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## Obama's Indefensible Pipeline Punt

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**Obama's delaying consideration of the Keystone XL pipeline is what is called a spherically perfect decision, because no matter from which angle you look at it, it looks perfectly the same: wrong.**



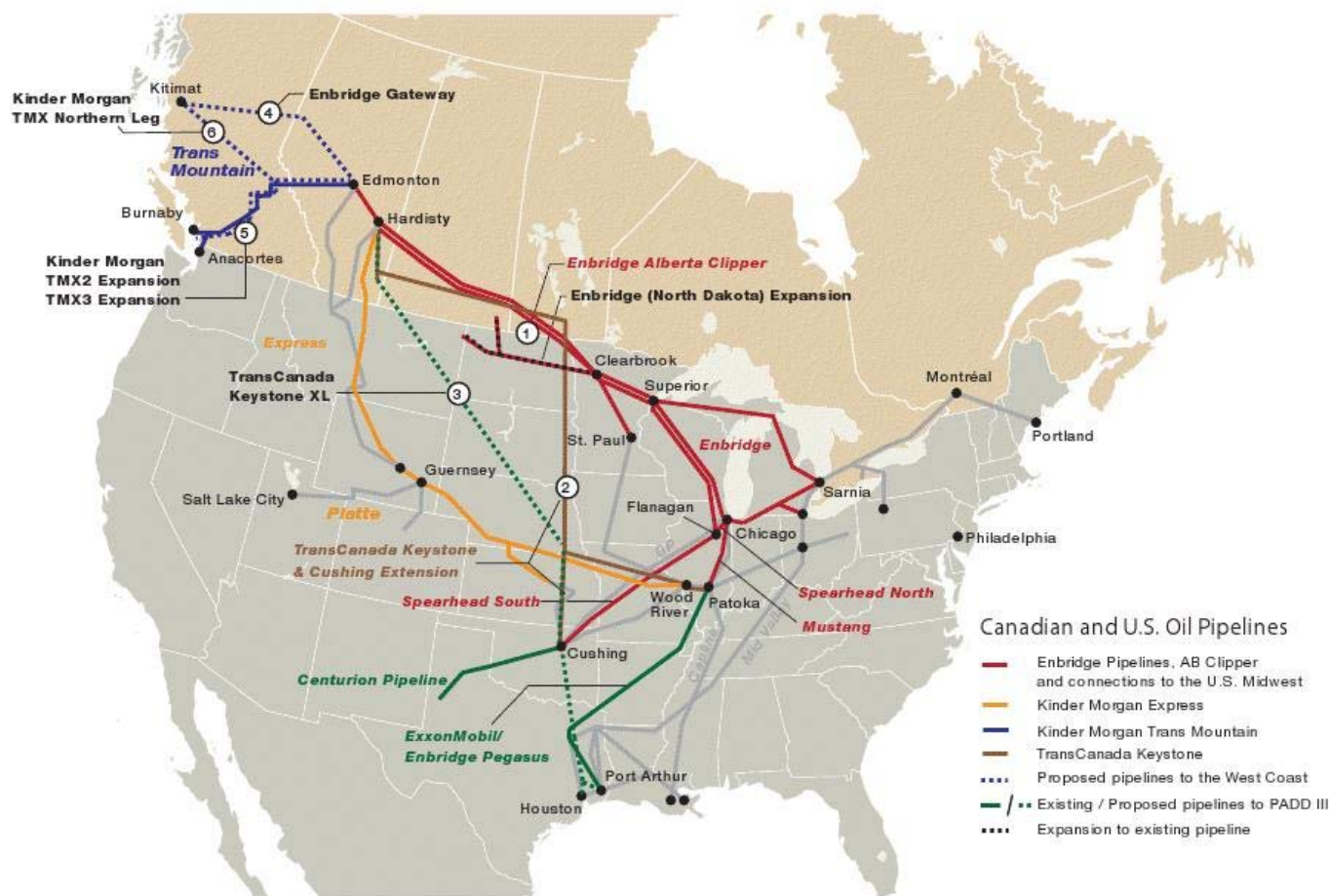
President Obama made yet another bold decision by refusing to consider the fate of the Keystone XL pipeline until after the 2012 election. Here is a brief primer for those who know nothing about Canada, for those who have only a hazy notion of America's energy supply, and for those who do not know what the months of protests in front of the White House—with the placards about the Earth in peril and with pipeline-like black plastic tubes—have been all about.

Canada—not Saudi Arabia or Iraq—is the single-largest provider of America's imported crude oil and refined oil products. In 2010, it supplied nearly 27 percent of net U.S. petroleum imports and 21.4 percent of all U.S. crude oil purchases abroad, more than the entire Persian Gulf region (18.4 percent), and far more than second place Mexico (12.5 percent) and third place Venezuela (9.9 percent). (By the way, remember those claims that the United States invaded Iraq for its oil? Well, in 2010 Iraq accounted for a mere 4.5 percent of U.S. crude oil imports and only about a quarter of its crude exports went to the United States, less than went to China!) In 2010, the United States imported about 46 percent of its total crude oil consumption (and 49 percent of all petroleum products) and hence Canada supplied about 8 percent of America's crude oil, almost every twelfth barrel.

The existing Keystone pipeline carries crude oil from the Athabasca oil sands in Alberta to Illinois (since June 2010) and to Oklahoma (since February 2011) and its capacity is about 30 percent of Canada's total crude oil exports to the United States (or almost 600,000 barrels a day). Its extension, Keystone XL, has been under consideration since 2009 and it received the approval of Canada's National Energy Board in March 2010. It would transport oil from Alberta by crossing first to Montana and then to Nebraska, where it would connect to the existing Keystone line to

Oklahoma and a further extension would then reach the Gulf Coast refineries in Texas. The XL line would have a capacity of 700,000 barrels a day and hence the entire Keystone system would move 1.3 million barrels a day, equal to about 13 percent of the country's total imports of petroleum products and just over 6 percent of its total crude oil consumption in 2010.

Construction of the pipeline has been opposed on a variety of environmental grounds. The planned XL route was to cross assorted "sensitive" areas; a catastrophic rupture would contaminate Ogallala, the country's largest aquifer; and, most notably, the pipeline would move "dirty" crude derived from Alberta's oil sands, whose extraction and upgrading uses considerably more energy, and hence emits more carbon dioxide than, the production of conventional liquid oil. As a result, protests against the XL pipeline have been portrayed as protecting a planet in peril and helping to avert catastrophic climate change.



Source: Canadian Association of Petroleum Producers.

Here are a few facts to consider. With a total length of close to 3,000 kilometers, the new pipeline would add just over 1 percent to the already existing network of crude oil and refined products lines that crisscross the United States and parts of Canada. Why, if pipeline safety is a key concern, have we not seen waves of civil disobedience focused on more than a quarter million kilometers of existing pipelines?

Long-term statistics show convincingly that there is no safer way to transport large masses of liquids over long distances than a pipeline. Moving the same amount by trucks or rail would be much more risky, in addition to being vastly more expensive. So would be moving the oil from Alberta to British Columbia and then shipping it by tankers via the Panama Canal to Texas.

Are the protesters concerned about fragile landscapes and potential water pollution? A pipeline can be re-routed in order to avoid running through areas seen as fragile and its sections crossing the areas underlain by Ogallala could be designed with even greater safety precautions than the usual standard in order to limit any spill to a small, localized area. All of these are engineering challenges with acceptable practical solutions. Inevitably, no matter how it would be done, there will always be a residual risk: so it will always be with oil imports by supertankers or (as we hear from the opponents of the practice) with horizontal drilling and fracking needed to produce more natural gas.



The pipeline's contribution to global climate change is presented as the key reason for blocking its construction. Comparison of carbon dioxide emissions from burning products (gasoline, kerosene, diesel fuel) distilled from different kinds of crude oils should be done on a comprehensive, well-to-wheel basis: values for extraction, processing, and transportation may differ substantially, but the values for combustion of refined liquid fuels are virtually identical and they account for an overwhelming majority (roughly two-thirds) of emissions. On this basis carbon dioxide emissions from fuels derived from Alberta oil sands are about 5 percent higher than for an average barrel consumed in the United States.

Even if we assume that the emissions mean for fuel produced from oil sands is 15 percent higher than the prevailing U.S. average (which would be the case if all that oil was produced by steam stimulation, the most CO<sub>2</sub>-intensive way of extracting oil from sands) this would translate roughly to an additional 70 kilograms of CO<sub>2</sub> per barrel of fuel. With the XL's annual throughput of about 250 million barrels, this would produce additional CO<sub>2</sub> emissions of about 18 million tons per year. For

comparison, in 2010 alone China's total CO2 emissions rose by 780 million tons—more than 40 times the additional CO2 that would be emitted annually from the extraction, transportation, processing, and combustion of Alberta oil carried through the Keystone XL to Texas. Put another way, if there would be no oil-sand oil produced in Alberta to feed the XL pipeline and then refined in the United States and the products burned in American vehicles, then the Chinese would generate an additional mass of CO2 equivalent to that prevented burden in less than two weeks.

Here comes the craziest twist: if the opponents of the XL succeed and prevent its construction, there is a strong possibility that Alberta's oil sand-derived oil will be piped westward to Canada's Pacific coast and loaded on supertankers going to Asia, to feed China's grossly inefficient industries.

And there is more. The XL is to deliver an equivalent of about 6 percent of total U.S. crude oil consumption in 2010, a small share that the country should be able to do without. Indeed, it could have done that already in the past if it had steadily improved the performance of its vehicles rather than keeping it flat for two decades between 1986 and 2006.

Either way, the United States will need oil imports for a long time to come, as even the fastest conceivable transition to non-fossil energies cannot be accomplished in a matter of one or two decades. If the United States chooses to cut itself off from its largest, most reliable, and most durable supply of crude oil, from where will it, with its continuing high use of transportation fuel, get its future imports? Crude oil production in two other major U.S. suppliers in the Western hemisphere, Mexico and Venezuela, has been declining (by, respectively, more than 20 percent and more than 15 percent between 2005 and 2011), and in the Middle East the United States faces enormous competition from China.

By preventing the oil flow from Canada, the United States will thus deliberately deprive itself of new manufacturing and construction jobs; it will not slow down the increase of global CO2 emissions from fossil fuel combustion (OK, by two weeks, perhaps); it will almost certainly empower China; and it will make itself strategically even more vulnerable by becoming further dependent on declining, unstable, and contested overseas crude oil supplies. That is what is called a spherically perfect decision, because no matter from which angle you look at it, it looks perfectly the same: wrong.

**Vaclav Smil does interdisciplinary research in the fields of energy, environmental and population change, food production and nutrition, technical innovation, risk assessment, and public policy.**

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