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"Keystone XL Pipeline: Examination of Scientific and Environmental Issues"
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Chairmen Loomis and Stewart, Ranking Members Bonamici and Swalwell and members of the Committee, thank you for today's opportunity to testify on the scientific and environmental issues associated with the Keystone XL pipeline. My name is Anthony Swift. I am a policy analyst for the Natural Resources Defense Council (NRDC). NRDC is a national, nonprofit organization of scientists, lawyers and environmental specialists dedicated to protecting public health and the environment. Founded in 1970, NRDC has more than 1.2 million members and online activists worldwide, serviced from offices in New York, Washington, Los Angeles, San Francisco, Chicago, and Beijing.

Keystone XL presents unresolved pipeline safety issues

In early 2011, NRDC raised concerns that an influx of tar sands on the U.S. pipeline network posed greater risks to pipeline integrity, challenges for leak detection systems and significantly increased impacts to sensitive water resources when spilled.[1] Observing a lack of due diligence by industry as it flooded the aging U.S. pipeline system with thick, heavy diluted bitumen tar sands and proposed a major expansion of tar sands transport on new pipelines like Keystone XL, NRDC called on government regulators to identify risks associated with tar sands pipelines and develop safety regulations to address those risks.[2] Since then, evidence has continued accumulate confirming many of the concerns raised by NRDC – information showing that pipelines moving tar sands are more likely to leak, that leak detection systems are unlikely to detect tar sands

[1] NRDC, Tar Sands Pipeline Safety Risks, February 2011, http://www.nrdc.org/energy/tarsandssafetyrisks.asp.
[2] Id.

spills when they happen, that tar sands spills are significantly more damaging than conventional spills, and that conventional spills response measures are inadequate for containing and cleaning tar sands spills.[3]

Pipelines in the U.S. with longest history moving tar sands diluted bitumen also have worst spill record.

Diluted bitumen has only been moved on the U.S. pipeline system since the late 90s and federal regulators still don't provide data with the specificity to evaluate the safety record of pipelines moving tar sands. But a close look at pipeline incident data from states in the northern Midwest, which have seen the greatest volumes of tar sands diluted bitumen over the longest time period, is alarming. Pipelines in North Dakota, Minnesota, Wisconsin and Michigan spilled 3.6 times as much crude per mile than the national average between 20010 and 2012.[4]

High temperature tar sands pipelines are at greater risk of leaks.

Tar sands pipelines operate at higher temperatures that conventional pipelines and high temperature pipelines are more likely to spill due to external corrosion. We know that high temperature pipelines are more likely to rupture due to external corrosion because a small network of pipelines in southern California has provided us with an on point case study. Pipelines serving the Kern River field in California have transported thick heavy crudes to nearby refineries for several decades. In a ten year study of its pipeline network, California regulators found:

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[3] Pipeline and Hazardous Materials Safety Administration (PHMSA), Leak Detection Study – DTPH56-11-D-000001, December 10, 2012, http://www.phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Files/Press%20Release%20Files/Leak%20Detection%20Study.pdf; Elizabeth McGowan, Lisa Song, The Dilbit Disaster: Inside The Biggest Oil Spill You've Never Heard Of, InsideClimate News, July 26, 2012, http://insideclimatenews.org/news/20120626/dilbit-diluted-bitumen-enbridge-kalamazoo-river-marshall-michigan-oil-spill-6b-pipeline-epa; Anthony Swift, Kalamazoo One Year Later: Anatomy of a Tar Sands Spill, July 26, 2011, http://switchboard.nrdc.org/blogs/aswift/kalamazoo_one_year_later_anato.html.

[4] North Dakota, Minnesota, Wisconsin, and Michigan have 6,416 miles of crude pipeline, or about 12.1 percent of the U.S. total. PHMSA. State Mileage by Commodity Statistics. 2013. primis.phmsa.dot.gov/comm/reports/safety/MI_detail1.html?nocache=8335#_OuterPanel_tab_4. Meanwhile, between 2007 and 2010 pipelines in North Dakota, Minnesota, Wisconsin, and Michigan spilled 27,911 barrels of crude in underground leaks, or 40.2% of the 63,987 barrels of crude spilled in the United States from 2010-12. Pipeline and Hazardouns Safety Materials Administration (PHMSA), Data and Statistics, Crude pipelines 2010-2012, http://www.phmsa.dot.gov/pipeline/library/data-stats.

> "Operating temperature had a significant effect on leak incident rates. Generally, the higher the operating temperature, the higher the resulting incident rate." California State Fire Marshalls, Pipeline Risk Assessment, 1993.[5]

The California study took into account other factors and found that regardless of pipeline age, coating, or pipeline materials, pipelines with higher temperatures had more spills due to external corrosion.[6] This study showed that pipelines operating above 100°F were had a higher incidence of ruptures due to external corrosion. [7] Pipelines operating at in the range of 130°F to 159°F were nearly 24 times more likely to leak due to external corrosion and six times more likely to leak from any cause than pipelines operating under 70°F.[8] In its draft Supplemental Environmental Impact Statement (SEIS), State indicated that Keystone XL will operate at a temperature range between 130°F and 150°F.[9]

This is not a new issue. Enbridge's tar sands spill into the Kalamazoo River in 2010, resulting in the largest and most expensive onshore pipeline accident in U.S. history, was caused by external corrosion.[10] Moreover, much of Enbridge's line 6B, which was one of the first pipelines to move significant volumes of tar sands diluted bitumen into the United States, had to be replaced due to hundreds of corrosion abnormalities. NRDC highlighted the risk of external corrosion on high temperature diluted bitumen tar sands pipelines in comments to U.S. pipeline regulators in early 2011.[11] And yet, industry's silence on the general risk of high temperature tar sands pipelines and external corrosion speaks volumes.

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[5] California State Fire Marshalls, Pipeline Risk Assessment, 1993. Pg. 68, http://osfm.fire.ca.gov/pipeline/pdf/publication/pipelineriskassessment.pdf
[6] Id.
[7] Id.
[8] Id.
[9] State Department, Keystone XL Draft Supplemental Environmental Impact Statement, May 1, 2013, 4.13-22 http://keystonepipeline-xl.state.gov/documents/organization/205621.pdf.
[10] National Transportation Safety Board, Enbridge Incorporated Hazardous Liquid Pipeline Rupture and Release, July 10, 2012, http://www.ntsb.gov/news/events/2012/marshall_mi/index.html.
[11] Natural Resources Defense Council et. al., Comments to the Office of Pipeline Safety In response to the Advanced Notice of Proposed Rulemaking Titled "Safety of On-Shore Hazardous Liquid Pipelines", February 18, 2011, http://switchboard.nrdc.org/blogs/sclefkowitz/NRDC%20et%20al%20Comments%20Proposed%20Rulemaking%20On-Shore%20Hazardous%20Liquid%20Pipelines%20Feb%2018%202011%20rev.pdf.

Leak detection systems miss 19 out of 20 spills.

In Tar Sands Safety Risks, NRDC identified a higher risk of false alarms for leak detection systems in pipelines moving diluted bitumen tar sands.[12] And indeed, the National Transportation Safety Board's investigation of the Kalamazoo tar sands spill found that a seventeen hour delay from the time of the rupture and their final shutoff of the pipeline was due to the belief by Enbridge's control center that the leak detection system was giving a false alarm.[13]

However, several new reports suggest that pipeline leak detection systems are far blunter instruments than many operators care to admit. An investigation of pipeline accident reports from the last ten years shows that leak detection systems miss 19 out of 20 spills.[14] This problem isn't limited to small spills – these systems also miss 4 out of 5 spills greater than 42,000 bpd.[15] A Congressionally mandated study of leak detection systems by federal regulators at the Pipeline and Hazardous Materials Safety Administration identified major gaps in leak detection systems and U.S. regulations.[16]

Communities have a right to be concerned by the poor state of leak detection technology as they face industry proposals to move tar sands in new or aging pipelines - particularly ones that transverse sensitive water resource.

Tar sands diluted bitumen spills are more damaging and difficult to clean.

The 2010 Enbridge tar sands spill into the Kalamazoo River highlighted an industry that was unprepared to address the unique challenges associated with tar sands diluted bitumen spills. Nearly three years after Enbridge spilled a million gallons of tar sands crude into the Kalamazoo

[12] NRDC, Tar Sands Pipeline Safety Risks, February 2011, http://www.nrdc.org/energy/tarsandssafetyrisks.asp.
[13] National Transportation Safety Board, Enbridge Incorporated Hazardous Liquid Pipeline Rupture and Release, July 10, 2012, http://www.ntsb.gov/news/events/2012/marshall_mi/index.html.
[14] Lisa Song, Few Oil Pipeline Spills Detected by Much-Touted Sensors, InsideClimate News, Sept. 19, 2012, http://www.bloomberg.com/news/2012-09-19/oil-pipeline-spills-go-undetected-by-much-touted-sensors.html.
[15] Id.
[16] Pipeline and Hazardous Materials Safety Administration (PHMSA), Leak Detection Study – DTPH56-11-D-000001, December 10, 2012, http://www.phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Files/Press%20Release%20Files/Leak%20Detection%20Study.pdf.

River watershed and almost a billion dollars has been spent on cleanup, and 38 miles of that river are still contaminated.[17]

Tar sands diluted bitumen is a mixture of very light petrochemicals and very heavy bitumen. Once spilled in a waterbody, the light petrochemicals – including toxins such as benzene and toluene - gas off, leaving the heavy bitumen to sink.[18] During the Enbridge tar sands spill in Kalamazoo, Michigan, significant volumes of heavy crude sank below the water's surface and traveled along the river bed.[19] EPA's on-site spill coordinator Mark Durno described the unique nature of the spill:

> "Where we thought we might be winding down our piece of the response, we're actually ramping back up. The submerged oil is a real story -- it's a real eye-opener. … In larger spills we've dealt with before, we haven't seen nearly this footprint of submerged oil, if we've seen any at all."[20]

In another interview, Mr. Durno observed:

> "This was the first time the EPA or anyone has done a submerged cleanup of this magnitude. I would never have expected... that we would have spent two or three times longer working on the submerged oil than surface oil. I don't think anyone at the EPA anticipated that, I don't think anyone at the state level anticipated that, I don't think anyone in industry anticipated that."[21]

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[17] EPA, In the Matter of Enbridge Energy et. al., Order for Removal Under Section 311(c) of the Clean Water Act, October 3, 2012, http://www.epa.gov/enbridgespill/pdfs/20121003-proposed-order-for-removal.pdf.
[18] Lisa Song, A Dilbit Primer: How It's Different from Conventional Oil, InsideClimate News, June 26, 2012, http://insideclimatenews.org/news/20120626/dilbit-primer-diluted-bitumen-conventional-oil-tar-sands-Alberta-Kalamazoo-Keystone-XL-Enbridge.
[19] Elizabeth McGowan, Lisa Song, The Dilbit Disaster: Inside The Biggest Oil Spill You've Never Heard Of, InsideClimate News, July 26, 2012, http://insideclimatenews.org/news/20120626/dilbit-diluted-bitumen-enbridge-kalamazoo-river-marshall-michigan-oil-spill-6b-pipeline-epa.
[20] Anthony Swift, Kalamazoo One Year Later: Anatomy of a Tar Sands Spill, July 26, 2011, http://switchboard.nrdc.org/blogs/aswift/kalamazoo_one_year_later_anato.html.
[21] Mitchell Anderson, Spill from Hell, The Tyee, March 5, 2012, http://thetyee.ca/News/2012/03/05/Diluted-Bitumen/.

One could argue that companies planning to move billions of barrels of tar sands across sensitive water resources by pipeline should have done due diligence before moving ahead. It is much harder to defend the fact that over two years after the Kalamazoo tar sands spill, neither industry nor regulators have evaluated the risks posed by diluted bitumen spills to the environment or developed measures to mitigate those risks.

Conventional spill response methods have proven ineffective for tar sands diluted bitumen spills.

During the Kalamazoo tar sands spill, conventional cleanup methods failed, and in some cases made the spill worse.[22] EPA officials were forced to improvise, using extreme measures to recover oil from riverbeds and the nearby Morrow Lake.[23] The spill cleanup continues, but now EPA officials have focused on ensure new areas are not contaminated, concluding that it would be too damaging to fully clean the nearly 40 miles of the Kalamazoo River that are already contaminated by tar sands.[24]

Over two years ago, NRDC called for an evaluation of the risks of tar sands spills and improved spill response planning for diluted bitumen spills in close consolation with locate emergency response teams and community. Unfortunately, neither regulators nor industry has made progress in evaluating or addressing the risks caused by tar sands spills. The extent of damage done to the region's watershed may not be known for years to come. Michigan State University Biologist Stephen Hamilton concluded:

[22] Lisa Song, Cleanup of 2010 Mich. Dilbit Spill Aims to Stop Spread of Submerged Oil, InsideClimate News, March 27, 2013, http://insideclimatenews.org/news/20130327/cleanup-2010-mich-dilbit-spill-aims-stop-spread-submerged-oil.

[23] Anthony Swift, Kalamazoo One Year Later: Anatomy of a Tar Sands Spill, July 26, 2011, http://switchboard.nrdc.org/blogs/aswift/kalamazoo_one_year_later_anato.html.

[24] EPA, In the Matter of Enbridge Energy et. al., Order for Removal Under Section 311(c) of the Clean Water Act, October 3, 2012, http://www.epa.gov/enbridgespill/pdfs/20121003-proposed-order-for-removal.pdf.

"This kind of crude oil is a complex mix of hundreds of compounds—some known to be toxic—that has not been studied much. We just don't understand the consequences well enough."[25]

Keystone XL is critical for tar sands expansion and associated climate emissions

The Keystone XL tar sands pipeline is a lynchpin for the expansion of the tar sands bitumen production in Canada. On this point, market analysts, voices in the Albertan tar sands industry, and the environmental community agree. Industry's plan to triple tar sands production by 2030, and the significant environmental impacts associated with that plan, cannot take place without the approval of the Keystone XL tar sands pipeline as a major avenue to the needed new markets for tar sands crude.[26]

Alternative pipeline and rail tar sands transportation proposals will not allow for the same level of tar sands production expansion and the associated climate emissions as the Keystone XL pipeline. As analysts at the CIBC bank in Canada have observed, tar sands oil producers in Alberta need every proposed tar sands infrastructure project – including Keystone XL - to move forward in order to meet industry production expansion goals.[27] For the following reasons, many of these proposed tar sands transportation projects are unlikely to move forward.

Pipelines to the west and east coasts are stalled by entrenched public and First Nations opposition.[28] Many of these proposals will require the use of aging pipelines to move tar sands through communities and sensitive watersheds.[29] After the rupture of the Pegasus pipeline in the

[25] David Hasemeyer, EPA Worries Dilbit Still a Threat to Kalamazoo River, More Than 2 Years After Spill, InsideClimate News, October 12, 2012, http://insideclimatenews.org/news/20121011/epa-dilbit-enbridge-6b-pipeline-kalamazoo-river-cleanup-tar-sands-oil-sands-keystone-xl-landowners-environment?page=3.
[26] Canadian Association of Petroleum Producers (CAPP), Crude Oil, Forecasts, Markets and Pipelines, June 2012, pg. 38, http://www.capp.ca/forecast/Pages/default.aspx.
[27] Vanderklippe, Nathan. "Glut of Cheap Crude Raise Doubts Over Oil Sands Expansion." *Globe and Mail* 17 August 2012. http://www.theglobeandmail.com/globe-investor/pipelines-glut-of-cheap-crude-raise-doubts-over-oil-sands-expansion/article4485891/.
[28] Nathan Lemphers, The Climate Impacts of the Proposed Keystone XL Oilsands Pipeline, January 17, 2013, pgs. 8-9, http://www.pembina.org/pub/2407.
[29] The proposed reversal of the Portland Montreal pipeline through New England and TransCanada's conversion of its natural gas pipeline system through its east coast both require the use of pipeline systems which are over fifty years old.

Arkansas community of Mayflower, the risks of these projects is becoming more apparent to the communities they would cross.

In its most recent draft supplemental environmental impact statement, while the State Department acknowledged that tar sands is significantly more carbon intensive over its lifecycle than conventional crude, the agency mistakenly suggested that rail could provide an economically feasible alternative to Keystone XL.[30]

The State Department made the prediction that tar sands by rail was on the verge of rapid expansion in 2011.[31] State's forecast proved inaccurate then and its 2013 forecast on the viability of rail continues to be substantively flawed.

A recent investigation by Reuters has debunked the State Department's argument that industry's expansion plan for tar sands production, and the substantial climate emissions associated with it, can be fueled by rail if Keystone XL is rejected. [32] Reaching out to many of the same industry sources the State Department cited in its draft Supplemental Environmental Impact Statement (SEIS), the Reuters investigation demonstrates the errors in State's analysis that led it to dramatically overstate the potential of rail to move tar sands.[33]

State's prediction that 200,000 bpd of heavy Canadian tar sands would reach the Gulf by rail by the end of the year was based on a misinterpretation of industry data, according to the sources that State cited. As the Reuters story reported:

> "The State Department report cites two industry studies to predict that 200,000 barrels a day or more of Canadian heavy crude oil will reach Gulf Coast refiners by train by the

[30] The State Department found that the crudes expected to be transported on Keystone XL were likely to be up to 19 percent more greenhouse gas intensive on a well-to-wheel basis when compared to reference crudes. State Department, Draft Supplemental Environmental Impact Statement, Appendix W: Life-Cycle Greenhouse Gas Emissions of Petroleum Products from WCSB Oil Sands Crudes Compared with Reference Crudes, pg. 60, March 1, 2013, http://keystonepipeline-xl.state.gov/documents/organization/205563.pdf.
[31] EnSys, Keystone XL - No Expansion Update, August 12, 2011, pgs. 52-53, 75, www.keystonepipeline-xl.state.gov/documents/organization/182263.pdf.
[32] Patrick Ruckers, Analysis: Oil-by-train may not be substitute for Keystone pipeline, Reuters, April 18, 2013 http://www.reuters.com/article/2013/04/18/us-usa-keystone-railroads-idUSBRE93H07I20130418.
[33] Patrick Ruckers, Analysis: Oil-by-train may not be substitute for Keystone pipeline, Reuters, April 18, 2013 http://www.reuters.com/article/2013/04/18/us-usa-keystone-railroads-idUSBRE93H07I20130418.

> end of this year. Officials used that figure to bolster their argument that the oil industry has already decided rail is a good option for moving oil sands crude. 'Limitations on pipeline transport would force more crude oil to be transported via other modes of transportation, such as rail, which would probably (but not certainly) be more expensive,' the State Department said."[34]

The report goes on to show that State's industry sources disagree:

> "But one of the sources for the 200,000 barrels per day estimate, Calgary investment bank Peters & Co, says its forecast was misunderstood as being for just Gulf Coast-bound oil when it included shipments to Eastern Canada and other refiners. 'We haven't tracked exactly where those barrels are going,' said Tyler Reardon, a spokesman for Peters & Co." [35]

Where that 200,000 bpd is likely to go and whether its light or heavy is very important. Keystone XL would bring heavy tar sands from northern Alberta to the Gulf Coast where refineries have the equipment to handle heavy crude. Refineries in the East Coast of the United States and Canada only have a very limited capacity to process heavy crude – totaling less than a quarter of the potential volume of Keystone XL.

The key question is whether it's economically feasible to move heavy tar sands crude to the Gulf Coast refineries by rail. The answer appears be no. In a year when Gulf Coast prices for heavy Canadian tar sands were up to $50 a barrel higher than those in the Midwest, heavy Canadian crude movements to the Gulf by rail only increased from 15,000 bpd to 25,000 bpd between 2011 and 2012 – still a fraction of a percent of total production.[36]

The relative lack of tar sands crude moving by rail contrasts with a significant increase in the movement of light crude from North Dakota by rail. From 2009 to 2013, transport of oil by rail

[34] Id.
[35] Id.
[36] Id.

in North Dakota increased from a few thousand barrels a day to over half a million.[37] In January 2013, over two thirds of light crude produced in North Dakota was transported to refineries by rail.[38] As they turned to rail, domestic light oil producers have even rejected major pipeline proposals – including Oenok's 200,000 barrel per day Bakken pipeline.[39] When analysts talk about the upsurge of rail transport in the United States and southern Canada, this is what they're referring to – an enormous expansion of light crude from the Bakken.

There are two major reasons why tar sands producers haven't turned to rail to move their product to market. First, it is significantly more expensive for them to do so, and second, they have significantly tighter profit margins than Bakken producers.

Tar sands diluted bitumen is significantly more expensive to move by rail than Bakken light crude. There are a number of reasons for this:

- The tar sands are about 1,000 miles farther away from refinery markets than the Bakken oil fields.
- Trains moving light crude can carry nearly 30% more crude than trains moving heavy tar sands diluted bitumen.[40]
- Moving tar sands requires specialized rail offloading terminals, onloading terminals and heated rail cars.[41]

All of these factors increase the cost of moving a barrel of tar sands to Gulf Coast refineries. Shipping a barrel of tar sands diluted bitumen to the Gulf is currently costing tar sands producers $31 a barrel.[42] Moving it by pipeline only costs $8 to $9.50 a barrel.[43]

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[37] North Dakota Pipeline Authority, U.S. Williston Basin Rail Export Estimates, April 1, 2013, http://ndpipelines.files.wordpress.com/2012/04/ndpa-website-data13.xlsx.
[38] Justin Miller, Wayzata firm to expand N.D. rail terminal for Bakken crude oil, Star Tribune, March 15, 2013, http://www.startribune.com/business/198551531.html?refer=y.
[39] Chicago Tribune, Oenoek Update 1: Cancels 200,000 bpd Bakken Project, Nov. 1, 2012, http://articles.chicagotribune.com/2012-11-27/news/sns-rt-oneok-bakkenpipeline-update-1l1e8mrbzd-20121127_1_overland-pass-pipeline-bakken-crude-express-pipeline-oneok-partners-lp.
[40] Light crude train cars can move up to 700 barrels while heavy train cars can only move 550 barrels. Doug Wilkins, Integrated Midstream Solutions, TD Securities 'Crude By Rail Forum, pg. 11, October 2, 2012.
[41] *Id.*

Tar sands producers also have much tighter margins than conventional Bakken producers. Tar sands crude is a lower value commodity than Bakken light crude. In addition, it has significantly higher production prices. With breakeven production costs ranging from $60 a barrel to over $100 a barrel – and increasing by each year – new tar sands projects cannot profitably bear significantly greater transportation costs associated with rail.[44]

The fact that the rejection of Keystone XL would reduce tar sands production is acknowledged by Canadian officials. Joe Oliver, Canada's Natural Resources Minister, recently observed that costs and logistical challenges make moving tar sands by rail a poor choice for producers, noting that a rejection of Keystone XL would put a dent in tar sands production.[45]

Market analysis by The Goodman Group (TGG) also identified fundamental flaws in the analysis that led State to conclude that Keystone XL would have limited impact on tar sands production and the climate impacts associated with it. [46] TGG concluded that State's draft environmental review "is deeply flawed and not a sound basis for decision-making."[47] Based on its analysis, TGG concludes "that KXL, and specifically its impact on tar sands logistics costs and crude prices, will have a significant impact on tar sands expansion under a very broad range of conditions and assumptions."[48] TGG stated that a conservative and credible estimate of Keystone

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[42] Nicole Mordant, Analysis: Crude-by-rail carves out long-term North American niche, Reuters, Nov. 4, 2012, http://www.reuters.com/article/2012/11/04/us-railways-oil-northamerica-idUSBRE8A30AX20121104.

[43] State Department, Supplemental EIS, Market Analysis, 1.4-49, 50, March 1, 2013.

[44] Energy Conservation Resources Board, ST98-2012 Alberta's Energy Reserves 2011 and Supply/Demand Outlook 2012–2021, pg. 3-30, June 2012; Pembina Institute: January 28, 2013 "Beneath the Surface" Report (Pg. 57) http://www.pembina.org/pub/2404; Katusa, Marin. "Oil Price Differentials: Caught Between the Sands and the Pipelines." *Forbes* 6 June 2012. Web. http://www.forbes.com/sites/energysource/2012/06/21/oil-price-differentials-caught-between-the-sands-and-the-pipelines/3/

[45] Patrick Ruckers, Crude-by-rail no substitute for Keystone XL – Energy Minister, Rueters, April 24, 2013, http://www.reuters.com/article/2013/04/24/usa-keystone-rail-idUSL2N0DB23P20130424.

[46] Ian Goodman, Report evaluating the adequacy of the Keystone XL (KXL) Draft Supplemental Environmental Impact Statement (DSEIS) Market Analysis, April 22, 2013, Section 7.0, http://switchboard.nrdc.org/blogs/aswift/Comments%20of%20Sierra%20Club%2C%20et.%20al.%2C%20on%20the%20Keystone%20XL%20DSEIS.4.22.13.pdf.

[47] Ian Goodman, Report evaluating the adequacy of the Keystone XL (KXL) Draft Supplemental Environmental Impact Statement (DSEIS) Market Analysis, April 22, 2013, Section 7.0, http://switchboard.nrdc.org/blogs/aswift/Comments%20of%20Sierra%20Club%2C%20et.%20al.%2C%20on%20the%20Keystone%20XL%20DSEIS.4.22.13.pdf.

[48] Id.

XL's impact on tar sands expansion would be 830,000 bpd based on its evaluation of current market conditions.[49]

Keystone XL is a linchpin for tar sands production and associated climate emissions

Infrastructure is needed for tar sands expansion, and it is clear to most observers that the permit decision for Keystone XL plays a critical role in the future of tar sands production and the greenhouse gas emissions associated with it. The Keystone XL tar sands pipeline is a fundamental element in the oil industry's plan to triple production of tar sands oil from 2 million barrels per day (bpd) to 6 million bpd by 2030, and in the longer term to hike production to more than 9 million bpd.[50] The U.S. decision on whether to approve the Keystone XL pipeline will have a direct bearing on whether the tar sands industry can attain those goals, with their attendant increases in carbon pollution. Keystone XL would lock the U.S. into a long-term commitment to an energy infrastructure that relies on dirty oil.

Producing tar sands generates at least three times as much carbon as conventional crude. The Environmental Protection Agency (EPA) estimates that simply replacing the conventional crude with tar sands from Keystone XL would increase U.S. carbon emissions by as much as 935 million metric tons CO_2e during the pipeline's 50 year lifespan.[51] A recent report evaluating the project's total carbon emissions shows that Keystone XL would be responsible for at least 181 million metric tons of carbon dioxide c CO_2e of emissions each year, comparable to the tailpipe emissions from more than 37.7 million cars or 51 coal-fired power plants.[52] The first step in addressing climate change is to stop making the problem worse – and that means rejecting the Keystone XL tar sands pipeline and the higher carbon emissions associated with it.

[49] Id.
[50] NRDC, Climate Impacts from the Keystone XL Tar Sands Pipeline, February 8, 2013, http://switchboard.nrdc.org/blogs/ddroitsch/FINAL%20NRDC%20Keystone%20XL%20climate%20impacts%20memo%20Feb%208%202013.pdf.
[51] Cynthia Giles, Environmental Protection Agency, April 22, 2013, http://epa.gov/compliance/nepa/keystone-xl-project-epa-comment-letter-20130056.pdf.
[52] Oil Change International, Cooking the Books: How the State Department Analysis Ignores the True Climate Impacts of the Keystone XL Pipeline, April 16, 2013, http://priceofoil.org/2013/04/16/cooking-the-books-the-true-climate-impact-of-keystone-xl/.

The substantial risks of the Keystone XL tar sands pipeline outweigh its marginal benefits. Keystone XL would enable a substantial expansion of tar sands expansion and substantial climate pollution associated with it. The pipeline would endanger critical jobs on ranches and farms in the Great Plains states in order to transport tar sands to the Gulf Coast where it can be refined and exported. In exchange for 35 permanent jobs, Keystone XL would pose a permanent risk to American communities, sensitive water resources and agricultural industry.[53] We need to protect those jobs, not put them at risk of the kind of tar sands blowout that has poisoned nearly 40 miles of the Kalamazoo River in Michigan or the recent spill in Arkansas, which sent up to 420,000 gallons of tar sands oil flowing through the community of Mayflower.[54]

The Keystone XL tar sands pipeline would undermine U.S. efforts to reduce its carbon emissions, threaten communities and sensitive water resources, and increase refinery emissions in the Gulf Coast in order to provide tar sands producers a means of exporting their product on the international market. This tradeoff is not in the nation's interest. TransCanada's application to build the Keystone XL pipeline should be rejected.

[53] State Department, Draft Supplemental Impact Statement Executive Summary, pg. 13-14, March 1, 2013.
[54] National Response Center, Report 104298, March 30, 2013, http://www.nrc.uscg.mil/reports/rwservlet?standard_web+inc_seq=1042498.