

Recent developments: The Keystone XL tar sands pipeline is not in the national interest



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Significant new developments in North America's energy landscape make it clearer than ever that the proposed Keystone XL tar sands pipeline fails the President's climate test and should be rejected as not being in the national interest. Events have increasingly exposed the fallacy of assuming that the tar sands will be developed at the same pace with or without Keystone XL. There is now little question that Keystone XL is critical to expanded production in the tar sands. By driving increased production, Keystone XL would increase the carbon intensity of the world's fuel mix, significantly add to the carbon pollution driving climate change and undermine the nation's climate leadership. Closer to home, on the ranches and farms its route would cross, Keystone XL would also imperil the health and drinking water of millions of Americans.

The Keystone XL tar sands pipeline will worsen climate change because it would lock in high-carbon infrastructure for the next half century, facilitating expansion of the tar sands industry. With rising production costs, pipeline constraints, and world oil prices dropping below break-even points for many tar sands projects,¹ it is now impossible to credibly argue that Keystone XL will not enable substantial growth in tar sands production and associated carbon emissions.

- **Tar sands transportation bottlenecks, the high cost of rail, rising costs of labor and capital,² and the low cost of crude oil are forming a perfect storm that is leading to large project cancellations and an expected slowdown in industry growth.³**
 - In February 2014, Shell announced the cancellation of its proposed 200,000 bpd Pierre River tar sands mine,⁴ followed by Total's announcement in May that it was canceling its 160,000 bpd Joslyn North tar sands mine,⁵ with Statoil following suit in September when it announced the cancellation of its 40,000 bpd Corner in situ project.⁶
 - In its June 2014 market forecast report, the Canadian Association of Petroleum Producers lowered its 2030 tar sands production forecast by 400,000 bpd due to factors including "cost competitiveness and availability of financing."⁷ In December, Canada's National Energy Board re-released a projection of tar sands production volumes under a low crude oil price scenario that demonstrates the production impact of the developing tar sands industry slow down.⁸
- **Increasing tar sands production costs have further undermined the economic feasibility of tar sands expansion.**
 - Production costs for tar sands have increased since the State Department prepared its Final Supplemental Environmental Impact Statement (FSEIS). State relied in part on data from a 2013 report by the Canadian Energy Research Institute (CERI); however, in its 2014 update, CERI found that the supply costs of producing a barrel of tar sands crude from the cheapest tar sands projects had increased by over \$20 per barrel.⁹
 - Though rising supply costs and low oil prices were cited by Shell and Total as drivers of the cancellation decisions discussed above, Total's transport strategy relies heavily on three stalled pipelines¹⁰ and Statoil cited pipeline constraints as a major reason for its recent project cancellation.¹¹
- **The significant drop in oil prices, a major consideration in the State Department's analysis and a key determinant to the tar sands industry's outlook, requires a fresh look at the pipeline's climate impacts.**

- Oil prices have now fallen below the \$75 per barrel threshold at which the State Department concluded “higher transportation costs [associated with rail] could have a substantial impact on oil sands production levels-possibly in excess of the capacity of the proposed Project-because many in situ projects are estimated to break even around these levels.”¹²
- Oil prices are expected to remain substantially lower than State assumed.¹³ In fact, EIA has since substantially reduced its oil price forecasts.¹⁴ Futures markets are forecasting that oil prices are likely to trade within a range of \$67 and \$77 a barrel through 2022.¹⁵
- The State Department finding that Keystone XL would not affect production rested on a range of possible oil prices from \$92/barrel to \$145/barrel which is far from the current or projected outlook.¹⁶ However, under the State Department scenario where oil prices were between \$65 and \$75, building Keystone XL would have “substantial impact on oil sands production levels”.¹⁷
- **Tar sands by rail shipments to the Gulf have fallen far short of projections¹⁸ in past environmental reviews and proven significantly more costly than pipeline.**
 - The Canadian Association of Petroleum Producers (CAPP) and RBN Energy estimate that it costs \$15-\$22 per barrel to transport tar sands crude by rail to the Gulf Coast¹⁹ versus Keystone XL’s \$8.10 per barrel.²⁰ As oil prices remain low, tar sands producers cannot afford to depend heavily on rail if operations are to remain profitable.
 - The new Canexus unit train terminal at Bruderheim, near Edmonton – the first unit train terminal serving Alberta’s tar sands region – is fraught with problems. After coming online less than one year ago, it has operated at a fraction of its capacity, has faced unplanned shutdowns, and is on the verge of bankruptcy.²¹
- **Tar sands industry leaders, and energy analysts continue to highlight the necessary of pipeline infrastructure to enable the plan to triple tar sands expansion by 2030.²²**
 - “Contrary to the opinion of the U.S. State Department, approving Keystone XL is indeed a necessary condition to increasing oil sands production. What happens if it doesn’t get built? Canada’s oil patch doesn’t like to think about that scenario, but it’s one that investors need to be considering.” Jeff Rubin, former chief economist, CIBC World Markets²³
 - “If there were no more pipeline expansions, I would have to slow down,” Brian Ferguson, Cenovus CEO (major tar sands company based in Canada)²⁴
 - “Approval of the northern leg of the Keystone XL pipeline, which will transport oil from Alberta to Cushing, remains the most significant catalyst for improving takeaway bottlenecks, in our view.” Barclays, Global 2014 E&P Spending Outlook²⁵
 - “This is why Keystone is so important for us – because we have this refinery capable of treating our crude and today we are missing that opportunity because of that logistical constraint ... Of course, if those main pipeline projects are taking more time, that may impact the timing of the decisions for the biggest projects in the oil sands.” Total E&P Canada (tar sands producer) President Andrew Goffart²⁶

As a result of all of the factors above, the climate case against the Keystone XL tar sands pipeline has crystalized. It is now even more clear the pipeline will drive tar sands expansion.

- The FSEIS confirmed that tar sands crude oil is significantly more carbon intensive than the crudes it would displace,²⁷ and could therefore contribute 1.43 billion “accumulated incremental” or additional²⁸ metric tons of GHG emissions to the atmosphere over 50 years .²⁹
 - This is equivalent to putting 5.7 million passenger vehicles on the road for the life time of the project.³⁰
 - Studies suggest that these figures may have substantially underestimated Keystone XL’s carbon impact by ignoring the effect that additional Canadian supply will have on global demand. The Stockholm Institute published a study in Nature which estimated that the annual incremental

- GHG emissions associated with Keystone XL would be 110 million metric tons, quadruple the number relied on by State (or 5.5 billion metric tons over 50 years).³¹
 - Total lifetime GHG emissions from the crude Keystone XL would transport are estimated to be 8.4 billion metric tons.³²
- If Keystone XL were built, the increased levels of carbon emissions generated by this *single project* would lead to \$128 billion in climate costs, according to the administration's social costs of carbon calculator.³³

Keystone XL and the tar sands crude oil it carries exposes the land and water resources of America's heartland to serious risks of dangerous spills.

- Following the 2010 pipeline rupture that spilled more than 800,000 gallons of tar sands into the Kalamazoo River and has cost more than \$1 billion in ongoing cleanup costs³⁴ and another 2013 pipeline rupture in Arkansas that spilled more than 200,000,³⁵ it is widely understood that tar sands spills are more dangerous, longer lasting, and more difficult to clean up than spills of conventional oil.³⁶
- Native American communities – many of which are strongly opposed to the pipeline – have long argued that they were not consulted about Keystone XL's impact to their traditional lands and waters.³⁷
 - The importance of this failure by the State Department and TransCanada was reiterated by U.S. Secretary of the Interior Sally Jewell in early December when she stated that "they know their lands better than we do."³⁸
- The leak detection technology proposed for Keystone XL is insufficient and could allow a catastrophic spill of up to half a million gallons per day to go undetected by operators.³⁹
 - Tar sands spills along the pipeline's route present an unacceptable risk for water resources, such as the Ogallala aquifer, and the globally critical farm and ranchland that depends on this resource.
 - A recent investigation found that leak detection systems miss 19 out of 20 spills – a systemic failure that needs to be addressed to prevent what could become the largest tar sands spill in the U.S.⁴⁰

Keystone XL is a foreign pipeline through the U.S. that will facilitate export of Canadian raw and refined oil to markets around the world.

- President Obama has already noted that Keystone XL provides "the ability of Canada to pump their oil, send it through our land, down to the Gulf, where it will be sold everywhere else."⁴¹ Data from the U.S. Energy Information Agency back him up, showing a clear and steady increase in U.S. Gulf Coast exports of both refined petroleum products and crude oil.⁴²
- Keystone XL is not about enhancing U.S. energy security. More than half of the fuels produced from the crude moved through Keystone XL are forecast to be exported internationally and the pipeline is not necessary for transporting domestic crude.⁴³

Keystone XL is not a jobs creator and never has been.

- According to the State Department's FSEIS, Keystone XL would create 1,950 construction jobs over two years and only 50 permanent jobs (35 of which would be located in the U.S.).⁴⁴ Meanwhile, clean energy companies announced 18,000 jobs in the third quarter of 2014 alone.⁴⁵

Approval of Keystone XL would negatively impact U.S. and international efforts to stabilize climate change and seriously undermine the nation's climate leadership.

- The U.S. must be consistent in its call to reduce significant new sources of carbon, a position that is in direct conflict with approving a pipeline that supports expanded tar sands production. Rejecting Keystone XL is consistent with other policies in the President's Climate Action Plan, such as ending financial support for new overseas coal power plants.⁴⁶
- Keystone XL is wholly inconsistent with a scenario where the international community limits warming to 2 degrees Celsius. In IEA forecasts, meeting that goal is dependent on significantly reduced U.S. and global oil consumption through 2035.⁴⁷

- U.S. climate leadership and credibility in negotiating robust international climate commitments depends on taking actions at home that are consistent with what the U.S. is asking other countries to do. Rejecting Keystone XL demonstrates that the U.S. will not allow new infrastructure that unlocks large sources of carbon pollution.⁴⁸

Approval of Keystone XL would further undermine Canada's capacity to make and honor future greenhouse gas emissions reductions.

- Extraction of tar sands oil is Canada's fastest growing source of emissions and its most significant barrier to meeting its international greenhouse gas reduction target.⁴⁹
- Canada is currently on track to miss its climate obligations by a large margin.⁵⁰ A large part of this failure is due to emissions from the nation's expanding tar sands industry, which are expected to nearly double from 2010 levels by 2020.⁵¹

¹ Financial Post, Quarter of new Canadian oil projects vulnerable if oil falls below US\$80: IEA, October 14, 2014, http://business.financialpost.com/2014/10/14/canada-oil-prices-iea/?_lsa=0f8b-8672; Current oil prices are now well below US\$80, hitting US\$65 in early December 2014. Bloomberg, Energy & Oil Prices, December 4, 2014, <http://www.bloomberg.com/energy/>.

² The rise in costs for tar sands projects has been well documented by CERI. CERI, Canadian Oil Sands Supply Costs and Development Projects (2014-2048), July 2014, http://www.ceri.ca/images/stories/2014-07-17_CERI_Study_141_Oil_Sands_Supply_Cost_Update_2014-2048.pdf

³ On December 4, 2014, Canada's National Energy Board re-released a projection of tar sands production volumes under a low crude oil price scenario that closely matches what is now being observed in world energy markets. This analysis highlights the problematic assumptions relied on by the State Department. National Energy Board, Market Snapshot: The Impact of Sustained Low Oil Prices in the NEB's Energy Futures Report, December 4, 2014, <http://www.neb.gc.ca/nrg/ntgrtd/mrkt/snpst/2014/12-04/wprc-eng.html>.

⁴ Jeff Lewis, Shell halts work on Pierre River oil sands mine in northern Alberta, Financial Post, February 12, 2014, http://business.financialpost.com/2014/02/12/shell-halts-work-on-pierre-river-oil-sands-mine-in-northern-alberta/?_lsa=0f8b-8672.

⁵ Dan Healing, Joslyn North oilsands mine put on hold, Calgary Herald, May 28, 2014, <http://www.calgaryherald.com/business/Joslyn+North+oilsands+mine+hold/9888984/story.html>.

⁶ Statoil calls off 40,000-bpd Canadian oil sands development, Reuters, September 25, 2014, <http://af.reuters.com/article/commoditiesNews/idAFL6NORQ53020140925>.

⁷ Canadian Association of Petroleum Producers (CAPP), Crude Oil, Forecasts, Markets and Pipelines, June 2014, pg. 7, <http://www.capp.ca/forecast/Pages/default.aspx>.

⁸ National Energy Board, Market Snapshot: The Impact of Sustained Low Oil Prices in the NEB's Energy Futures Report, December 4, 2014, <http://www.neb.gc.ca/nrg/ntgrtd/mrkt/snpst/2014/12-04/wprc-eng.html>.

⁹ CERI found that the plant gate costs, or the costs of production without transport or blending, or for the lowest cost tar sands projects – SAGD or in situ – has increased from \$30.32 per barrel to \$50.89 per barrel between 2013 and 2014. The breakeven costs of these projects (with plant gate costs of \$30.32 per barrel) were what State relied on when developing the \$65-\$75 threshold oil price. Canadian Energy Research Institute, Canadian Oil Sands Supply Cost and Development Projects (2012-2046), May 2013, Pg. 31, http://www.ceri.ca/images/stories/2013-06-10_CERI_Study_133_-_Oil_Sands_Update_2012-2046.pdf; Canadian Energy Research Institute, Canadian Oil Sands Supply Cost and Development Projects (2014-2048), July 2014, Pg. 32 http://www.ceri.ca/images/stories/2014-07-17_CERI_Study_141_Oil_Sands_Supply_Cost_Update_2014-2048.pdf.

¹⁰ Carrie Tait, Total shelves \$11-billion Alberta oil sands mine, Globe and Mail, May 29, 2014, <http://www.theglobeandmail.com/report-on-business/joslyn/article18914681/>.

¹¹ Press Release: Statoil postpones Corner project, Statoil, 2014, http://www.statoil.com/en/NewsAndMedia/News/2014/Pages/25Sept_CornerPostponement.aspx.

¹² State Department, Final Supplemental Environmental Impact Statement (FSEIS), Jan. 31, 2014, pg. 1.4-8. In its environmental review, the State Department acknowledged that "the price threshold above which pipeline constraints are likely to have a limited impact on future production levels could change if supply costs or production expectations prove different than estimated in this analysis."

¹³ WTI Financial Futures Quotes, CME Group, <http://www.cmegroup.com/trading/energy/crude-oil/west-texas-intermediate-wti-crude-oil-calendar-swap-futures.html>.

¹⁴ Nicole Friedman, EIA Slashes Oil-Price Forecast for 2015, Wall Street Journal, <http://online.wsj.com/articles/eia-slashes-oil-price-forecasts-for-2015-1415815622>.

¹⁵ Crude Oil Futures Quotes, CME Group, <http://www.cmegroup.com/trading/energy/crude-oil/light-sweet-crude.html>.

¹⁶ State, FSEIS, Appendix C, Adobe pg. 166.

¹⁷ CRITICAL PRICE RANGE \$65 to \$75/BBL -- "Oil sands production is expected to be most sensitive to increased transport costs in a range of [WTI] prices around \$65 to 75 per barrel. Assuming prices fell in this range, higher transportation costs could have a substantial impact on oil sands production levels—possibly in excess of the capacity of the proposed Project—because many in situ projects are estimated to break even around these levels." (FSEIS pg 1.4-8)

¹⁸ Patrick Rucker, Canada oil-by-rail deliveries in 2013 lagged U.S. estimate, Reuters, March 5, 2014, <http://www.reuters.com/article/2014/03/05/us-keystone-rail-idUSL2N0J15H20140305>.

¹⁹ Canadian Association of Petroleum Producers (CAPP), Crude Oil, Forecasts, Markets and Pipelines, June 2014, pg. 33, <http://www.capp.ca/forecast/Pages/default.aspx>; Sandy Fielden, Mamma Maya – Narrowing Discounts For Canadian Crude At The Gulf Coast Undercut Rail, RBN Energy, November 13, 2014, <https://rbnenergy.com/mamma-maya-narrowing-discounts-for-canadian-crude-at-the-gulf-coast-undercut-rail>.

²⁰ State, FSEIS, Jan. 31, 2014, 1.4-83 (FN 122).

²¹ Anthony Swift, The tar sands train the couldn't, NRDC, October 21, 2014, <http://switchboard.nrdc.org/blogs/aswift/canexus Bruderheim terminal th.html>.

²² The CEO of major tar sands producer Cenovus reported his company's plan to triple production in coming years was contingent on more pipeline capacity, while the financial community, including RBC Capital, Goldman Sachs, Barclays and CIBC, all publicly acknowledged that a tar sands industry without new

pipelines will be smaller than one with them. Shawn McCarthy and Richard Blackwell, "Oil Industry Rebutts Trash Talking Celebrity Critics", *Globe and Mail*, January 15, 2014, <http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/oil-industry-rebutts-trash-talking-celebrity-critics/article16357980/>; Shawn McCarthy, "Rising costs, transport woes threaten to slow oil boom," *Globe and Mail*, June 6, 2014, <http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/canadian-oil-sands-production-forecast-lowered-slightly-for-2030/article19075059/>; "Minister Oliver warned of 'dire consequences' unless more pipelines built: email," *The Hill Times*, February 10, 2014,

²³ Jeff Rubin, "Why, nine years later, Keystone XL's fate is still in limbo," February 7, 2014, <http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/why-nine-years-later-keystone-xls-fate-is-still-in-limbo/article16747622/>.

²⁴ Shawn McCarthy and Richard Blackwell, "Oil industry rebuts 'trash-talking' celebrity critics," January 15, 2014, <http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/oil-industry-rebutts-trash-talking-celebrity-critics/article16357980/>.

²⁵ Barclays Bank, *Global 2014 E&P Spending Outlook*, December 9, 2013.

²⁶ Shawn McCarthy, "Total sets sights on getting oil sands crude to Gulf Coast," March 28, 2013, <http://www.theglobeandmail.com/globe-investor/total-sets-sights-on-getting-oil-sands-to-gulf-coast/article10536822/>.

²⁷ Tar sands crude generates up to 17% more carbon dioxide per barrel than the conventional crude it would likely displace. State, FSEIS, 4.14-31.

²⁸ Incremental emissions are the additional emissions from extracting, transporting, making fuel, and combusting fuel from tar sands compared those emissions for conventionally produced fuels.

²⁹ State, FSEIS, Table 4.14-8. These emissions include the 27.4 MMT CO_{2e} of annual incremental GHG emissions over 50 years, plus construction and land use change emissions.

³⁰ Greenhouse Gas Equivalencies Calculator, U.S. EPA, <http://www.epa.gov/cleanenergy/energy-resources/calculator.html>.

³¹ This analysis considered a more complete picture of Keystone XL's role in driving carbon emissions by analyzing the increased oil production facilitated by Keystone XL and the closely associated increase in global oil consumption that could follow.

³² Total annual lifecycle emissions of tar sands crude transported by Keystone XL multiplied by the project's 50 year lifespan. State, FSEIS, 4.14-4.

³³ In 2007 dollars, the social cost of Keystone XL's incremental 1.4 billion metric ton carbon dioxide impact is between \$80.6 billion and \$114 billion using the administration's SCC figures as a discount rate of 2.5% to 3%. Adjusting to 2014 dollars, that figure rises to between \$90 billion to \$128 billion. Using the same analysis, Keystone XL's total emissions (including combustion), which the FSEIS projects at 168 MMT CO_{2e} per year, or 8.4 billion metric tons CO_{2e} over its 50 year lifespan. According to the Administration's social cost of carbon figures, at a discount rate of 2.5%, those emissions would carry a cost of \$552 billion to \$785 billion over its projected lifetime. State, Final Supplemental Environmental Impact Statement (FSEIS), Table 4.14-8, January 31, 2014; NRDC, *Evaluation of Section 1.4 Market Analysis assumptions*, March 6, 2014, pg. 1, <http://switchboard.nrdc.org/blogs/aswift/Market%20Analysis%20Memo%20Final%203-6-14%29.pdf>.

³⁴ EPA's Response to the Enbridge Oil Spill, U.S. EPA, <http://www.epa.gov/enbridgespill/>.

³⁵ Exxon faces \$2.7 million fine for Arkansas pipeline spill, Reuters, November 6, 2014, <http://www.reuters.com/article/2013/11/07/us-usa-exxon-fine-idUSBRE9A603X20131107>.

³⁶ Officials at both the EPA and State have recognized that tar sands diluted bitumen poses increased risks to water bodies. Recognizing this reality, the National Academy of Sciences has just begun a study that will analyze the challenges associated with cleanup up tar sands crude. State, FSEIS, 4.13-11; EPA, EPA's Response to the Enbridge Oil Spill, <http://www.epa.gov/enbridgespill/>; Elana Schor, Politico, NAS to study spill cleanup for oil sands crude. Partial article available free here: <http://tarsandsolutions.org/in-the-media/nas-to-study-spill-cleanup-for-oil-sands-crude>.

³⁷ Amanda Holpuch, *The Guardian*, South Dakota Sioux tribe calls Keystone XL pipeline approval "act of war," November 17, 2014, <http://www.theguardian.com/environment/2014/nov/17/sioux-tribe-keystone-xl-pipeline-south-dakota-act-of-war>; Rob Capriccioso, *Indian Country Today Media Network*, Exaggerated Consultation Claims, Factual Errors in State Department's Keystone XL Environment Report Rattle Natives, March 15, 2013, <http://indiancountrytodaymedianetwork.com/2013/03/15/exaggerated-consultation-claims-factual-errors-state-departments-keystone-xl-environment>.

³⁸ *Indian Country Today Media Network*, 'They Know Their Lands Better Than We Do': Sally Jewell on Tribal Keystone XL Opposition, December 4, 2014, <http://indiancountrytodaymedianetwork.com/2014/12/04/they-know-their-lands-better-we-do-sally-jewell-keystone-xl-opposition-158132>.

³⁹ TransCanada's SCADA leak detection system will not be able to detect leaks smaller than 1.5%-2% of the 830,000 bpd pipeline's flow rate, or leaks smaller than 523,000 to 697,000 gallons per day. State, FSEIS, 3.13-34.

⁴⁰ John Cushman, Pipeline leak detection still doesn't work, Inside Climate News, January 22, 2014, <http://insideclimatenews.org/content/pipeline-leak-detection-still-doesnt-work>; U.S. Department of Transportation, Final Report: Leak Detection Study, December 10, 2012.

⁴¹ The Whitehouse, Remarks by President Obama and Daw Aung San Suu Kyi of Burma in Joint Press Conference, November 14, 2014, <http://www.whitehouse.gov/the-press-office/2014/11/14/remarks-president-obama-and-daw-aung-san-suu-kyi-burma-joint-press-confe>.

⁴² EIA, U.S. crude exports in April rise to highest level in 15 years, June 16, 2014, <http://www.eia.gov/todayinenergy/detail.cfm?id=16711>; EIA, Crude exports and re-exports continue to rise; some volumes sent to Europe and Asia, October 31, 2014, <http://www.eia.gov/todayinenergy/detail.cfm?id=18631>.

⁴³ State forecast that over half of the refined product from Keystone XL would be exported internationally. State, DSEIS, 1.4-15, March 2013; Elana Schor, U.S. oil just 8% of pipeline's daily haul, TransCanada tells State Dept., E&E News, March 11, 2014, <http://www.eenews.net/stories/1059995926>.

⁴⁴ State, FSEIS, 4.10-15, 4.10-31.

⁴⁵ Bob Keefe, Jobs, Jobs, Jobs: Not From Keystone – From Clean Energy, *Huffington Post*, November 14, 2014, http://www.huffingtonpost.com/bob-keefe/keystone-pipeline-jobs_b_6159120.html.

⁴⁶ In the interest of speeding the transition to a green economy, the CAP calls for an end of public subsidies for new coal fired power plants overseas. Permitting new long-term high-carbon infrastructure domestically would be inconsistent with this policy. White House, *Climate Action Plan*, June 2013, pg. 20, <http://www.whitehouse.gov/sites/default/files/image/president27climateactionplan.pdf>.

⁴⁷ In its 450 ppm scenario, IEA projects global oil consumption to decline to 78 million bpd by 2035 while U.S. consumption declines to 9 million bpd by 2035 (converting 7.14 barrels per ton equivalent), IEA, *World Energy Outlook 2013*, pgs. 503, 585.

⁴⁸ The Administration's decision on Keystone XL is being watched closely by the international community and will undoubtedly be considered a test of its commitment to climate action. John Broder, *European Climate Official Urges Keystone XL Veto*, *New York Times*, February 28, 2013, http://green.blogs.nytimes.com/2013/02/28/european-climate-official-urges-keystone-xl-veto/?_php=true&_type=blogs&_r=0.

⁴⁹ In Copenhagen, Canada committed to reduce its emissions by 17% from its 2005 levels by 2020. However, it is on track to exceed its 2005 emissions in 2020, predominantly due to its expanding tar sands industry. State, FSEIS, 4.14-46; NRDC, *Climate Impacts of the Keystone XL Tar Sands Pipeline*, October 2013, <http://www.nrdc.org/energy/keystone-pipeline/tar-sands-climate-impacts.asp>.

⁵⁰ Canada committed to reduce its annual carbon emissions to 607 MMT CO_{2e} in 2020 (or 17% below its 2005 emissions); however, according to Canadian government forecasts, the country is on track to reach 734 MMT CO_{2e} (in slight excess of its 2005 emissions). State, FSEIS, 4.14-46.

⁵¹ Emissions from Canada's tar sands sector are forecast to increase from 55 MMT CO_{2e} in 2010 to 104 MMT CO_{2e} in 2020. State, FSEIS, 4.14-46; P.J Partington, Clare Demerse, *Context for climate action in Canada*, Pembina, October 2013, <http://www.pembina.org/pub/2486>.