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A-2007-00653 / cc

OCT 15 2010

Ms. Clare Demerse  
Pembina Institute  
130 Albert Street  
Suite 910  
Ottawa, Ontario  
K1P 5G4

Dear Ms. Demerse:

We have completed processing your request under the Access to Information Act (the Act) for:

“All documents (including briefing notes, memos and correspondence) concerning low carbon fuel standards. Date range: March , April and May 2007”

Attached please find the complete release package in response to this request. Please be advised that some information has been withheld in accordance with section/paragraph 19(1), 21 and 69 of the Act. A copy of the relevant sections is attached.

Please be advised that you are entitled to file a complaint with the Information Commissioner concerning the processing of your request within sixty days of the receipt of this notice. In the event you decide to avail yourself of this right, your notice of complaint should be addressed to:

Information Commissioner  
Tower B, Place de Ville  
112 Kent Street, 22nd Floor  
Ottawa, Ontario  
K1A 1H3

If you have any questions regarding this request, please do not hesitate to contact Céline Chrétien at (819) 934-6070.

Yours sincerely,

Pierre Bernier  
Access to Information and  
Privacy Coordinator

Enclosure

**MEMORANDUM TO MINISTER**

**CALIFORNIA'S ANNOUNCEMENT OF A LOW CARBON FUEL STANDARD**

**PURPOSE**

To inform you about California's recent proposal for a Low Carbon Fuel Standard (LCFS) for transportation fuels.

**SUMMARY**

- Governor Schwarzenegger has announced his intention to establish a Low Carbon Fuel Standard (LCFS) for transportation fuels sold in California.
- The initial goal is to reduce the carbon intensity of California's passenger vehicle fuels by at least 10 percent by 2020.

**CURRENT STATUS**

California Governor Schwarzenegger announced on January 9, 2007 his intention to issue an executive order to establish a Low Carbon Fuel Standard (LCFS) for transportation fuels sold in California. The initial goal is to reduce the carbon intensity of California's passenger vehicle fuels by at least 10 percent by 2020. Details on the proposal are set out in a white paper entitled *The Role of a Low Carbon Fuel Standard in Reducing Greenhouse Gas Emissions and Protecting Our Economy*.

This proposal is part of California's overall strategy to fight global warming. The LCFS would be the world's first global warming standard for transportation fuels. It complements California's regulation of GHG emissions from vehicles, which come into force with the 2009 model year.

The LCFS would require fuel providers to ensure that the mix of transportation fuels they sell into the California market meets, on average, a declining standard for GHG emissions measured in CO<sub>2</sub>-equivalent gram per unit of fuel energy sold. All relevant greenhouse gases would be included (i.e., CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O) and be measured on a "full fuel cycle" basis (i.e., upstream feedstock extraction, fuel refining, and transport to market). Providers of fuels that exceed the performance standard for the compliance period would be able to generate credits that could be banked for future use<sup>10</sup> or sold to other fuel providers.

Unlike the concept of renewable fuel standards, the LCFS would measure greenhouse gas impact over full fuel cycles, and allow fuels other than renewables to be used for compliance. It would also discourage the development of high-carbon unconventional oil.

California's white paper sets out the following as possible low carbon fuel strategies under the LCFS:

- E10 (10% ethanol, 90% gasoline by volume)
- E85 (85% ethanol, 15% gasoline) for use in Flex Fuel Vehicles
- Ethanol from cellulosic materials
- Electricity for electric vehicles
- Hydrogen
- Compressed Natural Gas
- Liquefied Petroleum Gas
- Other biomass based fuels.

There is also a link to vehicle efficiency, as it is noted that vehicles powered by electric batteries vehicles and hydrogen fuel cells will need an adjustment factor applied to the GHG emissions factor associated with the production of the energy source (eg. to account for the greater inherent efficiency of electric drive).

California targets implementation of the new standard by the end of 2008. The next steps in developing the proposal include:

- Analytical study by the University of California, in partnership with the California Energy Commission and the Air Resources Board (CARB), to develop a framework
- CEC to use the study in developing a state strategy to increase the amount of alternative fuels in California.
- CEC will conduct public hearings and propose a compliance schedule for the Low Carbon Fuels Standard.
- CARB will initiate a regulatory proceeding which will establish and implement the Low Carbon Fuel Standard.

The Department will monitor these developments.

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Michael Horgan

Drafting Officer's Name: Bruce McEwen  
Branch/Division: ESB/CAD/OGED  
Phone No: 953-4673  
Date Drafted: January 12, 2007

SECRET  
MOS-98203

**MEMORANDUM TO MINISTER'S OFFICE**

**CALIFORNIA'S LOW CARBON FUEL STANDARD**  
For Information

**PURPOSE**

To provide you with information on California's Low Carbon Fuel Standard, its potential impact on the Canadian petroleum industry and its applicability for Canada.

**SUMMARY**

- California has established a Low Carbon Fuel Standard (LCFS) which is set to reduce the lifecycle GHG emissions intensity of passenger vehicle fuels by 10% by 2020. The rules have yet to be set, but the policy direction is to consider the GHG emissions from all stages of fuel production and to allow for credit trading between fuel providers.
- The LCFS is expected to have a negligible impact on the Canadian oil industry, as Canadian crude oil imports account for less than 2 percent of California's crude oil imports.
- Implementing a LCFS in Canada would largely duplicate the federal government's recent and planned actions, which together will address the majority of the lifecycle GHG emissions associated with Canadian passenger vehicle fuels.

**CURRENT STATUS**

In January 2007, the Governor of California signed an Executive Order establishing a Low Carbon Fuel Standard (LCFS), with the initial goal to reduce the average GHG intensity of California's passenger vehicle fuels by at least 10% by 2020. The GHG emissions will be measured on a lifecycle basis, which takes into account all emissions associated with various stages of fuel production. Further information on the lifecycle approach is provided in Annex I.

The LCFS is expected to reduce CO<sub>2</sub>e emissions by 13.5 Mt in 2020, expand the renewable fuels market by three to five times, and increase the availability of alternative fuel and next-generation-hybrid vehicles up to 20 times the current number. The LCFS would complement California's proposed vehicle fuel-efficiency standards which would lower the demand for fuel while the LCFS would lower the GHG emissions associated with each unit of fuel.

The rules for the policy initiative have yet to be set; it is expected that the LCFS will be adopted in 2008.

## ISSUES

Under the LCFS, fuel providers (defined as refiners, importers, and blenders of passenger vehicle fuels) will be required to meet targets based on the average GHG intensity of their annual fuel sales. A system of tradable credits will allow those that over perform to either bank credits for future compliance, or sell their excess credits to other fuel providers. This design will allow the market to find the most cost-effective ways of achieving the targeted GHG intensity improvements.

The LCFS is different from a Renewable Fuel Standard, as the LCFS does not dictate which fuels must be used. Unlike Renewable Fuel Standards, the LCFS is likely to encourage compliance through a number of actions such as:

- Blending more low-GHG ethanol into gasoline products and lowering the GHG intensity of ethanol production (particularly through the use of agricultural and landfill waste products as feedstock),
- Producing lower GHG electricity and hydrogen (to be used as a vehicle fuel), and
- Promoting lower carbon intensive fuels such as natural.

The LCFS is expected to create a substantial certain market for low GHG fuels and a stable investment environment which, in combination with the state-wide cap and trade system, is expected to create a large enough price signal to induce sufficient, timely investments in new fuel and vehicle technologies. By accounting for the total lifecycle emissions of fuel, the LCFS will encourage reductions in GHG emissions at all stages of fuel production. It is interesting though that many upstream activities are located both out-of-state and out-of-country, so reductions at those points would be unlikely to count towards either the California or U.S. GHG inventory in future international forums.

The LCFS is also framed as helping to reduce California's dependence on oil and achieving the specific goal of displacing 20% of the state's on-road transportation petroleum-based fuels with alternative fuels by 2020.

## CONSIDERATIONS

### Impact of the California LCFS on the Canadian oil industry:

The short term impact of the LCFS on the Canadian oil industry is expected to be negligible, since the policy is likely to be phased in gradually (10% target is for 2020) and because California currently receives an insignificant amount of Canadian crude oil. Canadian crude oil imports account for less than 2 percent of California's crude oil imports. The level of imports represents approximately 0.6% of western Canada's total output. At today's world oil price, this represents about \$320 million. In 2005, total revenues from Canadian crude oil exports were in the order of \$32.5 billion.

Over the longer term, the LCFS could have a more significant impact on the Canadian oil industry since the projected growth in oil sands output over the next decade will require the

development of new markets for Canadian crude. In a 2005 report, the Canadian Association of Petroleum Producers identified California as one of the preferred destinations for Canadian oil sands exports – the others being the US Gulf Coast and Asia. The Government of California's white paper states that as a co-benefit the LCFS will "discourage unclean energy developments ... such as tar sands and oil shale, that are not only worse for the climate (as much as twice as polluting as conventional gasoline) but also destroy wilderness areas and use scarce water resources." Such sentiments may be directed at discouraging development of the massive U.S. oil shale deposits, or at Canada's oil sands. As a result, the potential for California as a new market for Canadian exports could be diminished by the LCFS, because the lifecycle emissions of vehicle fuels produced from oil sands crude are 30-50% above those fuels produced from conventional oil. Since California does not currently produce gasoline sourced from tar sands, to begin doing so would make achieving the 10% LCFS more challenging.

While a more detailed analysis would be required to fully understand the possibilities, GHG emissions from vehicle fuel sourced from oil sands crude could be reduced at a number of stages in the production cycle. This could allow future oil sands crude to penetrate the California market despite the LCFS. For example, carbon capture and storage is a well known option that is expected to reduce the GHGs from oil sands production, and when combined with efficiency improvements at other steps in the production cycle, it might be possible for the lifecycle emissions to be brought down at least to the GHG intensity level of gasoline produced from conventional oil, if not lower.

In addition, the Canadian oil industry might preferentially send lower-GHG crude oils and fuels to California, while sending higher-GHG crude oils and fuels to other markets, both in Canada, in the U.S. and elsewhere. However, this strategy would lose its utility if other jurisdictions adopted the California approach

#### Assessment of implementing a LCFS in Canada:

While a California-style LCFS could be introduced in Canada, it would largely duplicate the federal government's recent and planned actions which together will address most of the lifecycle GHG emissions associated with Canadian passenger vehicle fuels.

On the refinement side, approximately 85% of Canadian gasoline is refined in Canada, and these refineries will soon face GHG regulations (being developed under the CAIRA). With regards to the emissions associated with the upstream oil production, just over half of the crude oil used in Canadian refineries comes from Canadian sources which will also soon be subject to GHG regulations.

Together, the pending CAIRA regulations and the 5% standard for renewable fuels could achieve California's LCFS target of a 10% intensity improvement by 2020. However, this will be made more challenging by the expectation that Canadian refineries will increasingly use oil sands crude as a feedstock, which currently results in significantly higher GHG emissions than using conventional oil as a feedstock.

While the 5% renewable fuel standard will ensure greater use of these fuels in the immediate term, a LCFS would likely result in their continued growth above the 5% level. The LCFS would also ensure that the renewable fuels produced for the Canadian market result in real and significant lifecycle GHG reductions. Currently, the GHG benefits vary widely depending on the production techniques (see Annex I).

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Michael Horgan

Drafting Officer's Name: Darren Christie/Margaret Chase  
Branch/Division: SPB, CAM  
Phone No: 953-4284 / 994-1247  
Date Drafted: April 12, 2007

**ANNEX I**

**SUPPLEMENTAL INFORMATION**

*Life Cycle Approach:* The LCFS will measure the GHG emissions of fuel on a lifecycle basis, and will be intensity based – measured in grams of CO<sub>2</sub>e per British Thermal Unit (BTU) of the fuel. With respect to vehicle fuels derived from fossil-fuels, the life-cycle measure is expected to take into account the GHG emissions associated with all stages of production – including emissions associated with activities at the well or mine, pipeline transportation, upgrading, refinement, and final delivery. Similarly, in the case of biofuels, emissions intensity improvements can be achieved at all production stages –from the growing and harvesting of crops to delivery at the gas pump.

<b>TABLE 1</b>	
<b><u>Lifecycle GHG emissions per kilometre in a regular gasoline vehicle, relative to gasoline produced from conventional oil</u></b>	
<b>Fuel/Feedstock</b>	<b>% Change</b>
Fuel cells, with hydrogen from solar or nuclear energy	-90 to -80
Fuel cells, with hydrogen from natural gas	-50 to -40
Biofuels from cellulose	-90 to -40
Diesel	-20 to -10
Natural gas powered vehicle	-20 to -10
Battery electric vehicles and plug-in hybrid electric vehicles	
with electricity sourced from nuclear, hydro, solar or wind	-90 to -80
with electricity sourced from natural gas	-60 to -40
with electricity sourced from coal	+0 to +20
Corn ethanol	-50 to +20
<b>Gasoline sourced from the tar sands (Nearer the lower bound for in situ, and upper bound for surface mining)</b>	<b>+30 to +50</b>
Gasoline from liquefied coal	+40 to +80

SOURCE: Preliminary work from the University of California, Berkeley and Davis.





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A-2008-00182 / cc

OCT 15 2010

Ms. Clare Demerse  
Pembina Institute  
130 Albert Street  
Suite 910  
Ottawa, Ontario  
K1P 5G4

Dear Ms. Demerse:

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“All documents (including briefing notes, memos and correspondence) concerning low carbon fuel standards. Date range: Dec 2007, Jan 08 and Feb 2008.”

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Yours sincerely,

Pierre Bernier  
Access to Information and  
Privacy Coordinator

Enclosure



CANADIAN ASSOCIATION  
OF PETROLEUM PRODUCERS

December 20, 2007

Hon. David Emerson  
Minister of International Trade  
Parliament Buildings  
Ottawa, ON K1A 0A6

Hon. Jim Prentice  
Minister of Industry  
Parliament Buildings  
Ottawa, ON K1A 0A6

Dear Ministers:

**Re: Proposals at provincial and state levels in Canada and the United States for Low Carbon Fuel Standards (LCFS)**

CAPP is writing to express concern about the potentially discriminatory and trade distorting effects of measures, in particular Low Carbon Fuel Standards (LCFS), being proposed or in various stages of development in some states of the United States and in some Canadian provinces. Such local measures can unnecessarily and detrimentally affect international trade and Canada's prosperity agenda.

CAPP represents 150 producer members who produce some 95% of Canada's oil and natural gas in a \$100 Billion a year industry. Free trade in energy is a cornerstone of the Canada/United States trade relationship and a foundation for substantial investment in Canada. Exports to the United States represent a significant proportion of CAPP member production as well as Canada's overall trade with the United States.

The LCFS, as contemplated in California, would require all gasoline and diesel fuel providers to track the life-cycle global warming intensity of their products and reduce this value over time. (The term life cycle refers to all activities included in the production, transport, storage and use of the fuel from 'well to wheel'.) Petroleum fuel providers would be required to reduce their greenhouse-gas emissions in a variety of ways including blending more bio-fuel with gasoline and diesel, buying low-carbon fuels, buying emissions credits from other producers, making refineries more efficient, or using lower-carbon sources of energy to run refineries. The California LCFS would encourage choice among source or types of oil on the basis of estimated upstream emission intensity. It has been suggested that, although the discrimination might be disguised, this is designed to deter the entry of products originating from Canadian oil sands.

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December 20, 2007

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The California approach ignores the policy direction of producing jurisdictions such as Canada and Alberta even though it is aimed in effect at managing emissions from 'well to wheel'. California is not a significant market for Canadian crude oil and products. However, this is an inappropriate approach to international trade and environment policy. It would have trade distorting effects by diverting crude oil supplies from their natural markets. Moreover, the result is likely to be a failure to reduce overall emissions.

The California regulation is part of the Western Climate Initiative of the Western Governors. British Columbia has joined the WCI and is proposing both LCFS and renewable fuel standards (RFS). Ontario has also announced similar intentions. Midwest states such as Minnesota have also announced their intention to put LCFS systems in place. LCFS forms part of the recently announced Platform on Energy Security and Climate Stewardship of the Midwest Governors Association. These proposals exist for the most part in broad outline only.

Local preferences, the characteristics of local energy markets, or the local availability of fuel mix would appear to be a factor in the various proposals. It is inevitable that some proposals will intentionally or unintentionally discriminate against Canadian oil sands. In California, for example, there is a proposal to single out oil sands with oil shale and coal to liquids for separate treatment, while treating all other crude feedstocks as having the same upstream emission intensity despite a wide variation among them.

The LCFS is attracting attention at the federal level. The Lieberman Warner Senate Bill S-2191 mentions LCFS in very general terms.

These measures, aimed at addressing climate change concerns, reach well beyond local areas, have clear impacts on national and international energy trade, and indeed appear designed to affect energy trade including discrimination against types or sources of oil.

Protocols exist under NAFTA for consultation between Canada and the United States to ensure that environmental standards or measures that could affect energy trade are non-discriminatory, do not constitute disguised restrictions on trade, and do not unnecessarily distort trade. These protocols affirm and build on WTO protocols. The intent is that regulations enacted by local authorities should be compatible with international trade obligations made by federal authorities. It would appear that these protocols have yet to be invoked in regard to this subject.

Both Canada and the United States have national policies that support and foster domestically an open competitive market in energy trade. Free trade in energy between Canada and the United States also has the strong support of both Canada and the United States. Free trade in energy is built on domestic market oriented energy policies and has contributed greatly to the prosperity and energy security of both Canada and the United States.

December 20, 2007

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Climate change is a common environmental concern for Canada, the United States and other countries. All jurisdictions are examining how best to address the climate change challenge. Compatibility of the approaches taken to climate change both within our countries and between our countries is essential to an open North American energy market. Compatibility is required under international trade agreements and is vital to future security and prosperity.

The proliferation of local measures that impact energy trade within our countries and between Canada and the United States is of great concern. We urge you act to ensure the mutually beneficial free trade in energy is preserved and future prosperity is enhanced.

Yours sincerely,



Gordon J. Kerr  
Chairman

cc Hon. John Baird, Environment Canada  
Hon. Maxime Bernier, Foreign Affairs  
Hon. Gary Lunn, Natural Resources Canada  
Hon. Bill Boyd, Minister of Energy and Resources, Saskatchewan  
Hon. Kathy Dunderdale, Minister of Natural Resources, Newfoundland and  
Labrador  
Hon. Mel Knight, Minister of Energy, Alberta  
Hon. Richard Neufeld, Minister of Energy, Mines and Petroleum Resources,  
British Columbia