# SUMMARY

The Committee's views on the use of alcohol-gasoline blends can be summarized quite simply. It supports the wider introduction of oxygenated fuels in Canada using methanol and ethanol as blending agents. It recommends federal incentives to promote the research, development and demonstration needed to establish these blends, but not the creation of special subsidies to foster their use. The Committee recommends standards for alcohol-gasoline blending, while advocating the minimum amount of regulation necessary to ensure the safe and satisfactory use of oxygenated fuels in Canada. The industry should determine when such blends are marketable.

In accordance with its mandate, the Committee has considered the use of methanol and ethanol as octane enhancers in Canadian gasoline, together with four other chemicals advocated for use as gasoline additives. These additional blending agents are three "higher" (more complex) alcohols — isopropanol (IPA), isobutanol (IBA) and tertiary butanol (TBA) — and an ether — methyl tertiary butyl ether (MTBE). Because all six additives contain oxygen, they are referred to as *oxygenates*. When added to gasoline, the resulting blend is commonly known as an *oxygenated fuel*.

Methanol, the least expensive oxygenate in this group, cannot alone be blended in gasoline if any water is present in the fuel. Methanol is highly soluble in water and will combine with it to form a separate layer or "phase". To stabilize a methanol-gasoline blend and thus prevent phase separation, another alcohol can be added and is known in this application as a *cosolvent*.

Several reasons suggest that it is in the public interest to encourage the use of methanol and cosolvent ethanol as gasoline additives in Canada.

For many years lead compounds have been added to gasoline to raise its octane rating (to improve the fuel's antiknock characteristics), an important specification in this era of high compression engines. But medical research indicates that lead released into the environment through fuel combustion can create a health hazard, particularly in urban areas. There is evidence that elevated blood lead levels are associated with harmful biochemical and neurophysiological effects, especially in children.

Canada is one of a growing number of countries restricting lead concentrations in gasoline; effective January 1, 1987, the permissible lead level will be lowered to 0.29 grams per litre of gasoline from 0.77 grams per litre. On March 25, 1986, the Federal Government