



President  
of the Treasury Board

Présidente  
du Conseil du Trésor

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

## Fiscal Year 1998–99

Canada



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

**Fiscal Year 1998–99**



© Her Majesty the Queen in Right of Canada,  
represented by the President of the Treasury Board, 1999  
Catalogue No. BT76-1/1999  
ISBN 0-662-64401-8



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 1998–99, pursuant to the *Alternative Fuels Act*.

Lucienne Robillard  
President of the Treasury Board



## **Table of Contents**

### **Executive Summary**

<b>1. Introduction</b>	<b>1</b>
1.1 <i>Alternative Fuels Act</i>	1
<b>2. Compliance with the <i>Alternative Fuels Act</i></b>	<b>2</b>
2.1 New Vehicle Acquisitions	2
2.2 Use of Alternative Transportation Fuels in the Federal Fleet	3
<b>3. Conclusion</b>	<b>4</b>
3.1 Federal Government Commitment	4
3.2 Key Issues Limiting Viability of Alternative Transportation Fuels	5
<b>Annex 1 – Terminology</b>	<b>7</b>
<b>Annex 2 – New Vehicle Acquisitions</b>	<b>9</b>
<b>Annex 3 – Definitions of Table Headings</b>	<b>11</b>



## **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 Act in respect of all federal government bodies named in schedules I, I.1 and II of the *Financial Administration Act* (FAA).

### **Compliance with the *Alternative Fuels Act***

With regard to the acquisition of alternative transportation fuel (ATF) vehicles, the federal government, through activities of the federal bodies named in schedules I, I.1 and II of the *Financial Administration Act*, is in full compliance and in fact, has exceeded the requirements of the *Alternative Fuels Act* for the second 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.

### **Requirements of the *Alternative Fuels Act***

The Act 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 ATF.

For the fiscal year commencing April 1, 1998, the Act required that 60 per cent of newly acquired vehicles, deemed to be both cost-effective and operationally feasible for the use of ATF, be capable of operating on these.

The Act 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 operating on such fuels.



# 1. INTRODUCTION

The *Alternative Fuels Act* (AFA) requires the President of the Treasury Board to report annually on the application of the Act 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 *Alternative Fuels Act* received Royal Assent on June 22, 1995, and took effect on April 1, 1997. The purpose of the Act 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, thereby lessening dependence on petroleum-based fuels for transportation. The Act targets the federal vehicle fleet thus providing the government with a leadership role in the use of ATF.

The Act 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 Act requires departments and agencies to 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 in comparison with a conventional fuel, and the vehicle can fulfil its operational duties, then it becomes part of a group of new acquisitions that is viable for operation on ATF.

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

The Act 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 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 Act and its regulations, and to provide leadership and assistance to departments and agencies to help them meet the obligations set forth in the Act.

This is the second annual *Report on the Application of the Alternative Fuels Act*.

Section 2 of the Report assesses the federal government's compliance with the Act. Section 2.1 summarizes the application of the Act in relation to 1998–99 fiscal year vehicle acquisitions and section 2.2 reports on the extent of ATF usage in the federal fleet during the 1998–99 fiscal year.





Section 3 concludes the report with a discussion of the federal government's commitment to continuing to meet the requirements of the Act, along with some examples of expansion in the use of ATF and factors limiting its use in the federal fleet.

## 2. COMPLIANCE WITH THE *ALTERNATIVE FUELS ACT*

Taking into account the acquisition activities of all departments and agencies, it is reported that the federal government is in full compliance with the Act. Section 2.1 provides a summary of the application of the Act 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 maximum extent possible.

### 2.1 New Vehicle Acquisitions

The table below provides a summary of the application of the Act on a government-wide basis for the 1998–99 fiscal year. This table illustrates that at least 60 per cent of all new vehicle acquisitions that should be cost-effective and operationally feasible for ATF use are actually capable of operating on ATF.

Total Number of Vehicles Acquired*	Total Vehicles Cost-effective for Use of an ATF*	Total Vehicles Cost-effective and Operationally Feasible for Use* of an ATF	Actual Number of ATF Vehicles Acquired*	60% Target – Required Acquisitions as per Act*
2,409	218	126	161	76

A summary of the application of the Act on a department/agency basis is contained in Annex 2.

#### Meeting and Exceeding the Requirements of the Act

The federal government, through the acquisition activities of departments and agencies, has surpassed the requirements of the Act for the 1998–99 fiscal year. This pattern can be attributed to the mandate of certain departments and agencies to demonstrate leadership in the use of ATF. These federal organizations have introduced ATF into their 1998–99 acquisitions to the maximum extent possible.

---

\* Definitions of the table headings are contained in Annex 3.







Using information provided by the departments and agencies and data contained in Public Works and Government Services Canada's Vehicle Statistical Information System (VSIS), it is estimated that 63 per cent of the ATF vehicles purchased in 1998–99 are factory produced and that 37 per cent are converted after acquisition. These results represent the best estimate available at the time this report was tabled.

## 2.2 Use of Alternative Transportation Fuels in the Federal Fleet

The Act requires federal bodies to use an ATF in the operation of any motor vehicle in the federal fleet already capable of operating on such a fuel to the maximum extent possible, where cost-effective and operationally feasible.

The following table summarizes the estimated fuel consumption by fuel type for the 1998–99 fiscal year for the 17 departments and agencies with the largest fleets.

Fuel Type	Estimated Number of Vehicles	Total Estimated Annual Consumption	Average Annual Consumption Per Vehicle
<b>Conventional Fuels</b>			
Gasoline <sup>1</sup>	20,753	66,210,455 L	3,190 L
Diesel	427	1,102,900 L	2,585 L
<b>Alternative Fuels</b>			
Natural Gas	118	356,148 Kg	3,018 Kg
Propane	576	2,942,086 L	5,106 L
Ethanol 85	3	20,402 L	6,801 L
Methanol 85 <sup>2</sup>	17	31,293 L	1,839 L
Electric	4	Data not Available	Data not Available
<b>Total</b>	<b>21,898</b>		

<sup>1</sup> **Gasoline:** 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 reported data, either with Ethanol 85 or with gasoline.

<sup>2</sup> **Methanol 85:** Although the vehicles are equipped with methanol 85 compatible engines, the estimated annual consumption figures are in litres of gasoline because records indicate that there are no stations selling methanol 85 in the areas where the vehicles are being utilised. However, the vehicles are all running on ethanol 10.





Several federal bodies named in schedules I, I.1 and II of the FAA, have stated that Ethanol 10 blend (E10) is used to the greatest extent possible in their gasoline vehicles. For natural gas and propane, consumption statistics include dedicated and bi-fuel applications.

### **3. CONCLUSION**

#### **3.1 Federal Government Commitment**

During the 1998–99 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 also complied during the 1997–98 fiscal year.

The federal government is committed to continuing to comply with the requirements of the Act and is committed to demonstrating leadership in the attainment 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 items below illustrate the expansion of the use of ATF by some federal government organizations during the 1998–99 fiscal year:

1. In addition to having converted vehicles purchased during the 1998–99 fiscal year, both Correctional Service Canada and the Royal Canadian Mounted Police converted more than 10 vehicles each that had been purchased in previous fiscal years, where it was deemed to be cost-effective. Most of these vehicles were converted to natural gas applications.
2. Natural Resources Canada has added an Ethanol 85 blend (E85) refuelling facility located at headquarters in Ottawa for its E85 vehicles. Although the supply of E85 is limited, the department has been able to obtain it at a reasonable price. Natural Resources Canada also provides E85 to Agriculture and Agri-Food Canada as well as to Environment Canada for their E85 vehicles.
3. Correctional Service Canada is using E10 exclusively in nine of its gasoline bulk fuel facilities in its Prairie Region and offers this fuel to other interested departments and agencies.

It continues to be the experience of the federal government 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 issues that place practical limitations on the use of ATF and ATF vehicles. The resolution of many of these issues will surely lead to the acquisition of more ATF vehicles for the federal fleet and greater use of ATF across the federal government.





## 3.2 Key Issues Limiting Viability of Alternative Transportation Fuels

Despite the commitment of the federal government to increase the use of ATF in the federal fleet, a number of external factors continues to limit the feasibility of using ATF vehicles. During both the 1997–98 and 1998–99 fiscal years, the acquisition of ATF vehicles and the use of ATF was curtailed by a limited ATF infrastructure across many parts of the country and a limited selection and availability of appropriate ATF vehicles from the manufacturer.

The items below summarize some of the key issues that have limited the use of ATF vehicles and ATF in the federal government during the 1998–99 fiscal year. It should be noted that the issues below were also applicable to the 1997–98 fiscal year.

1. During the 1998–99 fiscal year, there was a limited supply of factory produced ATF vehicles, in comparison with 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 \$4,202 to \$9,923 for propane and natural gas vehicles and from \$1,406 to \$3,424 for Ethanol 85 vehicles. The cost of after-market conversion kits ranges from \$2,745 to \$4,145 for propane and natural gas applications. It is generally the case that the lower-priced kits are indicative of earlier, lower technology while the higher priced ones reflect newer, cleaner technology.
3. Inconsistent and delayed manufacturer delivery schedules for ATF vehicles create difficulties for federal departments when planning and budgeting for their acquisitions.
4. Natural gas, propane and Ethanol 85 infrastructure is limited; supply of these fuel types is unreliable outside of urban areas and supplier hours of operation are often limited. The use of a bi-fuel vehicle would enable the operator to use gasoline in those areas where the appropriate ATF is not available. Such a practice would, however, have a significant effect on the ability to recover costs over the life of the vehicle through fuel savings.
5. The effectiveness and quality of vehicle conversion kits are questionable when emissions-testing analysis of converted vehicles reveals higher emissions in comparison to 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. Finally, the federal government has experienced problems in the operation of converted vehicles, including a tendency for these to backfire, thereby reducing confidence in the performance of the conversion kits.
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 operational feasibility of using 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. New technology in gasoline vehicles has enabled better fuel efficiency, reduced emissions and increased engine performance.
8. When comparing the energy equivalency of ATF to gasoline, it is sometimes the case that ATF is more costly than gasoline at the pump, thereby eliminating the payback of converting to an ATF. Furthermore, because many federal departments currently access gasoline through bulk facilities at a price considerably lower than the ATF equivalent sold at the pump, the use of ATF is not a viable option.

ATF is also available through bulk facilities, and at a much lower cost than gasoline purchased at the pump; however, few federal departments have access to such supplies.

9. Some areas still restrict the use of propane vehicles, for example in underground parking garages and on some airport tarmacs.
10. Available cargo space is reduced with the addition of an ATF tank.
11. The fewer the average annual kilometres travelled by a vehicle, the less likely it is that ATF use will be cost-effective.
12. Budgetary constraints and allocations limit the ability to finance initial capital costs to acquire ATF vehicles.





## ANNEX 1 – TERMINOLOGY

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

### Alternative Transportation Fuel

Alternative transportation fuel, or ATF, is prescribed by regulation to include, but is not limited to, ethanol, methanol, propane gas, natural gas, hydrogen or electricity when used as a sole source of direct propulsion energy.

The definition of ATF is extended to include blended fuels when an ATF makes up at least 50 per cent of the blend for the purposes of *acquiring* motor vehicles. Flex-fuel and bi-fuel vehicles are also considered to be ATF vehicles for the purposes of *acquiring* motor vehicles.

For the purposes of *using* ATFs, the definition of ATF is also extended to include bio-diesel and blended fuels to the extent that any of the approved ATFs appears in the blend.

### Bi-fuel Vehicle

A vehicle 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).

### 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 fuel savings are greater than \$1, a vehicle is considered cost-effective for ATF use.

### Flex-fuel Vehicle

A vehicle 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).

### Motor Vehicle

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





## **Operationally Feasible**

A vehicle is considered to be operationally feasible for ATF use when it can be demonstrated that the vehicle will continue to be able to fulfil its primary operational tasks.

The definition of operational feasibility will vary across departments and agencies according to a wide range of variables, including: the specific travel patterns of each vehicle; the mandate of the department or agency; the availability of ATF supply in all locations the vehicle will travel; vehicle performance requirements; and vehicle availability or availability of a suitable conversion kit.





## ANNEX 2 – NEW VEHICLE ACQUISITIONS

The table below summarizes the application of the Act for the 1998–99 fiscal year on a department/agency basis. The information reported is the result of consultation with each department and agency.

Departments and agencies included in schedules I, I.1 and II of the FAA that *did not* acquire any new vehicles during the 1998–99 fiscal year are not included in this list; however, they, too, are in compliance with the Act.

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
<b>SCHEDULE I</b>				
Agriculture and Agri-Food Canada	72	4	4	5
Citizenship and Immigration Canada	18	1	0	0
Department of Canadian Heritage	144	26	10	20
Department of Foreign Affairs and International Trade	1	0	0	0
Department of Justice Canada	1	0	0	0
Environment Canada	56	15	2	9
Fisheries and Oceans	67	6	0	0
Health Canada	34	2	0	0
Human Resources Development Canada	58	0	0	0
Indian and Northern Affairs Canada	8	0	0	0
Industry Canada	35	4	0	0
National Defence	481	17	0	0
Natural Resources Canada	32	11	11	14
Public Works and Government Services Canada	31	4	2	12
Revenue Canada	18	2	1	2
Solicitor General Canada	1	0	0	0
Transport Canada	45	9	9	12
Treasury Board of Canada Secretariat	2	0	0	0
Veterans Affairs Canada	7	5	0	0
Western Economic Diversification Canada	1	0	0	0
<b>Totals for Schedule I</b>	<b>1,112</b>	<b>106</b>	<b>39</b>	<b>74</b>





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
<b>SCHEDULE I.1</b>				
Atlantic Canada Opportunities Agency	3	0	0	0
Canadian Centre for Management Development	1	0	0	0
Correctional Service Canada	164	37	12	37
Economic Development Agency of Canada for the Regions of Quebec	2	0	0	1
National Archives of Canada	2	0	0	0
National Energy Board	1	0	0	0
National Parole Board	1	0	0	0
Offices of the Information and Privacy Commissioners	2	0	0	0
Privy Council Office	4	0	0	0
Royal Canadian Mounted Police	1,025	75	75	49
<b>Totals for Schedule I.1</b>	<b>1,205</b>	<b>112</b>	<b>87</b>	<b>87</b>

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
<b>SCHEDULE II</b>				
Canadian Food Inspection Agency	83	0	0	0
National Research Council Canada	4	0	0	0
Transportation Safety Board of Canada	5	0	0	0
<b>Totals for Schedule II</b>	<b>92</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Totals for All Schedules</b>	<b>2,409</b>	<b>218</b>	<b>126</b>	<b>161</b>







## **ANNEX 3 – DEFINITIONS OF TABLE HEADINGS**

### **Department or Agency**

All federal government bodies (departments and agencies) named in schedules I, I.1 and II of the *Financial Administration Act* that made vehicle acquisitions during the 1998–99 fiscal year.

### **Number of Vehicles Acquired**

The total number of vehicles acquired by the departments and/or agencies during the 1998–99 fiscal year.

### **Vehicles Cost-effective for ATF Use**

Number of 1998–99 vehicle acquisitions considered to be no more costly to operate on ATF in comparison to a conventional fuel.

### **Vehicles Cost-effective and Operationally Feasible for ATF Use**

Number of 1998–99 vehicle acquisitions considered to be no more costly to operate on ATF in comparison to a conventional fuel *and* able to fulfil its operational duties while using ATF.

### **Actual Number of ATF Vehicles Acquired**

The actual number of 1998–99 vehicle acquisitions that are capable of operating on ATF.

### **60% Target – Required Acquisitions as per Act**

Total number of 1998–99 vehicle acquisitions that should be capable of operating on ATF as per the *Alternative Fuels Act*.

For the 1998–99 fiscal year, the Act requires that 60 per cent of all vehicle acquisitions that are determined to be both cost-effective and operationally feasible for ATF use should be capable of operating on ATF.

