

Light Duty Vehicle Attributes

Inputs and Methods for the 2013 Transportation Energy Demand Forecast

Hearing Room A

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California Energy Commission

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Background

- Vehicle attribute forecasts are required to produce fuel consumption forecasts
- CEC does not presently have a model that forecasts vehicle attributes
- Vehicle attribute forecasts will be obtained from a contractor, Sierra Research



Vehicle Attributes

- Model year
- Vehicle class
- Number of individual makes and models
- Acceleration
- Maintenance cost
- **New Vehicle Retail Price**
- **Fuel economy**
- Range
- Vehicle lifetime in years
- Passenger Seat Capacity
- Trunk or Storage Space
- Refueling Time

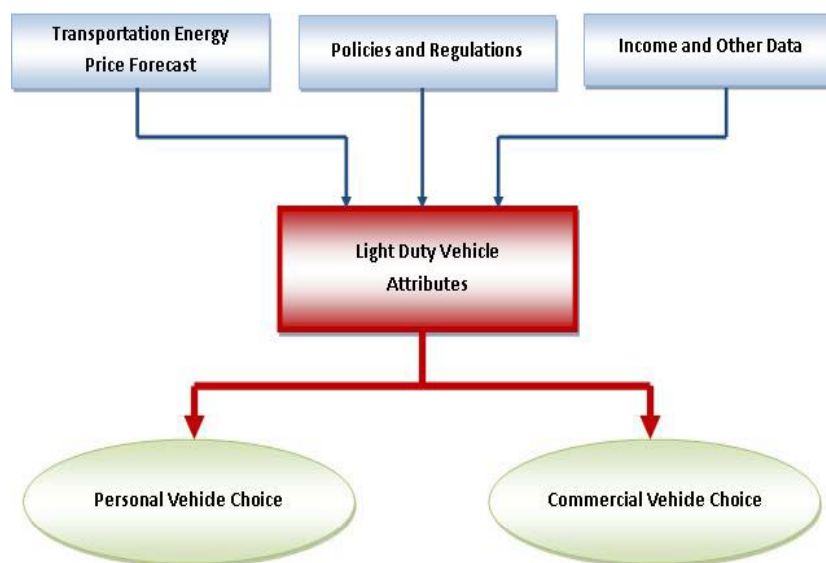


Fuel Types

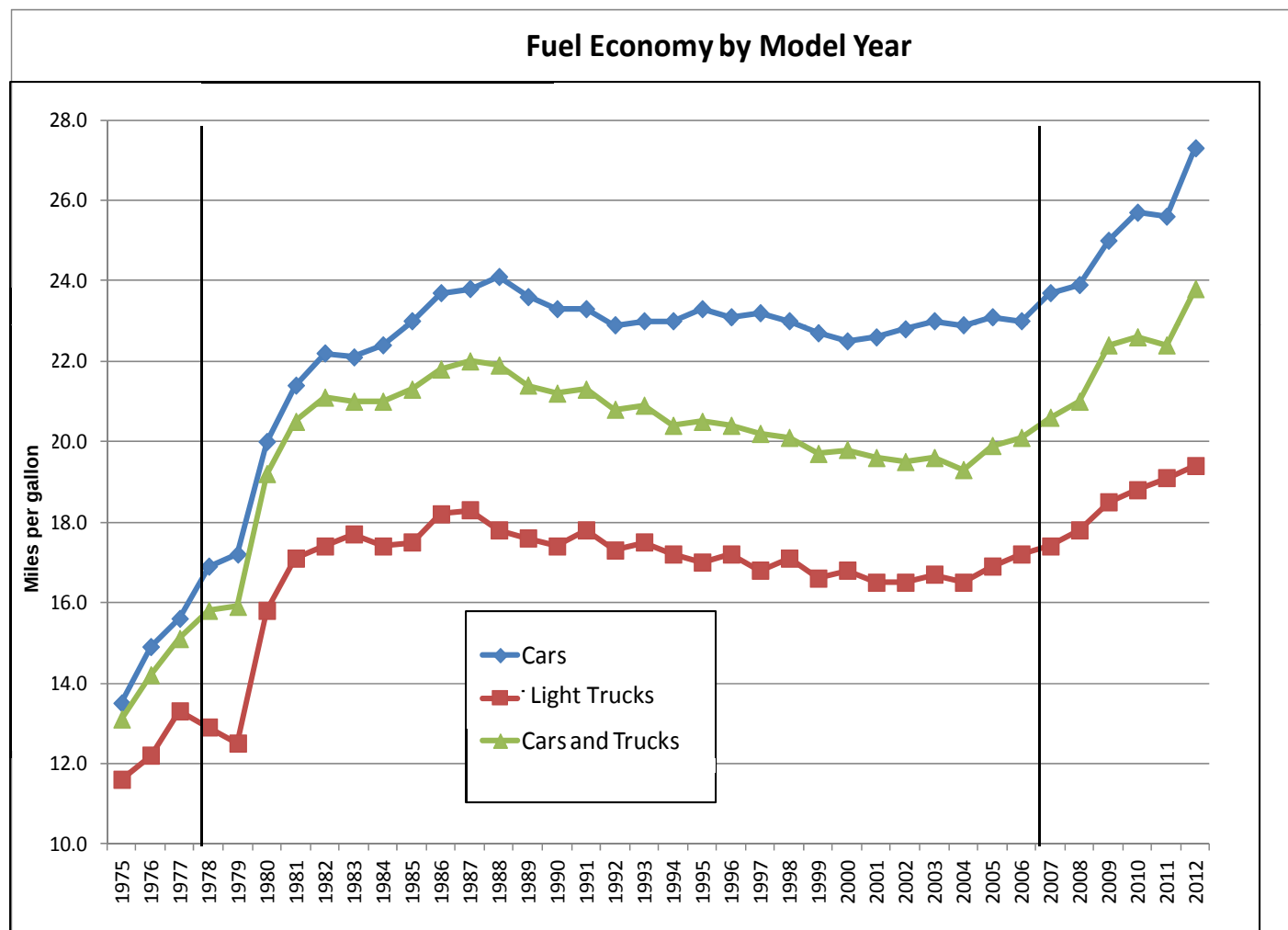
- Gasoline
- Gasoline Electric Hybrids
- Diesel
- Flexible Fuel Vehicles (FFV)
- Plug-in Electric Gasoline Hybrids
- Compressed Natural Gas (CNG)
- Full Electric
- ***Diesel Electric Hybrid***
- ***Hydrogen Vehicles***
- ***CNG Hybrid***
- ***Dual Fuel – Gasoline and CNG***



Role of vehicle attribute forecasts in Energy Commission's light duty vehicle models



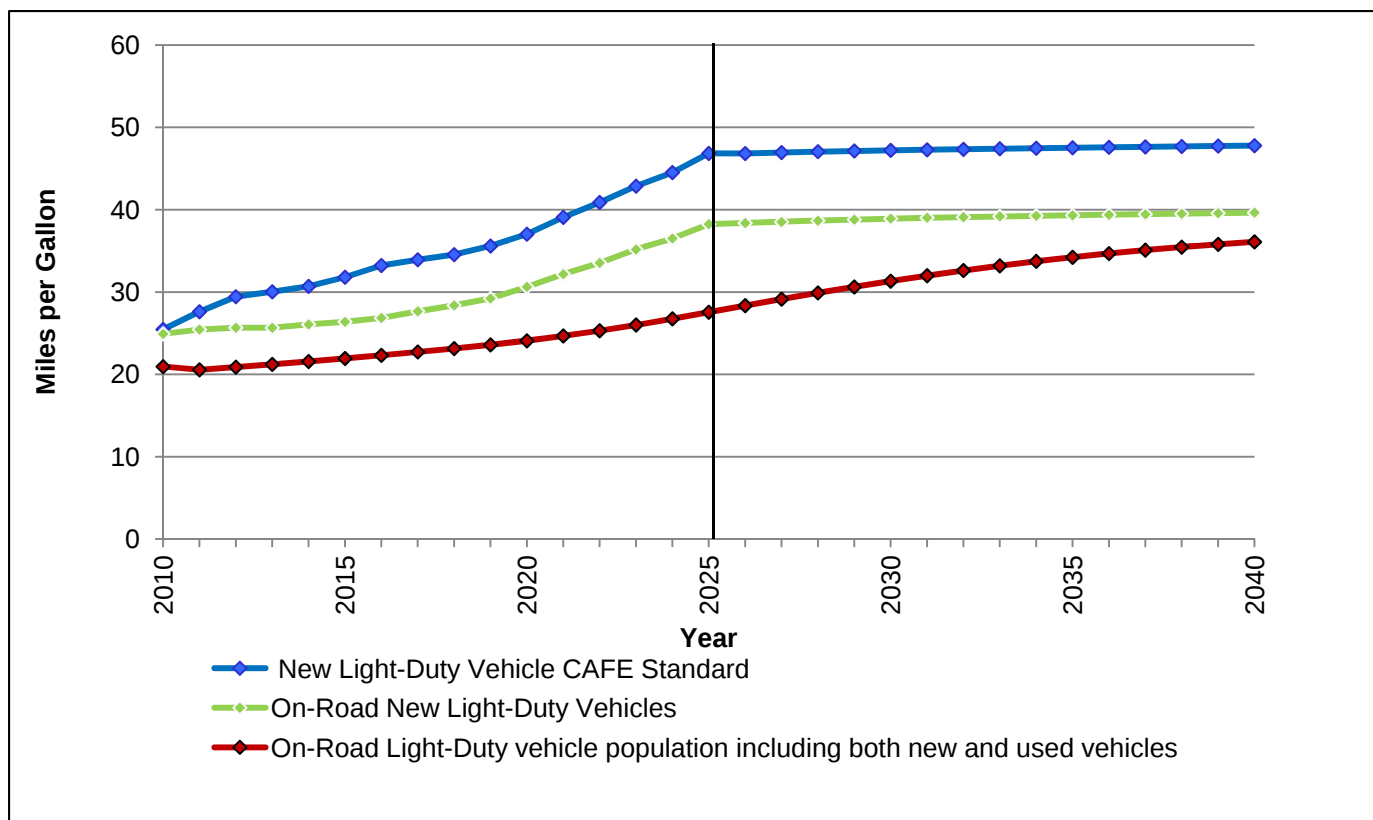
Historical U.S. Fuel Economy



Source: Energy Commission Analysis of EPA Light-Duty Automotive Technology, Carbon Dioxide Emissions, and Fuel Economy Trends: 1975 Through 2011



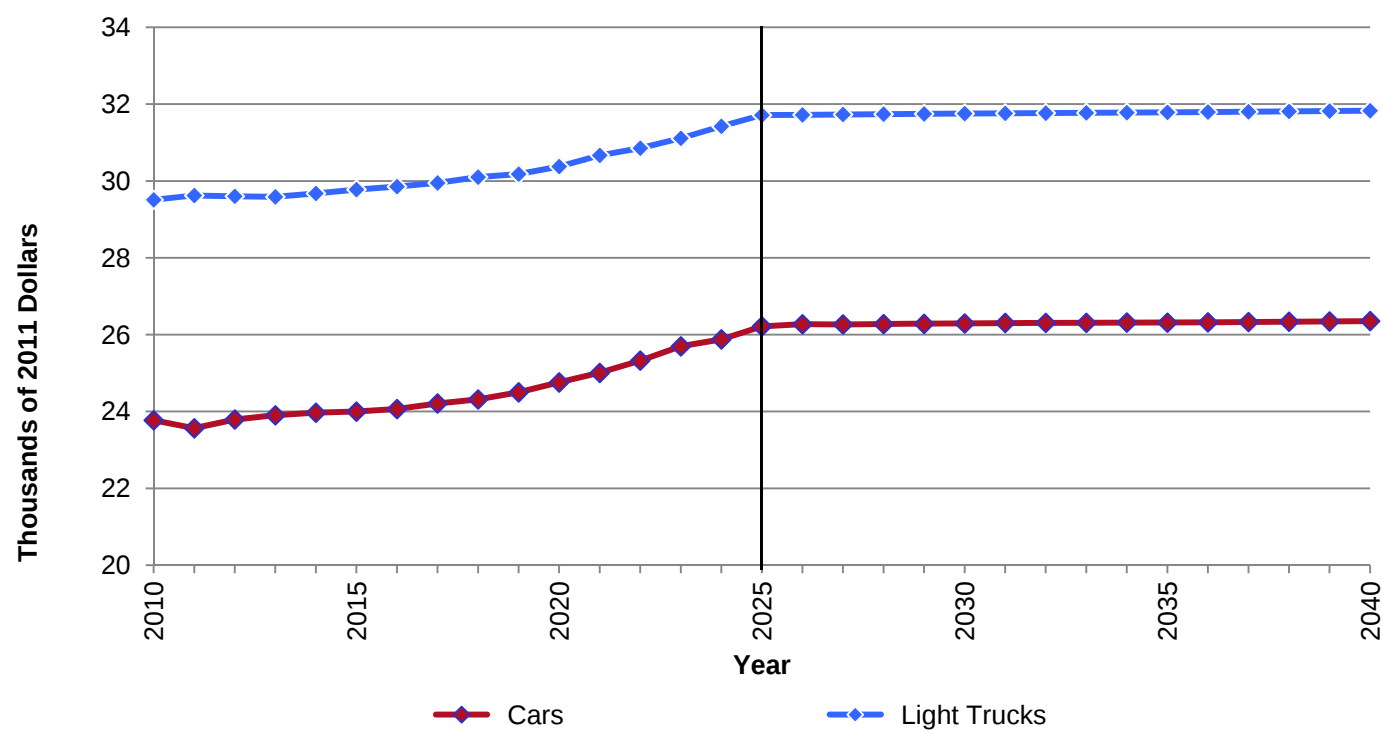
U.S. Average Fuel Economy



Source: Energy Information Administration, 2013 Annual Energy Outlook, reference case



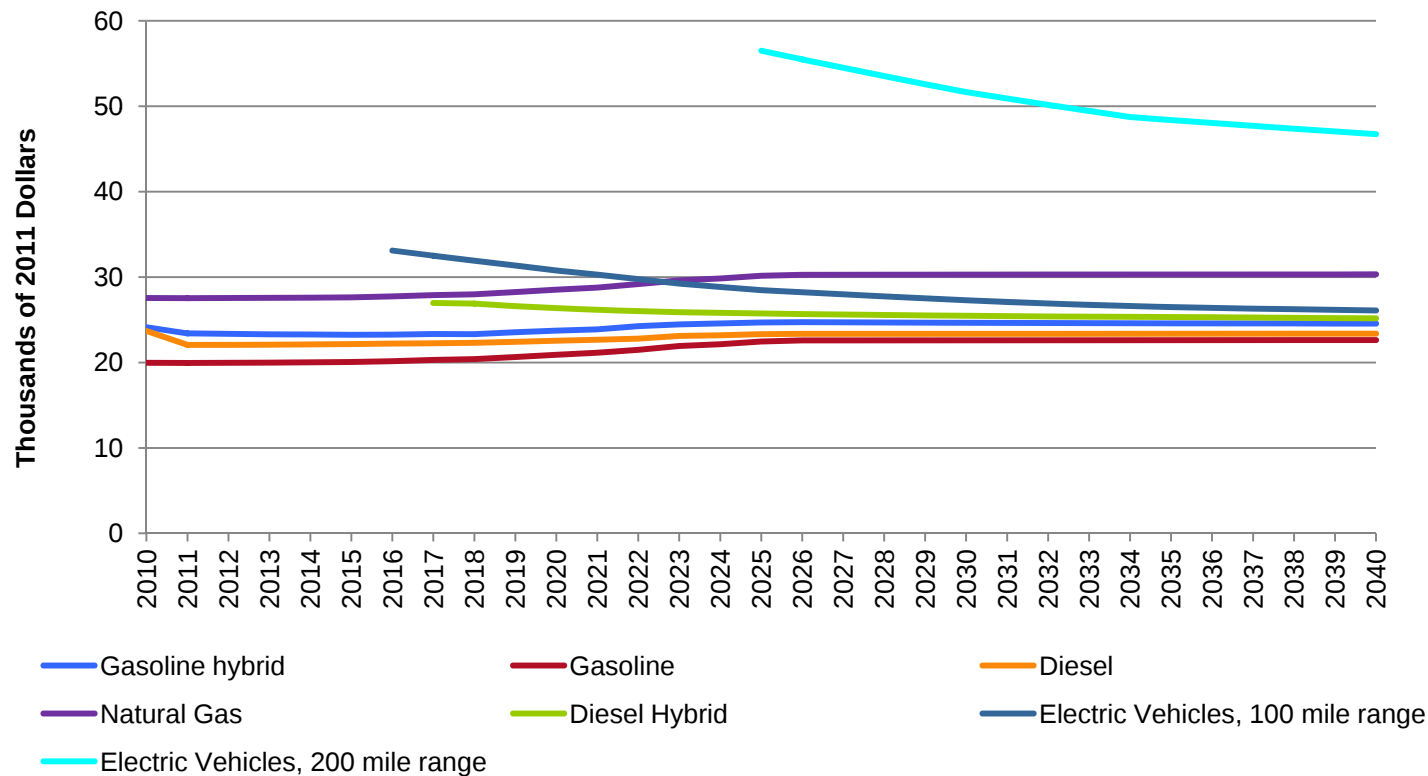
U.S. Average Light Duty Vehicle Prices



Source: Energy Information Administration, 2013 Annual Energy Outlook, reference case



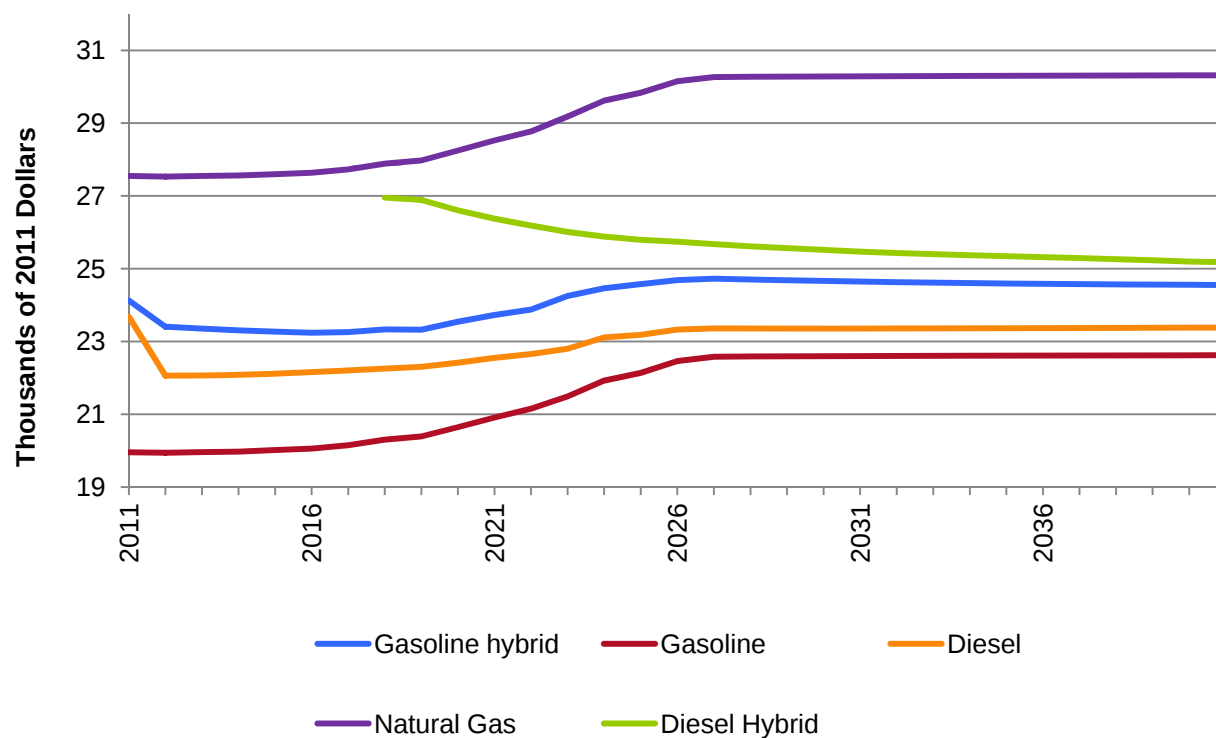
U.S. Average Compact Vehicle Prices by Fuel Type



Source: Energy Information Administration, 2013 Annual Energy Outlook, reference case



U.S. Average Compact Vehicle Prices by Fuel Type

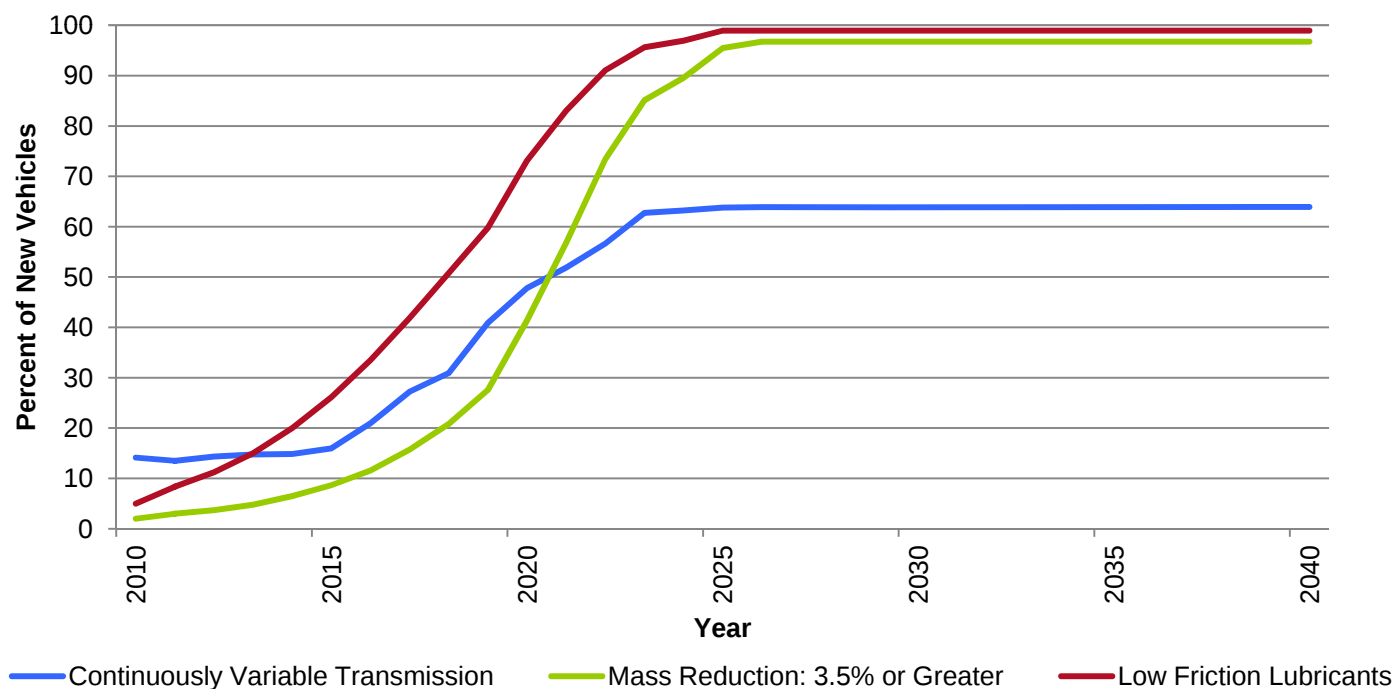


Source: Energy Information Administration, 2013 Annual Energy Outlook, reference case



Forecasted U.S Vehicle Technology Market Penetration

Light Duty Car Vehicle Technologies



Source: Energy Information Administration, 2013 Annual Energy Outlook, reference case



California Specific Input Data

- Historical Data
- Fuel Price Scenarios
- Economic Growth Scenarios
- Regulatory Scenarios
 - LEV/ZEV requirements
 - Low Carbon Fuel Standard

