

# California Low Carbon Fuel Standard Not Right For Minnesota

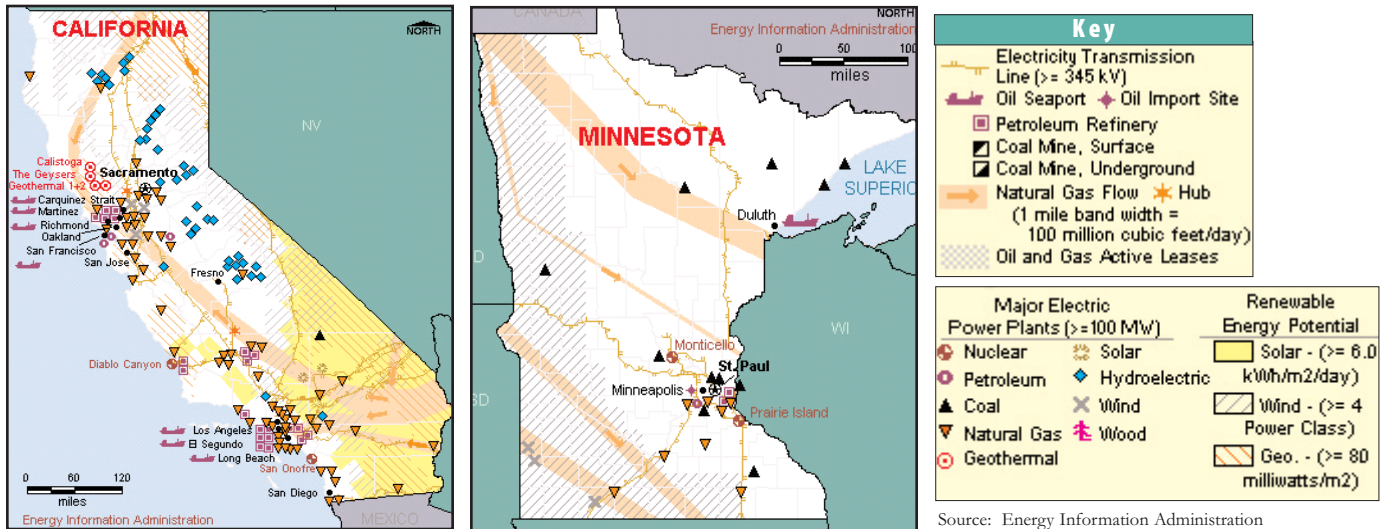
## What is the California Low Carbon Fuel Standard (LCFS)?

California's LCFS is a policy to require the use of low carbon fuels (measured on a full life-cycle basis) to reduce greenhouse gas (GHG) emissions from the transportation sector.

To date, only California and Massachusetts have experimented with an LCFS (both require a 10% reduction in carbon intensity). Neither state has fully implemented an LCFS or figured out how to calculate the full life-cycle carbon emissions for the range of transportation fuel sources that exist, including ethanol and other biofuels.

## Adopting California's Low Carbon Fuel Standard – square peg, round hole

**California laws aren't for Minnesota.** Transportation accounts for more than 40% of California's annual greenhouse gas emissions – in Minnesota that figure is just 24%. California also has its own crude oil supply and ranks third in the nation for refining capacity. Minnesota has two refineries that rely almost exclusively on crude oil from Canada.



**Bad for Minnesota's ethanol industry.** California's proposed life-cycle analysis includes the impact of land use changes, which disadvantages biofuels made from food crops. Eighty percent of U.S. corn ethanol production is in the Midwest.

**Bad for Minnesota's primary fuel supply.** The California LCFS disadvantages Canadian crude by giving it a carbon-intensity score that is 10% higher than conventional crude. Unlike California, which is one of the top crude oil producing states in the nation, Minnesota gets more than 80% of its crude from Canada.

**Bad for Minnesota consumers.** A Minnesota LCFS could increase fuel prices and isolate the state's fuel supply, leaving it vulnerable to wild price fluctuations. California typically has among the highest fuel prices in the country. California fuel prices are higher and more variable than prices in other states in part because there are relatively few supply sources of its unique blend of gasoline outside the state. Due to the relative isolation and the specific requirements of the California fuel market, California motorists are also vulnerable to short-term spikes in the price of gasoline. No pipelines connect California to other major U.S. refining centers, and California refineries often operate at near maximum capacity due to high demand for petroleum products. When an unplanned refinery outage occurs, replacement supplies must be brought in via marine tanker. Locating and transporting this replacement gasoline (which must conform to the state's strict fuel requirements) can take from two to six weeks.

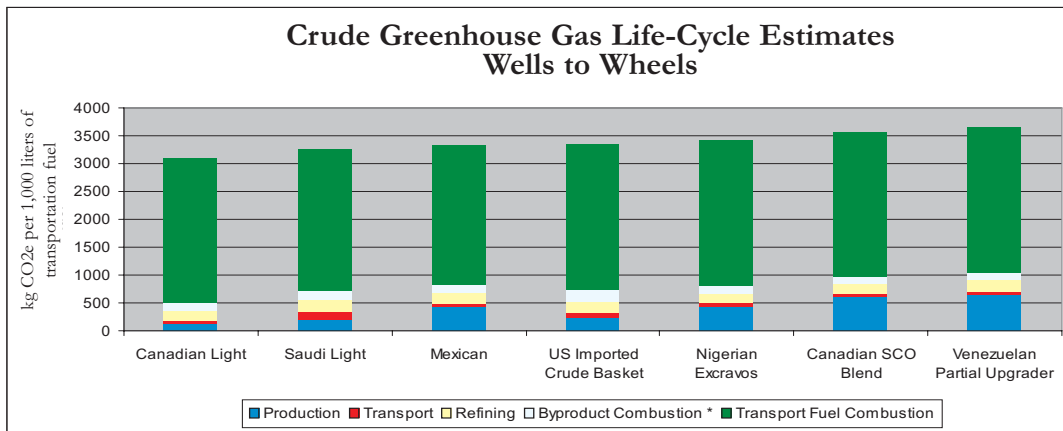
## Adopting California's Low Carbon Fuel Standard – square peg, round hole (continued)

**Bad for Minnesota's economy.** An LCFS could potentially squander billions of dollars of investment in pipeline and refining infrastructure built specifically to process Canadian crude oil. Jobs are also at risk for workers who maintain these facilities. Flint Hills' Pine Bend refinery, for example, is among the largest continuous construction projects in Minnesota. At any given time, there are 200-2,000 contractors working on site.

## Discouraging North American crude in favor of the Middle East

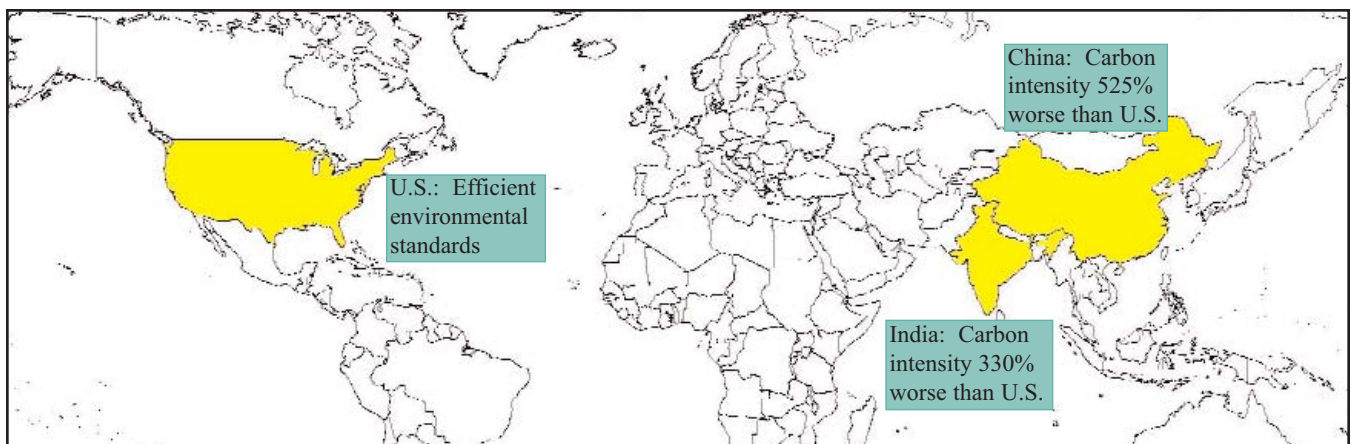
Minnesota gets more than 80% of its crude oil from Canada, which has the second-largest proven oil reserves in the world (15% of world reserves), after Saudi Arabia.

Currently, more energy is required to recover Canadian crude oil than is used in recovering light, sweet crude oil typically found in the Middle East. Consequently, Canadian crude generates more greenhouse gas emissions than traditional drilling during the production process, resulting in higher life-cycle emissions. An LCFS would disadvantage Canadian crude and encourage the use of crude imported from the Middle East.



## A net negative for the environment

If the Minnesota market goes away for Canadian crude, existing and proposed pipeline infrastructure could be used to bypass the state to reach non-LCFS states. If other Midwestern states adopt an LCFS, Canadian crude will most likely be produced for export to developing nations such as China and India. These nations have lower environmental standards than the U.S., which means there would be a net increase in GHG emissions if that crude is ultimately refined elsewhere. It also would be less energy efficient and a potentially greater risk to the environment for Canada to transport its crude abroad by oil tanker versus keeping it in North America.



*If midwestern states adopt a Low Carbon Fuel Standard, Canadian crude oil will likely be produced for export to developing nations such as China and India, which would result in a net increase of greenhouse gas emissions.*

## A net negative for the environment (continued)

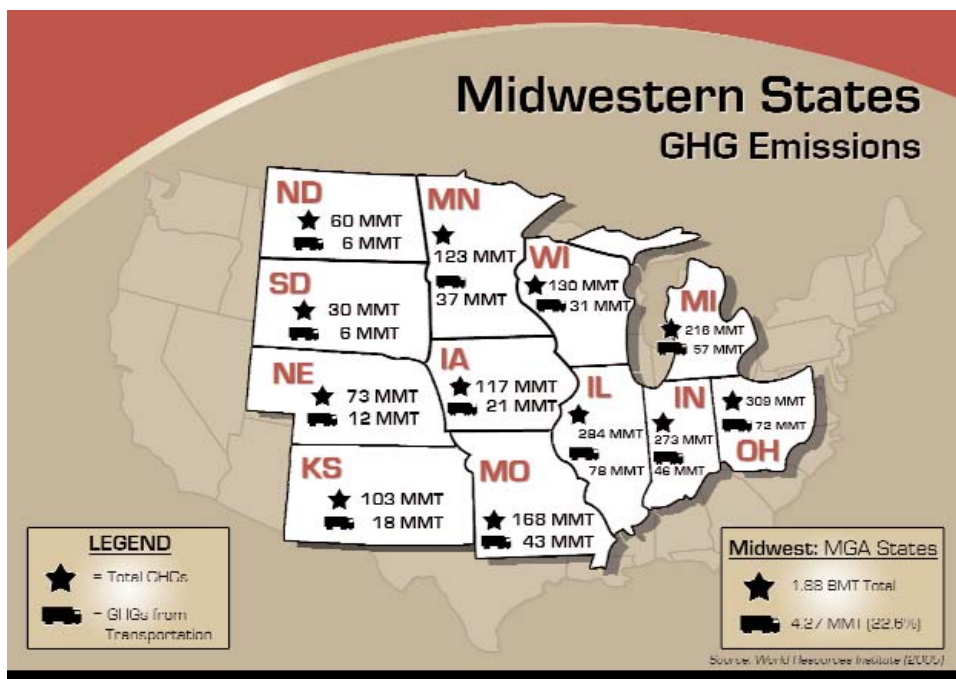
The midwestern U.S. is the most efficient transportation destination and refiner of Canadian oil sands crude, which reduces its environmental impact. Oil sands crude oil is a growing resource that is attracting significant investment to develop it. The oil will be used somewhere in the world.

## A solution looking for a problem

Minnesota already has among the cleanest burning fuels in the U.S. and emits less carbon dioxide than most other comparable cold-weather states.

The transportation sector's share of greenhouse gas emissions in the U.S. is 27%. In Minnesota, transportation fuels are just 24.1% of these emissions. Minnesota is the only state that requires the statewide use of gasoline blended with 10% ethanol. Minnesota also offers incentives to encourage the use of E85 – a mixture of 85% ethanol with 15% motor gasoline.

In 2007, the overall regulated air emissions per barrel for Minnesota's Flint Hills Resources refinery were 68%\* lower than the industry average (\*does not include carbon). Since 1997, the company has reduced its average per-barrel criteria for air emissions by 71%. Flint Hills Resources currently ranks seventh for lowest criteria air emissions per barrel among the 50 largest refineries in the U.S. In 2004, Flint Hills received a Clean Air Award from the U.S. EPA for its industry-leading program to reduce flaring.



MMT - Million Metric Tons

BMT - Billion Metric Tons

## More questions than answers

There are two studies pending that may shed additional light on the potential costs and consequences of a Low Carbon Fuel Standard for Minnesota:

- California's proposed standard is expected to be released in February and will receive a hearing in March. The plan is expected to include a process for calculating agricultural land use as part of the full life-cycle analysis for biofuels.
- A University of Minnesota study commissioned by the Department of Commerce is expected in May '09.

