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Report to the Canadian Council of Ministers of the Environment by the Task Force on Cleaner Vehicles and Fuels

Executive Summary

On November 8, 1994, the CCME established a Task Force on Cleaner Vehicles and Fuels to develop options and recommendations on a national approach to new vehicle emission and efficiency standards and fuel formulations for Canada, recognizing regional/urban realities.

The use of vehicles results in major impacts to the environment and to human health, including the effects of fine particulates, ground-level ozone, and toxic substances. Vehicles contribute significantly to emissions of carbon dioxide, and thus to climate change. This report focuses on the impacts of vehicle emissions on air quality in Canada, and it proposes recommendations that will result in improved air quality in the near and long term.

While the Task Force strongly supports the improvement of national standards to reduce vehicle emissions and the setting of minimum national standards for fuel composition, it recognizes that certain regions experience more serious air quality problems and should therefore have the flexibility to enact more stringent air pollution measures as deemed necessary.

Recommendation No. 1: National Vehicle Emission Standards (page 20)

Canada adopt tighter new vehicle emission standards in harmony with the U.S. as follows:

- Transport Canada immediately update regulations under the Motor Vehicle Safety Act to harmonize with standards currently in regulations under the U.S. 1990 Clean Air Act;
- The federal government support the adoption of the U.S. national low emission initiative currently referred to as "49-State LEV program". Should this initiative become available, then Transport Canada should implement it for model year 2001. Where a manufacturer offers an early phase-in of low emission vehicles in the U.S. under the "49-State LEV program", this is also to be offered in Canada, subject to production scheduling and other constraints;
- The federal government take a proactive role in the development of future North American vehicle emission standards.

If the "49-State LEV" program does not proceed, the Task Force recommends that Canada establish national harmonized standards as follows:

- The federal government develop a low emission vehicle program. The goal of this program would be to introduce in Canada, a mix of vehicles which will provide overall new vehicle fleet emission performance at least equivalent to the LEV standard by model year 2001. The specific program will be developed in consultation with stakeholders to reflect production constraints, market considerations, and environmental benefits.

Recommendation No. 2: Alternative Transportation Fuels and Advanced Technology Vehicles (page 27)

The federal government in concert with the provinces and stakeholders through the National Air Issues Coordinating Committee:

- negotiate a memorandum of understanding (MOU) with the auto manufacturing and alternative "fuel" industries by July 1, 1996 in order to make advanced technology vehicles available for sale in a timely manner.
- seek to coordinate and enhance federal, provincial, and auto and fuel industry efforts to support market development of alternative fuels and advanced technology vehicles and report on these efforts to the CCME by the fall of 1996.

Recommendation No. 3: Other Programs for Vehicles (page 32)

Provincial governments consider the development of Inspection and Maintenance programs consistent with the CCME's 1990 Management Plan for Nitrogen Oxides and Volatile Organic Compounds and using the existing CCME Code of Practice as a guide. In concert with these programs, automakers are to provide emission control component defect and performance warranties.

As well, provinces and territories should consider measures such as the following to reduce in-use vehicle emissions as required to address regional air quality issues: early retirement of high-emitting vehicles, transportation demand management, remote sensing for high emitting vehicles, and vapour recovery at gasoline service stations (Stage II).

Recommendation No. 4: Vehicle Fuel Efficiency (page 35)

Ministers endorse a comprehensive approach to fuel efficiency improvement in four principal areas:

- changes in driver behaviour;
- improved on-road efficiency performance;
- purchase decisions of more efficient vehicles; and
- improved vehicle fuel efficiency technology.

Recommendation No. 5: National Standard for Low-sulphur Diesel (page 39)

Environment Canada lead in the development and implementation of a regulated national standard to ensure provision of 100% on-road low-sulphur diesel (not greater than 0.05% mass) by October 1, 1997.

Recommendation No. 6: National Standard for Gasoline (page 43)

Environment Canada, in consultation with provinces and stakeholders, lead in the development and implementation of a regulated minimum national standard for gasoline, as outlined in Table 1.

Table1

Minimum National Standard for Gasoline

Summer vapour pressure: Maximum of 10.5 psi, with 9.0 psi in the Windsor-Quebec City corridor and 8.1 psi in the Lower Fraser Valley. Starting by June 1, 1996, subject to assessment of feasibility on a regional basis, but not later than June 1, 1997.

Benzene: 1% by volume maximum, with the option for a lower annual pool average for each refinery and importer to provide operational flexibility to be set through the regulatory process. Starting by January 1, 1998.

Aromatics: Maintain the 1994 Canadian annual average of 27% by volume or equivalent benzene tailpipe emission performance level. Starting by January 1, 1997.

Olefins: Maintain the 1994 Canadian annual average or equivalent 1,3-butadiene tailpipe emission performance level. Starting by January 1, 1997. Further action on controlling emissions of 1,3-butadiene from gasoline-powered vehicles may become warranted pending a possible Priority Substance Assessment of 1,3-butadiene.

Sulphur: A future level of sulphur in gasoline should be based on the lower of:

- a. recommendations that might be forthcoming from auto and oil industry studies which are aimed at setting the sulphur levels in gasoline to provide fuels compatible with low emission vehicle technologies. Recommendations in this regard should be provided by industry no later than November 1, 1996, or
- b. assessments to be undertaken by Environment Canada in consultation with provinces and stakeholders during 1996 to set a cost-effective limit for sulphur in gasoline taking into account associated health and environmental benefits.

Based on work done to date on costs, cost effectiveness and benefits, a sulphur level under 200 ppm appears to be warranted. Further work is required to set a specific number.

The final sulphur limit should become effective not later than January 1, 2000. The actual limit and implementation date should be determined by no later than January 1,

1997 to enable construction of facilities to proceed on time. As an interim measure, the 1994 Canadian annual average of 360 ppm should be maintained, starting by January 1, 1997.

Deposit Control Additives: All gasoline should have effective deposit control additives.

(This table is a recommendation for a minimum national standard; regional air quality problems might warrant more stringent requirements where studies have already been completed.)

Recommendation No.7: Process for Liaison on Internal Combustion Engine and Fuels Standards (page 58)

The Task Force recommends that:

- Environment Canada, with direct involvement of the provinces and other stakeholders, establish an effective, continuing process to ensure a coordinated approach on vehicle and fuel emission control programs; and
- Environment Canada report to CCME ministers on actions taken with respect to implementation of the recommendations in this report, including final recommended national emission standards for vehicles and fuels.