



## 1 SCOPE

This specification supplements the series of specifications for: Automobiles, passenger, 4-door; Truck, pickup body, 4x2 and 4x4, less than 10,000-lb. GVWR; Passenger and cargo van, 4x2, less than 10,000-lb. GVWR; Truck, light-duty, cab and chassis, 11,000-lb. to 17,500-lb. GVWR and Truck, medium-duty, cab and chassis, 25,950-lb. to 33,000-lb. GVWR.

This specification is intended only to describe the unique requirements of the fuel system and its related equipment and performance as they relate to alternative fueled vehicles. Please refer to the standard specifications for general requirements of the base vehicle size, type, and other miscellaneous features.

The Low Speed Electric Vehicle (LSV) requirements are specified in the Neighborhood Electric Vehicle (NEV) specifications.

## 2 SPECIFICATIONS AND STANDARDS

Areas where the alternate fuel system impacts the standard specifications (for gasoline/diesel fueled vehicles) may be waived for this contract. This includes such things as: gross vehicle weight rating, payload, engine displacement, emission rating, cargo volume and others directly affected by the fuel system modifications. The bidder may be required to substantiate the reasons for downgrading the base requirement.

The base vehicle shall comply with all other specifications and be of the size and type indicated by each line item description in the Request for Proposal. If the manufacturer does not manufacture the vehicle model with the specified component, an alternative component may be acceptable. The bidder may be required to substantiate the reason for the offer of an alternative component.

## 3 REQUIREMENTS

**3.1 GENERAL REQUIREMENTS:** All vehicles shall be approved and marketed by the original equipment (vehicle) manufacturer. Full factory literature, parts, service, technical support and warranties shall be available. Aftermarket conversions are allowed if the full OEM endorsement described above is maintained. Converted vehicles shall meet current certification requirements of the U. S. Environmental Protection Agency (EPA) and California Air Resource Board (CARB) as applicable at time of bid opening. A copy of the required EPA / CARB Certification shall be provided with the bid or within five (5) days of request by the State. All components used to modify the power train and fuel systems shall conform to the current applicable National Fire Protection Association (NFPA) standards and shall be engineered and certified for the specific fuel type.

In cases where multiple tanks are available, bidder shall offer the configuration that meets or exceeds the specified minimum driving range.

### 3.2 DEFINITIONS:

- "Dedicated" shall mean that the vehicle operates on only an alternative fuel.
- "Bi-fuel" shall mean that the vehicle can operate on either an alternative fuel or gasoline, with separate tanks and fuel systems for each fuel.
- "Flexible fuel" shall mean that the vehicle is designed to run on a combination of an alternative fuel with a conventional fuel.
- A converted vehicle shall be defined as a vehicle that was originally designed to operate on gasoline but has been altered to run on an alternative fuel such as compressed natural gas (CNG) or liquefied petroleum gas (LPG).
- "Driving Range" - EPA definition: The driving range is shown in miles and represents the distance the vehicle can travel on a full tank(s) of fuel during combined city and highway driving (55% city and 45% highway).

- “Alternative Fuels” – EPA definition: Alternative fuels are derived from resources other than petroleum. Some are produced domestically, reducing our dependence on imported oil, and some are derived from renewable sources.
- “ZEV” shall mean Zero Emission Vehicle.
- “UDDS” shall mean Urban Dynamometer Driving Schedule, California Air Resources Board (CARB) range certification.

- 3.3 COMPRESSED NATURAL GAS (CNG), DEDICATED OR BI-FUEL:** Vehicles with a dedicated CNG fuel system shall have a “driving range” of at least 150 miles. Vehicles with a bi-fuel system (Gasoline-CNG) shall have a “driving range” of at least 75 miles on CNG.

CNG tanks located in the bed of pickup trucks shall be the low profile type (dual tanks), if available, to allow for installation of a toolbox directly over the tanks.

- 3.4 PROPANE ALSO CALLED LIQUEFIED PETROLEUM GAS (LPG), DEDICATED OR BI-FUEL:** Vehicles with a dedicated LPG fuel system shall have a “driving range” of at least 150 miles. Vehicles with a bi-fuel system (Gasoline-LPG) shall have a “driving range” of at least 75 miles on LPG.

Propane tanks located in the bed of pickup trucks shall be the low profile type, (dual tanks) if available, to allow for installation of a toolbox directly over the tanks.

- 3.5 FLEXIBLE FUEL E-85 (ETHANOL):** Vehicles shall use a fuel system designed to operate with any mixture of unleaded gasoline and an ethyl alcohol based fuel up to 85% alcohol.
- 3.6 BIO-DIESEL:** Vehicles shall use a fuel system designed to operate with a blend of petro-diesel fuel and bio-diesel fuel derived from vegetable oils and animal fats and meeting the requirements of ASTM D6751 (applies to B-100) and purchased from a BQ-9000 (or equal) accredited producer and supplier.
- B-20 (20% bio-diesel fuel)
  - B-50 (50% bio-diesel fuel)
  - B-100 (100% bio-diesel fuel)
- 3.7 BATTERY ELECTRIC:** Vehicles shall operate solely by use of a battery or battery pack, or that is powered primarily through the use of an electric battery or battery pack but uses a flywheel or capacitor that stores energy produced by the electric motor or through regenerative braking to assist in vehicle operation. Vehicles shall be certified to zero-emission standards and capable of operation on freeways with a minimum UDDS ZEV range of 75 miles.
- 3.8 FUEL CELL:** No specific requirements at this time.
- 3.9 WHEEL WEIGHTS:** Wheel weights shall contain no more than 0.1 percent lead by weight (Health and Safety Code Section 25215.6).