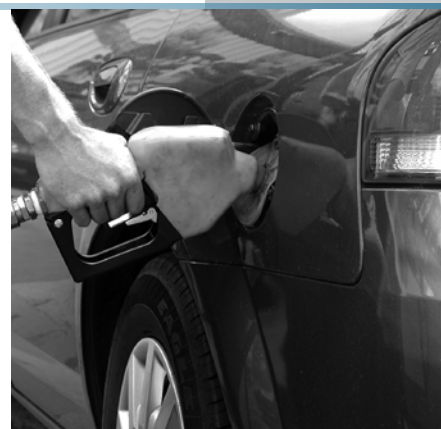




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Report on the Application of the *Alternative Fuels Act*

Fiscal Year 2009–10



Canada



**Report on the Application
of the *Alternative Fuels Act***

Fiscal Year 2009–10

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President's Message

I am pleased to table in Parliament the annual *Report on the Application of the Alternative Fuels Act*, for the fiscal year 2009–10, pursuant to the *Alternative Fuels Act*.

Original signed by

The Honourable Stockwell Day, P.C., M.P.
President of the Treasury Board

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Executive Summary

Annual Report on the Application of the Alternative Fuels Act

The *Alternative Fuels Act* (AFA) requires the President of the Treasury Board to report annually on the application of the AFA in respect of all federal bodies (departments and agencies) named in schedules I, I.1, and II of the *Financial Administration Act* (FAA).

This is the thirteenth annual report on the application of the AFA.

The Alternative Fuels Act

The purpose of the AFA is to accelerate the use in Canada of alternative fuels in motor vehicles to reduce the emission of carbon dioxide and other greenhouse gases, thereby lessening dependence on petroleum-based fuels for transportation. These alternative fuels include ethanol, methanol, propane gas, natural gas, hydrogen, or electricity, which must be used as the sole source of direct propulsion energy.

Compliance with the Alternative Fuels Act

For the thirteenth consecutive year, the federal government, through the activities of the federal bodies named in schedules I, I.1, and II of the FAA, complied with AFA acquisition requirements. Due to the limited availability of alternative fuel vehicles that are suitable for all federal government operations during fiscal year 2009–10, 43 per cent of newly acquired vehicles were capable of running on alternative fuels. In the aggregate, the federal government acquired 1,525 alternative fuel vehicles during 2009–10, each one capable of operating on E85 ethanol fuel.

Conclusion

The availability of alternative fuel vehicles through manufacturers is increasing; however, the lack of an alternative fuel supply infrastructure throughout Canada has constrained the ability of the federal government to increase the use of alternative fuels in its fleet. This has limited progress in reaching the AFA target that was originally expected when the Act took effect in 1997.

Meanwhile, the federal government has continued to meet the objective of the AFA through several mitigating measures aimed at reducing harmful emissions from its fleet. They include the acquisition of vehicles capable of operating on both petroleum-based and alternative fuels, the acquisition of hybrid gasoline-electric vehicles, the application of environmental criteria in the evaluation of bids for federal vehicles, government-wide policies requiring the purchase of E10 gasoline where available, and the elimination of unnecessary idling. Over the years, the modernization of the federal fleet with newer, cleaner, and more fuel-efficient vehicles has also led to a reduction in greenhouse gas and harmful ground-level emissions.

1. Introduction

The *Alternative Fuels Act* (AFA) requires the President of the Treasury Board to report annually on the application of the AFA in respect of all federal bodies (departments and agencies) named in schedules I, I.1, and II of the *Financial Administration Act* (FAA).

This is the thirteenth annual report on the application of the AFA.

1.1 *Alternative Fuels Act*

The AFA received Royal Assent on June 22, 1995, and took effect on April 1, 1997. The purpose of the AFA is to accelerate the use in Canada of alternative fuels in motor vehicles to reduce the emission of carbon dioxide and other greenhouse gases, thereby lessening dependence on petroleum-based fuels for transportation. These alternative fuels include ethanol, methanol, propane gas, natural gas, hydrogen, or electricity, which must be used as the sole source of direct propulsion energy.

The AFA and the *Alternative Fuels Regulations* require that, when cost-effective and operationally feasible, 75 per cent of all newly acquired motor vehicles operated by federal departments and agencies use alternative fuels. More specifically, the AFA requires that:

- ▶ of the portion of newly acquired vehicles deemed both cost-effective and operationally feasible to run on alternative fuels, 75 per cent must be physically capable of using these fuels; and
- ▶ when it is cost-effective and operationally feasible, a federal body shall use an alternative fuel in the operation of any motor vehicle capable of operating on such a fuel.

2. Compliance with the *Alternative Fuels Act*

Treasury Board policy requires departments and agencies to comply with the AFA when making motor vehicle procurement decisions. Supporting guidelines provide departments and agencies with additional information on the effective application of the AFA and the *Alternative Fuels Regulations* and with guidance on meeting their AFA obligations.

Though there has been an increase in the availability of alternative fuel vehicles for purchase, there continued to be a limited supply of factory-produced alternative fuel vehicles in the classes of vehicles and engine sizes that are suitable for federal government operations. Departments and agencies have also been restricted to using mostly petroleum-based fuels due to a lack of alternative fuel infrastructure throughout Canada. Under these conditions, operating federal government vehicles on alternative fuels is operationally feasible in only a few areas. Nevertheless, in support of the objective of the AFA, the federal government has taken

mitigating measures to reduce greenhouse gas emissions and increase the viability of using alternative fuels in its fleet. Details on these measures are provided in section 2.4.

2.1 New alternative fuel vehicle acquisitions

The federal government acquired a total of 3,568 vehicles during 2009–10. Of these, 1,525 (43 per cent) were alternative fuel vehicles.

All new factory-produced alternative fuel vehicles acquired during 2009–10 were capable of running on gasoline alone or on any blend of gasoline and ethanol (up to a maximum of 85 per cent ethanol).

2.2 Use of alternative fuels in the federal fleet

The portion of the federal government's 6,104 E85 alternative fuel vehicles with access to E85 fuel consumed approximately 287,203 litres during 2009–10.

The federal government's 11 natural gas vehicles consumed approximately 664,427 kg of natural gas, and its 2 propane vehicles consumed approximately 102,316 litres of propane.

The federal government has also made use of low-level blended fuels, consuming 7,911,136 litres of E10 gasoline and 308,271 litres of biodiesel.

The following table summarizes departments and agencies' estimated fuel consumption by fuel type during 2009–10.

Fuel Type	Approximate Number of Vehicles	Total Estimated Annual Fuel Consumption	Percentage of Total Fuel Consumption
Gasoline	23,159	59,811,595 L	74.2%
Diesel	2,029	10,230,324 L	12.7%
E10 gasoline	Included in Gasoline numbers	7,911,136 L	9.8%
Hybrid (gasoline)	1,327	1,261,219 L	1.6%
Ethanol 85	6,104	287,203 L	0.4%
Biodiesel	Included in Diesel numbers	308,271 L	0.4%
Propane	2	102,316 L	0.1%
Natural gas	11	664,427 kg	0.8%
Total	32,632		100%

2.3 Cost-effectiveness and operational-feasibility constraints

During 2009–10, there were a number of cost-effectiveness and operational-feasibility constraints that worked against the acquisition of alternative fuel vehicles and the viability of using these fuels in the federal fleet.

- ▶ Although manufacturers increased their production of alternative fuel vehicles and offered them in a wider selection of vehicle classes, there continued to be a limited supply of factory-produced alternative fuel vehicles suitable for federal government operations.
- ▶ The price of E85 fuel was higher than regular gasoline during 2009–10. In addition, the lower energy content of E85 fuel compared to regular gasoline results in an inefficiency factor of 25 per cent, i.e. approximately 25 per cent more E85 fuel is necessary to travel the same distance.
- ▶ The number of fuelling stations that offered E85 fuel commercially in Canada during 2009–10 fell from four to two. Both were in Ontario, with one located in Ottawa and the other located in Guelph. Consequently, it was not operationally feasible to run alternative fuel vehicles on E85 fuel in most areas throughout Canada.
- ▶ Outside of urban areas, supplies of propane and natural gas remain limited, and the operating hours of suppliers are often restricted.
- ▶ Some jurisdictions restrict the use of propane vehicles in certain areas for safety reasons, e.g. underground parking garages and some airport tarmacs.
- ▶ The installation of alternative fuel tanks in vehicles sometimes affects their operational capabilities as it reduces available cargo space.
- ▶ The effectiveness and quality of after-market conversion kits for propane and natural gas remain questionable, and testing has sometimes revealed a higher quantity of emissions than those produced from gasoline vehicles. Also, some departments noted that the limited number of approved warranty service facilities for converted vehicles resulted in higher maintenance and repair costs. Consequently, no federal vehicles were converted to alternative fuel use during 2009–10.

2.4 Mitigating measures

Despite the factors listed above, the federal government endeavoured to meet the objective of the AFA to accelerate the use in Canada of alternative fuels in motor vehicles to reduce the emission of carbon dioxide and other greenhouse gases. This was accomplished through several measures.

- ▶ The federal government continued to make use of the fourteen E85 ethanol fuelling tanks installed on its own sites across Canada, thus increasing the viability of alternative fuel usage in those regions.

-
- ▶ To further reduce greenhouse gas emissions from the federal fleet, environmental criteria apply to the purchase of most passenger cars, minivans, and station wagons. These criteria provide an advantage to alternative fuel and hybrid gasoline-electric vehicles as well as to vehicles equipped with fuel-efficient four-cylinder engines.
 - ▶ Treasury Board policy requires departments and agencies to fill up with E10 fuel whenever possible and to take measures to eliminate unnecessary idling.

These measures articulate the federal government's commitment to meeting the objective of the AFA in a practical manner that takes advantage of opportunities to demonstrate environmental leadership despite cost-effectiveness and operational-feasibility constraints.

2.5 Use of hybrid gasoline-electric vehicles in the federal fleet

The trend in the automotive industry is a move toward hybrid gasoline-electric vehicles, and vehicle manufacturers produced many models in different vehicle classes during 2009–10.

As hybrid gasoline-electric vehicles are not considered alternative fuel vehicles under the AFA, they were not included in the acquisition total of 1,525 reported in section 2.1. Because hybrid gasoline-electric vehicles meet federal operational needs, the federal government ordered 168 such vehicles in 2009–10. It now operates an estimated 1,327 of these vehicles. Department and agency acquisitions of hybrid gasoline-electric vehicle acquisitions during 2009–10 are itemized in Appendix C.

3. Conclusion

During 2009–10, the federal government complied with AFA requirements governing vehicle acquisition. Nevertheless, constraints such as the lack of a supporting infrastructure for alternative fuels in Canada continue to curtail the ability of the federal government to increase the use of alternative fuels in its fleet. This has resulted in limited progress in reaching the AFA target that was originally expected when the Act took effect in 1997. Notwithstanding, the federal government has continued to work toward meeting the spirit and intent of the AFA through mitigating measures, such as the acquisition of vehicles capable of operating on both petroleum-based and alternative fuels. This better positions its fleet should changes occur in the cost of alternative fuels and in their availability.

The government has also taken action to reduce greenhouse gas emissions from the federal fleet through its policies and required practices. For example, Treasury Board policy requirements to buy E10 fuel where available and to eliminate unnecessary idling result in lower emissions. Furthermore, environmental criteria are used in evaluating bids for federal vehicles, which

provide an advantage to hybrid gasoline-electric vehicles, alternative fuel vehicles, and vehicles with fuel-efficient four-cylinder engines.

It is clear that the automotive industry is shifting its focus to hybrid technology to increase availability of these vehicles in more classes. This should provide the federal government with further opportunities to purchase additional hybrid vehicles and, as a result, reduce greenhouse gas emissions.

Despite the constraints that worked against the acquisition of alternative fuel vehicles and the use of alternative fuels in its fleet, the government's combined total of alternative fuel and hybrid gasoline-electric vehicles increased by 6 per cent during 2009–10 and now represents approximately 23 per cent of the federal fleet.

Appendix A: Terminology

This section provides definitions of the terms frequently used in this report.

Alternative fuel

Under the AFA, *alternative fuel* must include, but is not limited to, ethanol, methanol, propane gas, natural gas, hydrogen, or electricity, which must be used as the sole source of direct propulsion energy.

With respect to the purchase of motor vehicles, the definition of *alternative fuel* is broader under the *Alternative Fuels Regulations*. A blended fuel may also be deemed an alternative fuel under the Regulations when one of the alternative fuels defined above makes up at least 50 per cent of the blend.

With respect to the use of alternative fuels, the definition of *alternative fuel* is broader under the *Alternative Fuels Regulations* and includes biodiesel and blended fuels. Blended fuels may include any amount of the approved alternative fuels defined above.

Alternative fuel vehicle

For the purposes of reporting on the AFA, the term *alternative fuel vehicle* encompasses motor vehicles equipped with engines that are capable of running on an alternative fuel as defined in the *Alternative Fuels Regulations*.

Cost-effective

A vehicle is considered *cost-effective* for alternative fuel use if it can be demonstrated that either the additional cost of converting a vehicle to use alternative fuels or the cost of acquiring a factory-produced alternative fuel vehicle will be recovered in the form of fuel savings over the life of the vehicle.

Motor vehicle

For the purposes of reporting on the AFA, the term *motor vehicle* comprises automobiles, passenger vans, light- or medium-duty trucks, and buses.

Operationally feasible

Alternative fuel use is considered to be *operationally feasible* when it can be demonstrated that the vehicle will be able to fulfill its primary operational tasks.

The definition of operational feasibility will vary across departments and agencies according to a wide range of variables, such as the specific travel patterns of each vehicle, the mandate of the

department or agency, the availability of alternative fuels wherever the vehicle will travel, local laws (or bylaws), the performance requirements of the vehicle, and the availability of the vehicle or of a suitable conversion kit.

Appendix B: New Vehicle Acquisitions

The table below lists departments and agencies' new vehicle acquisitions under the application of the AFA for 2009–10. Consultations with each department and agency included in schedules I, I.1, and II of the FAA yielded the information reported. If a department or agency is not listed in the table, it did not acquire any new vehicle during 2009–10.

Department or Agency	Total Number of Vehicles Acquired	Number of Alternative Fuel Vehicles Acquired
Schedule I		
Agriculture and Agri-Food Canada	134	92
Environment Canada	99	38
Fisheries and Oceans Canada	127	34
Health Canada	32	11
Human Resources and Skills Development Canada	17	2
Indian and Northern Affairs Canada	17	8
Industry Canada	41	14
National Defence	567	183
Natural Resources Canada	52	20
Public Works and Government Services Canada	33	12
Transport Canada	51	8
Veterans Affairs Canada	2	1
Treasury Board	1	0
Totals for Schedule I	1,173	423

Department or Agency	Total Number of Vehicles Acquired	Number of Alternative Fuel Vehicles Acquired
Schedule I.1		
Atlantic Canada Opportunities Agency	8	0
Canadian Space Agency	1	0
Correctional Service Canada	337	145
Courts Administration Service	1	0
Economic Development Agency of Canada for the Regions of Quebec	2	1
Library and Archives Canada	1	0
National Parole Board	1	0
Public Prosecution Service of Canada	2	0
Privy Council Office	3	1
Royal Canadian Mounted Police	1,736	877
Totals for Schedule I.1	2,092	1,024

Department or Agency	Total Number of Vehicles Acquired	Number of Alternative Fuel Vehicles Acquired
Schedule II		
Canada Border Services Agency	68	31
Canada Revenue Agency	14	5
Canadian Food Inspection Agency	100	24
Canadian Nuclear Safety Commission	7	2
Transportation Safety Board of Canada	4	0
National Research Council Canada	5	1
Parks Canada	104	15
Registrar of the Supreme Court of Canada	1	0
Totals for Schedule II	303	78
Total for all Schedules	3,568	1,525

Appendix C: Hybrid Vehicle Acquisitions

The table below lists departments and agencies' hybrid gasoline-electric vehicle acquisitions for 2009–10. Consultations with each department and agency yielded the information reported. If a department or agency is not listed below, it did not acquire any new hybrid gasoline-electric vehicle during 2009–10.

Department or Agency	Number of Hybrid Gasoline-Electric Vehicles Acquired
Agriculture and Agri-Food Canada	3
Atlantic Canada Opportunities Agency	5
Canada Border Services Agency	3
Canada Revenue Agency	2
Canadian Food Inspection Agency	9
Environment Canada	20
Fisheries and Oceans Canada	6
Health Canada	3
Industry Canada	11
National Defence	4
National Research Council Canada	2
Natural Resources Canada	14
Parks Canada	10
Privy Council Office	1
Public Works and Government Services Canada	11
Royal Canadian Mounted Police	29
Transport Canada	34
Treasury Board	1
Grand Total	168