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I. Introduction

Mr. Chairman, Ranking Member Corker, members of the Committee, it is an honor to appear before you today. My name is Michael Brune, and I am the Executive Director of the Sierra Club.

The Sierra Club, and more than two million people who submitted comments last week to the U.S. State Department, firmly believe that the Keystone XL tar sands export pipeline is not in the national interest.

In 2009, President Obama made a commitment to reduce U.S. greenhouse gases by 17 percent by 2020. The Obama administration put this forward in Copenhagen as our country's share of a global effort to limit climate change to no more than two degrees Celsius, or 3.6 degrees Fahrenheit—the target scientists tell us may be safe.

Achieving this goal, which has been unanimously agreed on at a global level, is central to the success of President Obama's Climate Action Plan,[1] announced in June of last year.

It is therefore shocking to realize that the State Department failed to take this target into account when it evaluated the climate impacts of the Keystone XL pipeline.

By avoiding any consideration of climate safety, the State Department report is blindingly clear on one point, if only by implication: The Keystone XL tar sands pipeline is not compatible with a climate-safe world.

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[1] *The President's Climate Action Plan*, Executive Office of the President, June 2013, Accessed from: <http://www.whitehouse.gov/sites/default/files/image/president27 sclimateactionplan.pdf>. [11 March 2014].

Last week, Secretary John Kerry issued instructions to all U.S. diplomats and employees around the world on combating climate change. *"Lead by example through strong action at home and abroad,"*[2] was his first directive to his staff. America can and should lead on climate, by saying no to this polluting pipeline, and by saying yes to clean energy and the many more jobs it will create and the security it will bring for us here at home.

If America, and the world, are going to meet the challenge of climate change, we must face the conclusion of climate science that the vast majority of proven fossil fuel reserves will need to be left in the ground if we are to limit warming to less than 2 degrees Celsius, or 3.6 degrees Fahrenheit. Given this clear science, it makes no sense to permit a pipeline that would facilitate the extraction of some of the dirtiest, most expensive oil on the planet. We have to start stopping somewhere.

Keystone XL would significantly exacerbate climate pollution because it would increase the development of the tar sands substantially. A report just last week from the UK-based organization Carbon Tracker showed that Keystone XL would enable additional production of roughly 500,000 barrels per day and trigger the emissions equivalent of building 46 new coal plants.[3]

Put another way, the additional emissions triggered by Keystone XL over the next 35 years would be roughly equivalent to all the carbon emissions of the United States in 2013.[4] That sounds very significant to me.

Proponents of Keystone XL like to say that industry will inevitably develop Alberta's tar sands, so even a rejection of the pipeline would make no difference. This has always been Goliath's argument to David: You can't make a difference, so don't even try. Americans know, though, that we can make a difference. They said we couldn't put a man on the moon, but we did.

Like many of you, I am a parent, and I am deeply concerned about the world we are leaving for all our children. One of the most important lessons I try to teach my kids is the need to set goals, and to keep them in mind over time as you strive to achieve them. Our country has a clear, science-based, laudable goal to limit global warming. We must keep that goal in mind and recognize that achieving it is inconsistent with permitting the Keystone XL pipeline.

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[2] Revkin, Andrew C., "Kerry Orders U.S. Diplomats to Press Case for Climate Action," *The New York Times,* March 10, 2014. Accessed from: <http://dotearth.blogs.nytimes.com/2014/ 03/10/kerry-orders-u-s-diplomats-to-press-case-for-climate-action/?_php=true&_type=blogs&_r=0>. [11 March 2014].

[3] Kretzmann, Steve, "Did the State Department Manipulate Facts to Support Keystone XL?" Accessed from: <http://priceofoil.org/2014/03/06/state-department-manipulate -facts-support-kxl/>. [12 March 2014].

[4] "Keystone XL Pipeline (KXL): The 'Significance' Trap," *Carbon Tracker Initiative*, 3 March 2014. Accessed from: <http://www.carbontracker.org/wp-content/uploads/2014/03/Kxl-The-Significance -Trap_FINAL_03_03_2014.pdf>. [10 March 2014].

II. Building the Keystone pipeline is incompatible with the level of emissions reductions necessary to avoid catastrophic climate change.

It is now clear from industry reports and analysis that building the Keystone XL Pipeline only makes sense in a world where the United States fails to meet its climate goals, and oil prices stay high partly as a result of this failure. If Environmental Resources Management, the consulting group that prepared the State Department's Final Supplemental Environmental Impact Statement (FSEIS) for Keystone XL, had considered a scenario where the United States together with other countries achieves our climate goals, the Keystone XL pipeline would have been shown to be both uneconomic and disruptive to the climate.

The FSEIS used three future U.S. energy-demand scenarios developed by the Department of Energy. None of these scenarios modeled a world in which the United States meets its stated goal of limiting climate change to less than two degrees Celsius, or 3.6 degrees Fahrenheit, despite the fact that even these flawed models revealed that the carbon impact of the pipeline could equal as much as 5.7 million cars each year.[5] According to the Carbon Tracker Initiative, the projected U.S. oil demand for 2035 in the FSEIS is 68 to 86 percent above the safe climate scenario modeled by the International Energy Agency.[6]

Additionally, the FSEIS analysis is at odds with Goldman Sachs, Citi, and other mainstream oil industry analysts.[7] Carbon Tracker substituted the data that those analysts use rather than a "hypothetical value" used by State, and found that the KXL pipeline triggers emissions would be on a par with building 46 new coal plants.[8]

Finally, all of the scenarios used by the State Department in the FSEIS would place us on a path to six degrees Celsius, or 11 degrees Fahrenheit, of global warming. International Energy Agency Chief Economist Fatih Birol said recently that a six-degree Celsius temperature rise would have "catastrophic implications."[9]

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[5] Kretzmann, Steve, "Kerry's State Department Ignored Obama's Climate Action Plan," Oil Change International, 17 February, 2014. Accessed from: <http://priceofoil.org/2014/02/17/kerrys-state -department-ignored-obamas-climate-action-plan/> [10 March 2014].

[6] "Keystone XL Pipeline (KXL): The 'Significance' Trap," *Carbon Tracker Initiative*, 3 March 2014. Accessed from: <http://www.carbontracker.org/wp-content/uploads/2014/03/Kxl-The-Significance -Trap_FINAL_03_03_2014.pdf>. [10 March 2014].

[7] Goldman Sachs, 380 Oil Projects to Change the World, April 2013; Citi, Global Vision 2012; Rystad Energy, UCUBE, Accessed from: <http://www.rystadenergy.com/Databases/UCube>. [11 March 2014].

[8] Kretzmann, Steve, "Did the State Department Manipulate Facts to Support Keystone XL?" Accessed from: <http://priceofoil.org/2014/03/06/state-department-manipulate-facts -support-kxl/> and http://www.epa.gov/cleanenergy/energy-resources/ calculator.html assuming 30 year coal plant life [11 March 2014].

[9] Kretzmann, Steve, "Kerry's State Department Ignored Obama's Climate Action Plan," Oil Change International, 17 February, 2014. Accessed from: <http://priceofoil.org/2014/02/17/kerrys-state -department-ignored-obamas-climate-action-plan/>. [11 March 2014]; World Energy Outlook, International Energy Agency, 5, December 2011. Accessed from:

Similarly, the FSEIS scenarios link the economic viability of tar sands to a scenario of rising oil prices that is unlikely to occur if the world begins to seriously reduce greenhouse gas (GHG) emissions. The long-term viability of oil sands production is closely linked to rising oil prices (which are underpinned by a consistent growth in global oil demand).[10]

Even leaving aside the impact of effective climate policies, oil analysts don't agree with the high prices projected in the report. The FSEIS projects oil prices to be in excess of $100 per barrel in 2020[11], but the current futures price for WTI crude is $79.13 by December 2019.[12] The International Energy Agency similarly estimates that oil prices will decline by about $20 a barrel over the next five years.[13]

III. Keystone XL is a linchpin to tar sands development.

Industry analysts are clear that the Keystone XL pipeline is a linchpin to tar sands development. If the President approves the pipeline, he will be effectively approving the further development of the tar sands.

In February of 2013, RBC Dominion Securities said: "The growth envisioned in Canada's oil sands is likely to be temporarily deferred in the event that Keystone XL is not approved. Our analysis would suggest that up to 450,000 bbl/d—or one-third, of Canada's oil sands growth could be deferred in the 2015-17 timeframe."[14]

The International Energy Agency's 2013 World Energy Outlook[15] (November 2013), states that the oil industry's plan for tar sands expansion "is contingent on the construction of major new pipelines to enable the crude to be exported to Asia and the

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<http://www.iea.org/publications /worldenergyoutlook/pressmedia/quotes/7/>. [10 March 2014].

[10] "Keystone XL Pipeline (KXL): The 'Significance' Trap," *Carbon Tracker Initiative*, 3 March, 2014. Accessed from: <http://www.carbontracker.org/wp-content/uploads/2014/03/Kxl-The-Significance -Trap_FINAL_03_03_2014.pdf>. [10 March 2014].

[11] "Figure 1.4.4-8: Reference Case WCS Prices by Pipeline Scenario," Final *Supplemental Environmental Impact Statement: Keystone XL Project*, U.S. Department of State Bureau of Oceans and International Environmental and Scientific Affairs, January 2014. Accessed from: <http://keystonepipeline-xl.state.gov/documents/organization/221147.pdf>. [10 March 2014].

[12] Crude Oil Future Quotes: Globex, CME Group. Accessed from: <http://www.cmegroup.com/trading/energy/crude-oil/light-sweet-crude.html>. [11 March 2014].

[13] Swift, Anthony, "International Energy Agency Links Keystone XL Decision to Significant Tar Sands Expansion," *Switchboard: NRDC Staff Blog*, November 13, 2013. Accessed from: <http://switchboard.nrdc.org/blogs/aswift/international_energy_agency_li.html>. [10 March 2014].

[14] "Energy Insights Keystone XL—Weighing the Outcomes," RBC Capital Markets, February 11, 2013. Accessed from: <http://dir.rbcinvestments.com/pictures/account-barnaby.ross/energy%20insights%20-%20rbc%20cm%20-%2002%2011%202013.pdf>. [March 7, 2014].

[15] World Energy Outlook 2013, International Energy Agency, November 12, 2013. Accessed from: <http://www.worldenergyoutlook.org/publications/weo-2013/>. [March 10, 2014].

United States."[16] They later add that, "In Canada, if the controversies over the Keystone XL pipeline and the pipelines from Alberta to the British Columbia coast were to be resolved quickly, oil sands production could easily grow 1 Mbd (million barrels per day) higher than we project."[17]

A recent working paper by the Stockholm Environmental Institute analyzed a number of scenarios to answer the question of how the proposed "Keystone XL might affect the global oil market by increasing supply, decreasing prices, and thus increasing global oil consumption."[18] The study concludes that the "approval of the Keystone XL pipeline could lead (depending on assumptions about how much of the oil would otherwise make it to market) to an increase in global GHG emissions four times as big as prior analyses have concluded and potentially counteract some of the flagship emission *reduction* policies of the U.S. government."[19]

In December 2013, Barclays Bank released its "Global 2014 E&P Spending Outlook" with its projections and recommendations for the new year. It stated: "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."[20]

Goldman Sachs, in a 2013 research report, entitled, *Getting oil out of Canada: Heavy oil diffs expected to stay wide and volatile*, wrote: "In the event that either the Keystone XL newbuild or Alberta Clipper expansion (or both) encounter further delays, we believe risk would grow that Canadian heavy oil/oil sands supply would remain trapped in the province of Alberta, putting downward pressure on WCS pricing on both an absolute basis and versus WTI."[21]

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[16] Cushman, John H. Jr., "IEA: Tar Sands Export Pipelines Needed for Canada's Oil to Boom," Inside Climate News, November 14, 2013. Accessed at: <http://insideclimatenews.org/news/20131114/iea-tar-sands-export-pipelines-needed-canadas-oil-boom>. [10 March, 2014].

[17] Swift, Anthony, "International Energy Agency Links Keystone XL Decision to Significant Tar Sands Expansion," *Switchboard: NRDC Staff Blog*, November 13, 2013. Accessed from: <http://switchboard.nrdc.org/blogs/aswift/international_energy_agency_li.html>. [10 March 2014].

[18] Peter Erickson and Michael Lazarus, "Greenhouse gas emissions implications of the Keystone XL pipeline," Stockholm Environmental Institute, December 2013. Accessed from: <http://www.sei-international.org/mediamanager/documents/Publications/Climate/SEI-WP-2013-11-KeystoneXL-price-effects.pdf >. [10 March 2014].

[19] Ibid.

[20] "Global 2014 E&P Spending Outlook: North American Spending to Accelerate," *Barclays*, 9 December 2013. Accessed from: <http://www.pennenergy.com/content/dam/Pennenergy/online-articles/2013/December/Global%202014%20EP%20Spending%20Outlook.pdf>. [10 March 2014].

[21] "Goldman Sachs Analyst Report Contradicts State Department Finding Regarding Keystone XL Tar Sands Pipeline," Oil Change International, Accessed from: <http://switchboard.nrdc.org/blogs/aswift/Goldman%20Sachs%20KXL%20report%20summary%20FINAL.PDF>. [10 March 2014].

Goldman Sachs's emphasis that Keystone XL and the expansion of the Alberta Clipper pipeline are linchpins to future tar sands growth is especially significant in light of the fact that the Obama administration has the ultimate power to approve—or reject—both of them. The Alberta Clipper expansion would increase the capacity of that pipeline (which stretches from Canada's province of Alberta to Superior, Wisconsin) to 800,000 barrels per day.[22] As 16 environmental organizations stated in a letter to the State Department in January 2014, that President Obama could deny both of these projects only further demonstrates that tar sands development is not inevitable—the U.S. government has a great deal of influence over the future development of this resource.[23]

IV. Oil industry representatives and Canadian officials admit that Keystone XL is a linchpin to tar sands development.

As recently as January of this year, Russ Girling, CEO of Transcanada, said when referring to Keystone XL, "[w]hen markets come up, you have to take advantage of them … If you miss an opportunity, you may lose it for decades and decades to come."[24]

Brian Ferguson, CEO Cenovus Energy Inc., a large Canadian oil company that plans to nearly triple its tar sands production to reach 1 million bpd by 2023, recently said, "If there were no more pipeline expansions, I would have to slow down."[25]

Steve Tungesvik, President and CEO of Statoil, said in 2013 that he is "reluctant" to invest in tar sands due to the uncertainty around export pipelines.[26]

Joe Oliver, Canada's Natural Resources Minister, stated in a memo obtained through Canada's Access to Information Act that, "in order for crude oil production to grow, the North American pipeline network must be expanded through initiatives, such as the Keystone XL pipeline project."[27]

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[22] "Alberta Clipper (Line 67) Capacity Expansion," Enbridge, 2013. Available from: <http://enbridge.com/MainlineEnhancementProgram/Canada/Alberta-Clipper-Capacity-Expansion.aspx>. [11 March 2014].

[23] Sierra Club et al., "Comments of the Sierra Club, et. al., to the Department of State on the Final SUpplemental environmental Impact Statement and National Interest Determination for the TransCanada Keystone XL Pipeline," Letter to Secretary John Kerry, March 7, 2014.

[24] Mogerman, Josh, "Oil and Financial Industry Quotes Highlight Keystone XL as Essential Tar Sands Lynchpin," *Switchboard*, January 31, 2014. Accessed from: <http://switchboard.nrdc.org/blogs/jmogerman/oil_and_financial_industry_quo.html>. [10 March 2014].

[25] McCarthy, Shawn, and Richard Blackwell, "Oil Industry Rebuts 'trash-talking' Celebrity Critics," *The Globe and Mail*, January 16, 2014. Accessed from: <http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/oil-industry-rebuts-trash-talking-celebrity-critics/article16357980/>. [10 March 2014].

[26] Lewis, Jeff, "Statoil May Pick East Coast Over Alberta For New Expansions," *Financial Post*, December 16, 2013. Accessed from <http://business.financialpost.com/2013/12/16/statoil -may-pick-east-coast-over-alberta-for-new-expansions/?__lsa=f779-8290>. [10 March 2014].

[27] "Keystone XL: Canadian Officials Admit Pipeline Would Increase Oil Sands Production,"

V. Rail is not a viable alternative to a project that would pump 830,000 barrels per day through the U.S.

The argument that tar sands development is inevitable, based on the notion that oil companies could simply export the same amount of oil from Canada's province of Alberta by rail, is fundamentally flawed.

The recent Carbon Tracker analysis demonstrates that Keystone XL would have a greater impact on the rate of future tar sands development than rail. The lower costs of transporting tar sands through this pipeline, as opposed to rail, mean that by 2018 industry could develop an additional 510,000 to 525,000 barrels of bitumen per day. This is a quarter of Canada's entire 2013 bitumen production. By 2050, Keystone XL would be directly responsible for the additional greenhouse gas emissions equivalent to one billion passenger vehicles' annual emissions, or equivalent to yearly emissions from 1,400 coal-fired power plants—almost the amount of total U.S. emissions in 2013.[28]

Even the U.S. State Department, in its FSEIS, recognized that transporting tar sands by rail costs $15 to $20 per barrel (versus Keystone XL's cost of $8 per barrel). The State Department estimated that, on average, rail would cost $8 a barrel more to transport tar sands than pipelines. Considering that industry representatives recently told Canadian officials that increasing costs by $0.80 per barrel would hinder investment and curb production, rail's incremental cost demonstrates its infeasibility as an alternative to new pipelines.[29]

Genscape, a provider of energy information for commodity and financial markets, recently reported that the economics of railing Canadian heavy crude to the Gulf Coast are deteriorating. It reported that, in the last week of February, the price differential between Mexican heavy crude, known as Maya, and Canada's heavy crude (WCS) had widened to $13-14 per barrel and $24 less than WTI (West Texas Intermediate). In reference to railing Canadian heavy to the Gulf Coast, it quoted a crude oil trader as saying, "It's not that viable to break even railing to the Gulf."[30]

And while transporting bitumen by rail is already more costly than a new pipeline would be, the cost of rail is only likely to increase. In the past few years, it has become strikingly evident that crude-by-rail projects are dangerous and sometimes even deadly—

Greenwire, August 26, 2013.Accessed from: <http://www.eenews.net/greenwire/stories/1059986427/search>. [10 March 2014].

[28] "Keystone XL Pipeline (KXL): The 'Significance' Trap," *Carbon Tracker Initiative*, 3 March 2014. Accessed from: <http://www.carbontracker.org/wp-content/uploads/2014/03/Kxl-The-Significance -Trap_FINAL_03_03_2014.pdf>. [10 March 2014].

[29] Swift, Anthony, "A Deeper Dive: State's Environmental Review of Keystone XL Tar Sands Pipeline Shows it is not in the Nation's Interest," *Switchboard*, Feb 3, 2014. Accessed from: <http://switchboard.nrdc.org/blogs/aswift/a_deeper_dive_states_environme.html>. [11 March 2014].

[30] Genscape Petrorail Report, Volume: 2, Issue: 9, March 4, 2014 (Subscription Only).

and certainly not a solution to the country's energy needs.

2013 was marked by a numerous rail accidents (like the Lac-Mégantic train derailment in Quebec, which killed 47 people) and spills (in 2013, U.S. trains spilled more crude oil than they had in the previous four decades combined).[31] U.S. government agencies are currently calling for stricter regulations on the transportation of oil by rail, which would require extensive capital investment in the modernization of crude-by-rail infrastructure.

For example, in September 2013, the Pipeline and Hazardous Materials Safety Administration (PHMSA) announced that it was considering revising Hazardous Materials Regulations (HMR) "to improve the regulations applicable to the transportation of hazardous materials by rail."[32] During PHMSA's public comment period, the Association of American Railroads (AAR) argued that the new regulations should include retrofitting 72,000 older tanker cars, performing minor upgrades on 14,000 additional cars, and phasing out any cars that do not meet new safety requirements.[33] AAR's recommendations also included upgrading the DOT-111, a model that represents approximately 85 percent of the nation's 92,000 tank cars, as these have been demonstrated to puncture when trains crash. [34]

Additionally, in January 2014, both the U.S. National Transportation Safety Board (NTSB) and the Transportation Safety Board of Canada issued joint recommendations "to address the safety risk of transporting crude oil by rail".[35] Expressing concerns about "major loss of life," NTSB recommended stricter standards for trains carrying crude, including modifications to tank cars that, according to Bloomberg Government, could cost shippers and leasing companies $5.2 billion.[36] Also in January, U.S. Department of Transport Secretary Anthony Foxx stated that the oil and rail industry would begin

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[31] Tate, Curtis, "More Oil Spilled From Trains in 2013 Than in Previous 4 Decades, Federal Data Show," *McClatchy Washington Bureau*, January 20, 2014. Accessed from: <http://www.mcclatchydc.com/2014/01/20/215143/more-oil-spilled-from-trains-in.html>. [10 March 2014].

[32] "PHMSA-2012-0082 (HM-251): Hazardous Materials: Rail Petitions and Recommendations To Improve the Safety of Railroad Tank Car Transportation (RRR)," PHMSA, September 6, 2014. Accessed from: <http://phmsa.dot.gov/portal/site/PHMSA/menuitem.6f23687cf7b00b0f22e4c6962d9c8789/?vgnextoid=41e8c4a1c0cf0410VgnVCM100000d2c97898RCRD&vgnextchannel=c7c1d95c4d037110VgnVCM1000009ed07898RCRD&vgnextfmt=print>. [10 March 2014].

[33] Sobczak, Blake, "Rail industry group says tougher rules needed for tank cars hauling oil," E&E [33]Publishing, LLC., November 15 2013. Accessed from: <http://www.eenews.net/stories/1059990536>. [10 March 2014].

[34] Johnston, Rory, "The tank car that's stirring up rail safety debate," *CNBC News*, January 16 2014. Accessed from: <http://dot111.info/2014/01/16/the-tank-car-thats-stirring-up-rail-safety-debate/>. [10 March 2014].

[35] "NTSB Calls for Tougher Standards on Trains Carrying Crude Oil," NTSB Press Release, January 23, 2014. Accessed from: <https://www.ntsb.gov/news/2014/140123.html>. [10 March 2014].

[36] Keane, Angela Greiling, "Stronger Tank Cars Needed to Ship Oil by Rail: Agencies," *Bloomberg Sustainability*, January 23, 2014. Accessed from:<http://www.bloomberg.com/news/2014-01-23/stronger-tank-cars-needed-to-ship-oil-by-rail-agencies.html>. [10 March 2014].

implementing voluntary accident-reduction procedures in early 2014,[37] which will include reduced train speeds for certain trains carrying crude oil.[38]

These planned and proposed regulations by U.S. agencies and the rail industry demonstrate that stricter regulations are inevitable, since, as NTSB Chairman Deborah Hersman said in January, "The large-scale shipment of crude oil by rail simply didn't exist ten years ago, and our safety regulations need to catch up with this new reality."[39] These important regulations not only will do more to protect our communities but will also make rail more expensive—making the idea that they could "replace" proposed tar sands pipelines even more absurd.

VI. Keystone XL would be an export pipeline.

Keystone XL would be a pipeline through, rather than to, America. Thanks in great part to increased fuel efficiency standards[40] and the fact that, for the first time since 1970, U.S. oil production is on the rise,[41] a new pipeline that would increase the amount of oil coming into the U.S. is not only unnecessary—it would increase the likelihood that tar sands oil will be exported.

Keystone XL would deliver tar sands to refineries in the Gulf that already export most of their refined product, and that are planning to increase these export amount.[42] The State Department's Draft Supplemental EIS acknowledged that Gulf Coast refineries export most of their product.[43]

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[37] Brown, Matthew, "US Officials Call for More Safety For Oil by Rail," Associated Press, January 16, 2014. Accessed from: <http://bigstory.ap.org/article/us-officials-call-more-safety-oil-rail>. [10 March 2014].

[38] "Freight Railroads Join U.S. Transportation Secretary Foxx in Announcing Industry Crude by Rail Safety Initiative," Association of American Railroads. February 21, 2014. Accessed from: <https://www.aar.org/newsandevents/Press-Releases/Pages/Freight-Railroads-Join-U-S-Transportation-Secretary-Foxx-in-Announcing-Industry-Crude-By-Rail-Safety-Initiative.aspx#.Ux1Gk-ddVqL>. [10 March 2014].

[39] "NTSB Calls for Tougher Standards on Trains Carrying Crude Oil." National Transportation Safety Board: Office of Public Affairs. January 23, 2014. Accessed from: <https://www.ntsb.gov/news/2014/140123.html>. [10 March 2014].

[40] "President Obama Announces Historic 54.5 mpg Fuel Efficiency Standard." The White House Office of the PRess Secretary, Accessed from: <http://www.whitehouse.gov/the-press-office/2011/07/29/president-obama-announces-historic-545-mpg-fuel-efficiency-standard>. [11 March 2014].

[41] *Exporting Energy Security: Keystone XL Exposed*, Oil Change International, September 2011. Acccessed from: <http://priceofoil.org/content/uploads/2011/09/OCIkeystone XL_2011R.pdf>. [11 March 2014].

[42] Colarulli, Kate et al., "FAIL: How the Keystone XL Tar Sands Pipeline Flunks the Climate Test," Sierra Club. August 2013, Accessed from: <https://content.sierraclub.org/beyondoil/sites/content.sierraclub.org.beyondoil/files/documents/kxl-climate-report.pdf>. [10 March 2014].

[43] Draft Supplemental Environmental Impact Statement: Keystone XL Project. Market Analysis: 1.4-15. Accessed from: <http://keystonepipeline-xl.state.gov/documents/organization/205654.pdf>. [10 March 2014].

Since 2008, when the Keystone XL permit application was first submitted to the State Department, Gulf Coast exports of petroleum products have soared 172 percent. Many Gulf Coast refineries have access to deep water port facilities, and the region now produces much more product than the U.S. markets can handle. Throughout the 2008-2013 period, the Gulf Coast refineries averaged 73 percent of US oil exports. In 2013, that rose to 76 percent.[44]

Exports of refined petroleum products from the Gulf Coast region (also know as PADD 3) reached nearly 3.3 million barrels per day in December 2013, nearly four times the capacity of Keystone XL.[45]

And while the Gulf Coast refining region includes a number of inland refineries without access to export facilities, Keystone XL would primarily supply a group of refineries in the vicinity of Houston; Port Arthur, Texas; and Lake Charles, Louisiana. These refineries all have excellent access to export facilities and are at the heart of the Gulf Coast export boom.

The Motiva Port Arthur Refinery—owned by Saudi Aramco and Shell—recently became America's largest refinery.[46] As a Bank of America-Merrill Lynch analyst has stated, "The bulk of the Motiva plant's production is—like a growing share of refinery capacity along the Gulf Coast—geared for export (…) (w)e can export gasoline and diesel to northwest Europe cheaper than they can produce it locally".[47]

Asia would be a major recipient of the product transported by Keystone XL. The comments submitted by Sierra Club et al. to the State Department in March 2014 summarize a key finding of a report by Philip K. Verleger, Jr. (which was cited in the State Department's FSEIS) to have concluded that the Keystone XL pipeline, if built, would facilitate Canadian crude exports to China rather than the United States, because buyers for refineries on the Gulf Coast can limit their purchases of Canadian crude, forcing the Canadian producers to seek buyers in overseas markets, most likely China.[48]

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[44] Stockman, Lorne, "Potential Keystone XL Refineries Continue to Increase Exports," *Oil Change International*, January 31, 2014. Accessed from: <http://priceofoil.org/2014/01/31/potential-keystone-xl-refineries-continue-increase-petroleum-product-exports/>. [11 March 2014].

[45] "Petroleum & Other Liquids." U.S. Energy Information Administration. Accessed from: <http://www.eia.gov/dnav/pet/pet_move_exp_dc_R30-Z00_mbblpd_m.htm>. [11 March 2014].

[46] Colarulli, Kate et al., "FAIL: How the Keystone XL Tar Sands Pipeline Flunks the Climate Test," Sierra Club. August 2013, Accessed from: <https://content.sierraclub.org/beyondoil/sites/content.sierraclub.org.beyondoil/files/documents/kxl-climate-report.pdf>. [10 March 2014].

[47] Stockman, Lorne, "Keystone XL refineries already exporting 60 percent of their gasoline," Oil Change International, March 14, 2013. Accessed from: <http://priceofoil.org/2013/03/14/keystone-xl-refineries-already-exporting-60-percent-of-their-gasoline/>. [March 10, 2014].

[48] Philip K. Verleger, *The Tar Sands Road to China: The Long, Tortured Route from Alberta to*

Another recipient of Keystone XL product would be Europe. For years, industry representatives and Canadian government officials have been lobbying the European Union (EU) to not label tar sands as an especially carbon-intensive source of fuel as part of the EU's efforts to combat climate change. The EU's proposed Fuel Quality Directive would classify tar sands as a particularly dirty source of transportation fuel, as part of a plan to require countries in the EU to reduce the greenhouse gas intensity of transportation fuels by 6 percent by 2020.[49]

It is significant that a current prohibition on the export of crude from the U.S. (i.e. non-refined product) does not apply to Canadian crude if it has not been commingled with U.S. oil. Keystone XL would likely create a surplus of heavy oil on the market that would have to leave the Gulf somehow. Or as a *Platts* editorial director explained,

> "When the Canadian crudes rise in price [U.S. refiners] will look at other alternatives, and force the Canadian crudes to move out of the Gulf Coast. The Canadian crudes cannot go back up into Canada again. They will have to go out."[50]

Keystone XL proponents like to maintain that the pipeline would simply replace the heavy oils the U.S. already imports from countries like Venezuela. This argument ignores the evidence that Keystone XL oil would not replace heavy oil from Latin America or the Middle East. Venezuela, Saudi Arabia, and Mexico own around half of the heavy oil refining capacity in the Gulf. Those refineries are expected to continue giving preference to refining their own countries' oil as opposed to Canadian heavy oil. Meanwhile, thanks to high levels of U.S. light oil development, Gulf refiners can buy discounted domestic oil, and these refiners are increasing their intake of domestic light oil while reducing their processing of heavy oil. This makes it all the more likely that a glut of Canadian heavy oil in the Gulf will be pushed onto the world market by exploiting a loophole in U.S. crude export regulations.[51]

In short, the argument that Keystone XL is a pipeline that would benefit oil consumers in the U.S. ignores a mountain of evidence demonstrating that this project's product is intended for export.

Dalian, PKVerleger LLC: February 2011. Accessed from: <http://www.pkverlegerllc.com/assets/ documents/1102_PEM_Summary.pdf>. [10 March 2014].

[49] Solomon, Ilana, and Quentin Karpilow, "Discouraging Use of Tar Sands or Expanding Trade: Which Do You Think is More Important?" Huffington Post Green, September 24, 2013. Accessed from:<http://www.huffingtonpost.com/ilana-solomon/discouraging-use-of-tar-sands_b_3977130.html>. [March 10, 2014].

[50] "The Keystone XL Pipeline Will Lead to a Surplus of Heaving Crude Oil on the Gulf Coast That Will be Exported." Oil Change International. Accessed from: <http://priceofoil.org/content/uploads/2013/07/OCI_KXL-Crude-Exports_07-11-13.pdf>. [10 March 2014].

[51] Ibid.

VII. Approving Keystone XL would be a threat to national security.

Because Keystone XL would facilitate the development of one of the world's most carbon intensive sources of oil, it is important to consider the impacts that these additional greenhouse gas emissions would have on global populations and on national security.

On the issue of national security, I rely on military and intelligence professionals to assess the national security threat from climate change. Since 2010, key documents setting out U.S. security doctrine have indicated that the destabilizing impacts of climate change on basic human needs, such as food and water, as well as extreme weather events and coastal flooding can have a major destabilizing effect in areas of geostrategic importance to the U.S.—acting as a threat multiplier that increases security risk to Americans.

The recently released Quadrennial Defense Review 2014, stated that "[t]he impacts of climate change may increase the frequency, scale, and complexity of future missions, including defense support to civil authorities, while at the same time undermining the capacity of our domestic installations to support training activities." [52] The report further states:

> "The pressures caused by climate change will influence resource competition while placing additional burdens on economies, societies, and governance institutions around the world. These effects are threat multipliers that will aggravate stressors abroad such as poverty, environmental degradation, political instability, and social tensions—conditions that can enable terrorist activity and other forms of violence."[53]

The top U.S. Commander in the Asia-Pacific region, Admiral Samuel J. Locklear III, recently stated that climate change is the top security threat in that region. Locklear is a four star admiral in charge of monitoring hostilities between North and South Korea, as well as between China and Japan, so his determination that the top threat is climate change does not reflect a lack of other serious security concerns in his area of responsibility. In a recent interview with the *Boston Globe,* Admiral Locklear stated:

> "We have interjected into our multilateral dialogue—even with China and India—the imperative to kind of get military capabilities aligned [for] when the effects of climate change start to impact these massive populations… If it goes bad, you could have hundreds of thousands or millions of people displaced and then security will start to crumble pretty quickly.''[54]

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[52] Quadrennial Defense Review 2014. Secretary of Defense. March 4, 2014. Accessed from: <http://www.defense.gov/pubs/2014_Quadrennial_Defense_Review.pdf>. [10 March 2014].

[53] Ibid.

[54] Bender, Bryan, "Chief of US Pacific Forces calls Climate Biggest Worry." *The Boston Globe.* March 9, 2014. Accessed from: <http://www.bostonglobe.com/news/nation/2013

Interestingly, these comments were made months before Typhoon Haiyan devastated the Philippines, displacing millions.

In addition to destabilizing conditions overseas, the Keystone XL pipeline presents a new threat to homeland security. According to the Department of Homeland Security, pipeline infrastructure has been a popular target for cybersecurity attacks.[55] In fiscal year 2012 alone, the Department's Industrial Control Systems Cyber Emergency Response Team assisted 23 oil and natural gas sector organizations with incident response and recovery efforts.[56] According to DHS, the hackers succeeded in obtaining information pertaining to the organizations' Industrial Control Systems and Supervisory Control and Data Acquisition (SCADA) systems—including data that DHS says would facilitate remote operations. All of us who live in the California Bay Area remember the catastrophic consequences of the natural gas pipeline rupture in San Bruno. As someone who has seen at close hand what can happen when pipeline managers aren't getting accurate data from their SCADA systems, I am deeply worried about potential cybersecurity attacks on Keystone XL's SCADA system that threaten communities throughout America's heartland.[57]

The number of hearings and bills on cybersecurity, as well as the recent executive order and framework, demonstrate that Congress and the Administration share my concern about the cybersecurity threat to critical infrastructure. Of course, this sort of cybersecurity threat is not something that can ever be fully prevented, but that doesn't mean that the Obama Administration should approve a major new cybersecurity target without significant evidence that they are taking action to protect Americans along route. In the absence of clear evidence that the U.S. government has assessed this risk, and has an effective plan in place to manage it, the State Department would not be in a position to determine that the pipeline is in our national interest.

Finally, it is intriguing that Keystone XL proponents argue that approving Keystone XL, by increasing exports, would reduce countries like Ukraine's dependence on Russia.[58] Besides acknowledging that Keystone XL's product would be intended for export,this

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/03/09/admiral-samuel-locklear-commander-pacific-forces-warns-that-climate-change-top-threat/BHdPVCLrWEMxRe9IXJZcHL/story.html>. [10 March 2014].

[55] Mills, Elinor, "U.S. Warns of Cyberattacks on Gas Pipeline Companies." CNET. May 7, 2012 Accessed from: <http://news.cnet.com/8301-1009_3-57429617-83/u.s-warns-of-cyberattacks-on-gas-pipeline-companies/>. [10 March 2014].

[56] "ICS_CERT - Operational Review Fiscal Year 2012: Incident Response." ICS-CERT Monitor. U.S. Department of Homeland Security: Industrial Control Systems Cyber Emergency Response Team. Oct/Nov/Dec 2012. Accessed from: <http://ics-cert.us-cert.gov/sites/default/files/ICS-CERT_Monthly_Monitor_Oct-Dec2012_2.pdf>. [10 March 2014].

[57] Ibid.

[58] Strasser, Annie-Rose, "Paul Ryan Uses Ukraine to Argue For construction of Keystone XL Pipeline," *Climate Progress*. March 5, 2014. Accessed from: <http://thinkprogress.org/climate/2014/03/05/3363111/paul-ryan-ukraine-keystone/>. [10 March 2014].

argument has been rebutted by energy security experts. For example, the Council on Foreign Relations' Michael Levi recently noted:

> "The idea that U.S. oil exports would give Europe some sort of special buffer is silly. The world oil market is pretty flexible, and U.S. exports would be a drop in an already large sea. To the extent that Europe is constrained in its ability to switch oil sources quickly, that's because of infrastructure, something U.S. exports wouldn't change."[59]

VIII. There is no evidence that either the Government of Canada or the provincial Government of Alberta would be willing or able to "mitigate" the emissions from a project that would increase the development of Alberta's tar sands.

Canada's Prime Minister, Stephen Harper, has reportedly offered to embark on a plan to reduce Canada's GHG emissions if President Obama approves Keystone XL.[60] However the Government of Canada, under Prime Minister Harper's leadership, should be judged by its inability to live up to its climate commitments to date. Canada's federal government has repeatedly missed its own targets to regulate Canada's oil and gas sector.[61] In fact, it will miss its own 2020 GHG reduction targets, in large part due to tar sands development. Tar sands are Canada's fastest-growing source of greenhouse gas emissions.[62] Even though it has a relatively small population, Canada is already one of the top 10 greenhouse gas-emitting countries in the world.[63] In 2011, the Canadian federal government's own peer-reviewed reports forecast that emissions from tar sands would be triple 2005 levels by 2020.[64]

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[59] Levi, Michael, "An Energy Weapon vs. Russia?" Council on Foreign Relations. March 5, 2014. Accessed from: <http://blogs.cfr.org/levi/2014/03/05/an-energy-weapon-vs-russia/>. [10 March 2014].

[60] Hall, Chris, "Harper Offers Obama Climate Plan to Win Keystone Approval." *CBC News*, September 6, 2013. Accessed from: <http://www.cbc.ca/news/politics/harper-offers- obama-climate-plan-to-win-keystone-approval-1.1701391>. [10 March 2014].

[61] Paris, Max. "Oil and Gas Industry Emission Rules Still Not Ready From Ottawa." *CBC News.* July 3 2013. Accessed from: <http://www.cbc.ca/news/politics/oil-and-gas-industry-emission-rules-still-not-ready-from-ottawa-1.1343855>.

[61] Whittington, Les. "Canadians Still Waiting on Oilsands Emissions Targets." *The Star*. August 6 2013. Accessed from: <http://www.thestar.com/news/canada/2013/08/06/canadians_still_waiting_on_oilsands_emissions_targets.html>. [10 March 2014].

[62] Oil Sands: Climate Impacts Pembina Institute. Accessed from: <http://www.pembina.org/oil-sands/os101/climate>. [10 March 2014].

[63] Grant, Jennifer and Marc Huot. "Clearing the Air On Oilsands Emissions."

[63] Pembina Institute. November 23 2012. Accessed from: <http://www.pembina.org/pub/2393>. [10 March 2014].

[64] "Canada's Emissions Trends." Environment Canada. July 2011. Accessed from: <http://www.ec.gc.ca/doc/publications/cc/COM1374/ec-com1374-en-toc.htm>. [10 March 2014]. Also - Austen, Ian. "Oil Sands to Raise Emissions, Canadian Report Says." *The New*

[64] *York Times.* August 8 2011. Accessed from: <http://green.blogs.nytimes.com/2011/08/08/oil-sands-to-boost-emissions-canadian-report-says/?action=click&module=Search&region=searchResults%230&version=&url=http%3A%

Prime Minister Harper has shown an unwillingness to take serious action on climate change, and he has even actively undermined his own government's climate programs and research. Prime Minister Harper's government drastically cut funding for government research on climate change, ended the government's National Round Table on the Economy and Environment, and cut support for research programs like the Canadian Foundation for Climate and Atmospheric Sciences.[65]

Meanwhile, the province of Alberta's "Specified Gas Emitters Regulation" (SGER) is ostensibly intended to reduce greenhouse gas emissions on oil and gas development in the province. However, its carbon pricing mechanism, as the Pembina Institute details, "is too weak to provide an incentive for oilsands operators to meaningfully reduce greenhouse gas emissions."[66] The SGER means tar sands operators have to pay a mere 18 to 22 cents to produce a barrel of oil, which is too weak a penalty to prompt emission reductions.[67] Moreover, targets are set in terms of intensity (GHG emissions per barrel) instead of a cap, and tar sands emissions have grown every year since this policy went into effect.

A 2013 study compiled extensive evidence showing that fewer than one percent of environmental violations in Alberta's tar sands region are actually enforced with fines or other enforcement mechanisms.[68]

IX. Keystone XL would produce up to 15,000 tons of petcoke a day,[69] a filthy byproduct of tar sands production that is hazardous to communities and has its own major climate implications.

Petroleum coke, or petcoke, is an extremely carbon-intensive byproduct of tar sands production. Petcoke resembles coal and commonly replaces coal as a fuel in power plants and other industry processes. When combusted, petcoke releases 5 to 10 percent *more* carbon dioxide than coal (on a per-unit of energy basis).[70] As Oil Change International details in its 2013 report *Petroleum Coke: The Coal Hiding in the Tar Sands*, the bitumen carried by Keystone XL would carry approximately 15,000 tons of petcoke each day—

2F%2Fquery.nytimes.com%2Fsearch%2Fsitesearch%2F%23%2Foil%2Bsands%2Bboost%2Bemissions%2Bcanadian%2Breport%2F>.

65 "Canada's Climate Credibility Gap." Environmental Defence. Accessed from: <http://environmentaldefence.ca/reports/canada%E2%80%99s-climate-credibility-gap>. [11 March 2014].

66 Grant, Jennifer and Marc Huot. "Clearing the Air on Oilsands Emissions." Pembina Institute. Nov 23, 2012. Accessed from: <http://www.pembina.org/pub/2393>. [11 March 2014].

67 Ibid.

68 Timoney, Kevin and Peter Lee. "Environmental Incidents in Northeastern Alberta's Bitumen Tar Sands Region, 1996-2012." July 2013. Accessed from: <https://sites.google.com/site/bitumenenvironmentalincidents/file-cabinet>. [11 March 2014].

69 *Petroleum Coke: The Goal Hiding in the Tar Sands*, Oil Change International, January 2013. Accessed from: <http://priceofoil.org/content/uploads/2013/01/OCI.Petcoke.FINALSCREEN.pdf>. [11 March 2014].

70 Ibid.

enough to fuel five coal-fired power plants.[71]

Much of the petcoke produced by Keystone XL would be shipped overseas and combusted in power plants in countries like China. The U.S. and Canada already export millions of tons of petcoke each year.[72] Petcoke is sold at an average of a 25 percent discount to conventional coal, meaning its cheap price incentives power plants to blend it with coal. Thus, as Oil Change International stresses, "Petcoke is making coal-fired power generation more carbon intensive and cheaper at exactly the time that we urgently need low carbon solutions to energy production."[73]

In addition to releasing climate-disrupting greenhouse gases, petcoke is also a major health hazard for U.S. communities. Fuel-grade petcoke has high levels of metals including mercury, lead, arsenic, selenium, chromium, nickel, and vanadium.[74] Huge petcoke piles from refining processes have begun to appear in cities like Chicago and Detroit, from which black dust clouds often escape and land on homes and communal spaces. The particulates in these dust clouds include EPA-recognized carcinogens, as well as other metals proven to cause developmental and cardiovascular problems in humans.[75] On February 26, 2014, Senators Barbara Boxer and Sheldon Whitehouse invited health experts to speak to brief press and staff on the health impacts of extracting and refining tar sands, including the harmful impacts of petcoke piles to communities in Chicago.[76]

X. Tar sands cause additional major impacts to communities and their health.

The extraction, development and refinement of tar sands are harmful to communities' health in both Canada and the U.S.

In Canada, communities living near tar sands mines are exposed to chemicals in their air and water that are proven to cause cancer, damage DNA, and cause developmental impacts.[77] First Nation communities near the Fort McMurray tar sands extraction site are

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[71] Ibid.

[72] "U.S. Exports of Petroleum Coke (Thousand Barrels)." *U.S. Energy Information Administration*. July 30, 2013. Accesse from: <http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MCKEXUS1&f=M>. [11 March 2014].

[73] *Petroleum Coke: The Goal Hiding in the Tar Sands*, Oil Change International, January 2013. Accessed from: <http://priceofoil.org/content/uploads/2013/01/OCI.Petcoke.FINALSCREEN.pdf>. [11 March 2014].

[74] "Tar Sands Crude Oil: Health Effects of a Dirty and Destructive Fuel." Natural Resources Defense Council. Accessed from: <http://www.nrdc.org/energy/tar-sands-health-effects.asp>. [11 March 2014].

[75] Ibid.

[76] "Senators Boxer, Whitehouse Expose Harmful Health Impacts of Tars Sands and Keystone XL Pipeline." Accessed from: <http://www.youtube.com/watch?v=SugmSVQJ06w>. [11 March 2014].

[77] "Tar Sands Crude Oil: Health Effects of a Dirty and Destructive Fuel." Natural Resources Defense Council. February 26, 2014. Accessed from: <http://www.nrdc.org/energy/tar-

being negatively impacted by high concentrations of carcinogenic pollutants in their air and water. Studies have found elevated concentrations of benzene, styrene, and seven different polycyclic aromatic hydrocarbons (PAHs) within 30 miles of Fort McMurray. Toxic tailings ponds, full of arsenic, mercury, benzene, lead, and ammonia, leak into the surrounding environment and threaten water supplies.[78] A 2009 study on health impacts in the Fort Chipewyan community, 124 miles downstream of tar sands development in Fort McMurray, found that from 1995 to 2006, cancer rates were 30 percent higher than typically expected during this time period, with high rates of biliary tract, blood and lymphatic, lung, and soft tissues cancers.[79] Dr. John O'Connor, a physician in the Fort Chipewyan community, has called for more public health investigations in his community, particularly in response to three localized cases of cholangiocarcinoma, a rare form of cancer.[80]

Tar sands also have major health implications for refinery communities in cities like Houston and Port Arthur, Texas, where tar sands from Keystone XL would be refined. Emissions from diluted tar sands are significantly more toxic than conventional crude oil and release significantly higher concentrations of copper, nickel, lead, and benzene. These pollutants have been demonstrated to increase the risk of cardiovascular illnesses, respiratory ailments, developmental delays, and cancer.[81]

The impacts of tar sands refinement are disproportionately high on low-income communities and communities of color. Dr. Earthea Nance, Associate Dean and Professor at Texas Southern University, recently submitted comments on the FSEIS illustrating that the proposed pipeline would have "disproportionate impacts" on African-American and Latino communities in Houston and Port Arthur, Texas. She illustrated that affected communities in Port Arthur face "increased risk of developing cancer, asthma, and cardiovascular disease caused by their proximity to industrial sources of pollution."[82]

XI. A spill from KXL would be catastrophic.

Transporting tar sands crude oil into the United States poses a different risk to communities and natural resources than conventional oil does.[83] Diluted bitumen, or dilbit, is a highly corrosive and acidic blend of thick raw bitumen and volatile natural gas

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sands-health-effects.asp>. [11 March 2014].

[78] Ibid.

[79] Ibid.

[80] Carr, Cindy, "Health Miseries Follow Tar Sands, Compass: Pointing the way to a Clean Energy Future. February 26, 2014. Accessed from: <http://sierraclub.typepad.com/compass/2014/02/health-miseries-follow-tar-sands.html>.

[80] and Brethour, Patrick, "Why is Cancer Sweeping Tiny Fort Chipewyan?" Globe and Mail, May 22, 2006. Accessed from: <http://www.commondreams.org/headlines06/0522-05.htm>. [11 March 2014].

[81] Ibid.

[82] Nance, Earthea, "Public Comment on Keystone XL," Texas Southern University, March 6, 2014.

[83] "What is Oil Sands?" Alberta Energy, Accessed from: <http://www.energy.alberta.ca/OilSands/793.asp>. [11 March 2014].

liquid condensate.[84] The impacts of spills can be much greater than conventional crude, and effective clean-up methods do not yet exist—and may never exist.

The health impacts from a tar sands spill and its subsequent long-term persistence in the environment include numerous toxic effects. Long-term exposure to benzene, which is a known carcinogen, can adversely affect bone marrow and cause anemia, leukemia, and possibly death. Long-term exposure to toluene may affect the nervous system or kidneys. Long-term exposure to ethylbenzene has been observed in animal studies to cause damage to the kidneys, inner ear, and hearing, and more.[85]

This information is based on the paucity of research that has been done on the health impacts from tar sands spills. This means that the residents of communities affected by tar sands spills, like Marshall, Michigan, and Mayflower, Arkansas, are involuntarily serving as guinea pigs for determining the long-term impact of a tar sands spill.

There is still no indication that dilbit, which would be traveling along the Keystone XL pipeline, can be effectively cleaned up. TransCanada's Keystone I pipeline leaked 14 times in the United States— including one spill of as much as 21,000 gallons—and 21 times in Canada during its first year of operation.[86] If the proposed pipeline were to spill and contaminate the Ogallala Aquifer, it would be a catastrophe for the millions of Americans who rely on it for drinking and irrigation water every day. Building Keystone XL would be an abdication of the U.S. government's responsibility to protect resources like the Missouri River, Prairie Pothole Region, Ogallala Aquifer, and the thousand other bodies of water that this pipeline would transect.[87]

XII. The projected job numbers from Keystone XL are low.

Keystone XL will not create many jobs. The State Department's FSEIS concluded:

> "Approximately 10,400 seasonal construction worker positions, engaged for 4- to 8-month construction periods, would be required to complete the proposed Project. When expressed as average annual jobs, this equates to approximately 3,900 average annual jobs (3,900 over 1 year of construction, or 1,950 per year over 2

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[84] "What Are Tar Sands?" Oil Shale & Tar Sands Programmatic EIS, Accessed from: <http://www.energy.alberta.ca/OilSands/793.asp>. [11 March 2014].

[85] "Potential Releases: 3.13-30," Final Supplemental Environmental Impact Statement, Accessed from: <http://keystonepipeline-xl.state.gov/documents/organization/221172.pdf>. [11 March 2014].

[86] Souza, Mike De, "Feds Recorded 100 Pipeline Spills and Accidents in the Last Two Years," *Vancouver Sun*, July 5, 2011. Accessed from: <http://www.canada.com/business/Feds+recorded+pipeline+spills+accidents+last+years/5053005/story.html#ixzz2R64CUaXR>. [11 March 2014]. The current FSEIS only documents 12 spills during Keystone's first year of operation. See FSEIS Table 4.13-12, Accessed from: <http://keystonepipeline-xl.state.gov/documents/organization/221189. pdf>. [11 March 2014].

[87] "Wetlands: 3.4," Final Supplemental Environmental Impact Statement, Accessed from: <http://keystonepipeline-xl.state.gov/documents/organization/221172.pdf>. [11 March 2014].

years). Thus, if built over a 2-year period consistent with the explanation provided above, the proposed Project would likely generate 1,950 construction jobs per year…Once the proposed Project enters service, operations would require an estimated 50 total employees: 35 permanent employees and 15 temporary contractors."[88]

XIII. Rejecting Keystone XL and continuing to reduce demand will create jobs and benefit the economy. Energy security will come through reduced demand and clean energy alternatives—not from a new tar sands pipeline.

America is a land of innovators. And today the factories of Detroit, the laboratories of Silicon Valley, and the next generation of American consumers are ready to invest in and profit from clean technology. The U.S. does not need to accelerate development of one of the most toxic forms of oil in the world. Largely thanks to fuel efficiency standards, U.S. demand for gasoline is decreasing.[89] In fact, due to improved fuel efficiency and decreases in vehicle miles travelled, the U.S. Energy Information Administration (EIA) projects that the energy use by light-duty vehicles will decline steadily through 2040.[90] Meanwhile, U.S. production of oil is rising for the first time since 1970.[91]

The 2012 fuel efficiency standards are expected to save 3.1 million barrels of oil per day in 2030.[92] That is equivalent to the amount of oil we import currently from Venezuela and the Persian Gulf together. By burning less oil and improving vehicle air conditioning systems, these recent standards will keep 570 million metric tons of greenhouse gas pollution out of our atmosphere in 2030[93]—that's nearly 10 percent of current U.S. greenhouse gas emissions.

Additionally, these more-efficient vehicles will save consumers money at the pump. A family that buys a new vehicle in 2025 will save $8,000 compared with the average vehicle on the road today, even after paying for fuel-saving technology. That's money

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[88] "Socioeconomics: Introduction 4.10.1," Final Supplemental Environmental Impact Statement: Keystone XL Project, Accessed from: <http://keystonepipeline-xl.state.gov/documents/organization/221186.pdf>. [11 March 2014].

[89] "President Obama Announces Historic 43.4 mpg Fuel Efficiency Standard." The White House; Office of the Press Secretary. Accessed from: <http://www.whitehouse.gov/the-press-office/2011/07/29/president-obama-announces-historic-545-mpg-fuel-efficiency-standard>. [11 March 2014].

[90] AEO2014 Early Release Overview," U.S. Energy Information Administration. December 16, 2014, Accessed from: <http://www.eia.gov/forecasts/aeo/er/executive_summary.cfm>. [11 March 2014].

[91] *Exporting Energy Security: Keystone XL Exposed*, Oil Change International, September 2011. Acccessed from: <http://priceofoil.org/content/uploads/2011/09/OCIkeystoneXL_2011R.pdf>. [11 March 2014].

[92] "Historic Fuel Efficiency and Auto Pollution Standards Finalized." Union of Concerned Scientists, August 28, 2012. Accessed from: <http://www.ucsusa.org/news/press_release/cafe-finalization-0383.html>. [11 March 2014].

[93] Mesnikoff, Ann, "54.5 Miles Per Gallon: This is a Big Deal," *Daily Kos,* Accessed from: <http://www.dailykos.com/story/2012/08/20/1122199/-54-5-Miles-Per-Gallon-This-Is-a-Big-Deal>. [11 March 2014].

that can be reinvested in local economies, instead of being sent to Canada to buy tar sands and into the pockets oil companies. Combined, Americans are expected to save $140 billion in 2030 as a result of these fuel efficiency standards, after paying for new fuel-saving technologies.[94]

By setting standards through 2025, President Obama is giving automakers the certainty they need to innovate and thrive. Already, automakers have technologies that can help meet these standards—advanced transmissions, start/stop engines, and strong, lightweight materials. The innovation and manufacturing of vehicles as a result of these standards will continue to create jobs—in the auto industry and throughout the economy. The Blue Green Alliance projects that the second round of fuel efficiency standards alone (from 2017-2025) will create roughly 570,000 jobs.[95] Over the next two years, new standards for our medium- and heavy-duty trucks are also expected, which will further increase investment in our economy and decrease our reliance on the oil industry.

Investing in the clean energy economy brings the support of American businesses, American employees, and environmental groups, and we create win-win-win scenarios. Compare that with Keystone XL, which threatens major sources of freshwater, American lands, and a stable climate.

XIV. Conclusion

The proposed Keystone XL pipeline is not in the national interest. The U.S. is on track to lower the amount of oil that we consume, and we are taking active steps to reduce our greenhouse gas emissions. Approving Keystone XL would be a step backward and would jeopardize the stability our our climate, the strength of our economy, and our children's futures.

Thank you for this opportunity to testify, and I look forward to answering any questions you might have.

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[94] "54.5 MPG: This is a Big Deal." Compass: Pointing the Way to a Clean Energy Future, August 14, 2012, <http://sierraclub.typepad.com/compass/2012/08/mpg-oil-infographic.html>. [11 March 2014].

[95] "Gearing Up: Smart Standards Create Good Jobs Building Cleaner Cars," *BlueGreen Alliance,* June 26, 2012. Accessed from: <http://www.bluegreenalliance.org/news/publications/ gearing-up>. [11 March 2014].