2,328 gal 4.4 tons Market: General/Unknown Vehicle type: Unknown/Other Percentage from coalition: 100% National Clean Fleets Partnership: No Energy Efficient Mobility Systems Partnership: No 8 Schwan's - Medium-duty Light-Duty Propane 26,579 gal 20,125 gal 31.7 tons Propane Market: Corporate Fleet Vehicle type: Pickup/SUV/Van Percentage from coalition: 100%

Energy Efficient Mobility Systems Partnership: No

National Clean Fleets Partnership: Yes

Station A 44 Heavy-Duty CNG 486,000 GGE 437,400 gal 649.0 tons

Fleet/Station Name	Vehicle Class	Fuel	Number of Vehicles	Fuel Used	GGE Reduced	GHG Reduced
Market: General/Unknown Vehicle type: Truck: Semi-trailer Percentage from coalition: 100% National Clean Fleets Partnership Energy Efficient Mobility Systems						
Station E	Heavy-Duty	CNG	30	17,652 GGE	11,253 gal	9.8 tons
Market: Utility Vehicle type: Unknown/Other Percentage from coalition: 75% National Clean Fleets Partnership Energy Efficient Mobility System						
This is a public CNG fueling station	-					
Station F Market: General/Unknown	Light-Duty	Biodiesel (20%)	39	13,148 gal	3,362 gal	53.8 tons
Vehicle type: Car Percentage from coalition: 100% National Clean Fleets Partnership Energy Efficient Mobility Systems						
This is a fueling station dispensing	B20 for public use.					
Station F	Light-Duty	E85 (blender pump)	1,500	273,592 gal	150,770 gal	717.9 tons
Market: General/Unknown Vehicle type: Car Percentage from coalition: 100% National Clean Fleets Partnership Energy Efficient Mobility Systems This is a series of fueling stations of	s Partnership: No		ation disponsi	og E95 for public uses		
						700.04
Station G	Light-Duty	Renewable Natural Gas	182	99,535 GGE	70,919 gal	702.8 tons
Renewable natural gas source: L Renewable natural gas location: Market: General/Unknown Vehicle type: Unknown/Other Percentage from coalition: 75% National Clean Fleets Partnership Energy Efficient Mobility Systems	Off-site					
This is a pair of local fueling station consumption is reported in separate						
Station I	Light-Duty	Renewable Natural Gas	468	255,517 GGE	182,056 gal	1,804.2 tons
Renewable natural gas source: L Renewable natural gas location: Market: General/Unknown Vehicle type: Unknown/Other Percentage from coalition: 75% National Clean Fleets Partnership Energy Efficient Mobility Systems	Off-site					
This is several local fueling stations consumption is reported in separate					their own CNG vehic	cles, whose fuel
Station K	Light-Duty	E85 (blender	4,242	1,095,000 gal	603,430 gal	2,873.2 tons

pump)

			N. mahan af			
Fleet/Station Name	Vehicle Class	Fuel	Number of Vehicles	Fuel Used	GGE Reduced	GHG Reduced
Market: General/Unknown Vehicle type: Unknown/Other Percentage from coalition: 100% National Clean Fleets Partnershi Energy Efficient Mobility System	p: No					
This is a series of fueling stations of	wned by the same	company, each s	station dispensin	g E85 for public use	-	
Station L	Light-Duty	E85 (blender pump)	3,435	886,702 gal	488,641 gal	2,326.7 tons
Market: General/Unknown Vehicle type: Unknown/Other Percentage from coalition: 100% National Clean Fleets Partnershi Energy Efficient Mobility System	p: No					
This is a series of fueling stations of	wned by the same	company, each s	station dispensin	g E85 for public use	-	
Station M Market: General/Unknown Vehicle type: Unknown/Other Percentage from coalition: 100% National Clean Fleets Partnership Energy Efficient Mobility System	p: No	CNG	34	18,628 GGE	17,697 gal	33.7 tons
This is a local fueling station disper	nsing CNG.					
Station N	Light-Duty	Biodiesel (20%)	10	3,717 gal	951 gal	15.2 tons
Market: General/Unknown Vehicle type: Unknown/Other Percentage from coalition: 100% National Clean Fleets Partnershi Energy Efficient Mobility System	p: No					
This is a fueling station dispensing	B20 for public use.					
Station N	Light-Duty	E85 (blender pump)	99	20,350 gal	11,214 gal	53.4 tons
Market: General/Unknown Vehicle type: Unknown/Other Percentage from coalition: 100% National Clean Fleets Partnershi Energy Efficient Mobility System	p: No					
This is a series of fueling stations of	wned by the same	company, each s	station dispensin	g E85 for public use		
Station O Market: General/Unknown Vehicle type: Unknown/Other Percentage from coalition: 100% National Clean Fleets Partnershi Energy Efficient Mobility System	p: No	CNG	16	8,613 GGE	8,182 gal	15.6 tons
This is a local CNG fueling station						
UPS - Heavy-duty CNG	Heavy-Duty	CNG	61	339,075 GGE	288,214 gal	251.3 tons
Market: Corporate Fleet Vehicle type: Unknown/Other Percentage from coalition: 100% National Clean Fleets Partnershi Energy Efficient Mobility System	p: Yes					
This includes class 4-6 package de	elivery trucks and cl	ass 7-8 tractors				
UPS - Heavy-duty LNG	Heavy-Duty	LNG	257	6,693,569 gal	4,012,078 gal	3,805.7 tons

			Number of			
Fleet/Station Name	Vehicle Class	Fuel	Vehicles	Fuel Used	GGE Reduced	GHG Reduced
Market: Corporate Fleet Vehicle type: Truck: Semi-trailer Percentage from coalition: 100% National Clean Fleets Partnersh Energy Efficient Mobility System	ip: Yes					
Waste Management - Heavy-duty CNG	Heavy-Duty	CNG	202	1,906,555 GGE	1,620,572 gal	1,413.1 tons
Market: Corporate Fleet Vehicle type: Truck: Refuse Percentage from coalition: 100% National Clean Fleets Partnersh Energy Efficient Mobility System	ip: Yes					
Reloading 2021 WM after not repo	rting. Will not reloa	d in 2023.				
Total:			13,140		8,950,192 gal	19,537 tons

Electric, Hybrid & Plug-in Vehicles

Fleet/Station Name	Vehicle Class	Fuel	Number of Vehicles	GGE Reduced	GHG Reduced
Fleet BB Electricity used: 52,237 kWh	Light-Duty	Electric	20	5,243 gal	42.3 tons
Market: Utility Vehicle type: Car Percentage from coalition: 75% National Clean Fleets Partnership: No Workplace Charging Challenge: - Energy Efficient Mobility Systems Partnership: No					
This is a power supplier for the region operating light-duty by the coalition.	y EVs across the st	ate. The total I	kWh has been na	arrowed down to onl	y the area covered
Fleet H	Light-Duty	Electric	1	149 gal	1.2 tons
Electricity used: 1,480 kWh Market: Utility Vehicle type: Car Percentage from coalition: 75% National Clean Fleets Partnership: No Workplace Charging Challenge: - Energy Efficient Mobility Systems Partnership: No This is a utility that operates a light-duty PEV.					
Fleet I	Heavy-Duty	HEV	1	1,367 gal	16.2 tons
Average vehicle fuel economy: 3 MPG Miles traveled per vehicle per year: 34,012 mi Market: Commuters Vehicle type: Bus: Transit Percentage from coalition: 100% National Clean Fleets Partnership: No Workplace Charging Challenge: - Energy Efficient Mobility Systems Partnership: No					
This is a transit agency operating a hybrid transit bus.					
Fleet LL	Heavy-Duty	Electric	12	2,736 gal	17.5 tons
Electricity used: 30,413 kWh Market: Commuters Vehicle type: Bus: Transit Percentage from coalition: 100% National Clean Fleets Partnership: No Workplace Charging Challenge: - Energy Efficient Mobility Systems Partnership: No					
This is a transit agency that operates a fleet of electric but	ises.				

			Number of		
Fleet/Station Name	Vehicle Class	Fuel	Vehicles	GGE Reduced	GHG Reduced
Fleet LL Average vehicle fuel economy: 5 MPG Miles traveled per vehicle per year: 36,909 mi Market: Commuters Vehicle type: Bus: Transit Percentage from coalition: 100% National Clean Fleets Partnership: No Workplace Charging Challenge: - Energy Efficient Mobility Systems Partnership: No This is a local government operating hybrid transit buses.	Heavy-Duty	HEV	150	851,968 gal	10,126.3 tons
Fleet P	Light-Duty	Electric	4	121 gal	1.0 tons
Electricity used: 1,204 kWh Market: Utility Vehicle type: Car Percentage from coalition: 75% National Clean Fleets Partnership: No Workplace Charging Challenge: - Energy Efficient Mobility Systems Partnership: No	Light Duty	Licotric	•	121 gai	1.0 10113
This is a utility operating light-duty EVs.					
Fleet P Average vehicle fuel economy: 43 MPG	Light-Duty	HEV	23	2,977 gal	35.0 tons
Miles traveled per vehicle per year: 5,142 mi Market: Utility Vehicle type: Pickup/SUV/Van Percentage from coalition: 75% National Clean Fleets Partnership: No Workplace Charging Challenge: - Energy Efficient Mobility Systems Partnership: No					
This is a utility operating hybrid vehicles.					
Fleet R Electricity used: 2,106 kWh Market: Utility Vehicle type: Car Percentage from coalition: 75% National Clean Fleets Partnership: No Workplace Charging Challenge: - Energy Efficient Mobility Systems Partnership: No	Light-Duty	Electric	2	211 gal	1.7 tons
This is a utility that operates PEVs.	5.	DUE) (0 1	0.01
Fleet T Electricity used: 76 kWh Market: Utility Vehicle type: Unknown/Other Percentage from coalition: 75% National Clean Fleets Partnership: No Workplace Charging Challenge: - Energy Efficient Mobility Systems Partnership: No	Heavy-Duty	PHEV	1	6 gal	0.0 tons
This is a utility that operates a heavy-duty PHEV.					
Fleet T Electricity used: 195 kWh Market: Utility Vehicle type: Car Percentage from coalition: 75% National Clean Fleets Partnership: No Workplace Charging Challenge: - Energy Efficient Mobility Systems Partnership: No	Light-Duty	Electric	2	20 gal	0.2 tons
This is a utility that operates light-duty PEVs.					

			Number of		
Fleet/Station Name	Vehicle Class	Fuel	Number of Vehicles	GGE Reduced	GHG Reduced
Fleet T	Light-Duty	HEV	2	55 gal	0.6 tons
Average vehicle fuel economy: 43 MPG Miles traveled per vehicle per year: 2,000 mi Market: Utility Vehicle type: Car Percentage from coalition: 75% National Clean Fleets Partnership: No Workplace Charging Challenge: - Energy Efficient Mobility Systems Partnership: No					
This is a utility operating hybrid vehicles.					
Fleet U	Light-Duty	Electric	32	2,662 gal	21.5 tons
Electricity used: 19,893 kWh Market: Government - Local Vehicle type: Car Percentage from coalition: 100% National Clean Fleets Partnership: No Workplace Charging Challenge: - Energy Efficient Mobility Systems Partnership: No					
This is a local government that operates light-duty PEVs.		\.			
Fleet U Average vehicle fuel economy: 43 MPG Miles traveled per vehicle per year: 500 mi Market: Government - Local Vehicle type: Car Percentage from coalition: 100% National Clean Fleets Partnership: No Workplace Charging Challenge: - Energy Efficient Mobility Systems Partnership: No	Light-Duty	HEV	438	3,994 gal	47.0 tons
This is a local government operating a fleet of hybrid veh	icles.				
Fleet V	Light-Duty	Electric	1	108 gal	0.9 tons
Electricity used: 1,080 kWh Market: Utility Vehicle type: Car Percentage from coalition: 75% National Clean Fleets Partnership: No Workplace Charging Challenge: - Energy Efficient Mobility Systems Partnership: No					
This is a utility that operates a light-duty PEV.					
Fleet Z Electricity used: 179 kWh Market: Government - Local Vehicle type: Unknown/Other Percentage from coalition: 100% National Clean Fleets Partnership: No Workplace Charging Challenge: - Energy Efficient Mobility Systems Partnership: No	Heavy-Duty	Electric	1	16 gal	0.1 tons
This is a county government that operates a heavy-duty l	PEV.				
Fleet Z	Light-Duty	Electric	1	60 gal	0.5 tons
Electricity used: 449 kWh Market: Government - Local Vehicle type: Car Percentage from coalition: 100% National Clean Fleets Partnership: No Workplace Charging Challenge: - Energy Efficient Mobility Systems Partnership: No					
This is a county government that operates a light-duty PE	V and two light-dut	y PHEVs.			

Number of Fleet/Station Name Vehicle Class **GGE Reduced Fuel** Vehicles **GHG Reduced** Fleet Z Light-Duty **HEV** 8 0.9 tons 73 gal Average vehicle fuel economy: 43 MPG Miles traveled per vehicle per year: 500 mi Market: Government - Local Vehicle type: Car Percentage from coalition: 100% National Clean Fleets Partnership: No Workplace Charging Challenge: -Energy Efficient Mobility Systems Partnership: No This is a county government operating a fleet of hybrid vehicles. Station B Light-Duty Electric 25,000 121,181 gal 977.1 tons

Electricity used: 905,573 kWh Market: General/Unknown Vehicle type: Unknown/Other Percentage from coalition: 100% National Clean Fleets Partnership: No Workplace Charging Challenge: -

Energy Efficient Mobility Systems Partnership: No

This is charging data provided to us by a network vendor covering the state. The vehicle number we used is a high estimate, reflecting the current number of EVs registered in Tennessee.

number of EVs registered in Tennessee.

Station C Light-Duty Electric 25,000 3,403 gal 27.4 tons

Electricity used: 25,430 kWh Market: General/Unknown Vehicle type: Unknown/Other Percentage from coalition: 100% National Clean Fleets Partnership: No Workplace Charging Challenge: -

Energy Efficient Mobility Systems Partnership: No

This is charging data provided to us by a network vendor covering the state. The vehicle number we used is a high estimate, reflecting the current number of EVs registered in Tennessee.

Station Q Light-Duty Electric 25,000 26,763 gal 215.8 tons

Electricity used: 200,000 kWh Market: General/Unknown Vehicle type: Unknown/Other Percentage from coalition: 100% National Clean Fleets Partnership: No Workplace Charging Challenge: -

Energy Efficient Mobility Systems Partnership: No

This is charging data provided to us by a network vendor covering the state. The vehicle number we used is a high estimate, reflecting the current

number of EVs registered in Tennessee.

Station R Light-Duty Electric 25,000 18,820 gal 151.7 tons

Electricity used: 140,636 kWh Market: General/Unknown Vehicle type: Unknown/Other Percentage from coalition: 100% National Clean Fleets Partnership: No Workplace Charging Challenge: -

Energy Efficient Mobility Systems Partnership: No

This is charging data provided to us by a network vendor covering the state. The vehicle number we used is a high estimate, reflecting the current

number of EVs registered in Tennessee.

UPS - Medium-duty Hybrids Heavy-Duty HEV 4 1,282 gal 15.2 tons

Number of Fleet/Station Name Vehicle Class Fuel Vehicles GGE Reduced GHG Reduced

Average vehicle fuel economy: 24 MPG Miles traveled per vehicle per year: 2,527 mi

Market: Corporate Fleet Vehicle type: Truck: No Trailer Percentage from coalition: 100% National Clean Fleets Partnership: Yes Workplace Charging Challenge: -

Energy Efficient Mobility Systems Partnership: No

UPS indicates that their hybrid vehicles see up to 4x improvement in fuel economy compared to their conventional counterparts.

UPS - Medium-duty PHEV Heavy-Duty PHEV 5 1,207 gal

Electricity used: 11,992 kWh Market: Corporate Fleet Vehicle type: Truck: No Trailer Percentage from coalition: 100% National Clean Fleets Partnership: Yes Workplace Charging Challenge: -

Energy Efficient Mobility Systems Partnership: No

Total: 100,708 1,044,420 gal 11,708 tons

8.4 tons

156 tons

Off-Road Vehicles

Total:

Fleet Name	Application	Method	Fuel	Number of Vehicles	GGE Reduced	GHG Reduced	
Fleet AA	Landscaping and lawn equipment	Alternative fuel or vehicles	Electric	289	25,120 gal	155.9 tons	
Fuel used: 288,200 kWh Percentage from coalitie National Clean Fleets Pa Energy Efficient Mobility	on: 100%	No					
This is a State government Coalition boundaries.	nt operating electric lawns	and mowing equipment	t. The share re	ported is only for	the equipment opera	ating within	
Fleet L	Other	Alternative fuel or vehicles	Propane	1	30 gal	0.0 tons	
Fuel used: 53 gal Percentage from coalition: 75% National Clean Fleets Partnership: No Energy Efficient Mobility Systems Partnership: No							

FUEL ECONOMY

290

25,150 gal

Vehicle Miles Traveled Reductions

This is a utility operating an off-road light duty propane vehicle.

Project Name	Method	Vehicle Class	GGE Reduced	GHG Reduced
VMT Red. 1	Mass transit	Light-Duty	276,044 gal	3,246.6 tons
Fuel type of vehicles driven less: Gasoline				
Fuel economy of vehicles driven less: 19 MP	G			
Number of vehicles driven less: 2.017.245				

Percentage from coalition: 50% National Clean Fleets Partnership: No

Energy Efficient Mobility Systems Partnership: No

VMT project per vehicle being driven less: 5 mi

This transit provider offers commuter rail, regional bus, and downtown bus services for Middle TN. MWTCF highlights the regional transit and rail services provided by the transit provider on its transportation demand management website and at local events. The agency provided the regional transit and rail ridership data for 2022.

Project NameMethodVehicle ClassGGE ReducedGHG ReducedVMT Red. 2CarpoolingLight-Duty25,422 gal299.0 tons

Fuel saved: 25,422 gallons Percentage from coalition: 100% National Clean Fleets Partnership: No

Energy Efficient Mobility Systems Partnership: No

This is a local rideshare program that provided actual fuel savings data.

VMT Red. 3 Telecommute Light-Duty 5,207 gal 61.2 tons

Fuel type of vehicles driven less: Gasoline Fuel economy of vehicles driven less: 19 MPG

Number of vehicles driven less: 13

VMT project per vehicle being driven less: 7,610 mi

Percentage from coalition: 100% National Clean Fleets Partnership: No

Energy Efficient Mobility Systems Partnership: No

The TN Department of Environment and Conservation's Office of Energy Programs (TDEC OEP) acts as host agency to MWTCF. In 2022, 13 office staff worked predominantly from home, resulting in an average VMT reduction per vehicle of around 7,610 miles.

VMT Red. 4 Vanpooling Light-Duty 146,437 gal 1,722.3 tons

Fuel type of vehicles driven less: Gasoline Fuel economy of vehicles driven less: 19 MPG

Number of vehicles driven less: 1

VMT project per vehicle being driven less: 3,532,010 mi

Fuel type of additional vehicles: Gasoline Fuel economy of additional vehicles: 15 MPG

Number of additional vehicles: 40 VMT per additional vehicle: 14,797 mi Percentage from coalition: 100% National Clean Fleets Partnership: No

Energy Efficient Mobility Systems Partnership: No

15-county regional vanpool. Vanpool program provided actual VMT reductions in 2022, but did not provide number of participants/number of cars

removed. This explains the high VMT reduction number used in the analysis.

Total: 453,109 gal 5,329 tons

IDLE REDUCTION

Truck Stop Electrification

Project Name	Number of Bays	Usage per Bay	GGE Reduced	GHG Reduced
IR Project 4	10	71 hrs/year	819 gal	9.7 tons
Percentage from coalition: 100% National Clean Fleets Partnership: No Energy Efficient Mobility Systems Partnership This is a TSE site at a major fueling station in TN				
Total:	10		819 gal	10 tons

Idle Reduction

Project Name	Type of Project	Number of Vehicles	GGE Reduced	GHG Reduced
IR Project 1	Auxiliary power unit (APU)	7	3,058 gal	36.0 tons
Type of vehicle: Light-Duty Fuel reduced: 3,058 gal Percentage from coalition: 100% National Clean Fleets Partnership: No Energy Efficient Mobility Systems Partnership: No				
This is a local fire department that implements idle redu	uction technology.			

Project Name	Type of Project	Number of Vehicles	GGE Reduced	GHG Reduced
IR Project 2	Policies	1,501	53,894 gal	640.6 tons

Type of vehicle: Heavy-Duty - Bus: School

Idling reduced per vehicle: 17 mins/day, 180 days/year

Fuel saved per vehicle: 0.61 gal/hr Percentage from coalition: 100% National Clean Fleets Partnership: No

Energy Efficient Mobility Systems Partnership: No

This is based on the results of a survey conducted of all school districts that implemented an idle reduction policy as part of their receiving Volkswagen Settlement EMT funds from the State of Tennessee. MWTCF staff within TDEC OEP administer this grant program.

Total: 1,508 56,952 gal 677 tons

FUEL STATIONS

New Stations

Fuel	Public Stations	Private Stations
Biodiesel	-	-
CNG - Compressed Natural Gas	-	-
E85 - 85% Ethanol	-	-
EVSE Ports (Chargers): Level 1 & Level 2	16	-
EVSE Ports (Chargers): DC Fast Chargers	2	-
Hydrogen	-	-
LNG - Liquefied Natural Gas	-	-
Propane	-	-
Total:	18	0

OUTREACH ACTIVITIES

Activity Name	Dates	Activity Type	Percentage from Coalition	Persons Reached
Video: Washington County Schools Electric Bus	01/20/2022	Social Media	100%	50
Technology: Electric vehicles				

Audience: General Public, Government, Private Fleets, Transit

This video explores Tennessee's first all-electric school bus, operated in Washington County. In addition to being uploaded to the Fuels Flix YouTube channel, this video was also shown during a Tennessee Sustainable Transportation Forum & Expo webinar in Q1 (attended by 104 stakeholders, including TDEC and TDOT leadership).

Video: A Conversation with Vanderbilt 04/28/2022 Social Media 100% 15

University on MoveVU

Technology: Vehicle miles traveled reduction

Audience: General Public, Other

This video featured an interview between MWTCF staff and representatives of Vanderbilt University's Commute Hub. The discussion focused on the university's MoveVU initiative, designed to encourage staff, faculty, and students to ditch single occupancy vehicle travel in favor of other mobility modes.

Video: A Conversation with TVA on EV Fleet 04/28/2022 Social Media 100% 10

Adoption

Technology: Electric vehicles

Audience: Government, Private Fleets, Utility

This video features an interview with the Tennessee Valley Authority on its decision to electrify 100% of its light-duty vehicle fleet and 50% of its medium-duty vehicle fleet by 2030.

Activity Name	Dates	Activity Type	Percentage from Coalition	Persons Reached
MD and HD Alternative Fuel Vehicle Workshop	04/07/2022	Workshop Held By Coalition	100%	75
echnology: E85, Electric vehicles, Natural gas ve Audience: Airport, Delivery, Government, Private F	•			
This event featured speakers from Alliance Autogas experiences and opportunities in the medium- and I piodiesel applications.				
Jpper Cumberland Area Community Charging Planning Workshop	06/06/2022	Conference Participation	10%	50
echnology: Electric vehicles				
Organized by East Tennessee Clean Fuels, this wo. Tennessee to discuss considerations and prioritizati			pper Cumberland region	of
/ideo: First-Mile, Last-Mile Transit Solutions n TN	6 04/29/2022	Social Media	100%	20
echnology: Vehicle miles traveled reduction Audience: Delivery, Government, Private Fleets, Tr	ansit, Utility			
This video featured interviews with two transit agent Link program with Uber (Nashville) and MATA's new rom transit hubs, particularly for low-income commissiolutions for reaching transit opportunities.	cies implementing first- v Ready! program (Men	nphis). These programs are desig	gned to assist people get	ting to and
/ideo: A Conversation with Memphis Fire Department on Idle Reduction	04/28/2022	Social Media	100%	50
Fechnology: Idle reduction Audience: Airport, Delivery, Government, Private F	leets, Utility			
This video features an interview with the Memphis I dling during emergencies and save fuel for the City		ir experience with new hybrid am	bulance technologies tha	t reduce
Nashville Earth Day	04/23/2022	Conference Participation	100%	150
Fechnology: Biodiesel, E85, Electric vehicles, Fuel Propane, Renewable diesel, Vehicle miles traveled Audience: General Public		ts, Hybrid electric vehicles, Idle r	eduction, Natural gas veh	nicles,
MWTCF set up and staffed a booth at the Nashville ransportation, alternative fuels, and advanced vehi	-	Centennial Park to raise awarene	ss about the coalition, su	stainable
TN State Parks EV Transition Assistance	12/31/2022	One-on-One Fleet Outreach	50%	10
Technology: Electric vehicles Audience: Government				
Throughout the year, MWTCF worked with TSP to b	pegin replacing Electric	Candidate Vehicles leaving state	e service with commercial	lly available
Nashville Electric Service Fleet Assistance	05/04/2022	One-on-One Fleet Outreach	50%	10
Technology: Electric vehicles Audience: Government, Utility				
MWTCF staff participated in a call with representati incentive program for customers within their service that NES could take and technical responses to key	territory. During the ca	II, MWTCF weighed in on and pro		
Stanford Business School Assistance	06/17/2022	One-on-One Fleet	50%	10

Outreach

Percentage Persons Activity Name Dates Activity Type from Coalition Reached

Technology: Electric vehicles

Audience: General Public, Private Fleets

MWTCF participated in a call with current students at Stanford Business School to provide technical assistance on a project that they are working on. Given that public EV charger deployment is hindered by low profitability and high financial risk, which inhibit private investment, the project team was seeking insights to improve charger profitability and reduce investment risk through advanced software management systems and novel financial structures.

07/01/2022 One-on-One Fleet 50% 10 City of Murfreesboro Assistance Outreach

Technology: Electric vehicles

Audience: General Public, Government, Private Fleets

MWTCF participated in communications between the City of Murfreesboro, TVA, and Smartmark USA to provide technical assistance for the City as it plans for implementation of its Connected Communities project, which is to include a degree of fleet electrification and the installation of Level 2 charging.

Vanderbilt University Assistance 09/26/2022 One-on-One Fleet 50% 10 Outreach

Technology: Electric vehicles **Audience: Private Fleets**

MWTCF staff participated in group calls with representatives from Vanderbilt University regarding a potential partnership for the coalition to provide technical assistance as the university begins to create an electrification plan. Early discussions focused on the services that MWTCF can provide as well as providing an overview of the different funding and financing opportunities that are available and upcoming.

TN BEEP Partnership 04/21/2022 One-on-One Fleet 15% 100 Outreach

Technology: Electric vehicles Audience: Government

MWTCF supported the planning and programming for the TN Bus Electrification, Education and Planning (BEEP) initiative, which included preparation for the first public webinar, which was held on April 21. TN BEEP is a partnership to provide no-cost education and assistance services to school district leadership and fleet management personnel in Tennessee. Significant funding is coming through the EPA over the next five years and this partnership intends to help districts that want to make the switch to electric or other alternative-fuel school buses. Following EPA's release of the list of prioritized school districts under the EPA Clean School Bus Program, MWTCF supported the TN BEEP initiative in reaching out to all 88 prioritized school districts in TN to answer questions, provide technical assistance, and encourage submission of applications by school districts for funding.

Total: 570

GRANTS

Name	Grantor	Total Grant Amount	Total Matching Funds	Total Project Funding	Grant Amount Spent in 2022	Matching Funds Spent in 2022	Total Project Funding Spent in 2022
EV Widescale Analysis for Tomorrow's Transportation Solutions	Clean Fuels Ohio	\$40,000	\$0	\$40,000	\$0	\$0	\$0
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Sources of the grant: U.S. Department of Energy

Partners: Clean Fuels Ohio, East Tennessee Clean Fuels Coalition

Technologies: Electricity

Funds contracted to coalitions or received from coalitions: receiving

Coalitions involved: Clean Fuels Ohio

Name	Grantor	Total Grant Amount	Total Matching Funds	Total Project Funding	Grant Amount Spent in 2022	Matching Funds Spent in 2022	Total Project Funding Spent in 2022
Rural Reimagined: Building an EV Ecosystem and Green Economy for	Tennessee Tech University	\$5,000	-	\$5,000	\$0	\$0	\$0
	S. Department of Energy litions or received from co Tennessee Clean Fuels Co						
Medium-duty eTruck: Pilot Electrified Fleets in Urban and Regiona	University of Texas at Austin / Tennessee Tech University	\$17,922	\$7,681	\$25,603	\$0	\$2,560	\$2,560
Length of grant: 3 years Year grant began: 2022 Sources of the grant: U.S Partners: East Tennessee Technologies: Electricity	,						
Total:	\$62,922	\$7,681	\$70,603	\$0	\$2,560	\$2,560	