Keystone XL: A Tar Sands Pipeline to Increase Oil Prices

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INTRODUCTION

One of the most misunderstood issues surrounding the proposed Keystone XL tar sands pipeline is the project's impact on U.S. gasoline prices. The Keystone XL tar sands pipeline would pump up to 830,000 barrels per day (bpd) of some of the world's dirtiest oil, which is strip mined and drilled from under Canada's Boreal forests, straight through the heart of America's breadbasket to refineries on the Texas Gulf Coast. By allowing tar sands access to the lucrative international market, Keystone XL would finance further expansion of tar sands extraction, worsening climate change and undermining efforts to move to clean energy. Pipeline supporters cite high gasoline prices as a reason to build the project. The truth is that Keystone XL is likely to both decrease the amount of gasoline produced in U.S. refineries for domestic markets, and increase the cost of producing it, leading to even higher prices at the pump.

The Keystone XL tar sands pipeline would divert oil from the Midwest to refineries on the Gulf Coast of Texas. Midwestern refineries produce more gasoline per barrel than refineries in any other region in the United States. That gasoline is then sold to U.S. consumers. In contrast, refineries on the Gulf Coast of Texas produce as much diesel as possible, much of which is exported internationally. By taking oil from midwestern gasoline refineries to Gulf Coast diesel refineries, Keystone XL will decrease the amount of gasoline available to American consumers.

Meanwhile the Keystone XL pipeline will increase the price that gasoline producing refineries in the Midwest pay for crude oil. TransCanada, the company sponsoring the pipeline, pitched the pipeline to Canadian regulators as a way of increasing the price of crude in the United States.[1] Right now, Midwestern refineries are buying crude oil at a discount—a deep discount. This allows them to produce products more cheaply than they would otherwise be able to. Building Keystone XL would change that. If TransCanada's analysis is accurate, under current market conditions,

Keystone XL would add $20 to $40 to the cost of a barrel of Canadian crude—increasing the cost of oil in the United States by tens of billions of dollars.

The Keystone XL tar sands pipeline is not a solution to rising gas prices. By decreasing the supply of gasoline in the United States and increasing the price refineries pay to produce it, Keystone XL will add to America's pain at the pump. The United States does not need the Keystone XL tar sands pipeline and the associated climate, land, and water risks. The solutions to our energy needs lie in reducing our demand for oil, increasing fuel efficiency standards, and eliminating subsidies for the oil industry.

OIL INDUSTRY SHIFTS FOCUS FROM GASOLINE TO DIESEL

To understand Keystone XL's impact on U.S. gas prices, it is first necessary to understand how the U.S. refinery industry supplies fuel for domestic and international transportation markets. The United States runs on gasoline. Motor gasoline provides more than two-thirds of the fuel for the U.S. ground transportation network.[2] In this, the United States is the international exception rather than the rule. Diesel provides nearly two-thirds of the ground transportation fuel outside North America.[3]

Historically, gasoline has commanded higher prices than diesel on both the U.S. and international markets, creating a financial incentive for refiners to produce as much gasoline as possible.[4] Prior to 2000, largest gasoline producing region in the United States was the Gulf Coast, which produced refined products almost exclusively for the U.S. market.[5] However, in recent years, increased worldwide demand for diesel fuel in Europe, China, India, and Latin America increased its price relative to gasoline.[6] By 2004, average diesel prices exceeded gasoline prices—particularly outside the United States.[7] These increasing diesel prices have created a financial incentive for refineries to maximize the amount of diesel they can get out of a barrel of oil and send that diesel to overseas markets.

Refineries can increase their diesel production with relatively minor, low-cost changes to the configuration of their existing operations. Larger capital investments, such as expansions that use hydocracking units rather than fluid catalytic cracking units, can further increase the amount of diesel that can be produced from a barrel of oil. Refineries in the United States, particularly those on the Texas Gulf Coast, are pursuing both strategies to increase their diesel yield, decreasing their production of gasoline in the process. Data shows that gasoline yield, or the amount of gasoline produced from a barrel of crude, has been declining over the last 10 years.[8]

This trend has been pronounced in refineries on the Gulf Coast with access to the higher prices in the international diesel market. Gulf Coast refiners, historically the primary source of gasoline for the U.S. market, had the greatest access and capacity to export to international diesel markets.[9] Today, these refiners have started reconfiguring their operations to prioritize diesel for international customers over gasoline for U.S. customers.[10] Data from the fourth quarter of 2011 indicate that the majority of refined products produced in Texas Gulf Coast refineries were exported on the international market.[11]

How Refineries Work

Crude oil is a mixture of petroleum molecules of different sizes. Refineries take this raw mixture and turn it into useful products like gasoline and diesel. The first step in the refining process is separating the naturally occurring petroleum molecules by size. This happens in a distillation unit, where crude is heated and sorted based on the different boiling points. Lighter molecules used to make high-value gasoline boil at lower temperatures, while heavier molecules that make lower value products, like petroleum coke, boil at higher temperatures.

Natural distillation does not produce enough gasoline and diesel to satisfy market needs. Light oil only yields about 20 percent gasoline products and 50 percent heavy residuum.[a] Heavier crude blends produce even less gasoline in natural distillation.[b]

Refineries use secondary conversion processes to increase the volume of gasoline and diesel that can be produced from a barrel of oil. Refineries contain several types of cracking and coking units which break large petroleum molecules into smaller ones. They also contain units which can combine very small petroleum molecules into larger ones. While refineries cannot process crude oil to produce one refined product exclusively—they can configure their operations to maximize the production of one product or another.[c] By adjusting the configuration of these downstream facilities, refinery operators can maximize the production of gasoline or diesel.

[a] http://www.eia.gov/pub/oil_gas/petroleum/analysis_publications/oil_market_basics/refining_text.htm#Crude Oil Quality

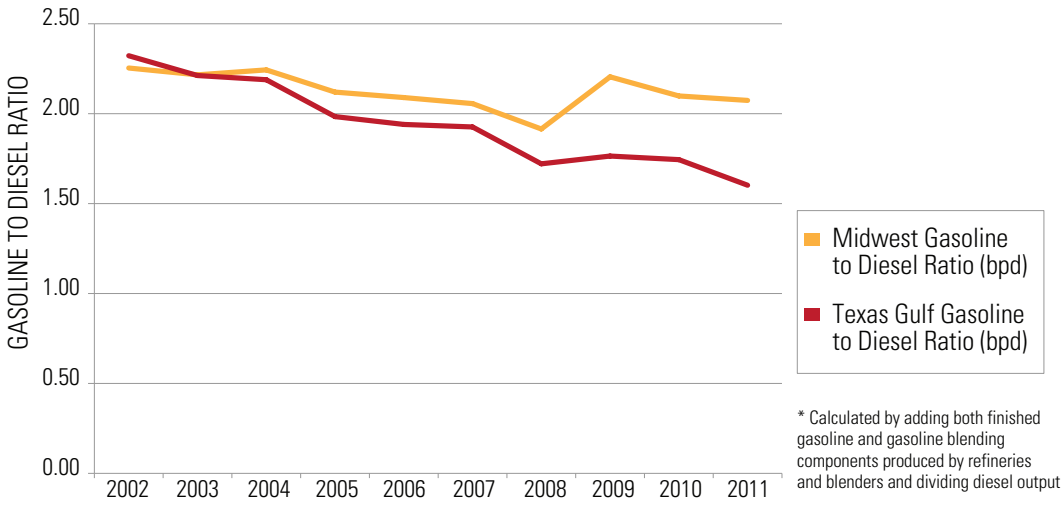
[b] http://www.gao.gov/new.items/d05525sp.pdf

[c] U.S. Energy Information Administration (EIA), Increasing Distillate Production at U.S. Refineries – Past Changes and Future Potential, Oct. 2010, pg. 9-13, ftp://ftp.eia.doe.gov/features/distillateprod.pdf.

MIDWESTERN REFINERIES PRODUCE MORE GASOLINE THAN TEXAS GULF COAST REFINERIES

In recent years, Gulf Coast refineries have switched from producing gasoline to producing diesel. Ten years ago, Texas Gulf Coast and Midwestern refineries had similar gasoline to diesel ratios, both producing about 2.3 barrels of gasoline for every barrel of diesel. Since then, Texas refineries have had a 30 percent decline in their gasoline to diesel output.

Figure 1: Refineries in the Texas Gulf Coast are Producing Less Finished Gasoline and More Diesel When Compared to Midwestern Refineries*



Lower gasoline production in Texas Gulf refineries cannot be attributed to lower quality crude oil feedstock. High quality crudes, which are lighter and less sulfuric, do tend to produce more gasoline. However, the overall quality of crude oil processed in Texas Gulf Coast refineries is better than that processed by many refineries in the Midwest which have higher gasoline output. [12] For instance, northern midwestern refineries, which process crudes which are both heavier and more sulfuric than those processed in the Texas Gulf Coast, also have gasoline yields that are more than 10 percent greater than those on the Gulf Coast of Texas.

More specifically, northern midwestern refineries produced about 22 gallons of gasoline from every barrel of crude oil over the last year—despite working with inferior feedstock.[13] On the other hand, refineries on the Gulf Coast of Texas produced about 17 gallons of gasoline, while processing lighter, sweeter crudes that should yield greater volumes of gasoline in similarly configured refineries.[14] In other words, a barrel of crude processed in midwestern refineries produces more than 25 percent more gasoline than one processed in a Texas Gulf refinery.

Given current differences between the gasoline yields of midwestern and Texas Gulf refineries, the fact that the Keystone XL pipeline will siphon up to 830,000 barrels per day of crude oil from the Midwest to the Gulf Coast would decrease U.S. gasoline supplies by 80,000 bpd, or 1.2 billion gallons a year.[15] And this analysis does not yet account for the fact that gasoline yields in Gulf refineries may continue to decline and the majority of finished gasoline produced in Texas Gulf refineries is exported internationally. Even without incorporating these factors, the numbers show that by reducing available gasoline supplies in the United States, the Keystone XL pipeline will likely increase pressure on retail gasoline prices.

"Increased diesel production certainly has had a pressuring effect on gasoline prices."

— Avery Ash, manager of regulatory affairs, American Automobile Association, March 29, 2012[16]

Table 1: Comparison in Crude Quality and Gasoline Yield Between Northern Midwest and Texas Gulf Coast Refineries

Crude Quality and Gasoline Yield	Northern Midwest Crude Quality	Texas Gulf Coast Crude Quality
API Gravity[a]	28	29
Sulfur Content[b]	2.3%	1.8%
Gasoline Yield[c]	51.2%	40.8%
Gallons of Gasoline per Barrel	21.5	17.1

Despite processing lower quality crudes, Northern Midwestern refineries produce more gasoline per barrel of crude oil than Texas Gulf Coast refineries.
Source: Showing crude input qualities from March 2011 – February 2012. EIA, Crude Input Qualities, April 30, 2012, http://www.eia.gov/dnav/pet/pet_pnp_crq_dcu_nus_m.htm.

[a] API gravity is a measure of how dense or heavy crude oil. The lower the gravity, the heavier and lesser quality the oil.

[b] Crudes with higher sulfur content are lower quality and more difficult to refine.

[c] Gasoline Yield is how much gasoline and gasoline blending components a refinery produces from a barrel of crude oil.

KEYSTONE XL WILL DIVERT OIL AWAY FROM MIDWEST

Keystone XL is not a pipeline to the United States, but one through it. Existing pipelines from Canada to the United States provide enough capacity to move all the oil that Canada produces. In fact, Canada's current oil production uses only approximately half of its export pipeline capacity. In 2010, Canada exported less than 2 million bpd of crude oil.[17] The vast majority of these exports were produced in western Canada and transported to the United States. Canada already has an excess of crude oil export pipelines—enough to export nearly 4.1 million bpd (see table 2: Total Capacity of Canada's Existing Export Pipelines).

Tar sands oil production in Canada is at approximately 1.6 million bpd.[18] Tar sands production would have to reach nearly 4.1 million bpd for Keystone XL to begin to transport additional crude into the United States.[19] Even if Canadian tar sands oil production increases at the highly aggressive pace that its oil industry predicts—reaching 3.7 million bpd by 2025—it would take more than 15 years to fill the existing pipelines to the United States.[20]

TransCanada's Keystone XL tar sands pipeline bypasses Midwestern refineries, transporting tar sands from Alberta directly to refineries on Texas's Gulf Coast. Although many pipeline systems have numerous pipelines for offloading oil along their route, Keystone XL only has two—one in Houston and another in Port Arthur, which are increasingly moving from domestic sales to focus on international exports of the products they produce.

KEYSTONE XL: SIMPLY AN EXPORT PIPELINE VIA THE TEXAS GULF REFINERIES

Rising diesel prices have corresponded with the United States becoming a major exporter of refined products. These changes have been dramatic in refineries located on the Gulf Coast. More than three-quarters of the nation's exports originate in refineries on the Gulf Coast.[21] As was explained in a previous section, within the Gulf Coast refineries, those located on the Texas Gulf Coast are particularly active in the export market. In the fourth quarter of 2011, these Texas Gulf Coast refineries were responsible for exporting nearly 1 million barrels of gasoline and diesel every day. These refineries produce more than half of U.S. gasoline and diesel exports, while only accounting for approximately one-sixth of the country's petroleum input.[22]

On the other hand, midwestern refineries sell 99 percent of their product to U.S. customers. Midwestern refineries do not currently have an easy means of accessing the lucrative international market for refined products.[23] The Midwest itself is one of the largest markets for gasoline in the United States and it is not well situated to export refined products to Europe, Latin America, or Asia. Moreover, its refineries have not pursued infrastructure to support the international export of products. The small fraction of petroleum exported by Midwestern refineries is primarily low-value petroleum coke, residual fuel oil, and asphalt.[24] In 2011, more than 99.7 percent of gasoline and diesel produced in the Midwest stayed in the United States.[25]

Table 2: Total Capacity of Canada's Existing Export Pipelines[a]

Name	Destination	Capacity (barrels per day)
Enbridge Mainline	Eastern Canada East Coast Midwest	1,900,000
Enbridge Alberta Clipper Pipeline	Northern Midwest	800,000[b]
TransCanada Keystone I Pipeline	Midwest	590,000
Express	Rocky Mountains Midwest	283,000
Milk River	Rocky Mountains	118,000
Rangeland	Rocky Mountains	85,000
Kinder Morgan TransMountain Pipeline	British Columbia	300,000
Total Existing Canadian Pipeline Export Capacity	**West Coast**	**4,076,000**

[a] Energy Resources Conservation Board, ST98-2011 Alberta's Energy Reserves 2010 and Supply/Demand Outlook 2011-2020, June 2011, pg. 3-28, http://www.ercb.ca/docs/products/STs/st98_current.pdf

[b] The Alberta Clipper pipeline is currently operating at 450,000 bpd, but is designed for a maximum capacity of 800,000 bpd. Enbridge, Alberta Clipper and Southern Lights, http://www.enbridge.com/Alberta-Clipper-and-Southern-Lights.aspx.

"So you will see what we have been doing is we are changing our output to meet the world demand and it is actually pulling product from the United States in the form of willing to bid up the price."

— Bill Klesse, chief executive officer of Valero, March 6, 2012[26]

KEYSTONE XL WILL INCREASE PRICE OF OIL IN UNITED STATES AND CANADA

The configuration of the U.S. pipeline system has meant that with additional flows of crude oil coming from the north, increased oil supplies are available to refineries in the Midwest, Rocky Mountains, and Ontario. As supplies in these regions have increased, oil prices have declined relative to the world oil market price. Throughout 2011, this caused the price of Canadian crude to decline significantly below international prices. In March 2012, tar sands crude was selling for $70 per barrel in the Midwest when Mexican Maya, a crude of similar quality selling on the international market, was selling for more than $112 per barrel.[27]

One of the primary purposes of the Keystone XL tar sands pipeline is to increase the price of Canadian tar sands and profits for the multinational companies that produce the tar sands. According to TransCanada, Keystone XL would increase the price of Canadian tar sands to roughly equal that of Mexican Maya.[28] When TransCanada told Canadian

The Gulf Coast Exports Gasoline and Diesel

During a recent Energy and Power subcommittee hearing, Alex Pourbaix of TransCanada explained to Representative Markey that after oil from Keystone XL is refined, diesel will be exported from Texas refineries internationally, while gasoline for U.S. consumers would be imported in exchange.[a] However, the numbers on the Gulf Coast tell a different story. In 2011, Gulf Coast refineries exported 390,000 barrels per day of finished motor gasoline on net.[b] Refineries on the Texas Gulf Coast were responsible for the majority of these exports.[c] While Gulf refineries are focused on exporting diesel, they are also exporting gasoline and not importing gasoline in high enough amounts to replace what they export.

In fact, nationally, the United States is now a net exporter of refined product. In the last quarter of 2011, U.S. exports of refined products exceeded imports by 2.5 million bpd.[d] Most of these exports were driven by an increase in foreign purchase of diesel fuel.[e]

[a] House Energy and Commerce Subcommittee on Energy and Power, Hearing on "The American Energy Initiative," Dec. 2, 2011, http://www.youtube.com/watch?v=VucRPHJtvGU.

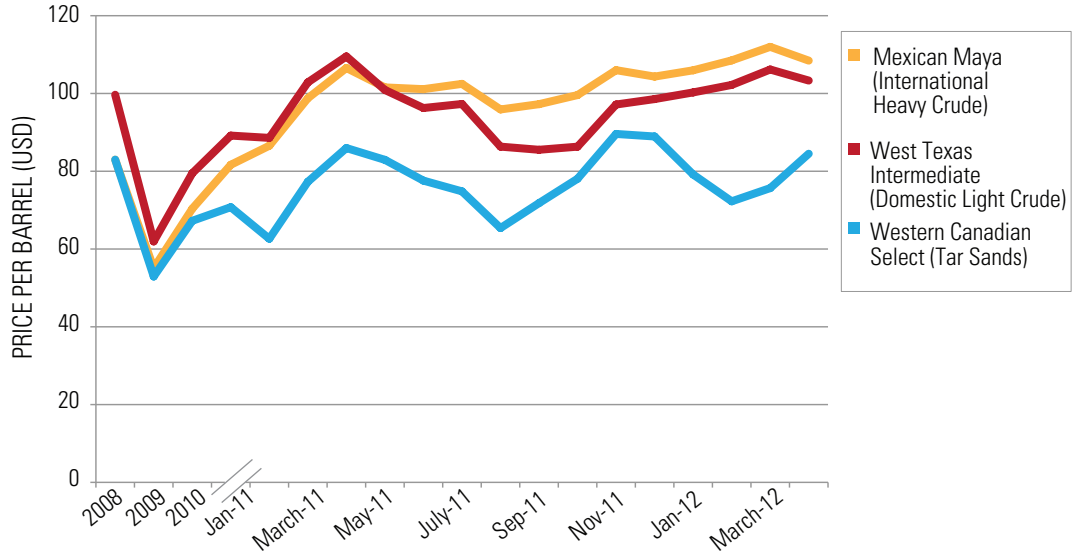
[b] EIA, Monthly Gulf Coast (PADD 3) Exports of Finished Motor Gasoline, Jan. 30, 2012, http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MGFEXP32&f=M; EIA, Monthly Gulf Coast (PADD 3) Imports of Finished Motor Gasoline, Jan. 30, 2012, http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MGFIMP32&f=M.

[c] In the fourth quarter of 2011, the Gulf Coast exported 557,000 bpd of finished motor gasoline, of which 422,000 bpd originated from Texas Gulf Coast refineries. EIA, Gulf Coast Exports of Finished Motor Gasoline, March 1, 2012, http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MGFEXP32&f=M/; EIA Texas Gulf Coast data request, April 2, 2012.

[d] EIA Import and Export Data for 4th quarter of 2011.

[e] EIA, U.S. petroleum product exports exceeded imports in 2011 for first time in over six decades, March 7, 2012, http://www.eia.gov/todayinenergy/detail.cfm?id=5290.

Figure 2: Tar Sands Crude Sells for a Signficant Discount Compared to Both Domestic and International Crude



regulators that Keystone XL would eliminate the disparity between Canadian crude and international crude prices in 2009, Canadian crude was selling at a $3 a barrel discount.[29] The overall revenue increase for Canadian crude producers was estimated at between $1.8 billion to $3.4 billion.[30]

"The price for Canadian heavy crude could increase further if the Keystone XL Pipeline causes the available supply in the Midwest to be less than the demand, resulting in a price equivalent to Midwest parity with imported Maya crude, as it was before 2000."

— Remarks submitted to Canadian National Energy Board by Purvin & Gurtz on TransCanada's behalf[31]

Since the beginning of 2012, Canadian tar sands crude has been selling at discount to Mexican Maya of $20 to $40 per barrel.[32] In the first quarter of 2012, prices at the Gulf Coast for Mexican Maya hovered between $100 and $115, while Canadian tar sands sold in the Midwest for between $60 and $90.[33] Reversing this discount would have a significant impact—increasing U.S. oil prices and the oil industry's profits.

The disparity between tar sands and Mexican Maya is now between six and fourteen times greater than the price discount existing when TransCanada forecast that Keystone XL would increase the revenues of Canadian tar sands producers by up to $3.4 billion. If TransCanada were to do the same analysis today, it would likely find that the Keystone XL pipeline would increase the amount the United States paid for Canadian crude by up to $27 billion a year.[34]

TransCanada predicted Keystone XL would lead to higher Canadian crude prices for several years—lasting as long as pipeline capacity exceeded Canadian tar sands supply.[35] With Keystone XL, Canada would have 5 million bpd of export pipeline capacity, nearly three times more pipeline capacity than it has oil to export.[36] Even based on industry's optimistic projections, it will take decades to fill that much pipeline capacity.[37]

The Keystone XL pipeline would allow tar sands producers to ship crude to Texas Gulf Coast refineries at higher international prices. In the process, it would divert oil from Midwestern refineries until decreasing oil supplies in that region force prices there to reach international levels.

Meanwhile, according to a Department of Energy report, the Keystone XL pipeline will not have a substantial effect on the crude available to Gulf Coast refineries.[38] If Keystone XL is built, Gulf Coast refineries will process Canadian volume of crude oil diverted from the Midwest.[39] If Keystone XL is not built, the Midwest will process that Canadian crude, turning it into high volumes of gasoline.[40] Gulf refiners will continue to buy oil on the international market in order to sell refined products back to the international market.[41]

KEYSTONE XL IS LIKELY TO INCREASE U.S. GASOLINE PRICES

The proposed Keystone XL tar sands pipeline will likely increase gasoline prices in large areas of the United States through two mechanisms:

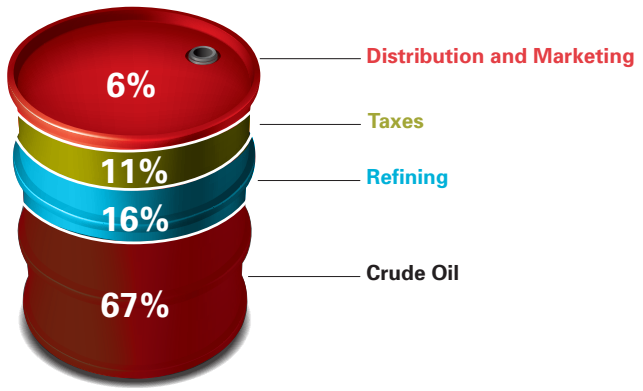
- Substantially increasing the cost of crude for refineries in the Midwest and Rocky Mountain states, leading them to either increase the price of their products or reduce their output
- Diverting oil from refineries in the Midwest that maximize gasoline production to those on the Texas Gulf Coast that maximize diesel output, reducing gasoline production in the U.S. market

Increasing Cost of Producing Gasoline in Midwest and Rockies

In the United States, the price of gasoline is primarily dictated by the price of crude oil.[42] TransCanada as well as industry and market analysts expect that Keystone XL will increase the price of Canadian crude oil.[43] This increase will have a substantial effect on the operating costs of refineries in the Midwest and Rocky Mountains, which both rely on Canadian crude imports for more than half of their feedstock.[44] Refineries deal with higher costs in two ways—passing them onto consumers as higher gas prices or producing less.

Refineries may attempt to pass on higher costs to consumers directly in the form of higher gasoline prices. Just as lower regional crude prices have resulted in lower gasoline prices in Rocky Mountain states, higher crude oil costs often lead to higher gasoline prices.

Figure 2: What Is In The Price of Gasoline?



Source: U.S. EIA, Gasoline and Fuel Update, May 21, 2012, http://www.eia.gov/petroleum/gasdiesel/.

Why Keystone XL Will Raise U.S. Oil Prices, Not Lower International Prices

Keystone XL will take oil currently refined in the Midwest and Rockies and send it to the Gulf Coast where it can be sold on the international market. Oil supplies dedicated to the United States will decline while the Keystone XL pipeline provides the international market with access to that Canadian crude previously meant for the U.S. market. This will have a powerful impact on oil prices in the Midwest and the Rockies—increasing the price of Canadian crude by $20 to $30 a barrel in the 2012 U.S. market, while doing nothing to decrease world oil prices. There are three reasons why the Keystone XL pipeline will not significantly lower international crude prices:

- The international market is more than twenty times larger than the midwestern and Rocky Mountain oil markets. Keystone XL could reduce Midwest and Rocky Mountain oil supplies by more than 20 percent while adding a fraction of a percent to global oil supplies.
- In the highly unlikely event that additional Canadian supplies had a measurable impact on world oil prices, Organization of the Petroleum Exporting Countries (OPEC) has the power to reduce international oil supply accordingly. OPEC produces more than 30 million bpd and already keeps an additional 2.5 million bpd off the market. Were additional Canadian supplies to measurably decrease international prices, OPEC could take an additional amount off the market to compensate.
- TransCanada's economic rationale for the Keystone XL project requires the pipeline to increase U.S. oil prices without affecting international prices. Tar sands producers will have to pay larger pipeline fees to send oil from Keystone XL to the Gulf of Mexico rather than the Midwest. TransCanada has stated that Keystone XL will increase the price of Canadian crude to equal the cost of Mexican Maya. Based on 2012 prices, that is an increase of approximately $25 per barrel.[a]

a Bloomberg, Western Canadian Select Crude Spot Oil, April 27, 2012, http://www.bloomberg.com/quote/USCRWCAS:IND; Bloomberg, Latin American Maya Crude Spot Oil, April 27, 2012, http://www.bloomberg.com/quote/LACRMAUS:IND.

Refiners that are unable to pass on higher crude oil costs to consumers often do so by lowering the amount of crude they process.[45] This has become the case with refineries on the East Coast, where higher crude costs in recent years have led to refineries idling capacity and even considering closure.[46] Relying on the international market for much of their crude oil supply, East Coast refineries are paying the highest price in the nation for crude oil feedstocks. In 2011, these refineries paid nearly $10 a barrel above the national average.[47] The costs are being passed on to East Coast consumers, who pay some of the highest gasoline prices in the country. East Coast refineries have not been able to pass on all the costs, however. In recent years they have idled significant capacity and are currently running just above two-thirds of operable capacity.[48] Several major East Coast refineries have been so compromised by these economic conditions that their long-term viability is in question.[49]

Rising crude oil prices in the Midwest and the Rockies is likely to put pressure on refinery operations, which are currently configured to maximize gasoline production. These refineries have been insulated from higher international crude prices by their access to discounted Canadian crudes. Gulf Coast refineries, which have been affected by higher crude costs, have compensated by decreasing their gasoline output, increasing their diesel production and exploiting higher prices overseas. Unlike Gulf Coast refineries, Midwestern and Rocky Mountain refineries do not have access to the international market and therefore have not been able to profit from higher international diesel prices in the way that Gulf Coast refineries have.[50] The higher crude costs that come along with the Keystone XL tar sands pipeline will force these refineries to consider two responses: increase gasoline prices directly or increase gasoline prices indirectly by lowering their output or shutting down units, thereby decreasing regional supply.

Decreased Regional Gasoline Production Leads to Higher Gasoline Prices

Local gasoline supplies are reduced when refineries, due to higher crude oil costs, reduce their output or shut down. This requires gasoline to be shipped from more distant locations that have excess, or marginal, gasoline supplies. Acquiring these additional supplies requires that consumers pay a premium to bid the additional gasoline away from other markets that may also be under-supplied. In addition to this premium, consumers must pay added transportation costs to have the gasoline shipped from a distant location.

There are increasingly limited volumes of excess gasoline supplies in the Gulf Coast. Competing with other markets currently purchasing these gasoline supplies, notably Latin America, requires paying higher gasoline prices. In the case of the East Coast, which already imports gasoline from Gulf refineries, importing additional gasoline supplies will require paying higher prices. As the Energy Information Administration (EIA) explains "higher price differentials for wholesale products compared with the Gulf Coast and markets abroad would have to occur to incentivize producers to send more products to the Northeast."[51] In other words, if the East Coast, or any other region in the United States, requires additional gasoline from the Gulf Coast, they will have to compete with the international market—and that means consumers pay higher prices for gasoline.

Why Are Gasoline Prices Lower in the Rocky Mountain States?

Gasoline prices in the Rocky Mountain states of Idaho, Montana, Utah, and Colorado are lower than those in the rest of the country. In fact, in the first months of 2012, these states enjoyed the lowest gasoline prices in the country—up to 50 cents below the national average.[a] Refineries in the Rocky Mountains rely on imports of Canadian crude and production from North Dakota. When the cost of the crude oil dropped for these refineries, so did the price of the gasoline they produced.[b]

Rocky Mountain states were able to sell gasoline at lower prices than were other parts of the country because their refineries were able to buy crude at substantially lower prices. While oil prices in the Rockies were still high by historical standards—averaging $88 per barrel in 2011—they were substantially below the world market price of $111 per barrel.[c] If Keystone XL moves forward, oil prices in the Rockies will increase along with prices in the Midwest as refineries in both regions compete with higher international oil prices at the Gulf Coast. Refineries will no longer be able to afford to offer consumers discounts for gasoline.

[a] EIA, Gasoline and Diesel Fuel Update, April 23, 2012, http://www.eia.gov/petroleum/gasdiesel/

[b] EIA, Retail gasoline prices in the Rocky Mountains fall as U.S. average prices rise – Today in Energy, Feb. 12, 2012, http://www.eia.gov/todayinenergy/detail.cfm?id=4990

[c] EIA, 2011 Brief: Brent crude oil averages over $100 per barrel in 2011, Jan. 12, 2012, http://www.eia.gov/dnav/pet/pet_pri_rac2_dcu_r40_a.htm

TAR SANDS OIL IS NO BARGAIN

Clearly, the Keystone XL tar sands pipeline will not ease consumers' pain at the pump. However, Keystone XL's impact on U.S. gasoline prices is not the tar sands pipeline's most critical flaw. Although the scope and subject of this brief is to evaluate Keystone XL's likely impact on U.S. gasoline prices, the larger issue is that the pipeline would lead to the expansion of tar sands crude extraction in Alberta, Canada. Tar sands crude, or bitumen, is a dirty fuel source. Its extraction is significantly more destructive than conventional crude, processing it is more energy intensive and burning it emits significantly more greenhouse gases.

Continued expansion of the tar sands undermines many of the initiatives the United States has been successfully promoting to reduce carbon emissions and intensity. The Environmental Protection Agency (EPA) projects that replacing 900,000 bpd of conventional oil with the same amount of tar sands from Keystone XL would increase U.S. annual carbon emissions by 27 million metric tons—the equivalent of adding 6 million cars on the road.[52]

In addition to the increased carbon emissions from getting tar sands out of the ground, the environmental destruction of the Boreal forest in Alberta due to tar sands extraction is creating significant additional carbon emissions. A new study in the *Proceedings of the National Academy of the Sciences* shows that in addition to the higher well-to-wheel emissions of tar sands, the destruction of the Boreal forest substantially increases the carbon impacts of tar sands production.[53] The study estimates the elimination of peatlands from tar sands extraction will release up to 175 million metric tons of carbon dioxide (CO_2) and reduce carbon sequestration by up to 26 million metric tons a year.[54] The debate about the Keystone XL tar sands pipeline is not just a question about a single piece of standalone infrastructure. Ultimately, it is a question about our energy future, our water, and our climate. Tar sands producers hope to increase the rate at which they extract this dirty fuel many times over in coming decades. By increasing the price of tar sands crude, Keystone XL facilitates this goal by dramatically increasing the financial incentives for investment in tar sands production on the backs of American consumers.

Tar sands expansion is inconsistent with our nation's commitment to addressing climate change. The United States should not approve infrastructure projects that enable the continued expansion of a resource that gives ground on many of the country's hard won accomplishments in fighting climate change. The fact that Keystone XL will increase gasoline prices in many parts of the United States and decrease the country's dedicated oil supplies give one more reason that Keystone XL is not in the national interest.

Canadian Consumers Will Not Benefit From Keystone XL

Keystone XL will not bring lower gasoline prices to Canadian consumers either. In fact, in its testimony before Canada's National Energy Board, TransCanada's representative predicted that Keystone XL would increase oil prices in Ontario and Western Canada, in addition to the United States.

Q: So, first of all, this "strategy" as you call it, would be intended to raise the crude price not only in PADD II [U.S. Midwest] but also in Ontario; right?

Mr. Wise (representing TransCanada): "Yes, it would raise it in Ontario and in Western Canada." National Energy Board Hearing, September 17, 2009 [a]

While the impacts of higher oil prices in Canada are outside the scope of this report, higher crude oil costs in Canada will likely increase pressure on gasoline prices for Canadian consumers, who paid an average of $4.89 a gallon for gasoline in 2012.[b] Tar sands are not the answer to high gasoline prices in either the United States or Canada.

[a] National Energy Board Hearing, Volume 3, September 17, 2009, Lines 3721-3722, https://www.neb-one.gc.ca/ll-eng/Livelink.exe/fetch/2000/90464/90552/418396/550305/570526/570650/A1L3V6_-_Vol.3-Thu Sep17.09?nodeid=570651&vernum=0&redirect=3

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OIL DEMAND REDUCTION IS THE BEST ENERGY POLICY

Fortunately, the better option for reducing how much consumers pay at the pump is reducing the number of times they have to visit the pump. The United States has already made great strides to reduce both the price Americans pay for every mile they travel as well as the number of miles they have to travel to get where they need to go. Even as gasoline prices reach record highs, fuel efficiency standards have ensured that the price drivers pay per mile have not. At the same time, in part due to smart growth and public transit initiatives, in recent years the number of vehicle miles travelled has declined. The United States can do even more today to reduce the impact expensive oil such as tar sands has on our economy over the next two decades. In the process, U.S. citizens could reap the economic bounty as our nation manufactures and exports clean solutions to oil dependence.

Adopting a series of oil savings policies would reduce U.S. oil consumption and imports by 5.7 million bpd in 20 years (see table 3: The United States Can Dramatically Reduce Its Dependence on Oil With An Oil Savings Plan). That is more oil than Canada is expected to produce in the future and more than twice as much as it produces now. These measures include continuing ongoing efforts to make our vehicles more efficient; supporting policies that result in better public transportation and community planning; and reducing oil demand in aviation, rail, marine, and other non-highway transportation equipment, as well as in industrial processes and building heat.

The United States has already taken a major step in the right direction. In 2011, the EPA and the U.S. Department of Transportation proposed new rules for passenger cars and light trucks that will result in new vehicles with nearly double the fuel efficiency of today's fleet.[55] This measure alone will reduce U.S. dependence on oil by 1.7 million barrels per day by 2030. That is more than two-times what Keystone XL would carry at full capacity.[56] Not only that, they are expected to save U.S. car owners $4,400 over the life of their vehicles.[57]

In the long term, the Keystone XL tar sands pipeline represents the wrong direction for a country at an energy crossroads. The national debate surrounding Keystone XL is about being mindful of the sort of energy future we want for our country. There is a different route that can reduce our dependence on oil and its rising prices. This route saves American consumers hundred of billions of dollars at the pump. It is a route that takes us to millions of new jobs and clean air benefits, making our nation a leader in the international clean energy market.

Table 3: The United States Can Dramatically Reduce Its Dependence on Oil With An Oil Savings Plan

Clean Energy Measures	Description	Potential Oil Savings in 2030 (million bbl/d)
Automobile Efficiency, Carbon Pollution Standards, and Vehicle Electrification	New-vehicle fuel economy and emissions standards reach 54.5 miles per gallon (mpg) and 163 gCO_2 per mile in 2025 and then improve at about 2 percent per year through 2030. Plug-in electric vehicles reach at least 15 percent of new sales by 2030. Existing standards for model year 2016 are included in the baseline.	2.0
Truck Efficiency and Carbon Pollution Standards	Fuel-efficiency and emission standards for new medium- and heavy-duty trucks increase from about 6 mpg to 10 mpg by 2030; SmartWay retrofits are applied to existing on-road trucks.	0.7
Cleaner Fuels for Vehicles	Natural gas displaces approximately 4 billion gallons of diesel fuel in heavy trucks; biofuels production as projected by the U.S. Energy Information Administration (EIA) are included in the baseline and therefore excluded here.	0.3
Reformed Transportation Investment	Better community planning and greater public transit investments reduce the rate of increase in light-duty vehicle miles traveled to achieve a 30 percent reduction from EIA light-duty mileage forecast by 2030. Freight-truck vehicle miles traveled drops by 5 percent from 2030 forecast levels.	1.1
Other	Fuel-efficient replacement tires and motor oil are used in existing automobiles; oil consumption by non-road vehicles is reduced by an average of 30 percent through air travel and equipment-efficiency improvements; efficiency of oil-heated buildings and industrial processes is improved to cut consumption in those sectors by 10 percent.	1.6
Total Potential Oil Saved		**5.7**

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