

Fleet Greening Trends & Best Practices:

A Survey of Fleet Managers

by David Crumrine

A major trend in fleet management today is designing and implementing “fleet greening” programs which focus on reducing the negative environmental impacts of an organization’s fleet. With rising oil prices & increased concern over global warming and the effects of greenhouse gas emissions, corporate and municipal fleets are increasingly pursuing efforts to green their fleet. In addition to the primary purpose of achieving environmental benefits, these programs are often times eligible for government incentives and can drive substantial fuel expense savings. This strong value proposition is driving increased attention, support, and priority for fleet greening initiatives within both public and private organizations.



For several years the federal government has facilitated fleet greening efforts with the Clean Cities Program. Clean Cities is the U.S. Department of Energy's (DOE) flagship alternative-transportation deployment initiative. Clean Cities has saved nearly 3 billion gallons of petroleum since its inception in 1993 with more than 8,400 stakeholders contributing to Clean Cities' goals and accomplishments through participation in nearly 100 Clean Cities coalitions across the country (source: DOE website).

Clean Cities builds partnerships with local and statewide organizations in the public and private sectors to adopt alternative and renewable fuels, idle-reduction measures, fuel economy improvements, and new transportation technologies. For example, the Clean Energy Coalition in Michigan recently supported Wright & Filippis, a Michigan based medical equipment supplier, in overhauling 25% of the company’s fleet to run on clean propane autogas. The program converted Ford vehicles using technology created by ROUSH CleanTech. This program reduced gasoline burned by 48,000 gallons by switching to propane fuel, eliminated 931,200 pounds of carbon dioxide per year from Wright & Filippis’ carbon footprint, and yielded savings of \$3,000 per year per vehicle.

The Study

Recognizing the increasing prominence and strategic value of fleet greening initiatives, Shepherd Advisors recently conducted a survey of fleet managers to examine their fleet greening programs. During Spring 2011, Shepherd Advisors interviewed a group of corporate and municipal fleet managers assessing their program vision and goals, benefits realized and challenges faced by their program.

Shepherd interviewed 9 fleet managers in public, private, and quasi-public organizations (utilities), located in primarily in the Midwest. They managed fleets of various sizes ranging from below 1,000 vehicles to over 8,000 vehicles. The interviews included a combination of fleet greening leaders (about half of the fleets being on Automotive Fleet's Top 100 Green Fleets list) as well as non-leaders. The survey focused on the following topics:

1. Fleet greening goals: What are their quantitative and qualitative goals? What targets and metrics are using to measure program success?
2. Vehicles, powertrains & fuel systems: Have they purchased vehicles with EV or other alternative powertrains or fuel systems? Are they retrofitting vehicles in the fleet or buying new? Are they using incentive programs to help subsidize purchases?
3. Fleet greening strategy: Were goals and direction driven from the "top" of the organization? How are they balancing fleet greening goals with the organization's economics goals and other fleet management priorities?
4. Status & Benefits: Have they realized their goals? Are there measurable environmental and/or organizational (business) benefits?
5. Challenges & Needs: What financial, organizational, educational, or other challenges have they encountered?
6. Fleet greening future plans: What are key metrics and targets moving forward? What types of vehicle technology/powertrains do they plan to use?

The Shepherd study generated findings useful to a variety of stakeholders including fleet managers, business executives, financial officers, vendors and suppliers of EV and alternative fuel system products and services.

Fleet Greening Survey Findings

"Fleet greening and all of its details and needs has essentially become my job as a fleet manager".

Fleet Greening Goals

The Shepherd study found that **8 of 9 interviewees have fleet greening goals in place with most featuring a metric for GHG emission reductions**. Many fleets have defined a metric for reducing gasoline consumption and/or a specific goal for increasing MPG. For example, one organization had the goal of "reducing GHG's by 10% by 2012" while another had the goal of increasing fleet MPG by 15%. In support of putting these metrics in place, the survey found that some of the organizations had commissioned studies to evaluate their carbon footprint and many were monitoring their level of GHG emissions on an ongoing basis.

Vehicles, Powertrains and Fuel Systems

Shepherd study found that nearly all of the interviewees were either using or had tested vehicles with hybrid powertrains and a few were testing electric vehicles (Chevy Volt). However, most hybrid/EV tests were small scale with mixed results. Fleet managers tended to find limited payback versus the higher upfront costs depending on mileage driven and vehicle replacement cycle timelines. Private companies saw limited potential for EV's given their distributed workforce (which were often times national) and the range/infrastructure concerns. As EV range and infrastructure issues are mitigated over time, these companies may integrate EV's into their fleet.

Many (especially private sector) interviewees viewed reducing fuel use in traditional internal combustion engines (ICE's) as a substantial, if not primary, part of their fleet greening strategy. For example, many of the interviewees were focused on reducing fuel use by migrating their fleet to 4 cylinder engines from 6 cylinder engines. One firm was accelerating its vehicle replacement cycle to increase the ratio of 4 cylinder engines. Another initiative cited in many interviews was driver training programs design to help the driver reduce idle time and drive more efficiently overall. As one fleet manager stated, "The biggest savings are in the driver's right foot!"

The survey found prominent use of ethanol flex fuel vehicles. Unfortunately, none of the organizations using flex fuel vehicles had direct insight to how much of the fuel purchased was an ethanol mix versus 100% gasoline as none of them tracked that information with their drivers.

The predominant approach to introducing greener vehicles into their fleets was to buy new greener vehicles within existing vehicle replacement timelines rather than converting existing vehicles to EV or alternative fuel systems. The perception was that replacement was easier and cheaper than conversion. Concern was expressed regarding the warranty eligibility for a powertrain that had been converted to an alternative fuel system such as propane or natural gas.

Finally, most of the fleet managers were skeptical regarding the viability of using alternative fuels systems like propane and CNG. With the exception of fleet managers where their business concerned production or supply of natural gas (utility) or propane, none of them were using these systems, viewing them as impractical for their usage patterns, logistics and scope of geographical distribution.

Fleet Greening Strategy

Most fleet greening strategies were driven top-down and combined economic and sustainability motivations. Some strategies were directly influenced by the subject matter of the business such as a gas powered utility focusing on natural gas or a propane supplier using propane. Most fleet managers were given leeway by upper management in determining which type of vehicle, powertrains or fuel systems to employ to achieve their organization's fleet greening goals within acceptable financial parameters.

The most significant factor shaping each organization's fleet greening strategy was the composition and distribution of their fleet along with the typical usage patterns of their drivers. The type of

vehicles in the fleet (van, pickup, passenger car, larger truck) was cited as a primary consideration given the limited availability of alternative powertrains or fuel systems for certain vehicles - larger vehicles in particular. For fleets with national distribution and geographical scope, fleet managers felt less comfortable moving into alternative powertrains and fuels systems due to infrastructure gaps/limits. Finally, driver usage patterns such as daily driving range were cited as factors. A new electric vehicle with range limits will make less sense for a sales person who may travel hundreds of miles per day in contrast to a municipal employee who travels up to 50 miles per day within the a given metropolitan area.

The study found that fleet greening strategy and program management were highly integrated into the ongoing fleet management and overall economics of the organization. All decisions were closely examined from an economic perspective and many organizations sought to achieve financial savings via their fleet greening efforts. The degree to which fleet managers were able to incur incremental expense to implement their programs varied based on financial condition of the organization and the degree of focus the organization had on fleet greening. The focus on economics was intensified by the recent economic downturn for both private and public organizations.

The survey also found that where fleet managers used fleet leasing companies for their vehicle supply, the fleet greening strategy was sometimes affected by the offerings of fleet leasing firms. For example, if a new hybrid or EV model was not offered by the fleet leasing firm, the fleet could not procure that model.

Finally, the strategy for some Michigan organizations was influenced by the desire for Detroit produced vehicles. As an example, one of the fleet managers expressed need to procure a specific brand of US vehicles as they were in a “company town” and only purchased that automaker’s vehicles.

Status & Benefits

All interviewees have achieved, or are on track to soon achieve, their goals. In fact many had already far exceeded their goals and were in the process of resetting more aggressive goals. The study also found that few fleet managers pursued incentive programs to help subsidize purchases. Only a few had accessed grants or incentives with another few planning to pursue incentive programs in the near future. Some of the fleet managers had studied available incentives and had concluded that they weren’t eligible for any opportunities while a few were simply not aware that incentives were available.

The organizations interviewed were realizing significant benefits on multiple levels. The fleet managers reported financial/economic savings, primarily in the form of reduced fuel expense, and GHG reductions. Many cited the inherent publicity value associated with these benefits and their company’s overall focus on going green as well.

Challenges & Needs

The study found several key challenges existed across many of the organizations. **Education was the most commonly cited need by fleet managers.** The need for education included understanding the

possible economic and environmental benefits of fleet greening initiatives as well as the types of alternative fuel approaches and programs that were available and viable for them to pursue. Education needs also focused on driver training to reduce fuel use and to retrain drivers to view their vehicle as a tool rather than a perk or a luxury (e.g., accept driving a 4 cylinder vehicle rather than a more powerful 6 or 8 cylinder vehicle). They saw education being a necessity at all levels including the staff, management, executive leadership and finance.

Another challenge expressed was staying on top of and sufficiently understanding all of the programs, new metrics, and market trends associated with fleet greening efforts. Driven by high rates of technological innovation and new offerings entering the market, the fleet manager needs to stay abreast of a very dynamic and growing marketplace. As one fleet manager said, “fleet greening and all of its details and needs has essentially become my job as a fleet manager”.

Concerns were expressed over the limited availability of EV/alternative fuel truck and van offerings. While some OEM’s/vendors have plans to bring truck or van products to market, few existed at the time of the survey. Fleet managers also expressed concerns over limited availability of alternative fuel or electricity infrastructure and charging stations. This issue was presented during several interviews as a primary reason why EV’s or other alternative fuel vehicles options such as propane or natural gas are not viewed as attractive options.

Other challenges included the inability to access volume discounts from dealers when buying EV’s/Hybrids. Apparently dealers had limited ability from the OEM’s to offer discounts with these new vehicle types. Another barrier cited was that the internal accounting used by the organization. For a couple of fleets interviewed, drivers realized the benefits of ongoing fuel savings while the company bore the upfront investment burden without the ongoing savings benefits. This set of incentives prevented the company from viewing EV’s as a worthwhile investment.

Finally, public sector fleet managers expressed a couple of concerns unique to the public sector. One issue entered around tightening budgets, reducing their ability to affect change. As one interviewee said, “It’s hard to implement change to our fleet when the fleet is being downsized each year”. Another concern was the difficulty posed by shifting strategy and policy due to changing political leadership.

Fleet Greening Future Plans

Fleet managers consistently felt optimistic about their ability to continue to achieve their goals and improve their overall carbon footprint - while possibly generating savings on fuel expense. All fleet managers discussed an ongoing approach to test new ideas, products and other best practices that emerge in the marketplace. The most significant program mentioned was the focus on reduced fuel use/expense by moving to 4 cylinder engines and driver training programs.

Most interviewees viewed EV’s and propane/CNG alt fuel systems as a growing part of their ongoing strategy – but most likely still a small part of the strategy for the foreseeable future. Municipalities discussed plans to increase EV usage given the limited need for extended range use and ability to centralize fueling and garaging. They also planned to test vans, medium sized and large electric/alt fuel

vehicles as they come to market. Prominent use of flex fuel and diesel systems was planned by most fleet managers. Finally, few fleet managers expressed interest in converting their existing fleet to electric/alternative fuel vehicle systems.

In Summary

The Shepherd survey generated an extensive set of valuable findings and takeaways for fleet managers, public administrators and business executives to consider. Overall, the survey portrayed high levels of attention, investment, and strategic focus within public and private organizations toward greening their fleets. The survey found positive outcomes among all organizations interviewed with all having set, achieved, and sometimes surpassed their fleet greening goals. Focus on fleet greening has grown to the point where the fleet manager's job now encompasses a whole new set of goals and metrics in addition to their standard operating objectives.

Other key summary points include the following:

- The composition & driving needs of the fleet are the key drivers in the organization's fleet greening strategy & approach. These factors directly influence the cost/benefit and viability of various alternative fuel or powertrain options.
- Electric/alternative fuel systems and powertrains are being tested and considered but the predominant fleet greening approach is to reduce fuel expense using ICE powertrains. These programs typically entail driver training and movement to 4 cylinder engines.
- The most significant barrier to program implementation is education of stakeholders at all levels of the organization. The need for education spans from working with administrators and decision makers regarding the cost, benefits and organizational support requirements of implementing fleet greening programs, to educating staff regarding fuel efficient driving techniques and the logic of driving 4 cylinder vehicles. Of course the study found the need in some instances to educate the fleet managers themselves regarding available products and services, how to access and use public incentives, and the viability of converting their existing fleet to alternative powertrains.

Finally, going forward, most fleet managers interviewed plan to increase use of alternative powertrain and fuel systems vehicles. While few expected them to comprise a large percentage of their overall fleet, they do plan to continue to test and assess which vehicle types work best for them.

Overall, the study's findings support this "test and learn" strategy for alternative powertrains and fuels systems. Given the extensive need for education paired with a fast evolving, technology driven marketplace, the logic of maintaining an open mind to new and better thinking and program management best practices is certainly a key success factor for any fleet manager and their organization as they seek to green their fleet.