Fleet Transition to Alternative Fuels: Business Case for Conversion Management

The need for an alternative fuel solution makes the business case for alternative fuel conversion. We need to lower fuel costs to bolster economic growth. We need to have clean burning fuels to reduce the global effects of greenhouse gas emissions. We need to re-train our labor force to fill the 2 million+ per year jobs created by the alternative fuels industry. We need to re-build business infrastructure within American towns, cities, counties, and states to return the American society to a producing society and away from a singular model of consumption. We need to reduce our dependency on foreign oil supplies to restore the American economy to independence.

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The Challenge

Efficiency and sustainability are tightly correlated when it comes to fleet management. EPA’s SmartWay Program, ‘smart cities’ and other public-private partnerships have put fleet managers in a key position as potential early adopters for new transportation technologies. Leading companies have made considerable investments aiming for lower operating costs. But when it’s all about the bottom line, how can fleet managers of private companies and public agencies work with vehicle manufacturers and conversion service providers to avoid the pitfalls associated with early adoption? Uncertain infrastructure and maintenance issues are potential liabilities, and decision makers must take into account routes, use type, telematics, and remarketing when choosing the best technology. How far will manufacturers go to entice fleet managers -- will current incentives make alternative fuel vehicles a viable option? What emerging technologies will enable fleets to surmount these obstacles?

The Business Impact

Commitment or lack of commitment from U.S. government, states, counties, cities, corporations, organizations, and associations is key and vital to a successful transition to alternative fuels. Reduction of greenhouse gas emissions is critical to the health of U.S. citizens and the continuation of business.

- **The U.S. Government** – House Bill 2282 Department of General Services, which passed into law on January 12, 2011, calls for states to develop an alternative fuels transition plan for the replacement of vehicles rotated out of fleets.

  Reduce Consumer Costs at the Pump with More Efficient Cars and Trucks
  Melody Barnes is Director of the Domestic Policy Council on April 1, 2011

  **Better Mileage for Our Cars:** The historic national fuel standards announced by the Obama Administration for model years 2012 – 2016 will …

  *Raise average fuel economy to 35.5 mpg by 2016, while maintaining consumer choice.* The 2012-2016 standards alone are estimated to…

  - Save 1.8 billion barrels of oil over the lifetime of the vehicles covered
  - Save the average driver roughly $3,000 over the life of their vehicle (model year 2016).

- **The State of Virginia** – On July 31, 2011, Virginia Governor Bob McDonnell signed executive order call for Virginia’s transition of its approximately 4000 passenger-type vehicles used by 175 state agencies, to alternative fuel vehicles.
Other States show their commitment to alternative fuels by early installation of 200 or more alternative re-fueling stations they have added to allow fleets and consumers to re-fuel vehicles with a cost efficient, and pollutant free fuel source. Removal of barriers to market in all aspects of alternative fuels allows for an expedient reduction of U.S. dependency on foreign oil, and allows fleet managers to make positive decisions as it relates to transition to an alternative fuel.

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<th>B20</th>
<th>CNG</th>
<th>E85</th>
<th>ELEC*</th>
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- **The AT&T Corporation** - "As the economy rises and falls with fuel prices, we have a responsibility to look for smart ways to reduce our costs," said Jerome Webber, vice president, AT&T Global Fleet Operations. "Putting 4,000 alternative-fuel vehicles on the road - including 3,000 compressed natural gas vehicles - is a significant statement about the ability of fleet operators to not only reduce costs, but also to cut vehicle emissions. Every alternative fuel vehicle on the road brings us closer to energy independence, and that's good for our company and our country."

Along with its fleet of CNG vehicles, AT&T is deploying all-electric and extended range electric vehicles in its fleet. AT&T fleets in St. Louis, Dallas and Los Angeles received the first of these vehicles. AT&T expects to make additional deployments in 2011 and 2012.

Through 2013, AT&T anticipates it will have purchased approximately 8,000 CNG vehicles at an anticipated cost of $350 million. AT&T expects to invest an
additional $215 million through 2018 to replace approximately 7,100 fleet passenger cars with alternative-fuel models.

According to a 2009 Center for Automotive Research report, AT&T's planned alternative-fuel vehicle initiative would:

- Save 49 million gallons of gasoline over the 10-year deployment period.
- Reduce carbon emissions by 211,000 metric tons - the greenhouse gas equivalent of removing 38,600 passenger vehicles from the road for one year.

- **The Clean Cities Atlanta Organization** - Clean Cities is composed of nearly 100 coalitions across the nation. As a foremost organization advocating the use of alternative fuels and advanced vehicle technologies, Clean Cities offers valuable insight on trends and lessons learned.

Worksheet available at www.afdc.energy.gov/afdc/data/
See "Data" tab for supporting data, sources, and notes
Last updated 10/18/10

Alternative Fuel Solutions, have been available and functional since the early 80’s; while not necessarily commercially suitable when they first came to market, they have since been refined and are now readily available, cost effective and energy efficient.
Global Pollutants Emitted by the U.S. Transportation Sector

Greenhouse gases are a global pollutant, so this Web section assesses them on a lifecycle basis. Carbon dioxide (CO₂) is by far the most abundant GHG in the transportation sector. However, fluorinated refrigerants used in mobile air conditioners are also major contributors due to their high global warming potential (GWP). The breakdown of greenhouse gas emissions from the U.S. transportation sector, weighted by GWP, is shown in table below.

GWP-Weighted GHGs Emitted by the U.S. Transportation Sector

<table>
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<tr>
<th>Greenhouse Gas</th>
<th>CO₂</th>
<th>Fluorinated Refrigerants*</th>
<th>N₂O</th>
<th>CH₄</th>
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<td>100-Year GWP</td>
<td>1</td>
<td>8100, 1300</td>
<td>296</td>
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<td>—</td>
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<tr>
<td>% of Total</td>
<td>88.40%</td>
<td>8.90%</td>
<td>2.00%</td>
<td>0.20%</td>
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*The fluorinated refrigerants used in U.S. mobile air conditioning is CFC-12 (GWP 8100) for model years 1991 and earlier, HFC-134a (GWP 1300) for model years 1995 and later, and a mix from 1992-1994 model year vehicles.

Source: IPCC Assessment Report, Chapter 5 - Transport and its Infrastructure

Addressing Alternative Fuel Vehicle Conversion – What’s Needed

Implementation

Implementing a statewide or region-wide scalable Alternative Fuel Vehicle Conversion solution for small to mid-size and consumers is a three-part process.

1. Re-purpose defunct auto dealerships and gas stations, create jobs
2. Train an Alternative Fuel Conversion workforce
3. Legislate consumer alternative fuel conversion tax credit transformation to rebate

Part 1- Infrastructure Re-build, Jobs

Infrastructure Re-build

Over 30 new-car dealerships failed in 2008, and another 1000 more expected to fail in 2009, according to an article in the Atlanta Journal-Constitution November 2, 2008.

With an over saturation in the market place of defunct auto dealerships and gas stations, throughout the states it will be prudent to re-purpose a number of those units as alternative fuels conversion centers. Thereby restoring value to the communities and re-building infrastructures within the state. To repurpose existing structures will decrease construction and purchase costs by 60%, and reduce time to market by 6-9 months.
Jobs

The Green Revolution is shaping up as a job engine and a path to economic recovery both now and in the future. It hopes to do all of this by creating an industry — and a workforce — capable of tackling America’s environmental problems and fuel needs.

“Clean-energy investments create 16.7 jobs per every $1 million in spending. Spending on fossil fuels, by contrast, generates 5.3 jobs per $1 million in spending.” Reported by Robert Pollin, Center for American Progress, July 17, 2009.

An alternative fuels vehicle conversion center of 145,000 sq ft equipped with 100 service conversion bays would serve a consumer population of 1-2 million for alternative fuels conversion. An operation this size would be in a metro setting such as Atlanta, Miami, Columbia, and Birmingham. This size conversion center would employ approximately 250 employees. Conversion Center designs are scalable both up and down to service the population where they are situated.

$983,796 Per Minute May 17, 2011 - T. Boone Pickens recently said that based on the latest figures from the Federal Reserve Economic Database, the U.S. imported 61 percent of its oil, or 344 million barrels in April 2011, sending approximately $42.5 billion to foreign countries.

When are we going to get serious about domestically produced Alternative Fuels?


"Renewable energy and energy efficiency technologies (RE&EE) are driving significant economic growth in the United States. In 2006, these industries generated 8.5 million new jobs, nearly $970 billion in revenue, more than $100 billion in industry profits, and more than $150 billion in increased federal, state, and local government tax revenues. Additionally, RE&EE provided important stimulus to the beleaguered U.S. manufacturing industry, displaced imported oil, and helped reduce the U.S. trade deficit.

To put this in perspective, RE&EE sales outpaced the combined sales of the three largest U.S. corporations. Total sales for Wal-Mart, Exxon-Mobil, and General Motors in 2006 were $905 billion.

If U.S. policymakers aggressively commit to programs that support the sustained orderly development of RE&EE, the news gets even better. According to research conducted by the American Solar Energy Society (ASES) and Management Information Services, Inc.
(MISI), the renewable energy and energy efficiency industry could—in a crash effort—generate up to $4.5 trillion in revenue in the United States and create 40 million new jobs by the year 2030. These 40 million jobs would represent nearly one out of every four jobs in 2030, and many would be jobs that could not easily be outsourced.”

2007 - American Solar Energy Society (ASES)

**Part 2- Education**

Through our Associate Membership with the National Alternative Fuels Training Consortium (NAFTC), which began in late 1992 training and supporting of alternative fuel vehicle (AFV) technicians in the field to address the urgent need for trained technicians with the natural gas industry training for individuals entering the alternative fuels industry is conducted. We collaborate with educational institutions, (see Figure 1); fuel providers; equipment and parts manufacturers; industry partners; federal and state agencies; and professional, educational, and training associations to offer alternative fuels training programs in formats ranging from continuing education to bachelor’s degree programs.

Since 1992, the program has expanded and includes affiliate members in a formal training network now known as the National Alternative Fuels Training Consortium (NAFTC). The NAFTC currently operates through a network of National Training Centers (NTCs) and Associate Training Centers (ATCs) across the country.

Over 10,000 technicians trained from industry, academic, and governmental organizations. The U.S. Postal Service, the U.S. Air Force, U.S. DOE Clean Cities Programs, and private fleets are example users of training materials from the NAFTC.

A Train-the-Trainers approach is used, and courses are developed to teach alternative fuel vehicle technology to trainers who then return to their institutions to conduct training. The basic NAFTC Train-the-Trainers courses include classroom time to learn fundamentals, videos, discussions, pre- and post-tests, and lab/shop activities.

**Figure 1**

Atlanta Technical College “Green Technology Program” students get their first Introduction to Alternative Fuels class, taught by 9TWO5 Motoring Alternative Fuels in partnership with Freedom Fueling Solutions as a kick-off to Alternative Fuels curriculum added as a certificated and degreed program, in the 2011-2012 school years.

Freedom Fueling Solutions, owner David Abroms demonstrating converted flex-fuel propane-gas vehicle.
Part 3 - Minimize total cost of consumer conversion

We have proposed to make alternative fuel vehicles more affordable through legislation of the current federal rebate for consumer conversions of up to $3,500—which would transform an existing $3,500 tax credit for alternative fuel vehicles into a rebate that will be available to all consumers immediately at the point of sale. This legislation will make it more affordable for individual consumers to convert their vehicles to an alternative fuel vehicle.

Since 2002 over 250 Law and Incentive Enactments targeted specifically for Alternative Fuel Vehicles have come into existence.

Worksheet available at www.afdc.energy.gov/afdc/data/
See "Data" tab for supporting data, sources, definitions, and notes
Last updated March 23, 2011
**Why 9TWO5 Motoring Alternative Fuels** improve businesses time to market

Partnership is important because it meets a growing demand for conversion to alternative fuels. We are pleased to continue to build partnering network with leaders in alternative fuels conversions, to bring alternative fuel solutions both statewide and nationwide. Partnership deals allow the company to post revenues and provide a continuing income stream while we seek investment for build-up of conversion centers and re-fueling stations. In return, conversion partners receive streams of business customers and 9TWO5 Motoring AF receives access to premium conversion technology.

Our nationwide conversion partnership network allows us to scale our business, opening the door to renewable fuel conversion across the southern U.S., America's most underserved market for renewable fuels. In addition, with U.S. automakers significantly increasing production of flex-fuel and diesel vehicles, gives customers true choice at the pump, making progress toward reducing our nation's independence on foreign oil and lowering carbon emissions. The increased alternative fuel vehicle directly from manufactures is an increase to revenue for our Service All Brand alternative refueling stations.

**Best in Class Customer Experience**

Amid the overworked over exposed fleet managers, are customers seeking organizations to take in hand and control the daunting tasks associated with managing an alternative fuel conversion for their fleet. Small to mid-size fleet owners with 8-300 vehicles in their fleet cannot both effectively run their operation and efficiently oversee a full-scale alternative fuel transition with their limited work force. Many small to mid-size fleets have stated this as the reason they have delayed the conversion process. They see the need for conversion as their fuel costs continue to rise, and they are well aware of the negative environmental impacts of petroleum-based products. However, economic limits imposed on them make it impossible to convert their fleets while remaining competitive in their industries, without substantial downtime.

Our customer resolution managers recognize small to mid-size fleet manager’s quandary and take on each project from end to end utilizing our in-house streamlined Logistics Business System (LBS) for gathering detailed level of fleet information, transition project management to training and after-conversion operation support. LBS allow companies to deliver on their brand promise to customers across any channel at any time with a seamless experience. The payoff is sustainable growth in sales and profitability. The monolithic self-guided conversion systems many companies have implemented get in the way of achieving their bottom-line and conversion goals.

The best way for companies to leverage this new technology, achieve bottom-line savings and goals and provide superior customer-facing services is to adopt a best-of-breed, services-oriented alternative fuels solution that can be easily integrated with legacy systems. The emerging leader in the alternative fuel conversion field is 9TWO5 Motoring Alternative Fuels.
9TWO5 Motoring Alternative Fuels conversion process delivers significant benefits:

**Faster implementation:** The average (100 vehicles) 9TWO5 Motoring Alternative Fuels project managed conversion takes 6 weeks.

**Lower cost:** 9TWO5 Motoring Alternative Fuels customers typically spend significantly less on their solution because we pass on volume discounts to customers.

**Quicker return on investment:** Payback time is usually 6-12 months with 9TWO5 Motoring Alternative Fuels,

**Higher rate of success:** 98 percent of all 9TWO5 Motoring Alternative Fuels installations completed on time and on budget.

**Summary**

The 9TWO5 Motoring Alternative Fuels solution works to simplify complex fleet environments, particularly if fleet downtime and cost of transition are critical success factors. Companies with complex distributed fleets; multiple counties and State channels; multiple product lines and divisions; and the need to leverage existing systems during alternative fuels transition will find that the 9TWO5 Motoring Alternative Fuels Logistics Business System is an exceptional solution.