Greenhouse Gas (GHG) Emissions & An LCFS:
The Barr Engineering Report on Crude Shuffling

In 2010, National Petrochemical and Refiners Association commissioned Barr Engineering to analyze the potential effects that a low-carbon fuel standard (LCFS) would have on the re-routing of crude supplies and the subsequent impact on GHG emissions. The report, entitled, "Low Carbon Fuel Standard 'Crude Shuffle' Greenhouse Gas Impacts Analysis," concluded that if a national LCFS were implemented in the United States, a notable increase in GHG emissions would occur due to the displacement of Canadian crude imports to the United States and the re-routing of crude imports and exports to accommodate this displacement. This situation is commonly referred to as "crude shuffling."

Since an LCFS is likely to discourage U.S. imports of Canadian crude produced from oil sands due to their higher lifecycle GHG content, imports from areas that produce light sweet crude, including the Middle East, would be encouraged. Canadian crude that was intended for export to the United States would then be re-routed for export to other markets farther away. The Barr study concluded that this shift in crude transport as a result of an LCFS would nearly triple the GHG emissions associated with crude transport from 7.1 to 19.0 million metric tons per year, depending on the extent of Canadian crude displacement. The increase in GHG emissions results from both a change in the transport methods (e.g. from pipeline to tanker) and an extension of the distance crude must be transported.

With the global demand for oil anticipated to rise, there will continue to be a demand for Canadian crude, regardless of whether an LCFS in the United States were to preference other sources. In particular, increased demand from developing economies, including China and India, will make up most of the growth in oil consumption in the next few years.[1] Given these estimations, the Barr study assumes that implementation of an LCFS in the United States would result in increased crude transport from Canada to China via pipeline and tanker, and from the Middle East to the United States via tanker and pipeline.

[1] U.S. Energy Information Administration, "Short-Term Outlook," March 2011.

Re-routing of crude transports could increase GHG missions by 7.1 to 19.0 million metric tons a year.

An LCFS could encourage increased Middle East imports to the U.S.

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