

Light Duty Fleet Vehicles

Light duty fleet vehicles are any vehicles that are primarily used as a means of transportation for government personnel. These range from small compact sedans, over 2x4 pickups, up to full sized 4x4 pickups, SUVs, and vans. In 2010, there were about 1,030 light vehicles (not including ATVs and snowmobiles) operating in 14 government departments and in Newfoundland and Labrador.



What are the key green issues?

- » **Fuel and Resource Consumption:** The vehicle market is still dominated by traditional gasoline- and diesel-powered vehicles. The trend to bigger overall fleets and generally larger and more powerful vehicle sizes in the past decade has resulted in increased fuel consumption as well as increasing emissions.
- » **Air Quality and Human Health:** Gasoline vehicles are a significant source of air pollutants including carbon monoxide (CO), nitrogen oxides (NOx), non-methane organic compounds (NMOC), and particulate matter (PM) that cause smog and unhealthy air conditions.
- » **Greenhouse Gas (GHG) Emissions:** Gasoline vehicles are also a major source of the main global warming pollutant, carbon dioxide (CO₂). In 2009, road transportation accounted for 19 percent of Canada's total GHG emissions, contributing to global warming as well as to acid rain, which destroys forests and damages other ecosystems.
- » **Waste and End-of-Life:** The disposal of end-of-life vehicles can pose a threat to the environment, largely because of hazardous materials contained in end-of-life vehicles.

How do green light duty vehicles advance Government's strategic priorities?

✓ Reducing Resource Use

Environmentally preferable cars are designed to have high fuel economy, which is a key way to reduce total fleet fuel consumption and costs. A range of technologies, e.g. hybrid-electric vehicles (HEVs) or electric vehicles, and fuels (e.g., biodiesel, compressed natural gas, ethanol) are available and cost-competitive. The target of the Government of Newfoundland and Labrador in the 2011 Climate Change and Energy Efficiency Action Plans is that 35 percent of new car and SUV purchases would be hybrid or energy-efficient. Since April 2008, 43 percent of the Provincial Government's new car or SUV purchases have been hybrid vehicles.

✓ Reducing Emissions and Improving Air Quality

Environmentally preferable cars are also designed to have reduced carbon emissions and operate on alternative energy sources in order to reduce GHG emissions, smog and global warming. Alternative fuel vehicles improve air quality and demonstrate lower maintenance costs due to the cleaner-burning properties of their fuel. This also reduces human health issues such as asthma, respiratory diseases, cancer, heart disease, birth defects, and brain damage.

In addition, the emission of chemicals, such as nitrogen oxides, which contribute to acid rain destroying forests and other terrestrial and aquatic ecosystems, is reduced.

After seven years of driving, a fleet of twenty hybrid cars will emit 1.3 million pounds less carbon dioxide, 25,000 pounds less carbon monoxide, and 320 pounds less nitrogen oxides than a fleet of twenty full size sedans.

Electric cars that operate entirely on electricity burn no gasoline or diesel and produce no "tailpipe" greenhouse gas emissions or pollution. Life-cycle greenhouse gas emissions directly related to battery electric vehicles are lower than those produced by internal combustion engines.

✓ Reducing Unnecessary Waste and Recycling

Up to 75 percent of a vehicle's content by weight can be reused or recycled. Ensuring vehicle fluids (oil, lubricants, antifreeze, batteries) are collected, recycled, and/or properly disposed of is key to prevent hazardous materials from going into the waste stream and damaging the environment.

Myth Buster

While hybrid and electric vehicles used to be significantly more expensive, initial purchasing costs of hybrid and electric vehicles have become very similar to those of gasoline cars.

Recommended	Why is it important?	How do I know I am getting it?
<p>✓ New vehicles will belong to the three best-in-class models in terms of high fuel efficiency/economy and low emissions at the time of purchase</p>	<p>Fuel-economy varies significantly between the best-in-class and worst-in-class models, by vehicle class and engine type, even when considering only conventional gasoline vehicles. Choosing between the three best-in-class models ensures a significant reduction in fuel consumption and emissions.</p>	<p> EnerGuide helps identify the most fuel-efficient vehicles in a vehicle class.</p> <p>The California Air Resource Board (CARB) emission standard designates gasoline vehicles that have fewer emissions than vehicles sold under the US federal government's emissions standard.</p>
<p>✓ Appropriate vehicle size based on usage</p>	<p>Selecting the appropriate vehicle class and the smallest size vehicle class practical is a way to meet and not exceed operational requirements. Having “too much vehicle” for the job is not only a waste of resources, it can often have a negative impact on the environment. In cases where smaller vehicles are purchased, the fleet will usually save money, given that smaller vehicles are typically less expensive than larger vehicles.</p>	<p>The fleet manager should have the authority to analyze how vehicles are used and assign those that are the most appropriate for the task. Using a powerful pickup truck for a trip that does not require hauling large or heavy items is not energy efficient. Conduct a re-assessment of entitlement to a vehicle when an employee has a change of role (servicing now suburban areas instead of regional areas, doesn't need a 4WD anymore.)</p>
<p>✓ Alternative Fuels when it is cost-effective and operationally feasible</p>	<p>Replacing petroleum-based fuels with alternative and renewable fuels can, in many cases, reduce both greenhouse gases and toxic diesel emissions. Waste vegetable oil biodiesel is the lowest carbon-intense transportation fuel for diesel vehicles.</p>	<p>Choose alternative fuels such as biodiesel blends (B20 or higher), ethanol blends (E85 or higher), natural gas and/or electricity to the maximum extent possible and where available. Check the NRCAN site on Alternative Fuels for more information.</p>
<p>✓ Advanced technology, vehicles including hybrids and electric vehicles</p>	<p>Gas/electric hybrid vehicles and diesel/electric light-duty work trucks, as well as electric cars are greatly contributing to reducing energy consumption, emissions and costs. There are regulatory requirements for advanced technology vehicles such as electric vehicles and plug-in hybrids for model years 2011 to 2016.</p>	<p>Check the NRCAN vehicle tables to determine the fuel consumption ratings of Advanced Technology Vehicles (plug-in hybrid electric and electric vehicles) for different model years.</p>

What else could I look for?

In addition to the minimum recommended criteria outlined above, there are stronger green attributes you can look for when making your purchasing decision.

Recommended	Why is it important?	How do I know I am getting it?
Fuel Consumption and Vehicle Use Tracking	Collecting and reporting fuel and vehicle/equipment use data is key to understanding fleet efficiency. The right data management system for each fleet depends primarily on fleet size, annual miles travelled and resources available to each fleet.	Ensure that your fleet management program contains appropriate systems to track fuel consumption and vehicle use. For small fleets, an electronic spreadsheet may suffice as a data management system. For larger fleets, dedicated software and telemetry systems may be more appropriate for optimal efficiency.
Fleet Efficiency Technologies	Technology can play a very important role in fuel conservation and efficiency improvements. Large fleets can realize dramatic environmental and cost savings by making use of anti-idling and fleet utilization technologies. Fleets can also improve efficiency by increasing the level of coordination and communication among departments and external partners.	<p>Install on-board systems (e.g. idle shutdown timers), which can often be purchased along with new equipment, or installed on existing fleet vehicles.</p> <p>Trip/route planning software can help reduce idle time and guarantee the most efficient routes on a daily basis. For large fleets, it can be specified at the time of purchase or installed as an add-on. Small fleet managers could use free Internet mapping tools instead.</p> <p>In-vehicle telematics (e.g. Global Positioning Systems): an electronic GPS device is installed in each vehicle, which communicates with software (e.g. at the main fleet office) to collect and interpret positional data transmitted by each vehicle. Data can include vehicle location, driving speed and idling times to provide fleet managers with a snapshot of their fleet's driving habits and practices.</p>
Diesel Vehicle Emission Reductions/New Engines and Retrofits	Diesel engines are significant generators of fine particles and toxic emissions. Reducing diesel particulate emissions can result in improved air quality, along with improved health for fleet employees (drivers and mechanics) who are exposed to diesel exhaust on a daily basis.	Utilizing on-road diesel vehicles to modernize their fleet to current green standards by retrofitting or installing new engines (year 2007 or newer) on 50 percent or more of their diesel vehicles.
Vehicles painted in light rather than dark colours	Light colours reflect rather than absorb sunlight and therefore reduce the need for air conditioning in the summertime.	Choose light colours, such as white or cream for vehicles.

Resources

- RPN online Hybrid Calculator is a publicly available tool that can be used to compare the lifecycle costs and emissions of hybrid and conventional vehicles <http://www.responsiblepurchasing.org/calculator/index.php>
- Responsible Purchasing Network (RPN) www.responsiblepurchasing.org