

IEA-Advanced Motor Fuels ANNUAL REPORT 2025

UNITED STATES



United States

Drivers and Policies

Vehicles move the American economy. Each year in the United States, vehicles transport 16 billion tons of freight — about \$64 billion worth of goods each day¹ — and move people more than 3 trillion vehicle-miles.² Growing our economy requires transportation, and transportation requires energy. The transportation sector accounts for approximately 27% of total U.S. energy needs,³ and the average U.S. household spends over 15% of its total family expenditures on transportation,⁴ making it, as a percentage of spending, the costliest personal expenditure after housing. Affordable transportation is critical to the overall economy, from the movement of goods to providing access to jobs, education, and healthcare.

The transportation sector has historically relied heavily on petroleum, which supports over 90% of the sector's energy needs today.⁵ The U.S. is now a net oil exporting country as a result of the significant expansion of its domestic oil production in the past 20 years.

Advanced Motor Fuels Statistics

The U.S. Energy Information Administration (EIA) estimated that total U.S. transportation energy consumption for 2025 was 28,208 trillion British thermal units (Btu) — 1% lower than in 2024.⁶ About 90% of this consumption is petroleum-based fuels (gasoline and diesel), with much of the remainder being ethanol blended into gasoline at 10% (E10), and biodiesel and renewable diesel blended into diesel at various rates. Biofuels accounted for 1,683 trillion Btu during 2025, natural gas for 1,399 trillion Btu, electricity for 60 trillion Btu, and propane for 12 trillion Btu.⁷

Biofuels

The most accurate biofuel use data come from the U.S. Environmental Protection Agency's (EPA's) recording of Renewable Identification Numbers (RINs) filed by refiner/marketers of liquid transportation fuels, as shown in Figure 1.⁸ Each RIN is equivalent to 1 gallon of ethanol-equivalent by Btu content; RINs are generated when a motor fuel refiner/blender blends or sells the renewable fuel or fuel blend. Renewable fuel volumes dropped slightly from 21.8 billion gallons in 2024 to 20.5 billion gallons in 2025, largely due to a 24% decrease in biomass-based diesel volumes.

¹ Bureau of Transportation Statistics, U.S. Department of Transportation (DOT), *Transportation Statistics Annual Report 2025*, Table 12, <https://www.bts.gov/tsar>.

² Davis, Stacy C, and Robert G. Boundy, *Transportation Energy Data Book: Edition 40*. Oak Ridge, TN: Oak Ridge National Laboratory 2022. <https://doi.org/10.2172/1878695>. Table 3.09: Shares of Highway Vehicle-Miles Traveled by Vehicle Type, 1970–2019.

³ Ibid. Table 2.02: U.S. Consumption of Total Energy by End-use Sector, 1950–2021.

⁴ Ibid. Table 11.1: Average Annual Expenditures of Households by Income, 2020.

⁵ Ibid. Table 2.03: Distribution of Energy Consumption by Source and Sector, 1973 and 2021.

⁶ EIA, *EIA Monthly Energy Review*, April 2026.

⁷ Ibid.

⁸ EPA, 2026, *EPA Moderated Transaction System*, March 2026.

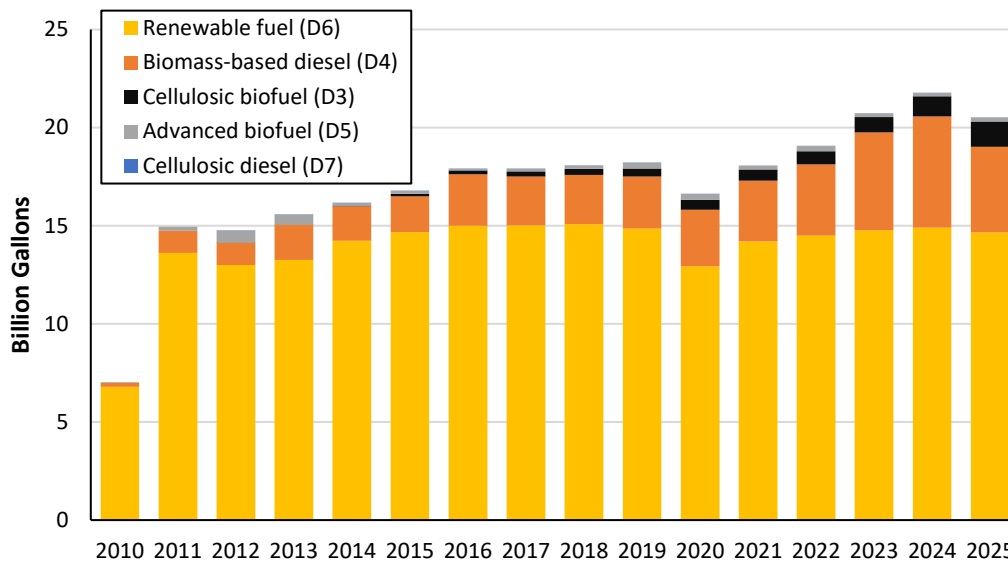


Figure 1. Biofuel Volumes Resulting from U.S. Renewable Fuel Standard

Electric Vehicles

Sales of plug-in hybrid electric vehicles (PHEVs) and battery electric vehicles (BEVs) totaled 1,476,934 in 2025 — a 5% decrease compared with 2024.⁹ In September 2025, federal tax credits for BEVs ended. On the other hand, sales of HEVs (non-plug-in) were up 28% in 2025, totaling 2,059,492.¹⁰ As of March 2026, consumers could choose from 134 available plug-in models for model year 2026.¹¹

Alternative Fuel Infrastructure

The U.S. Department of Energy's (DOE's) Alternative Fuels Data Center provides the number of alternative fuel refueling stations in the United States.¹² As Table 1 shows, not including electric recharging stations, the total number of alternative fueling stations in the United States increased by 79% between 2012 and 2025. The number of compressed natural gas (CNG), liquefied natural gas (LNG), and hydrogen stations decreased slightly in 2025. The total number of public and private non-residential EV recharging outlets jumped by over 1,900% over this period, with a 22% gain in 2025.

⁹ Argonne National Laboratory, 2026, "[Light Duty Electric Drive Vehicles Monthly Sales Updates](#)."

¹⁰ Ibid.

¹¹ DOE, 2026, Alternative Fuels Data Center, "[Availability of Hybrid and Plug-In Electric Vehicles](#)."

¹² DOE, 2026, "[Alternative Fueling Station Counts by State](#)."

Table 1. U.S. Alternative Fuel Refueling Stations by Type, 2012–2025 (including public and private stations)

Year	BD	CNG	E85	Electric Outlets ^a	H ₂	LNG	LPG	RD ^b	Total	Total Non-electric
2012	675	1,107	2,553	13,392	58	59	2,654	0	20,498	7,106
2013	757	1,263	2,639	19,410	53	81	2,956	0	27,159	7,749
2014	784	1,489	2,780	25,511	51	102	2,916	0	33,633	8,122
2015	721	1,563	2,990	30,945	39	111	3,594	0	39,963	9,018
2016	718	1,703	3,147	46,886	59	139	3,658	0	56,310	9,424
2017	704	1,671	3,399	53,141	63	136	3,478	0	62,592	9,451
2018	670	1,574	3,632	67,957	64	114	3,328	0	77,339	9,382
2019	614	1,583	3,837	87,457	64	116	3,118	0	96,789	9,332
2020	703	1,549	3,949	108,190	64	103	2,967	0	117,525	9,335
2021	1,102	1,506	4,378	130,241	67	103	2,804	0	140,201	9,960
2022	1,193	1,399	4,426	143,771	72	98	2,713	573	154,245	10,474
2023	1,700	1,392	4,495	176,032	76	94	2,813	606	187,208	11,176
2024	1,792	1,361	4,705	218,214	77	75	2,825	655	229,704	11,490
2025	1,639	1,352	5,082	267,277	70	68	2,988	1,490	279,966	12,689

^a Total number of recharging outlets, not sites.

^b Renewable diesel (RD) station data collection began in 2022.

Research and Development Focus

The DOE's Transportation Technologies Office (TTO) sponsors research and development (R&D) on a broad range of technologies for all levels of vehicles and transportation systems to enable affordable U.S. transportation systems. Areas of active research include advanced powertrain technologies, materials, and fuels for on-road and non-road applications, mobility systems, and technology deployment. The majority of the TTO budget is dedicated to batteries and electrified technologies, but engines and fuels continue to have a large role. Related to AMF's mission, TTO's current portfolio in the internal combustion engine vehicle area comprises the following: conducting research in fuels and advanced combustion engines for non-road vehicles, improving the match between engines and fuel characteristics, and increasing engine and vehicle efficiencies. This research covers a very broad range of fuel, engine, and vehicle technologies.

Outlook

The EIA's [Annual Energy Outlook 2026](#) projects a 40% decrease in light-duty transportation energy use from 2025 to 2050, despite a 12% increase in travel demand, due to improved energy efficiencies of vehicle technologies.¹³ Similarly, the EIA projects a 7% decrease in on-road freight transportation during this type, despite a 20% increase in miles traveled. BEVs and PHEVs are projected to account for about 49% and 77% of the total sales of light-duty vehicles in 2030 and 2050, respectively. While BEV, hydrogen and natural gas freight trucks sales are projected to account for 9%, 1%, and 1% of the total in 2030 and 24%, 7%, and 4% in 2050, respectively.

Additional Information Sources

- Oak Ridge National Laboratory, [“Transportation Energy Data Book”](#)
- DOE, [Federal and State Laws and Incentives](#)
- EIA, [Monthly Energy Review](#)
- DOE, [Technology Integration Program](#)
- DOE, [Alternative Fuels and Feedstocks Office](#)

¹³ Energy Information Administration, 2026, [Annual Energy Outlook 2026](#).