Report on the Application of the *Alternative Fuels Act*

Fiscal Year 2001–02

© Her Majesty the Queen in Right of Canada,
represented by the President of the Treasury Board, 2002
Catalogue No. BT76-1/2002
ISBN 0-662-66812-X

This document is available in alternative formats
and on the Treasury Board of Canada Secretariat's Web site at the following address:
http://www.tbs-sct.gc.ca

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 2001–02, pursuant to the *Alternative Fuels Act*.

Lucienne Robillard
President of the Treasury Board

Table of Contents

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 government bodies (departments and agencies) named in schedules I, I.1, and II of the *Financial Administration Act* (FAA).

Requirements of the *Alternative Fuels Act*

The AFA requires that, following a seven-year phase-in period, for the fiscal year commencing April 1, 2004, where it is cost-effective and operationally feasible, 75 per cent of all automobiles, passenger vans, light- and medium-duty trucks, and buses operated by federal government departments and agencies use alternative transportation fuels (ATF).

For the fiscal year that began April 1, 2001, the AFA required that 75 per cent of the portion of newly acquired vehicles for which alternative fuels were deemed to be both cost-effective and operationally feasible be physically capable of using these.

The AFA also requires that, when it is cost-effective and operationally feasible, a federal body shall use ATF in the operation of any motor vehicle capable of using such fuels.

Compliance with the *Alternative Fuels Act*

With regard to the acquisition of ATF vehicles, the federal government, through activities of the federal bodies named in schedules I, I.1, and II of the FAA, is in full compliance with and, in fact, has exceeded the requirements of the AFA for the fifth year in a row.

With regard to the use of ATF, federal organizations have indicated that all vehicles in the federal fleet capable of operating on ATF use these to the maximum extent possible.

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 government bodies (departments and agencies) named in schedules I, I.1, and II of the *Financial Administration Act* (FAA).

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 transportation fuels (ATF) in motor vehicles in order to reduce the emission of carbon dioxide and other greenhouse gases and to reduce dependence on petroleum-based fuels for transportation. The AFA targets the federal vehicle fleet and helps make the government a leader in the use of ATF.

The AFA requires that, following a seven-year phase-in period, for the fiscal year commencing April 1, 2004, where it is cost-effective and operationally feasible, 75 per cent of all automobiles, passenger vans, light- and medium-duty trucks, and buses operated by federal government departments and agencies, in the aggregate, use ATF.

Specifically, the AFA requires that departments and agencies review each new vehicle acquisition in terms of its estimated annual fuel consumption and primary operational tasks and determine whether using ATF would be both cost-effective and operationally feasible. This has been interpreted to mean that, if a new vehicle is less expensive to operate on ATF than on a conventional fuel, and the vehicle can fulfil its operational duties, then it is included in the group of new acquisitions that are capable of operating on ATF.

It is a requirement of the AFA that, for the fiscal year that began on April 1, 1997, 50 per cent of that group of vehicles had to have been able to operate on ATF. For the fiscal year that began on April 1, 1998, the requirement increased to 60 per cent. For the fiscal year that began on April 1, 1999, and for every year thereafter, 75 per cent of the viable vehicles must be capable of operating on ATF.

The AFA also requires that, 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.

In July 1995, the Treasury Board of Canada Secretariat revised the *Motor Vehicle Policy* to ensure effective application of the AFA and its regulations and to provide leadership and assistance to departments and agencies to help them meet the obligations set forth in the AFA.

This is the fifth annual report on the application of the *Alternative Fuels Act*.

Section 2 of the Report assesses the federal government's compliance with the AFA. Section 2.1 summarizes the application of the AFA in relation to 2001–02 fiscal year vehicle acquisitions, and section 2.2 reports on the extent of ATF use in the federal fleet during the 2001–02 fiscal year. Section 2.3 contains examples of progress in the use of ATF and emissions reductions while section 2.4 presents some of the key obstacles to using ATF in the federal fleet.

Section 3 concludes the report with a discussion of the federal government's commitment to continuing to meet the requirements of the AFA.

2. COMPLIANCE WITH THE *ALTERNATIVE FUELS ACT*

Taking into account the acquisition activities of all departments and agencies, the federal government reports that it is in full compliance with the AFA. Section 2.1 provides a summary of the application of the AFA on a government-wide basis.

Furthermore, it is reported that all vehicles in the federal fleet capable of operating on ATF use these fuels to the greatest extent possible.

2.1 New vehicle acquisitions

The table below provides a summary of the application of the AFA on a government-wide basis for the 2001–02 fiscal year. This table illustrates that at least 75 per cent of all new vehicle acquisitions for which ATF would be cost-effective and operationally feasible are, in fact, vehicles that are capable of operating on ATF. (Definitions of the table headings are contained in Appendix 3.)

Total number of vehicles acquired	Total number of vehicles for which ATF is cost-effective	Total number of vehicles for which ATF is cost-effective and operationally feasible	Actual number of ATF vehicles acquired	75% target — required acquisitions as per the AFA
3,984	267	102	126	76

A summary of the application of the AFA by department and agency is contained in Appendix 2.

Meeting and exceeding the requirements of the AFA

The federal government, through the acquisition activities of departments and agencies, has surpassed the requirements of the AFA for the 2001–02 fiscal year. This can be attributed to the mandate of certain departments and agencies to demonstrate leadership in the use of ATF. These federal organizations have done as much as they could in the 2001–02 fiscal year to acquire vehicles that can use alternative fuels.

From information provided by the departments and agencies and data contained in the Public Works and Government Services Canada Vehicle Statistical Information System (VSIS), it is estimated that 85 per cent of the ATF vehicles purchased in 2001–02 are factory-produced and that 15 per cent are converted after acquisition. These are the best estimates available at the time of tabling this report.

2.2 Use of ATF in the federal fleet

In the operation of any motor vehicle in the federal fleet already capable of operating on an alternative fuel, the AFA requires that federal bodies use an alternative fuel to the greatest extent possible, where this is cost-effective and operationally feasible.

The following table summarizes the estimated fuel consumption by fuel type for the 2001–02 fiscal year for the 18 departments and agencies with the largest fleets.[1]

Fuel type	Approximate number of vehicles	Total estimated annual consumption	Average annual consumption per vehicle
Conventional fuels			
Gasoline (includes E10) [2]	21,187	58,978,752 L	2,784 L
Diesel	1,123	2,827,329 L	2,518 L
Alternative fuels			
Natural Gas	390	349,578 kg	896 kg
Propane	468	1,079,625 L	2,307 L
Ethanol 85	142	85,018 L	599 L
Electric	3	Data not available	Data not available
Total	**23,313**		

1 These departments and agencies are Agriculture and Agri-Food Canada, Correctional Service Canada, National Defence, Environment Canada, Fisheries and Oceans Canada, National Research Council Canada, Natural Resources Canada, Parks Canada, Public Works and Government Services Canada, Royal Canadian Mounted Police, Transport Canada, Canada Customs and Revenue Agency, Industry Canada, Human Resources Development Canada, Canadian Food Inspection Agency, Citizenship and Immigration Canada, Health Canada, and Indian and Northern Affairs.

2 Gasoline consumption figures include ethanol 10 because reliable data on total fuel consumption of ethanol 10 fuel are not available. Sales of this fuel are not always tracked individually in the current reporting systems by either the oil companies or the fleet management system contractors. As a result, ethanol 10 is tracked as part of the gasoline data.

Federal bodies named in schedules I, I.1, and II of the FAA are endeavouring to use ethanol 10 blend (E10) to the greatest extent possible in their gasoline vehicles. For natural gas and propane, consumption statistics include dedicated and bi-fuel applications.

2.3 Examples of progress in the use of ATF and emissions reduction

The items below highlight the use of ATF and progress in emissions reduction by the federal government during the 2001–02 fiscal year:

1. Agriculture and Agri-Food Canada opened the second ethanol 85 (E85) refuelling station in Canada. It is located at the Central Experimental Farm (CEF) in Ottawa and it serves as a fuel storage and pumping facility for 16 vehicles running on E85. All other vehicles at the CEF run exclusively on E10 blended gasoline and low-sulphur diesel.

2. The number of E85 vehicles in the federal fleet increased again during the 2001–02 fiscal year, from 57 to 142 vehicles. The two E85 refuelling stations in Ottawa, owned and operated by Agriculture and Agri-Food Canada and Natural Resources Canada, also served vehicles owned by other departments, such as Environment Canada, Transport Canada, Public Works and Government Services Canada, and the Department of Foreign Affairs and International Trade.

3. The introduction in Canada of hybrid gasoline-electric vehicles has been well received by the federal government, which finds them to be practical and environmentally friendly. Hybrid gasoline-electric vehicles are not presently considered as ATF vehicles in terms of *acquiring* motor vehicles under the AFA and, as such, are not included in the "Number of Actual ATF Vehicles Acquired" column in the table in section 2.1 of this report. Nevertheless, hybrid gasoline-electric vehicles emit significantly less pollutants than conventional gasoline vehicles. The federal government acquired 40 of these hybrids during the 2001–02 fiscal year (see table below), which amounts to a total of 86 hybrids presently owned and operated by the federal government.

Department / Agency	Number of hybrid gas-electric vehicles acquired in 2001–02
Atlantic Canada Opportunities Agency	1
Environment Canada	7
Fisheries and Oceans Canada	2
Health Canada	2
National Defence	3
Natural Resources Canada	4
Parks Canada	1
Public Works and Government Services Canada	1
Royal Canadian Mounted Police	9
Transport Canada	10
Total	**40**

2.4 Key obstacles to expanding the use of ATF

Despite the commitment of the federal government to increase the use of ATF in the federal fleet, a number of external factors continue to limit the feasibility of using ATF vehicles. During the past five fiscal years, the acquisition of ATF vehicles and the use of ATF were curtailed by a limited ATF infrastructure across many parts of the country and a limited selection and availability of appropriate ATF vehicles from manufacturers.

The items below summarize some of the key obstacles.

1. During the 2001–02 fiscal year, there continued to be a limited supply of factory-produced ATF vehicles, compared to the number of gasoline models, suitable for federal government operations.

2. Compared to similar classes of gasoline vehicles, premiums for the acquisition of factory-produced ATF vehicles range from $1,902 to $9,025 for propane and natural gas vehicles and up to $1,096 for E85 vehicles. The cost of after-market conversion kits ranges from $3,695 to $5,495 for propane and natural gas applications. It is generally the case that the lower-priced kits incorporate earlier, less advanced technology, while the higher-priced ones reflect newer, cleaner technology.

3. Vehicle manufacturers are not producing ATF vehicles in the numbers originally anticipated, and the availability of ATF vehicles in Canada remains limited. Availability in Canada is dictated largely by the production needs of the bigger U.S. marketplace.

4. Natural gas, propane, and E85 infrastructure is still limited; supply of these fuel types is unreliable outside of urban areas, and supplier hours of operation are often restricted.

5. The effectiveness and quality of vehicle conversion kits remain questionable, considering that emissions-testing analysis of converted vehicles sometimes reveals higher emissions than those from a gasoline vehicle. As well, the highly sophisticated onboard diagnostic computers in new vehicles have severely curtailed the after-market conversion industry's ability to convert engines properly. Therefore, the federal government clearly favours factory-produced ATF vehicles, and it is estimated that these vehicles represent 85 per cent of the ATF vehicles acquired in 2001–02.

6. The availability and operating hours of approved warranty service facilities offering routine maintenance and repair services for factory-produced or converted ATF vehicles are limited, thereby restricting the use of an ATF vehicle in many locations. Also, some departments have noted that the limited number of approved warranty service facilities has resulted in higher maintenance and repair costs.

7. Some jurisdictions still restrict the use of propane vehicles in certain areas; for example, in underground parking garages and on some airport tarmacs.

8. The addition of an ATF tank sometimes affects the operational capabilities of vehicles. For example, available cargo space is often reduced.

9. The price of gasoline and the relatively low average annual kilometres travelled by federal vehicles make it less likely that ATF use will be cost-effective.

3. CONCLUSION

During the 2001–02 fiscal year, the federal government, through the activities of the federal bodies named in schedules I, I.1, and II of the FAA, has fully complied with the requirements of the AFA. It should be noted that the federal government has complied with the AFA every year since it came into force in April 1997.

The federal government is committed to continuing to comply with the requirements of the AFA and to demonstrating leadership in attaining of all federal environmental objectives. Expanding the current use of ATF and ATF vehicles remains a priority with departments and agencies as long as the use of such products is cost-effective and operationally feasible for their specific requirements.

The federal government finds that the availability of ATF vehicles and associated ATF infrastructure has not yet materialized to the extent first envisaged when the AFA was passed in June 1995. To date, the federal government has encountered many obstacles that place practical limitations on the use of ATF and ATF vehicles. In time, as these obstacles are overcome, there will be greater opportunity to acquire more ATF vehicles for the federal fleet and make greater use of alternative fuels across the federal government.

Expanding the use of ATF and ATF vehicles is but one of many measures taken by the federal government to reduce harmful emissions from its fleet. For example, fuel consumption is now a criterion in the evaluation of bids for federal vehicles, providing an advantage to fuel-efficient vehicles.

The modernization of the federal fleet, where newer, cleaner, and more fuel-efficient vehicles are replacing older technology vehicles, has led to a significant reduction in greenhouse gas (GHG) and harmful ground-level emissions. A recent report on the federal fleet commissioned by Natural Resources Canada as part of the Federal Vehicles Initiative to measure federal fleet energy improvements since 1995–96 provided encouraging findings, which indicated an overall reduction in the federal fleet of nearly 40 per cent in emissions levels for pollutants such as total hydrocarbons (THC), carbon monoxide (CO), and oxides of nitrogen (NOx). The report also notes a 20 per cent reduction in GHG (carbon dioxide) during the same time period.

Sound fleet management practices, in accordance with a life cycle approach, complement the AFA to ensure that the federal government acquires and operates its vehicles in an environmentally responsible manner.

APPENDIX 1 – TERMINOLOGY

The following section provides definitions of the terms frequently used in this Report.

Motor vehicle

For the purposes of reporting on the AFA, *motor vehicle* is defined to include automobiles, passenger vans, light- or medium-duty trucks, and buses.

Alternative transportation fuel

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

For the purpose of acquiring motor vehicles, the *Alternative Fuels Regulations* expand the definition of ATF given above to include blended fuels when an ATF (as defined above) makes up at least 50 per cent of the blend. Flex-fuel and bi-fuel vehicles are also considered to be ATF vehicles for the purposes of acquiring motor vehicles. Consultations are presently underway to determine whether the *Alternative Fuels Regulations* can and should be amended to include hybrid gasoline-electric vehicles as ATF vehicles for the purposes of the AFA.

For the purposes of using ATF, the *Alternative Fuels Regulations* also expand the definition of ATF given above to include bio-diesel and blended fuels that include any amount of the approved ATF.

Bi-fuel vehicle

A *bi-fuel vehicle* is one with two separate fuel systems that operates on either fuel (e.g., a bi-fuel gasoline-propane vehicle can operate on either gasoline or propane).

Flex-fuel vehicle

A *flex-fuel vehicle* is one with a single fuel system that operates on one of two different fuels alone or on a blend of the two (e.g., an E85 vehicle can operate on gasoline alone or on any blend of gasoline and ethanol to a maximum of 85 per cent ethanol).

Cost-effective

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

Where net savings are greater than $1, a vehicle is considered cost-effective for ATF use.

Operationally feasible

ATF 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, including the following: the specific travel patterns of each vehicle, the mandate of the department or agency, the availability of alternative fuels wherever the vehicle will travel, the local laws (or by-laws), the vehicle performance requirements, and the vehicle availability or the availability of a suitable conversion kit.

APPENDIX 2 – NEW VEHICLE ACQUISITIONS

The table below summarizes the application of the AFA for the 2001–02 fiscal year by department and agency. The information reported is the result of consultations with each department and agency.

Departments and agencies included in schedules I, I.1, and II of the FAA but not listed below *did not* acquire any new vehicles during the 2001–02 fiscal year. Nonetheless, they are in compliance with the AFA as their required ATF vehicle acquisitions would be nil.

Department or Agency	Number of vehicles acquired	Vehicles cost-effective for ATF use	Vehicles cost-effective and operationally feasible for ATF use	Actual number of ATF vehicles acquired
SCHEDULE 1				
Agriculture and Agri-Food Canada	68	4	2	12
Canadian Heritage	2	0	0	0
Citizenship and Immigration Canada	63	2	1	2
Department of Finance Canada	1	0	0	0
Department of Foreign Affairs and International Trade	6	0	0	0
Department of Justice Canada	1	0	0	0
Environment Canada	103	37	28	21
Fisheries and Oceans Canada	199	8	2	1
Health Canada	80	3	1	4
Human Resources Development Canada	6	0	0	0
Indian and Northern Affairs Canada	28	1	1	0
Industry Canada	76	0	0	1
National Defence	1,035	79	0	1
Natural Resources Canada	36	13	0	4
Public Works and Government Services Canada	46	20	20	20
Transport Canada	67	0	0	2
Veterans Affairs Canada	5	0	0	1
Western Economic Diversification Canada	1	0	0	0
Totals for Schedule I	**1,823**	**167**	**55**	**69**

Department or Agency	Number of vehicles acquired	Vehicles cost-effective for ATF use	Vehicles cost-effective and operationally feasible for ATF use	Actual number of ATF vehicles acquired
SCHEDULE I.1				
Atlantic Canada Opportunities Agency	5	0	0	0
Canadian International Development Agency	1	0	0	0
Canadian Radio-television and Telecommunications Commission	1	0	0	1
Communication Canada	1	0	0	0
Correctional Service Canada	196	32	31	24
Economic Development Canada for Quebec Regions	7	0	0	0
National Archives of Canada	1	1	1	1
National Parole Board	6	0	0	0
Office of the Auditor General of Canada	1	0	0	0
Privy Council Office	4	0	0	0
Registrar of the Supreme Court of Canada and that portion of the Public Service of Canada appointed under subsection 12(2) of the *Supreme Court Act*	1	0	0	0
Registry of the Federal Court of Canada	7	0	0	0
Royal Canadian Mounted Police	1,528	39	9	15
Totals for Schedule I.1	**1,759**	**72**	**41**	**41**

Department or Agency	Number of vehicles acquired	Vehicles cost-effective for ATF use	Vehicles cost-effective and operationally feasible for ATF use	Actual number of ATF vehicles acquired
SCHEDULE II				
Canada Customs and Revenue Agency	181	7	4	10
Canadian Food Inspection Agency	153	2	0	4
National Battlefields Commission	1	0	0	0
National Research Council Canada	15	2	2	2
Parks Canada	45	16	0	0
Transportation Safety Board of Canada	7	1	0	0
Totals for Schedule II	**402**	**28**	**6**	**16**
Total for all Schedules	**3,984**	**267**	**102**	**126**

APPENDIX 3 – DEFINITIONS OF TABLE HEADINGS

Department or Agency

These are all federal government bodies (departments and agencies) named in schedules I, I.1, and II of the *Financial Administration AFA* that made vehicle acquisitions during the 2001–02 fiscal year.

Number of vehicles acquired

This is the total number of vehicles acquired by the departments and agencies during the 2001-02 fiscal year.

Vehicles for which ATF is cost-effective

This is the number of 2001–02 vehicles acquired that are considered to be no more costly to operate on alternative fuels in comparison to a conventional fuel.

Vehicles for which ATF is cost-effective and operationally feasible

This is the number of 2001–02 vehicles acquired that are considered to be no more costly to operate on ATF in comparison to a conventional fuel *and* are able to fulfill their operational roles while using ATF.

Actual number of ATF vehicles acquired

This is the actual number of 2001–02 vehicles acquired that are capable of operating on ATF.

75% target — required acquisitions as per the AFA

This is the total number of 2001–02 vehicles acquired that should be capable of operating on ATF in accordance with the *Alternative Fuels Act*.

For the 2001–02 fiscal year, the AFA requires that 75 per cent of all those vehicles acquired for which ATF is determined to be both cost-effective and operationally feasible should be physically capable of operating on ATF.