

Just the Facts: Canada's Oil Sands & the Keystone XL Pipeline

“And when it comes to the oil we import from other nations, obviously we’ve got to look at neighbors like Canada and Mexico that are stable and steady and reliable sources.”

President Barack Obama
March 30, 2011

Denying a permit for Keystone XL or delaying it further would only contradict the President's expressed desire “to look at neighbors” like Canada for oil the United States must still import from other nations.

Keystone XL: No Significant Environmental Impact

Fact: Six years of rigorous review and analysis have informed the debate on Keystone XL and four U.S. State Department environmental studies have reached the same conclusion: construction of Keystone XL will have no significant impact on the environment. According to the State Department's Final Supplemental Environmental Impact Statement,

- The Keystone Pipeline would “include processes, procedures, and systems to prevent, detect, and mitigate potential oil spills” that could occur during construction and operation of the pipeline. Industry standards and practices (including the Project-specific Special Conditions developed by PHMSA) provide a level of protection above that of other pipeline systems in existence.¹
- “The analyses of potential impacts associated with construction and normal operation of the proposed Project suggest that significant impacts to most resources are not expected along the proposed Project route . . .”²

Canadian Oil is No Different from Other Oil Transported in U.S. Pipelines

Fact: Two government studies have concluded that the properties of Canadian diluted bitumen present no additional risk of release or spills.

- The State Department's *Final Supplemental Environmental Impact Statement* found that “both synthetic crude oil³ and dilbit⁴ are similar in composition and quality to the crude oils currently transported in pipelines in the U.S. and being refined in Gulf Coast refineries. Neither type of crude oil requires heating for transport in pipelines.”⁵
- According to a study completed by the National Academy of Sciences' National Research Council in June 2013, “the chemical and physical properties of diluted bitumen shipments were not found to differ in ways that would be expected to create a likelihood of release that is higher for a transmission pipeline transporting diluted bitumen than one transporting other crude oils.”⁶

¹ 2014 FSEIS, pg. ES-17

² 2014 FSEIS, pg. 4.16-1

³ Synthetic Crude Oil (SCO) “is produced from bitumen through a refinery conversion process that turns heavy hydrocarbons into lighter hydrocarbons. The conversion process typically includes the removal of sulfur, resulting in a *light sweet* SCO. The precise composition of SCO varies.” (2014 FSEIS, pg. 3.13-7)

⁴ “Dilbit is bitumen mixed with a diluent so it can be transported by pipeline . . . A common condensate stream (liquids derived from natural gas) is currently the primary type of diluent used for Canadian heavy crude. Diluent consists of condensates, ultra-light sweet crudes, and refinery and upgrader naphtha streams from several supply sources. Typically, dilbit uses approximately 25 percent of condensate, where companies use either their own supply sources of light hydrocarbons or purchase the above condensate stream.” (2014 FSEIS, pg. 3.13-7)

⁵ 2014 FEIS, p. 2-2

⁶ http://www.nap.edu/catalog.php?record_id=18381, *The Effects of Diluted Bitumen on Crude Oil Transmission Pipelines*, pg. 95

- To further reduce the risk of spills, TransCanada has agreed to incorporate additional mitigation measures in the design, construction and operation of Keystone XL, which include: 59 Special Conditions recommended by PHMSA, 25 mitigation measures recommended in the Battelle and Exponent risk reports and 11 additional mitigation measures.⁷

Greenhouse Gas Emissions in the Proper Context

Fact: GHG emissions from oil sands production are similar to those of other types of oil refined in the U.S. If Keystone XL is not approved, GHGs could actually increase through “crude shuffling.”

- An IHS Energy study, *Comparing GHG Intensity of the Oil Sands and the Average US Crude Oil*, reported that “Despite significant changes in the mix of crude oil supplied to US refineries between 2005 and 2012, the average GHG intensity was unchanged. Growth in supply and consumption of relatively lower-carbon crudes offset increased use of relatively higher-carbon crudes.”⁸
- IHS also reported that, “Forty-five percent of the crude oils consumed in the United States are within the same GHG intensity range as those from the Canadian oil sands. Comparing the oil sands against the average crude oil baseline estimated by IHS for 2012, refined products from oil sands has life-cycle GHG emissions that are between 1% and 19% higher than the average crude oil consumed in the United States. This places oil sands within the same GHG intensity range as 45% of crude oil supplied to US refineries in 2012. Two-thirds of the crudes in this range came from Latin America, Africa, the Middle East, and some US domestic production.”⁹
- Independent analysis of the project’s potential impact on greenhouse gas emissions by IHS CERA found that:

[e]ven if the Keystone XL pipeline does not move forward, we do not expect a material change to oil sands production growth. Therefore the Keystone decision itself will not have any impact on GHG emissions. Without Keystone, alternatives will be developed including other pipeline projects and crude delivery by rail. Not including Keystone XL, the volume of proposed pipeline capacity exiting western Canada currently totals 3 million barrels per day (mbd). Eighty percent of this proposed capacity connects Alberta with Canada’s west and east coasts, and obviously would not involve any US government approval. Even if new pipelines lag oil sands growth, rail will fill the gap, as it is doing today.¹⁰

- Failure to approve Keystone XL could actually increase greenhouse gas emissions as noted in a 2010 Barr Engineering study. Barr concluded that policies limiting oil sands crude use could cause Canadian producers to ship their product to Asian markets, while the U.S. would have to import more oil in tankers from the Middle East and elsewhere, thus increasing the carbon footprint and creating a crude oil “shuffle.”¹¹

The Canadian Federal and Alberta Provincial Governments Have Strict Regulations in Place

- Three provincial government agencies and five federal agencies regulate oil sands development and production. Alberta: Alberta Energy, Energy Resources Conservation Board, and Alberta Environment and Sustainable Resource Development; Federal: Canadian Environmental Assessment Agency, Environment Canada, Fisheries and Oceans Canada, Transport Canada, and the National Energy Board.

⁷ 2014 FSEIS, pg. Appendix Z-1

⁸ <http://www.ihs.com/pdfs/Comparing-GHG-Intensity-of-the-Oil-Sands-and-the-Average-US-Crude-Oil.pdf>

⁹ <http://www.ihs.com/pdfs/Comparing-GHG-Intensity-of-the-Oil-Sands-and-the-Average-US-Crude-Oil.pdf>

¹⁰ IHS CERA Insight, *Keystone XL Pipeline: No Material Impact on US GHG Emissions*, August 5, 2013, p. 1 (emphasis added)

¹¹ Barr Engineering Study, *Low Carbon Fuel Standard “Crude Shuffle,” Greenhouse Gas Impacts Analysis*, June 2010.

- Alberta was the first North American jurisdiction to mandate greenhouse gas emission reductions for large industrial facilities by passing the Specified Gas Emitters Regulation (SGER).¹²
- Alberta also created the Oil Sands Sustainable Development Secretariat to address growth issues in the province's oil sands regions. The Secretariat works with ministries, industry, communities and other stakeholders to address the social, infrastructure, environmental and economic impacts of oil sands development.
- Since 1990, oil sands producers reduced per barrel emissions by an average of 26 percent, and some achieved reductions as high as 50 percent.
- Alberta closely regulates the use of water. Large water users must apply to divert fresh water from its original source, and the amount of water allocated is based on sustaining Alberta's groundwater and surface water. Oil and gas producers use less than one-third of their total water allocation per year, and oil sands producers recycle about 80-95 percent of water used.

U.S. Regulations Already Enforce Emissions and Protect Health

Fact: The Keystone pipeline poses no danger to human health, and will not result in an increased rate of cancer or other diseases as some have claimed.

- The State Department's *Final Supplemental Environmental Impact Statement* concluded that "[c]rude oil spills are not likely to have toxic effects on the general public because of the many restrictions that local, state and federal agencies impose to avoid environmental exposure after a spill."¹³
- Crudes from oil sands, like conventional crudes, can vary widely in their properties depending on the source, processing at the oil sands mine, and blending that occurs before and during transportation. Regardless of source, fuels manufactured in a refinery must always meet established specifications so the processes to make those fuels are not going to vary substantially. Similarly, the emissions from a refinery will not vary substantially if the crude source changes because each refinery has a permit that constrains the operation. Refineries cannot exceed the emission limits in their Clean Air Act or other environmental permits regardless of the type of crude processed.
- Petroleum coke (petcoke) resulting from the refining process is not disposed of as a waste material; it is recycled, and typically used as a source of energy or source of carbon for industrial application. Fuel-grade petcoke represents nearly 80 percent of worldwide petcoke production and is a source of fuel for cement kilns and electric power plants. Calcined petcoke has the highest carbon purity and is used to manufacture energy, as well as in aluminum, graphite electrode, steel, titanium dioxide and other carbon consuming industries.

Science and Innovation are Driving Oil Sands Production Efficiency

Fact: The technologies Canadian – and U.S. – oil producers rely on are constantly evolving and becoming more efficient – that means lower emissions, smaller surface footprint, and reduced water use.

¹² Alberta Energy website, <http://www.energy.alberta.ca/oilsands/791.asp>, accessed Sept. 16, 2014

¹³ 2011 FEIS, pg. ES-10

- Former U.S. Secretary of Energy Steven Chu notably stated that Canadian oil sands producers are “making great strides in improving the environmental impact of the extraction of this oil and will continue to do so.”¹⁴
- Canada’s Oil Sands Innovation Alliance (COSIA) pools 12 companies’ expertise in oil sands technologies and operating practices. COSIA builds upon independent research and development already taking place, and focuses on four priority areas: improving water use; reducing greenhouse gas emissions intensity; reducing impact on land; and tailings management. COSIA’s mission is to accelerate the pace of environmental performance improvement and reduce the amount of time between drawing board concepts and operational application.
- Oil sands producers recycle 80-95 percent of water used, and use saline water where possible.

Oil Sands Development and Production Will Continue

Fact: Approval – or disapproval – of Keystone XL would have no bearing on oil sands development.

- The State Department’s *Final Supplemental Environmental Impact Study* concluded that “...approval or denial of any one crude oil transport project, including the proposed Project, is unlikely to significantly impact the rate of extraction in the oil sands or the continued demand for heavy crude oil at refineries in the United States based on expected oil prices, oil-sands supply costs, transport costs, and supply-demand scenarios.”¹⁵

- The study specifically noted that “[o]il sands production and investment could slow or accelerate depending on oil price trends, regulations, and technological developments, but the potential effects of those factors on the industry’s rate of expansion should not be conflated with the more limited effects of individual pipelines.” The State Department study also confirmed that the growing U.S. demand for heavy crude oil would continue to be met by other sources outside North America:

“Having Canada as a supplier for our oil is much more comforting than having other countries supply our oil.” (on [energyNOW](#))

Steven Chu
U.S. Secretary of Energy (2009-2013)

- “Varying pipeline availability has little impact on the prices that U.S. consumers pay for refined products such as gasoline or for heavy crude demand in the Gulf Coast. When this demand is not met by heavy Canadian supplies in the model results, it is met by heavy crude from Latin America and the Middle East.”¹⁶
- The EIA states that “Canada’s unconventional oil sands are a significant contributor to the recent and expected growth in the world’s liquid fuel supply and comprise the vast majority of the country’s proven oil reserves, which rank third globally,” after Saudi Arabia and Venezuela.¹⁷ The EIA also notes that:

[a]mong the top ten reserve-holders, the only other state that is not a member of the Organization of the Petroleum Exporting Countries (OPEC) is Russia. Canada’s proven oil reserve levels have been stagnant or slightly declining since 2003, when they increased by

¹⁴ <http://blog.chron.com/txpotomac/2011/08/steven-chu-better-for-u-s-to-import-canadian-oil-than-middle-eastern-crude/>

¹⁵ United States Department of State, *Final Supplemental Environmental Impact Statement for the Keystone XL Project*, Executive Summary, January 2014, p. ES-16

¹⁶ United States Department of State, *Final Supplemental Environmental Impact Statement for the Keystone XL Project*, Executive Summary, January 2014, p. ES-12

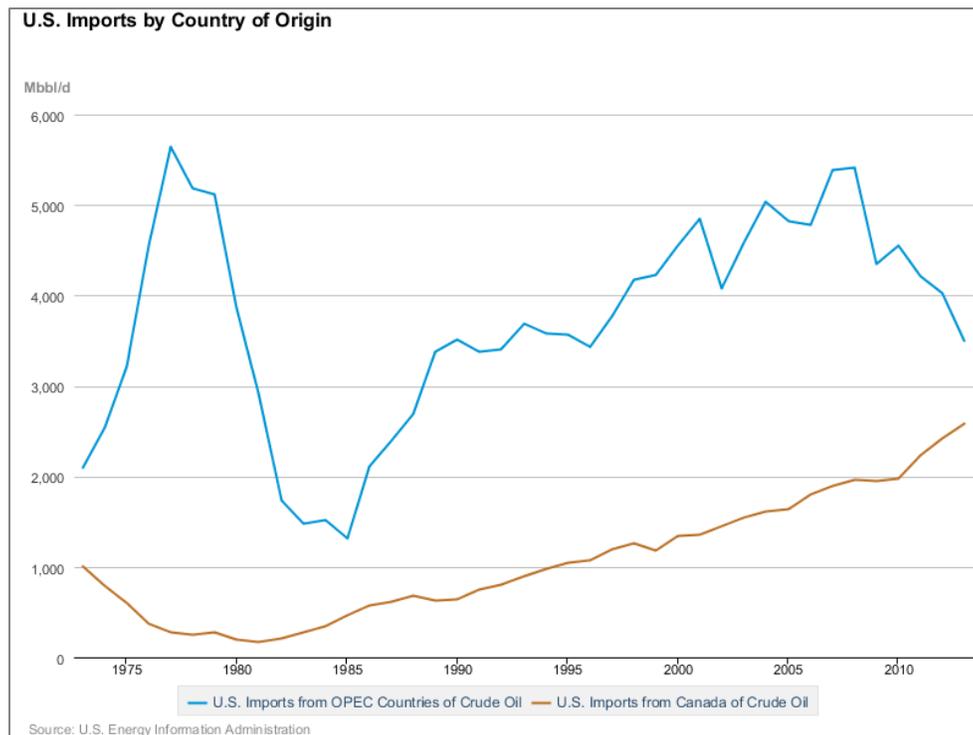
¹⁷ U.S. Energy Information Administration website, <http://www.eia.gov/countries/cab.cfm?fips=CA>, accessed February 10, 2014

an order of magnitude after oil sands resources were deemed to be technically and economically recoverable. The oil sands now account for approximately 170 billion barrels, or 98 percent, of Canada's oil reserves.¹⁸

The Importance of Canadian Oil Sands Production to U.S. and Global Energy Needs

Fact: According to the U.S. Energy Information Administration (EIA), "Canada is one of the world's five largest energy producers and is the principal source of U.S. energy imports. Canada's unconventional oil sands are a significant contributor to the recent and expected growth in the world's liquid fuel supply and comprise the vast majority of the country's proven oil reserves, which rank third globally."¹⁹

- U.S. imports of Canadian crude oil have steadily increased over the last decade – to about 2.6 million barrels a day in 2013.



- IHS CERA, in *Critical Questions for the Canadian Oil Sands*, notes that “[i]n 2012 Canadian crude oil imports to the United States totaled about 2.4 million barrels per day (mbd), or about 28% of total US crude imports. Much of this – 1.5 mbd, or about 18% of US imports – is from the oil sands. Oil sands alone are now the largest foreign source of US oil supply, providing more oil than Saudi Arabia or Mexico (the second and third largest suppliers), which accounted for 16% (1.4 mbd) and 11% (1.0 mbd), respectively, in 2012. ... Canada’s share of total US crude imports rose from 21% in 2010 to 28% in 2012.”²⁰
- Even with increased domestic oil production, the United States will still need imports to meet its growing needs, and Canada’s oil sands resource will remain “an important pillar of US supply.”
 - According to IHS Energy, “[d]espite the rapid growth of tight oil, we expect that the United States will still need over 5 mbd of net oil (liquids) imports each year over the next two

¹⁸ Ibid.

¹⁹ U.S. Energy Information Administration website, <http://www.eia.gov/countries/country-data.cfm?fips=CA>, accessed Sept. 16, 2014

²⁰ IHS CERA Special Report, *Critical Questions for the Canadian Oil Sands*, October 2013, pg. 3

decades. Oil sands are expected to remain an important pillar of US supply to meet this demand.²¹

- The Keystone XL pipeline would be able to transport up to 830,000 barrels of oil per day, allowing the United States to increase supply from its North American ally while simultaneously decreasing our nation's reliance on oil from unstable regions far overseas – from about 25 million barrels a month to about 80 million barrels.

Oil Sands Development in Canada Benefits the U.S. Economy

Fact: Keystone XL and oil sands development will create and sustain thousands of U.S. jobs and benefit local communities through increased business activity and tax revenues.

- The Canadian Energy Research Institute (CERI) estimated in its *Economic Impacts of Staged Development of Oil Sands Projects in Alberta (2010-2035)* report that oil sands projects will significantly increase total U.S. GDP by close to \$210 billion by 2035.
- According to CERI, employment in the United States as a result of new oil sands investments is expected to grow from 21,000 jobs in 2010 to 465,000 jobs in 2035. This type of employment includes new and preserved jobs and also consists of full-time and part-time jobs.²²
- The U.S. State Department's *Final Supplemental Environmental Impact Statement* released in January 2014 concludes that construction of Keystone XL will result in about:²³
 - A \$3.4 billion boost to U.S. Gross Domestic Product
 - 42,100 jobs (direct, indirect, and induced), and approximately \$2 billion in earnings throughout the United States²⁴
 - \$4 million in property taxes from construction camps
 - \$66 million from sales and use taxes
- Keystone XL's positive effects will be felt at the local level along its route. Twenty-seven counties in three states will benefit from tens of millions in property tax revenue, with no projected impact to other property values. According to the State Department's *Final Supplemental Environmental Impact Statement*:

The total estimated property tax from the proposed Project in the first full year of operations would be approximately \$55.6 million spread across 27 counties in three states. This impact to local property tax revenue receipts would be substantial for many counties, constituting a property tax revenue benefit of 10 percent or more in 17 of these 27 counties. Operation of the proposed Project is not expected to have an impact on residential or agricultural property values.²⁵

²¹ IHS CERA Special Report, *Critical Questions for the Canadian Oil Sands*, October 2013, p. 3

²² CERI Report: *Economic Impacts of New Oil Sands Projects in Alberta 2010 to 2035*, pg. xii,

<http://www.ceri.ca/images/stories/CERI%20Study%20124.pdf>

²³ 2014 FSEIS, pg. ES-19

²⁴ "The jobs and earnings analysis recognizes three distinct components of economic activity and job creation: direct, indirect, and induced. Direct economic activity associated with construction includes all jobs and earnings at firms that are awarded contracts for goods and services, including construction, directly by Keystone. Indirect economic activity includes all goods and services purchased by these construction contractors in the conduct of their services to the proposed Project. Examples of these types of activities related to pipeline construction include the goods and services purchased to produce inputs such as concrete, fuel, surveying, welding materials, and earth-moving equipment. Induced economic activity includes the spending of earnings received by employees working for either the construction contractor or for any supplier of goods and services required in the construction process. Examples of induced activities include spending by access road construction crews, welders, employees of pipe manufacturers, and ranchers providing beef for restaurants and construction camps." (2014 FSEIS, pg. ES-19 - 20)

²⁵ *Ibid.* (emphasis added)