



Technology and Marketing

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Regulations are one part of incentive

What's Fueling Our Alternative Fuel Policy?

In the September issue of *PE&T* ("Why Alternate Fuels May Become a Viable Alternative," page 18), I discussed the foundation that had been laid for alternative fuels to become viable alternatives for the transportation industry. The column reviewed the new national energy strategy, the 1990 Clean Air Act Amendments (CAAA), the Energy Policy Act of 1992 and current legislation in California.

In this column, I want to continue to highlight current regulatory activities that affect alternative fuels and also to set the stage for future columns on individual alternatives.

Fuel for thought

Earlier this year, the International Energy Agency presented a paper titled "World Energy Prospects to 2020" at the G8 Energy Ministers' Meeting in Moscow. The group presented a "Business as Usual" scenario that expects 95 percent of additional energy demands to be met with fossil fuels through 2020. Projections are for the energy demand to grow by 66 percent and CO₂ emissions by 69 percent as compared to those figures in 1995.

This scenario expects oil consumption to dominate the energy demands, peaking beyond 2010. Non-conventional energy sources, such as natural gas, gas liquids, tar sands and shale oil, are expected to become more important towards 2020 when increasing oil prices will make them more attractive.

Here's something else that will make alternative fuels more attractive. In June, President Clinton signed the Transportation Equity Act for the 21st Century (TEA-21).

The bill authorizes expenditures of \$217 billion over the next six years, primarily on highway construction and preservation projects. However, \$1.2 billion is earmarked for a new program for clean fuel buses and \$8.1 billion for local and state level pro-

grams for air quality improvement. Both areas will concentrate on alternative-fuel vehicle developments.

Zero-emission vehicles

The California Air Resources Board (CARB) staff has published a proposal changing current requirements for zero-emissions vehicles (ZEV) to be considered by its Board this fall. California now requires 10 percent of new vehicles to be ZEV by 2003.

Theoretically, only electric vehicles can meet ZEV standards. The CARB revision provides for partial credit towards meeting ZEV requirements by assigning a baseline allowance, a ZEV-miles traveled allowance and a low-fuel cycle emissions allowance.

The three allowances are added to provide a range of 0.2 to 1.0 ZEV credits. Allowances range from 1.0 for hydrogen fuel cell and some hybrid vehicles; and 0.4 for compressed natural gas (CNG) super ultra low emission vehicles (SULEV) to 0.2 for gasoline SULEV.

The proposal requires large vehicle manufacturers to meet at least 40 percent of their ZEV requirements with true ZEVs. Small and intermediate size manufacturers will be allowed to use a combination of partial ZEVs towards this requirement.

Most states currently offer significant incentives for using alternative-fuels vehicles.

The designation of SULEV is a relatively recent one and applies to medium and heavy-duty vehicles with emissions of less than half of the previous ultra low emission vehicles (ULEV) designation.

Alternative-fuels vehicles

While regulatory activities and incentives are promoting the use of alternative

fuels, the public needs ready access to alternative-fuels vehicles. Compact, mid-size and full size, dedicated and bi-fuel CNG passenger cars as well as vans and pickups are commercially available from Honda, Toyota, Volvo, General Motors, Chrysler and Ford.

Almost 40 models of CNG-powered transit, shuttle and school buses, as well as several heavy duty diesel engines, are also available. The choices are somewhat fewer in LNG and propane vehicles, although LNG is making inroads as a fuel for buses, trucks and railroad diesels.

Most states currently offer significant incentives for using alternative-fuels vehicles. Colorado, for instance, is now offering tax credits for up to 50 percent of conversion or acquisition costs incurred until January 1, 2001. Tax credits are reduced during later years, but are doubled if the alternative-fuels vehicle replaces a vehicle more than 10 years old.

Arizona has recently doubled its tax credit to \$2,000 for converting, buying or leasing dedicated alternative-fuels vehicles. Arizona also offers significant tax credits (up to \$400,000) for constructing and operating alternative fuels stations. While Colorado and Arizona are mentioned because they recently changed their subsidies, 30 states currently offer similar financial assistance for acquiring alternative-fuels vehicles.

Now that I have covered the regulatory environment for alternative fuels and future projections for energy use, future columns will cover the economics and technology of developing an alternative-fuels infrastructure.

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