



FACT SHEET

# AFV Towing and Roadside Personnel



As of 2015, there were nearly 23 million cars and light-duty trucks powered by propane, natural gas, biodiesel, ethanol, hydrogen, and electric on U.S. roads. These alternative fuel vehicles (AFVs) are as safe as conventional vehicles but they are different, meaning additional education and training is needed. It is important that towing and recovery operators understand the vehicles and their differences so they can work with them safely.

## Identification

Before towing a vehicle, determine if it is an AFV by:

- Noting vehicle badging and nonstandard dash indicators;
- Checking inside fuel doors for nonstandard fuel ports;
- Looking for specialized components such as orange cables under the hood or pressurized fuel tanks that can be in different locations.

## Towing

There are three main considerations when towing an alternative fuel vehicle:

1. Stop any leaks from fuel or battery acid;
  2. Locate and identify the type of fuel tank(s)—never connect towing equipment to fuel tanks;
  3. Locate and identify types of other special components such as high-voltage batteries and cables, and make sure they cannot be compromised while in tow.
- Before towing it is important to secure the vehicle by shutting off fuel sources, and monitoring for flammable vapors—remember some alternative fuels are odorless, colorless, and tasteless, and should be checked for with special gas detectors.
  - Several alternative fuel vehicles can be towed by conventional methods, including biodiesel, ethanol, natural gas, and propane vehicles.
  - Electric drive vehicles (hybrid electric, plug-in hybrid electric, battery electric, or fuel cell electric) should only be recovered using a rollback or flatbed.

## Roadside Assistance

Jumpstarting biodiesel, ethanol, natural gas, and propane vehicles is the same as with conventional vehicles. However, electric drive vehicles require specialized training:

- Jumpstarting electric drive vehicles (hybrid electric, plug-in hybrid electric, battery electric, and fuel cell electric) requires specialized attention:
  - Do NOT confuse the 12-volt battery with the high-voltage battery system. Avoid contact with the high-voltage battery and components;
  - If the 12-volt battery has gone dead, it may be necessary to use a boosting pin, usually found near the under hood fuse panel;
  - The vehicle's electric motor may make little noise. Watch for the "ready" indicator on dash.

- A fuel service call may require a tow to the nearest alternative fueling location or a mobile charging unit for battery electric vehicles.
- Always refer to the vehicle owner’s manual for jumpstarting procedures.

### Storing the Vehicle

When towing AFVs, it is important to notify the authorized service center or storage center to determine if there are additional steps needed to safely handle, discharge, and store the vehicle. Also note:

- Severely damaged vehicles should not be stored inside or within 50 feet of any structure.
- Before placing the vehicle in the tow lot, inspect it for leaking fluids, sparks, smoke, and gurgling or bubbling sounds. If any of these are detected, evacuate the area and contact emergency personnel.
- When storing AFVs it is important to maintain clear access to the vehicles for monitoring and emergency response if needed.

### Safety

As with conventional fuels, when working with AFVs there are important safety considerations. Fuels used in alternative fuel vehicles have properties different from gasoline and diesel:

- Some alternative fuels react adversely to water;
- Fuels such as hydrogen and natural gas are asphyxiates. Make sure the work area is well ventilated;
- Propane is heavier than air, and a leak can cause propane to pool in low lying areas;
- Fuels such as propane, liquefied natural gas, and hydrogen can cause instant frostbite;
- Breathing battery electrolyte vapors can cause severe respiratory problems;
- ALWAYS assume an electric drive vehicle has power and that high-voltage exists.

Use proper personal protective clothing and equipment when working with alternative fuel vehicles:

- High-voltage gloves for electric vehicles, standard work gloves for other alternative fuel vehicles;
- Eye protection;
- Boots;
- Flame detector for odorless, colorless, and/or tasteless alternative fuels.

**For More Information:**

[Coalition training info here]

**REGARDLESS OF YOUR ROLE IN TOWING, SAFETY IS EVERYONE’S JOB!**



National Alternative Fuels  
Training Consortium

A Program of



<http://www.naftc.wvu.edu/cleancitiesprojects>  
<https://cleancities.energy.gov>

National Alternative Fuels Training Consortium  
Ridgeview Business Park, 1100 Frederick Lane, Morgantown, WV 26508  
304-293-7882

Acknowledgment: This material is based upon work supported by the U.S. Department of Energy Clean Cities Program under Award Numbers DE-EE0001696 and DE-EE0007015.