



**Leadership Briefing**  
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**THE LOW-CARBON FUEL STANDARD: DANGEROUS RISKS – DUBIOUS BENEFITS**

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Section 121 of the Waxman-Markey Energy Bill proposes a low-carbon fuel standard (LCFS) that would attempt to combat climate change by restricting America's access to fossil fuels. If it is enacted, the consequences of the LCFS—both intended and unintended—will be uniformly negative, constituting a severe self-inflicted wound to our national security and economic recovery while contributing very little, if at all, to a reduction in global warming.

**Fundamentals**

**The LCFS consciously targets critical sources of fuel, not the primary source of emissions.**

- The provision focuses on the least polluting and most cost-sensitive elements of the fuel cycle: recovery, production and transport, often called the “well-to-tank” set of processes.
- Well-to-tank operations generate only 20% of the GHGs emitted in our transportation sector, while combustion in the vehicle (“tank-to-tailpipe”) accounts for 80%.<sup>1</sup> Therefore, forced reductions in well-to-tank emissions can produce, at best, only minor reductions in the total carbon footprint of the U.S. transportation sector. (Even these minor improvements may be illusory, as explained in the Practical Effects segment below.)
- Steady incremental improvements in well-to-tank processes are ongoing as a result of industry stewardship and sensible (non-prohibitive) regulations. U.S. refineries, for example, are among the most advanced industrial operations in the world—now more than 87% energy efficient.<sup>2</sup>
- This state of high and increasing process efficiencies effectively shifts the real-world focus of the LCFS to particular sources of oil: those that are the most difficult to recover and process.
- These so-called “unconventional” resources—oilsands, heavy oil and oil recovered from declining wells by enhanced methods—constitute about 70% of the world's remaining reserves, with very large deposits and robust production on our continent. (See maps, attached.)
- As the world's oil, and our essential import stream, get progressively heavier, one central fact will not change: “Oil is the world's vital source of energy and will remain so for many years to come, even under the most optimistic assumptions about the pace of development and deployment of alternative technology.”<sup>3</sup>
- While the LCFS may restrict imports from many sources, its most disruptive and disturbing effect on the U.S. will be discrimination against the products of Canada's oilsands and Mexico's heavy “Maya Crude.” Together, these countries supply us with over 30% of our oil imports and over one-fifth of our total consumption. <sup>4</sup>

## National Security

### **The LCFS will increase America's dependence on oil from the Middle East.**

- As the LCFS curtails “heavy” supplies from our most important current sources of imports—especially Canada (number one) and Mexico (number three)—much of the shortfall must be replaced from the world's major remaining deposits of light sweet crude, nearly all of which are in the Middle East and most especially in Iraq, Kuwait and the fields of Saudi Arabia that still produce without “energy-in” enhancement. (See attached chart—World Proved Reserves by Region.) That is, we will be deliberately increasing our dependence on that volatile region despite the Administration's core policy, as stated repeatedly by President Obama and Chief of Staff Emanuel, among others, to *reduce* dependence on the Middle East as a matter of high priority.<sup>5</sup>
- Deliberately choking-off secure resources on our own continent will exacerbate a troubling reality: OPEC, with its unpredictable cartel policies, controls most of the world's conventional oil.

### **World's Top Proven Oil Reserves**

Rank	Country	Barrels (in billions)	OPEC member
1	Saudi Arabia	266.8	Yes
2	Canada	178.6	No
3	Iran	138.4	Yes
4	Iraq	115.0	Yes
5	Kuwait	104.0	Yes
6	United Arab Emirates	97.8	Yes
7	Venezuela	87.0	Yes

**Source:** *Oil & Gas Journal*, vol. 105, issue 48 (December 24, 2007), pp. 24–25.

- Increased vulnerability to OPEC's commercial (or political) policies may be the least of our national worries under the LCFS. We will also be more exposed than we have ever been to natural and man-made disruptions to the flow of imports: another Katrina, a scuttled tanker in the Strait of Hormuz, an Israeli attack on Iran's nuclear facilities or perhaps a terrorist car-bomb at a Saudi refinery. Any of these events, or a range of others like them, will have magnified and perhaps catastrophic effects in the U.S. if we deliberately limit our North American sources. Last year's \$4 gasoline and the present recession could become fond memories.

## Practical Effects

### **The LCFS is an ineffective method for reducing domestic—and global—GHGs.**

- Recent independent modeling of the LCFS's likely environmental and economic effects has shown that it may actually increase net carbon emissions, that it cannot adjust energy markets efficiently, and that its cost to the nation in increased energy prices and abatements could be as high as \$760 billion annually. The study, by economists at the Universities of North Carolina and California, concludes that the best structure for an LCFS may be voluntary, if it is enacted at all.<sup>6</sup> Rather than a “cost-benefit” analysis, such findings might be better understood on a “cost-detriment” scale.
- If the United States moves to block development of the oil sands, Canada will be forced to look for markets in China and India. Plans for relatively inexpensive pipeline and rail systems to carry oilsands products to Canada's west coast for shipment to Asia have been vigorously advanced, however, and China has declared Canada's resources as potentially “vital” to its energy future.<sup>8, & 9</sup> Once made, such a market shift would likely be permanent.
- The LCFS would have a perverse chilling effect on further technical advances in the recovery and processing of unconventional fuels. Some suppliers could elect to send these products to less-regulated countries rather than incur increased production costs—as Venezuela may do in a pending arrangement with China to ship 200,000 barrels of heavy oil per day for refining in Guangdong.<sup>10</sup> There is unquestionably a strong world market for unconventional oil, but increasingly thirsty consumers like China and India have shown scant interest in improving their processing techniques. Scientific progress is most likely to come from efforts under rational environmental programs like those already in place on this continent. Irrational programs, like the LCFS, would inhibit that progress—and increase global emissions as a result.

## Domestic Impact

### **The LCFS will seriously damage the U.S. economy and erase thousands of jobs.**

- The LCFS requires that emissions related to its targeted resources must be reduced to 2005 levels beginning in 2014, but its constricting economic effects would begin immediately. Prudent business managers must eliminate projects now that would make compliance in 2014 more difficult, thus throttling major industrial activity and jobs-growth when recovery from the recession demands the opposite.
- The immediate economic effects of the LCFS will be significant. Huge investments in pipelines and refineries designed to handle unconventional feedstocks will be put at risk, together with the jobs they would create. Examples include the \$5.2 billion Keystone pipeline and the \$1.9 billion Detroit refinery expansion, both intended to accommodate Canadian oilsands. A single oilsands-centered refinery expansion in Indiana will support 2,000 contractor jobs during construction and sustain almost 1,800 full-time jobs going forward.<sup>11</sup>

- Shutting off the supply of Canadian oil will have dramatic impacts on Midwestern and Northern states:
 

Michigan—65,600 barrels imported per day.	Montana—More than 50% of oil used.
Minnesota—70% of oil used.	Wisconsin—More than 50% of oil used.
Washington—110,00 barrels imported per day.	Indiana—81,000 barrels imported/day.
Ohio—143,000 barrels imported per day.	Pennsylvania—102,000 barrels/day. <sup>12</sup>
- The negative impact of the LCFS on workers, infrastructure projects and energy prices will be damaging enough in the context of our national effort to add jobs and increase economic activity during the recession. But these effects will pale in the face of a catastrophic disruption resulting from our increased exposure to war or revolution in the Middle East—exposure that could and should have been foreseen.

### International Impact

#### **The LCFS directly and intentionally damages our NAFTA friends and allies.**

- It is a core tenet of NAFTA that the U.S., Canada and Mexico will not discriminate against each other's products. Through the LCFS, America will be attacking its closest allies' core industries in the name of environmental concerns that could be addressed far more effectively by other means. Canada and Mexico are our two largest trading partners and, on a human level, they deserve better from us. Both have invested very heavily in their oil industries in the expectation of fair treatment and a steady market here. Both are staunch allies: Canada standing with us heroically in Afghanistan; Mexico fighting essentially alone on the front lines of our common war against the drug cartels. We have promised both countries to work with them through these hard economic times. Refusing their most important exports on fundamentally illogical and picayune environmental grounds would be a rebuke not soon forgotten.
- As in the U.S., but on a much greater relative scale, the LCFS mandate that emissions levels of 2005 must be attained again by 2014 will have immediate and serious economic consequences in Canada and Mexico. Producers in both countries will be obliged to act now to prepare for such a restriction, either by laying-off workers and scaling back production—or by beginning the infrastructure projects necessary for reaching new markets.

### Implementation

#### **Waxman-Markey grants unprecedented powers to the Environmental Protection Agency.**

- Rather than grapple with the complexities and profound implications of a new regulatory regime affecting the country's entire transportation sector, the draft legislation gives EPA virtual carte blanche to devise and revise the LCFS as the agency sees fit. As drafted, the core questions about the LCFS remain questions, to be answered at the sole discretion of EPA:
  - What emissions levels actually existed in 2005 (at the base of the standard)?

- What, in fact, are today's emissions associated with the various categories of fossil fuels, their recovery and processing methods?
  - What are the limits to be met going forward and exactly who must meet them? When and how may they be changed?
  - What will be the "appropriate" conditions for trading emissions credits under the LCFS? Who must, and who may, participate? What other elements of the trade in credits might be "determined to be appropriate"?
  - And what will be the *economic and national energy security effects* of the LCFS after EPA designs and implements it?
- The only potential check on EPA's discretion would be judicial review under the "arbitrary and capricious" standard, which typically defers to agency decisions. Even this limited review may not be available in cases where a court determines that a matter is committed solely to the agency's discretion. As a result, EPA may change the LCFS whenever it wishes and probably without effective limitation, even through the courts.
  - In essence Waxman-Markey is silent on pesky details, waving its hands and directing EPA to create, implement and assess the LCFS with little or no idea as to what the resulting economic, environmental and national security effects will actually be.

### **Conclusion**

Enacting the LCFS would be a policy blunder based in such irrational thinking that it would be laughable if it were not so dangerous. In the name of small improvements in the segment of the fuel cycle that emits the least GHGs—miniscule improvements “at the margin of the margin” that may not, in fact, result—the United States would deliberately deny itself access to vast and secure sources of energy in North America and voluntarily increase its dependence on the Middle East, without doubt the most volatile region of the world. At one stroke, we would restrict economic activity, raise energy prices and destroy jobs across the continent in the midst of a recession, increase the risk of severe, energy-related domestic disruptions and even foreign wars brought on by factors beyond our control, and we would encourage our best allies to find new, more reliable markets for their oil. The energy ministers of China, India, Iraq and Kuwait have good reasons for supporting the LCFS; rational Americans do not.

**The Center for North American Energy Security recommends striking Section 121 of the Waxman-Markey Climate Change bill.**

## Notes

1. National Energy Technology Laboratory. "Development of Baseline Data and Analysis of Life Cycle Greenhouse Gas Emissions of Petroleum Based Fuels," p. ES-2 (November 26, 2008). <http://www.netl.doe.gov/energy-analyses/pubs/NETL%20LCA%20Petroleum-Based%20Fuels%20Nov%202008.pdf>
2. Michael Wang, Argonne National Laboratory. "Estimation of Energy Efficiencies of U.S. Petroleum Refineries," p.1 (March, 2008).
3. International Energy Agency, "World Energy Outlook 2008," p. ES-2. <http://www.iea.org/Textbase/npsum/WEO2008SUM.pdf>
4. Besides our NAFTA suppliers, the LCFS could significantly limit imports from Saudi Arabia ("Arab Heavy") and Venezuela ("Orinoco Heavy"), Angola (offshore production) and Nigeria ("Bonny Light"). These countries, together with Canada and Mexico, supply over 60% of our imports (more than one-third of total consumption).  
U.S. Energy Information Administration. "U.S. Imports by Country of Origin," (July 28, 2008).
5. "For the sake of our economy, our security, and the future of our planet, I will set a clear goal as president: in 10 years, we will finally end our dependence on oil from the Middle East." Barack Obama accepting the Democratic nomination (August 28, 2008).  
  
"The goals are having an energy policy in which America is independent of its tie to foreign oil and having a policy in which America basically has an energy policy that frees itself from exporting \$700 billion of wealth to the Middle East. Those are the objectives." Rahm Emanuel, Stephanopoulos interview, ABC's This Week, (April 19, 2009).
6. Stephen P. Holland, Jonathan E. Hughes, and Christopher R. Knittel. "Greenhouse Gas Reductions under Low Carbon Fuel Standards?" *American Economic Journal: Economic Policy*, pp. 106–46 (February, 2009). <http://www.atypon-link.com/AEAP/doi/pdf/10.1257/pol.1.1.106>
7. Stephen Harper, Press Release and Campaign Speech, (September 26, 2008).
8. Canadian National Railway, "Pipeline on Wheels," Diane Francis, National Post, April 15, 2009. <http://network.nationalpost.com/np/blogs/francis/archive/2009/04/09/cn-s-pipeline-on-rails.aspx>  
  
Enbridge "Northern Gateway" Pipeline Project: <http://www.northerngateway.ca/?adword>.
9. China Institute of the University of Alberta, "Canada's Oil Sands Vital to China's Energy Security." <http://www.uofaweb.ualberta.ca/chinainstitute/nav03.cfm?nav03=46273&nav02=43112&nav01=43092>
10. Simon Hall and Russell Gold, "Total, China in Talks on Venezuela Refining," Wall Street Journal (April 15, 2009). <http://online.wsj.com/article/SB123970674530016723.html#printMode>
11. Whiting Refinery Modernization, BP America. <http://www.bp.com/sectiongenericarticle.do?categoryId=9028384&contentId=7051633>
12. U.S. Energy Information Administration, "State Energy Profiles." <http://tonto.eia.doe.gov/state/index.cfm>