



Syncrude Aurora Tar Sands Mine, north of Fort McMurray in Alberta, Canada.

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Say No to Tar Sands Pipeline: Proposed Keystone XL Project Would Deliver Dirty Fuel at a High Cost

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The Canadian pipeline company TransCanada has proposed a tar sands pipeline that could bring as much as 900,000 barrels per day (bpd) of costly and polluting fuel to the U.S. Gulf Coast. This pipeline, called Keystone XL, will lock the United States into a dependence on hard-to-extract oil and generate a massive expansion of the destructive tar sands oil operations in Canada. In addition to the damage that would be caused by the increased tar sands extraction, the pipeline threatens to pollute freshwater supplies in America's agricultural heartland and increase emissions in already-polluted communities of the Gulf Coast.

Instead of carrying common crude oil, the Keystone XL pipeline would carry thick, toxic bitumen for refining in the Gulf states, effectively transporting pollution from Canada to the United States. Despite arguments that the pipeline would increase energy security, it would in fact create the first international market for tar sands oil. To date, Canada has not approved dedicated tar sands pipelines to its East or West Coast.

The United States should instead implement a comprehensive oil savings plan and reduce oil consumption by increasing fuel efficiency standards, hybrid cars, renewable energy, environmentally sustainable biofuels, and smart growth to meet our transportation needs.



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March 2011

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Fuel Facts

The Keystone XL Pipeline Undermines the United States Commitment to a Clean Energy Economy

To meet an 80 percent reduction in carbon emissions by 2050, significant changes must occur in our transportation sector, which is now responsible for 30 percent of global warming pollution in the United States. Nearly all of these emissions come from the combustion of oil. NRDC analysis shows that by 2050, passenger cars and light trucks—our largest source of transportation emissions—will need to run almost entirely on non-petroleum-based fuels if we are to meet our emissions targets. In contrast, tar sands produce a heavy crude with a higher lifecycle carbon content than many other petroleum sources. If the United States were to import 3 million barrels per day (mbd) of tar sands oil, it could offset all the emissions gains projected by the Environmental Protection Agency (EPA) under the Renewable Fuels Standard (RFS2) by 2022. Replacing 3 mbd day of conventional oil with tar sands oil would be equivalent to adding more than 22 million passenger cars to the roads.

Proposed Pipeline Presents Serious Environmental and Health Risks

The Alberta tar sands are found under a region of Boreal forest and wetlands similar in size to Florida. The bitumen—or the unrefined product excavated from the tar sands—must either be strip-mined or melted and pumped up after the ground has been heated with steam for several months. Both forms of tar sands extraction fragment and destroy the Boreal forest, killing nesting migratory birds and many other species. Toxic waste from the mining operations is stored in vast man-made dams—called tailings ponds—that already cover sixty-five square miles. Tar sands

| Proposed Keystone XL Pipeline | |
|-------------------------------|---|
| Length | 1,702 miles of new pipeline |
| Width | 36 inches |
| Capacity | 900,000 bpd |
| Location | Hardisty, Alberta to Nederland, Texas |
| States traversed | Montana, South Dakota, Nebraska, Kansas, Oklahoma, Texas |
| Cost | \$7 billion ^a |
| Status | Federal environmental impact assessment process underway and state-level permitting processes underway. |
| Timeline | TransCanada aims to have pipeline operating in 2012. |

Source: TransCanada and U.S. State Department webpages: www.transcanada.com/keystone/kxl.html and www.keystonepipeline-xl.state.gov.

^a Cost of Keystone I pipeline is approximately \$5.2 billion so that the total cost of the entire Keystone pipeline project will be over \$12 billion. TransCanada Corp. TransCanada, ConocoPhillips to Expand Keystone to Gulf Coast. Downstream Today. July 16, 2008.

extraction uses large amounts of water from the Athabasca River and underground aquifers and energy—primarily natural gas—to heat the water to separate the bitumen from the sand.

In September 2010, the Assembly of First Nations called on the United States to take into account in its energy policy the environmental effects of tar sands extraction on First Nations peoples, citing among other concerns the high rates of cancer in the downstream Fort Chipewyan community.¹ These concerns echo the findings of a report published the month before in the *Proceedings of the National Academy of Sciences*, which found that the tar sands industry releases 13 elements considered priority pollutants under the U.S. Clean Water Act—including lead, mercury, and arsenic—into the Athabasca River.²

Keystone XL will transport the heavy, corrosive tar sands bitumen to refineries in the United States, crossing America's agricultural heartland over water aquifers and rivers. Leaks and spills are common occurrences from such pipelines. Between 2000 and 2009, pipeline accidents were responsible for 2,794 significant incidents and 161 fatalities in the United States.³ In 2010 alone, Enbridge pipelines spilled over 1 million gallons of oil from

“The tar sands mines are destroying our environment. We cannot let the fossil fuel industry do this to us.”

KENT MOECKLY IS A LANDOWNER ALONG THE KEYSTONE PIPELINE..



Athabasca Delta greenery near Wood Buffalo National Park. This critical migratory bird habitat, downstream from the tar sands mines, is at risk due to the large amount of water diversions and toxic waste released in close proximity to the Athabasca River by tar sands producers.

© David Dodge/The Pembina Institute

“Seeing the maps of where this pipeline goes makes an individual compare this to having open heart surgery and being left with a scar for a lifetime.”

DAVID NIEMI IS A LANDOWNER IN BUFFALO, SD AND THE KEystone XL PIPELINE CROSSES HIS RANCHING OPERATION FOR TWELVE MILES.

Canada’s tar sands into Michigan’s Kalamazoo River; 275,000 gallons in a suburb of Chicago; and 126,000 gallons near Neche, North Dakota. And within a few months of beginning operation, TransCanada’s recently completed Keystone pipeline had leaked at least three times in South Dakota.⁴ Now TransCanada hopes to build the Keystone XL pipeline over and, in some places, *in* the Ogallala Aquifer, which serves as the primary source of drinking water for millions of Americans and provides 30 percent of the nation’s ground water used for irrigation. A pipeline leak would have devastating effects.

Pollutants from tar sands refineries contribute to a wide range of human health problems, which include heart and lung disease, asthma, and cancer. Many of the refineries proposing to take tar sands oil are located in areas that already do not meet air quality standards. Tar sands oil contains more sulfur, nitrogen, and metals (including lead, nickel, mercury, and arsenic) than conventional crudes.⁵ They also create emissions of sulfur dioxide (SO₂) and nitrous oxide (NO_x), which contribute to acid rain. In addition, the tar sands refining process stresses water resources, demanding vast amounts of fresh water, and producing ammonia and sludge. In fact, in a controversial plan, BP proposed to increase its ammonia discharges into the Great Lakes as a result of its tar sands processing.⁶



An Investment in a Pipe That May Never Be Filled

In 2009, the United States imported approximately 950,000 bpd of tar sands oil from the total 1.5 mbd produced in Canada; Canada consumes most of the rest. TransCanada’s Keystone XL pipeline would be the third new dedicated tar sands pipeline built from Alberta into the United States in recent years. In 2008, the U.S. Department of State approved the presidential permit for TransCanada’s Keystone pipeline, which will bring 591,000 bpd of bitumen from Alberta to Illinois and Oklahoma. And in 2009, the U.S. Department of State approved Enbridge’s Alberta Clipper pipeline, which will have an ultimate capacity of up to 800,000 bpd for delivering bitumen to Wisconsin.

Reaching the tar sands production necessary to fill these pipelines in the near future is unrealistic. With over 2 mbd of tar sands pipeline capacity already existing, Keystone XL would increase this to over 3 mbd. Assuming Canada’s consumption of the tar sands stays constant, even industry estimates indicate that these pipelines could not be filled to capacity until 2025—and because of the structure of pipeline shipping fees, operating these pipelines well under capacity increases the cost of the oil shipped through them.

| Measures to Reduce Oil Use with Existing Technologies ^a | | 2020 | 2030 |
|--|--|------------|------------|
| Efficiency | Includes new passenger vehicle and truck efficiency; fuel efficient tires and oil for existing car and aerodynamic retrofits for existing truck fleets; and improvements in aviation, rail, marine shipping, and oil-heated building efficiency. | 1.1 | 4.6 |
| Reduced Driving | Includes smart growth, walkable communities and more transit to avoid car trips, and more efficient operations with some shifts to rail to reduce freight truck miles. | 1.0 | 1.5 |
| Cleaner Fuels | Includes transitioning to plug-in hybrid and electric passenger vehicles and increased natural gas use in freight trucks. Biofuels are included in the baseline and are therefore excluded here. | 0.2 | 0.9 |
| Total | | 2.3 | 7.0 |

^a NRDC analysis. Oil savings are in comparison to a baseline that includes GHG and CAFE standards for light-duty vehicles for model years 2012-2016 as modeled by NRDC and biofuels volumes to meet the Renewable Fuels Standard 2, as projected by EIA's AEO 2010. This means that these savings are in addition to what we will save with GHG and CAFE standards and the RFS2.

The Keystone XL Pipeline Is Not in the National Interest and Should Not Be Approved

As required for transnational-boundary pipelines, TransCanada has applied to the U.S. Department of State for a presidential permit for Keystone XL.⁷ To receive the permit, a number of federal, state, and local requirements must be met and the U.S. Department of State must decide that construction and operation of the pipeline is in the national interest—a process that does not have clear criteria or transparency.

Any determination of national interest should consider the full harmful scope of tar sands oil imports into the United States and the associated negative impacts from extraction, pipelines, refineries, and end use. By this standard, the Keystone XL pipeline falls far short, and the Department of State's analysis of these issues was seriously lacking in its April 2010 draft environmental impact statement.⁸

Tar sands require oil prices to be high to turn a profit. It is not in the national interest to lock the United States into supporting an expensive and dirty form of oil for many years to come. Also, additional capacity for tar sands oil perpetuates America's addiction to oil, and undermines the clean energy alternatives that would bring genuine energy security.

Oil use in the United States has stabilized, and NRDC analysis has shown that the nation is on the path to implementing oil saving policies that could reduce our oil consumption by 2.3 mbd by 2020 and 7 mbd by 2030, compared to the Energy Information Administration's business as usual projections—and all with existing technology. Scaling up these technologies even further and putting American ingenuity to use, the United States now has the opportunity to strive to eliminate fossil fuel use altogether by 2050. The policies to support this goal include support for higher efficiency new cars, improved fuel economy standards, advanced environmentally sustainable biofuels, smart growth and transit, electric vehicles and air travel improvements, and increased research and development.

Tar sands oil threatens our air, water, land, and economy, and will increase already dangerously high greenhouse gas emissions and demand for natural gas. Tar sands oil has no place in the clean energy economy.

¹ The Pembina Institute, Canadian Aboriginal Concerns with Oil Sands: A compilation of key issues, resolutions, and legal activities, (September 2010). <http://pubs.pembina.org/reports/briefingnotesofntoursep10.pdf>.

² David W. Schindler et. al, "Oil Sands Development Contributes Elements Toxic at Low Concentrations to the Athabasca River and its Tributaries," Proceedings of the National Academy of Sciences vol. 107, no. 37, (August 30, 2010), 16178-16183, <http://www.pnas.org/content/107/37/16178.full.pdf>.

³ Pipeline Hazardous Materials and Safety Administration. Significant Pipeline Incidents. http://primis.phmsa.dot.gov/comm/reports/safety/SigPSI.html?nocache=6758#_all.

⁴ Leaks in the Keystone pipeline have been reported to the South Dakota Department of Environment and Natural Resources (DENR) on May 21, June 23 and August 10, 2010, South Dakota DENR. South Dakota Environmental Events Database. <http://denr.sd.gov/des/gw/Spills/SpillData.aspx>

⁵ Declaration of Galen W. Hartman, "Natural Resources Defense Council, Inc. v. United States Department of State et al. and TransCanada Keystone Pipeline," United States District Court for the District of Columbia, Civil Action No. 08-1363 (R.JL), Document 22-3, (Filed 10/17/2008), 4.

⁶ ADVENT-ENVIRON, Addendum to "Case-by-Case Antidegradation Analysis" Prepared for BP Whiting, Indiana, submitted to IDEM November 30, 2006, (Dec. 12, 2006), 3.

⁷ Executive Order 13337 of April 30, 2004, which amends Executive Order 11423 of August 16, 1968.

⁸ In comments on the DEIS, the EPA labeled it "Category 3: Inadequate" and requested significantly more analysis in a revised DEIS. [http://yosemite.epa.gov/oeca/webeis.nsf/%28PDFView%29/20100126/\\$file/20100126.PDF?OpenElement](http://yosemite.epa.gov/oeca/webeis.nsf/%28PDFView%29/20100126/$file/20100126.PDF?OpenElement).