

Going Green with Your Company Fleet



by Elin Shepard
Statewide Resource &
Sustainability Coordinator
Department of Administrative
Services, State of Oregon

Erratic fuel prices, falling budgets and environmental issues, as well as community health and safety are all good reasons to consider a “green fleet” for your company-owned vehicles.

What Is a Green Fleet and Why Is It Important?

A green fleet is a collection of vehicles and equipment managed by an organization that implements policies, programs and practices addressing the procurement, management and operation of the fleet in order to improve energy efficiency and reduce emissions.

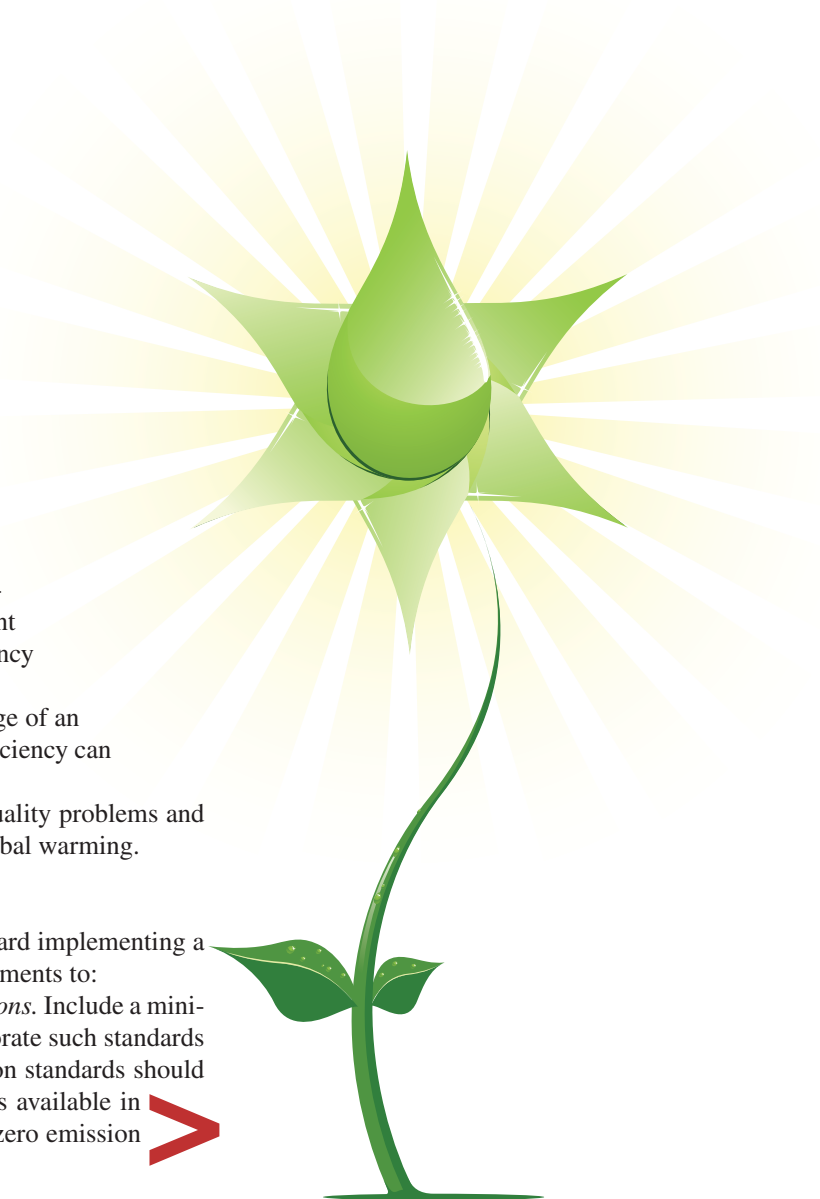
Operating a fleet often accounts for a significant percentage of an organization’s overall energy bill. Improving a fleet’s fuel efficiency can result in dramatic long-term energy savings.

Motor vehicles and equipment can exacerbate local air quality problems and may result in greenhouse gas emissions that contribute to global warming.

Adopt a Green Fleet Policy

Creating a green fleet policy is an important first step toward implementing a green fleet strategy. Green fleet policies often include requirements to:

- *Manage, maintain and operate the fleet to minimize emissions.* Include a minimum emission standard for each vehicle class and incorporate such standards in any procurement specifications. A green fleet’s emission standards should strive to incorporate the most stringent of these standards available in each vehicle class and seek to maximize the number of “zero emission vehicles.”



- *Review and modify procurement specifications* to allow the purchase of electric drive train or alternative fuel vehicles. Include a minimum fuel standard (in miles per gallon) for each vehicle class.
- *Ensure the rightsizing of vehicles.* Review all purchase requests to ensure the vehicle class is appropriate for the duty requirements that the vehicle will be called upon to perform.
- *Eliminate older vehicles or those that are used infrequently,* as well as vehicles that are disproportionately inefficient, and schedule their elimination or replacement.
- *Implement an anti-idling or idle-reduction program* to minimize idling by employees, contractors and vendors.
- *Utilize software programs and other tools to increase fleet efficiency,* such as route optimization, fuel use or mileage tracking software.
- *Set clear goals.* For example: reduce annual fuel use by 5 percent below 1999 by 2009; ensure at least 50 percent of new light duty vehicles purchased each

year are alternatively fueled or get 45 mpg or greater; have all eligible diesel vehicles retrofitted with emission control technology by 2008.

- *Regularly monitor and review compliance* with the goals of the green fleet policy.

Optimize Your Fleet

Seek to implement best practices, programs and policies that help you to utilize your fleet most efficiently and effectively.

Rightsizing: One of the most effective fuel saving strategies is to select the smallest possible vehicle based on the duty requirements of the task, and establish that standard across the fleet.

Downsizing: Reducing the overall fleet size is an effective strategy to save money (avoided purchase, maintenance and depreciation costs), discourage non-essential trips and encourage effective utilization of fleet vehicles. Look for opportunities to eliminate old vehicles — which tend to be fuel inefficient and have increased air emissions — and those that are infrequently used.

Maintenance: Well maintained and tuned engines can dramatically increase fuel efficiency and reduce environmental impacts (e.g., emissions, fluid leaks). Properly inflated tires are also important — studies show that under-inflation by two psi can increase fuel consumption by one percent.

Consider implementing an employee awareness campaign about the fuel efficiency and safety benefits of proper tire inflation. In addition, seek to ensure that your maintenance practices in your shops are as environmentally responsible as possible.

Technology Tools: Evaluate the costs and benefits of using various technology tools such as software and equipment that tracks fuel consumption and mileage by vehicle, idle shut off controls, route optimization software, etc.

Use Alternative Fuels

Because private sector fleets often have their own refueling facilities, fleet managers have a significant opportunity to use



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alternatives to traditional petroleum fuels. Two Web sites provide comprehensive information about alternative fuels, including types, environmental benefits, efficiencies, safety, costs, vehicle modifications and refueling infrastructure requirements:

U.S. Department of Energy: (www.afdc.energy.gov/afdc/) and Pollution Prevention Resource Center in Seattle: (www.pprc.org/pubs/archivealtfuels.cfm).

Alternative fuel options generally include:

Natural gas (compressed and liquefied) has significantly reduced air emissions and lower fuel costs compared to gasoline or diesel. It does require modifications to vehicles and fueling facilities and the driving range mileage is typically lower than traditionally fueled vehicles.

Propane (liquefied petroleum gas) also has reduced air emissions. Propane fueled vehicles have been used extensively for many years and require some modification, typically with

after-market kits. The fuel is generally cost competitive and widely available. Engine maintenance is improved due to less carbon build-up.

Methanol is an alcohol fuel which is typically blended with gasoline (*e.g.*, M85 = 85 percent methanol and 15 percent gasoline). Emissions are slightly lower than gasoline and toxic air pollutants are 50 percent-100 percent less (depending on the blend). Flex fuel vehicles can seamlessly switch back and forth between M85 and pure gasoline, which has made methanol a popular alternative fuel option.

Ethanol, like methanol, is an alcohol fuel that is blended with gasoline at 10 percent (E10) or 85 percent (E85). Ethanol works in Flex fuel vehicles and offers lower emissions, including reductions in greenhouse gas emissions. Currently, ethanol is made from grain crops, like corn, so the market price of corn influences the cost of the fuel. In the near future, however, ethanol will be made from cellulose (*e.g.*, wood, grass, straw), which will provide

significant alternative ethanol production opportunities.

Electricity can be used to operate electric motors in a variety of vehicle types, including hybrids. Electricity in hybrids is commonly provided by rechargeable batteries (although fuel cells are also in development).

Electricity can also be used to augment the operation of vehicle equipment or tools. For example, the City of Portland has outfitted maintenance trucks with solar panels on the roof so that equipment can be operated without needing to idle the engines.

Biodiesel is a fuel made from plant oils and animal fats. It can be used in its pure form as a direct replacement for diesel, but is most commonly blended at 5 percent (B5), 20 percent (B20) or 99 percent (B99). Biodiesel has significantly less air emissions and is generally only slightly more expensive than traditional diesel. Natural rubber components on older vehicles (generally 1995 or older) may need to be swapped out for synthetic rubber options due



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to the natural solvent properties of biodiesel.

Use Hybrids and Flex Fuel Vehicles

Gas-electric hybrids are exciting new additions to the car market for fleet purchases. Powered by both an internal combustion engine and a battery-operated electric motor, hybrids can achieve up to twice the fuel economy of a conventional car and produce 30 percent to 50 percent fewer greenhouse gas emissions. Each year, auto makers are making more gas-electric hybrid options available, including SUVs. Many private sector fleets have made hybrid sedans the default procurement option for new fleet vehicles.

Heavy duty diesel-electric hybrids are just beginning to become available, including utility, delivery and dump trucks. The Hybrid Truck Users Forum (www.calstart.org/programs/htuf/) is actively engaged with users and manufactures to continue these efforts and is an excellent source of information about new developments.

Flexible fuel vehicles, also known as FFVs, are designed to run on gasoline, E85 (85 percent ethanol) or any combination of the two. The “flexible” nature of the vehicle allows the driver to seamlessly switch back and forth between gasoline and E85. Chances are you already have FFVs in your fleet and you don’t even know it. Go to www.ve85.com/Vehicles/ to find out if you have FFVs in your fleet. Most importantly, consider specifying the flexible fuel option, if available, in all future vehicle purchases.

Plug-in hybrid electric vehicles (PHEV) use the same technology as the popular hybrids on the road today, but have a larger battery that can be recharged by plugging into a standard home outlet. The battery packs are large enough to power the vehicle from 20 to 60 miles on battery charge alone. The City of Austin, Texas, and Austin Energy have created a national campaign called Plug-In Partners (www.pluginpartners.org/) to demonstrate to automakers that a market for flexible-fuel PHEVs exists today.



Have a Green Maintenance Shop, Too

A green maintenance shop has policies and practices in place related to proper handling of hazardous waste, air quality and pollution, spill prevention and response, green product procurement, recycling, training and energy and water use.

Even if you are not interested in full certification, reviewing the checklists and manuals will provide excellent examples of best practices for a green vehicle maintenance shop.

Influence User Behavior

While ensuring you have the most fuel efficient and properly maintained fleet is critical, influencing the behavior of the users is also critical.


Fuel efficient driving: Aggressive driving (speeding, rapid acceleration and braking) wastes gas and can lower fuel efficiency by 33 percent at highway speeds and by 5 percent around town. As a rule of thumb, each 5 mph you drive over 60 mph is like paying an additional \$0.20 per gallon for gas (assuming gas costs ~\$3 per gallon). Also, avoid keeping unnecessary items

in vehicles; an extra 100 pounds in a vehicle can reduce fuel efficiency by up to 2 percent.

Idle reduction programs: Rising fuel prices, falling budgets, environmental issues as well as community health and safety are all reasons to develop a comprehensive idle reduction policy and employee/vendor outreach program. For a great resource for idle reduction materials (e.g., fact sheets, stickers and signs, policy documents) visit Idle Free BC at www.idlefreebc.ca/ (Canada).

Employee incentive programs: Develop incentive programs to encourage employees to implement best practices. If you have data and tracking technology available, provide incentives for employees to increase their miles per gallon (e.g., recognition for employees or crews who achieve a five percent reduction in fuel consumption by optimizing their routes, reducing idling, etc.).

Cost Considerations for Green Fleets

Fuel efficiency: The U.S. Environmental Protection Agency maintains a helpful 

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Web site, www.fueleconomy.gov, where you can look up fuel efficiency ratings for a variety of vehicles dating back to 1985. This will help you compare the potential cost savings of specifying high fuel efficiency vehicles.

Tax credits: Many states offer business energy tax credits for both hybrid vehicles (pre-approved list) and the use of alternative fuels and efficient truck technology (e.g., idle reduction technology, automatic tire inflation, aerodynamic packages). The BETC program has a "Pass-through Option" that will allow you to transfer your tax credit project eligibility to another business or individual (a pass-through partner) with an Oregon tax liability in exchange for a lump-sum payment.

Life cycle costing: Many local jurisdictions have used the tool of "life-cycle costing" to help evaluate the costs of alternative vehicles and fuels, including the costs of the associated environmental and public health benefits.

In 2004, the City of Seattle did a life-cycle cost benefit analysis for sedans, comparing a Dodge Neon, Toyota Prius and car-sharing through Flexcar. They considered purchase price, fuel mileage (and associated fuel costs) and salvage value (assuming eight year life). They also assigned costs associated with the environmental and health impacts of the vehicle emissions. They found (with a fuel price of \$1.80 per gallon at the time) that Flexcar was the most cost effective option for vehicles that are driven 400 miles or less per month. Thereafter, the Dodge Neon was the most cost effective with the Toyota Prius not far behind, especially when the monthly vehicle mileage was more than 1,000 miles.

Other Resources

- Fuel Economy & Other Cost Calculators www.fueleconomy.gov/;
- EPA Act (Energy Policy Act) www1.eere.energy.gov/vehiclesandfuels/epact/about/epact_fuels.html; and
- Local Government Fleet Rule for Alternative Fuel Vehicles www1.eere.energy.gov/vehiclesandfuels/epact/private/

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