

Exporting Energy Security

Keystone XL Exposed



An Oil Change International Briefing
September 2011



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Overview

TransCanada's proposed Keystone XL pipeline is a \$7 billion project to bring heavy, sour crude oil from tar sands production in Alberta, Canada to Port Arthur, Texas for refining. It has sparked an ongoing struggle as advocates and opponents of the project make their case in various ways to the Obama Administration.

Among the most oft repeated talking points by industry and their allies is the idea that Keystone XL is necessary for American energy security, and that its construction will help wean America of its dependence on Mideast oil. ***But the idea that Keystone XL will decrease America's dependence on foreign oil is demonstrably false.***

To issue a presidential permit to the proposed Keystone XL pipeline, the Obama Administration's State Department must find that the pipeline ***serves the national interest.*** This report demonstrates compellingly why it does not.

On August 25, 2011, Robert Jones, a spokesperson for TransCanada declared: *"The U.S. has a decision to make, [d]o they want to import oil from Canada or get conflict oil from OPEC nations?"*¹

On the surface this notion has a clear, if facile, appeal. But an understanding of the changing realities of the oil market in the United States and globally, and a close scrutiny of the oil companies that stand to profit from the pipeline, reveal a completely different story. In fact:

1. **The Keystone XL pipeline is an export pipeline.** The Gulf Coast refiners at the end of the pipeline's route are focused on expanding exports, and the nature of the tar sands crude Keystone XL delivers enhances their capacity to do so.
2. **Valero, the top beneficiary of the Keystone XL pipeline, has recently explicitly detailed an export strategy to its investors.** The nation's top refiner has locked in at least 20 percent of the pipeline's capacity, and, because its refinery in Port Arthur is within a Foreign Trade Zone, the company will accomplish its export strategy tax free.
3. **The oil market has changed markedly in the last several years, with U.S. demand decreasing, and U.S. production increasing for the first time in 40 years.** Higher fuel economy standards and slow economic growth have led to a decline in U.S. gasoline demand, while technological advances have opened up new sources in the U.S. Increasingly, U.S. refiners are turning to export.

These facts reveal the important truth that the Keystone XL pipeline would not in fact enhance U.S. energy security at all. *The construction of Keystone XL will not lessen U.S. dependence on foreign oil—rather, it will feed the growing trend of exporting refined products out of the United States, thereby doing nothing to enhance energy security or to stabilize oil prices or gasoline prices at the pump. If completed, it will successfully achieve a long term objective of Canadian tar sands producers—to gain access to export markets.*

The oil market is fundamentally global. The only way to truly reduce our dependence on foreign oil is to reduce our dependence on all oil.

This report looks at data from the U.S. Energy Information Administration (EIA), corporate disclosures to investors and oil market analyst reports. This information should form the basis of the Obama Administration's deliberations on the Keystone XL pipeline. An honest assessment of the Keystone XL project will show that the oil will be exported and will not benefit U.S. consumers or any reasonable definition of the nation's interest.

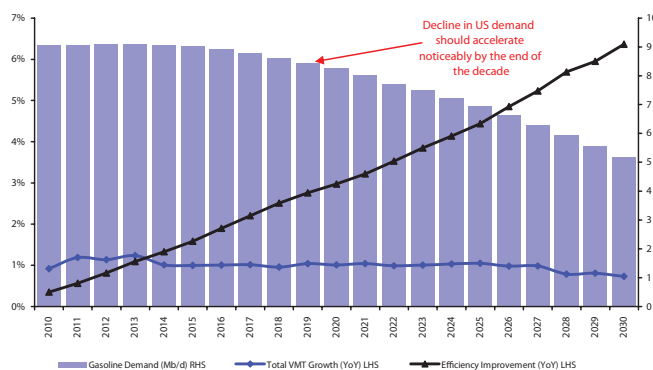
The Oil Market Today: Fundamental Changes

Since the early 1970s and the Arab oil embargo, the United States has faced the same essential challenge regarding oil: rising demand in the face of declining domestic production. For the last two years, and for the foreseeable future, that dynamic has reversed: demand is in decline, while domestic supply is rising. These two facts fundamentally change the current and future U.S. oil market.

This was not the case when the Keystone XL pipeline was originally proposed. However, since 2008, oil market analysts have repeatedly asserted that U.S. gasoline demand is in decline as a result of increasing vehicle efficiency.² This trend has recently been confirmed and reinforced by the introduction of more stringent fuel efficiency standards.³

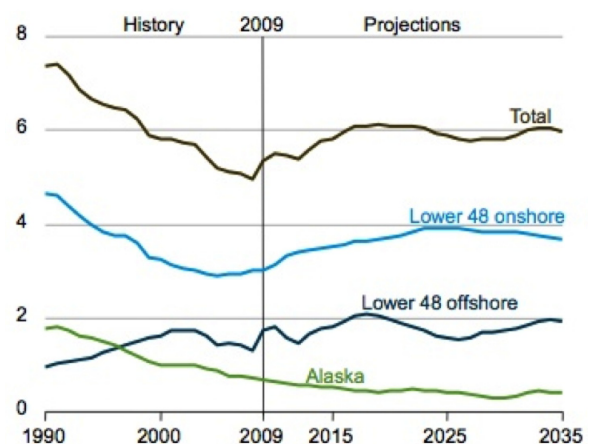
Keystone XL's backers argue that Alberta's oil is needed to replace foreign imports. A related argument says that Keystone XL is essential to relieve gridlock at the crossroads for U.S. oil trade, Oklahoma's Cushing hub. But these arguments don't stand up to scrutiny. In fact, the purpose of the pipeline is to give Canadian tar sands producers access to international markets.

US Gasoline Demand Forecast 2010-2030



Source: Deutsche Bank global Markets Research, 22 December 2010.⁴

U.S. Domestic Crude Production 1990 - 2035



Source: Energy Information Administration.⁵

Here are the key facts about the changing face of the oil market in the U.S. today:

- Gasoline demand is declining due to increasing vehicle efficiency and slow economic growth;
- Meanwhile the surge in new shale oil production in North Dakota and Texas has led to the first rise in U.S. oil production since 1970 and is forecast to continue for some time;
- As a result of stagnant demand and the rise in both domestic and Canadian oil production, there is a glut of oil in the U.S. market;
- Refiners have therefore identified export markets as their primary hope for growth and maximum profits;
- The shale surge and the glut of oil is driving the oil industry to adapt America’s petroleum transportation structure to a completely new reality: oil and fuel moving from the heartland to the coasts, instead of the other way round.

As a result of these new market dynamics, Canadian oil, which is already flowing in on two new pipelines, is competing with the new domestic oil. This is because a number of big refineries have refitted (or are in the process of refitting) in order to process the Canadian oil, which is different than most of the oil in the United States.⁶ Once these refineries are configured for the heavy sour from Canada, it is less profitable for them to process the light sweet oil being produced in North Dakota and Texas.⁷

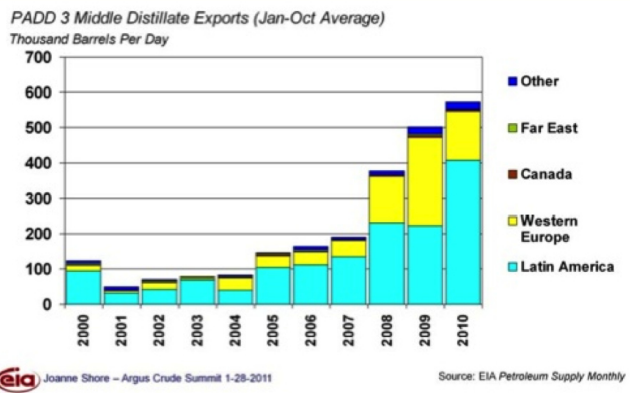
In short, Canadian tar sands producers are undercutting U.S. domestic oil producers, and Keystone XL will only help to make that situation permanent.

Globally, the state of the oil products market is also important to look at in understanding the attraction of U.S. refiners to export. Consider:

- There is a shortage of diesel capacity in global refining thanks to high demand in Europe and developing countries;
- There is a long term shortage of refining capacity in Latin America;
- As a result gulf coast refiners have been increasing exports of diesel to Europe and Latin America;
- These structural dynamics are forecast by the EIA to be long term;⁸

In short, there are market fundamentals at work here that provide incentives for a company that is properly positioned to refine the diluted bitumen from Keystone XL into diesel for export. Several refiners are positioned like this, in particular Valero.

Recent middle distillate export increases mainly went to Europe and Latin America



⁹“Middle distillates” include diesel, jet fuel and heating oil. Source: Energy Information Administration.

TransCanada's Business Model for Keystone XL

Generally, pipelines operate by shipping oil on what is known as the “spot market”—selling space to whatever oil company is willing to pay the most in a “cost of service” model. Keystone XL is different. Keystone XL is planned to operate on a business model of long-term contracts with very few shippers. Keystone XL’s unique contractual set-up allows us to reveal the ultimate fate of the diluted bitumen (dilbit) the pipeline will deliver.

In 2009, TransCanada identified the six shippers, or customers, who have signed confidential long-term binding agreements that according to TransCanada’s statements to Canada’s regulators, account for 76 percent of Keystone XL’s initial capacity.¹⁰

Port Arthur, Texas is the southern terminus of the Keystone XL pipeline and three of the shippers have refineries located there—Motiva, Total, and Valero. Two of the shippers are tar sands producers in need of access to markets (Canadian Natural Resources and Cenovus/Encana), and the final one is an oil trading firm specializing in export (Trafigura). The six shippers are:

- **Valero:** Valero—the largest exporter of refined products in the United States—has a long-term contract with TransCanada to ship oil on the Keystone XL pipeline. It also has a contract with Canadian Natural Resources to take 100,000 barrels per day until 2030 via the Keystone XL pipeline. Valero has also stated that it has additional contracts with other producers. The company’s business model relies on capturing profits from low-grade heavy sour oil (such as dilbit from Keystone XL), with sales growth now focused on export markets. It is upgrading the Port Arthur refining facility to process heavy sour oil into distillate,¹¹ or diesel, for export.^{12 13 14}

- **Motiva:** Motiva, is a joint refining venture between **Shell**, and **Saudi Aramco** and is in the process of refitting and expanding its refinery in Port Arthur.¹⁵ Shell has major stakes in the Alberta tar sands.
- **Total:** Total has stakes in the tar sands and has a newly-upgraded refinery in Port Arthur.¹⁶
- **Canadian Natural Resources:** This major Canadian oil producer has new diluted bitumen (dilbit) fields coming online but lacks upgrader or refining capacity to handle anticipated volumes.
- **Cenovus/Encana:** Like Canadian Natural Resources, Cenovus/Encana also has new dilbit fields coming online but lacks upgrader or refining capacity to handle anticipated volumes.

- **Trafigura:** This scandal-ridden company is a major player in Latin America petroleum trade. It was at the center of the Iraqi Oil for Food scandal and was fined one million euro for waste dumping in the Ivory Coast.¹⁷ Its prime business is import/export.¹⁸

Finally, the Motiva, Total and Valero refineries in Port Arthur are within a Foreign Trade Zone, meaning they are exempt from customs duties on imports and exports as well as various state and local taxes.¹⁹ This amounts to a sizeable subsidy to the oil industry to export refined oil products.

Valero's tar sands export strategy

The Keystone XL pipeline would probably not have gotten off of the drawing board without Valero. The refining company has the biggest single commitment to the pipeline guaranteeing TransCanada a customer for at least 100,000 barrels per day, or 20 percent of Keystone XL's capacity, until 2030²⁰. The long-term binding commitments with Valero and five other suppliers, refiners and traders, the details of which remain confidential, underpin the commercial viability of Keystone XL.

The tar sands-derived heavy sour crude that Keystone XL will deliver requires special equipment to refine. Following a series of refits and upgrades, Valero's Port Arthur refinery will be capable of processing at least 150,000 barrels per day of heavy sour crude by late 2012. The refinery is strategically located near the proposed terminus of Keystone XL.

Valero is able to process a very high proportion of that heavy sour crude into diesel. Indeed, the upgrades nearing completion at two different Valero Gulf Coast refineries involve hydrocrackers, which can be calibrated to make 90 percent diesel.²²

There is a surplus of diesel on the U.S. market due to the much higher proportional demand for gasoline in the United States and the fact that refining crude oil results in a range of products, so that all refineries are making diesel even if they are configured to prioritize gasoline.²³

Port Arthur Hydrocracker Project

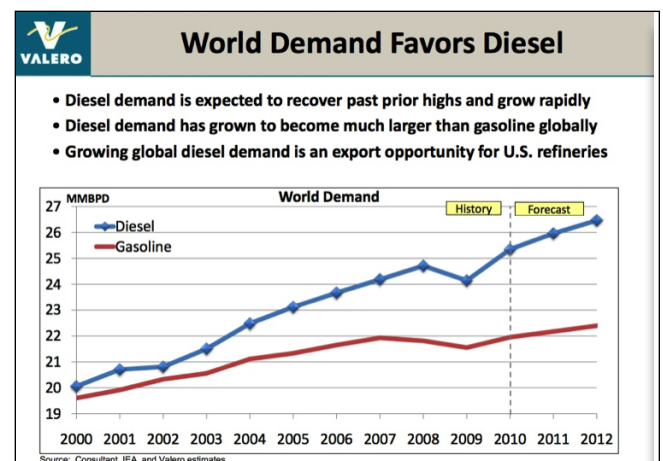
Investment Highlights

- Favorable economics driven by margin and volume gains
- Main unit is 50,000 barrels/day hydrocracker plus facilities to process over 150,000 barrels/day of high-acid, heavy sour Canadian crude
- Creates high-value products from low-value feedstocks plus hydrogen sourced from relatively inexpensive natural gas
- Unit has volume expansion of 25%-30%: 1 barrel of feedstocks yields 1.25 to 1.3 barrels of products
- Main products are high-quality diesel and jet fuel for growing global demand for middle distillates
- Located at large, Gulf Coast refinery to leverage existing operations and export logistics

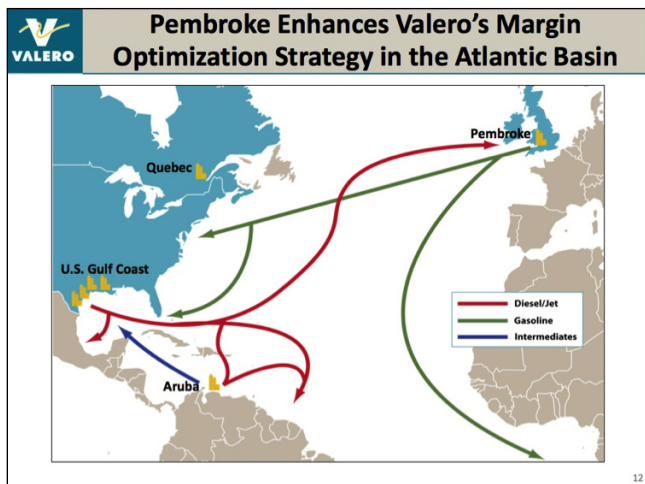
Summary of Project Status and Economics¹

Estimated completion date	3Q12
Estimated total investment (mil.)	\$1,525
Cumulative spend thru 1Q11 (mil.)	\$635
Estimated Incremental Operating Income before D&A ² (mil.), Base Case	\$485
Estimated Unlevered IRR on Total Spend, Base Case	21%
Estimated Incremental Operating Income before D&A ² (mil.), 2011 Fwd Curve	\$810

This slide outlines Valero's strategy for the \$1.5 billion hydrocracker at its Port Arthur refinery. It notes that the "main products are high quality diesel and jet fuel for growing global demand" and that the refinery is well located for exports.²¹



However, in the global market, there is strong demand for diesel because of the popularity of the more fuel-efficient diesel engine in passenger cars in Europe and elsewhere. The growth market for the global trade in petroleum products is dominated by diesel. Valero's strategy of converting its Port Arthur refinery to maximize diesel production through the processing of cheap, heavy sour crude from the Canadian tar sands is entirely focused on exporting the diesel into the global market.²⁴



In this slide for investors, Valero outlines plans to export diesel and jet fuel from the U.S. Gulf Coast while importing gasoline from its newly acquired refinery in the United Kingdom.²⁵

Valero has also purchased a refinery located in Wales in the United Kingdom. The company stated that it intends to import gasoline from this refinery

into the United States while exporting diesel and other products from its gulf coast refineries.²⁶ In short, Valero's strategy is to exploit arbitrage in the Atlantic basin, selling gasoline into the U.S. market while exporting diesel to Europe and both diesel and gasoline into Latin America.

The idea that Keystone XL enhances U.S. energy security is undermined by Valero's business model that seeks to export products made with imported oil while further importing gasoline from a third country.

Not only is Valero increasing U.S. imports of oil and gasoline, but it will also avoid paying tax while doing so. The Port Arthur refinery operates as a Foreign Trade Zone (FTZ), which traditionally gives tax benefits to companies that use imported components to manufacture items within the United States.²⁷ Usually refineries importing oil tax-free will still pay taxes when selling the refined products into the U.S. market. By both importing into and exporting from Port Arthur the company will avoid paying tax on the product sales.

In sum, Valero appears to have positioned itself with a captive supply into an offshore tax-haven where it refines product not for the United States, but for foreign markets. Only the pollution stays behind.

Appendix:

Valero statements on refining Canadian heavy sour crude and exporting diesel

Valero's own statements in regulatory disclosures and presentations to investors, show that it plans to refine Canadian tar sands into fuels for export. Valero is already the largest exporter of petroleum products in the United States. In the first quarter of 2011, Valero exported 65,000 barrels per day of gasoline to Mexico and South America and 165,000 barrels per day of diesel exports to Europe and Latin America²⁸. Valero expects its export trade to grow in coming years.

The additional crude (from Keystone XL) strategically aligns with our projects to increase ultra-low sulfur diesel production at our Port Arthur refinery, which can process heavy feedstocks into clean products.

Rich Marcogliese, executive VP and COO, Valero Energy Corporation²⁹

Long term, our strategy has always been to get Canadian heavy crude to the U.S. Gulf Coast.

Bill Klesse, Chairman, CEO & President, Valero Energy Corporation³⁰

Now, we also see long term that the Canadian crude oil production will continue to grow. And even though this pricing and costs and all of that certainly are issues for the Canadian producers, part of our strategy is to bring Canadian crude oil to the U.S. Gulf Coast. And as many of you that follow us know, we have been working with TransCanada and ConocoPhillips on the Keystone Pipeline project to bring that type of crude oil, in our case, to Port Arthur, Texas. And we think that that will go.

Bill Klesse, CEO and Chairman, Valero Energy Corporation³¹

But the U.S. can compete and can compete especially from the U.S. Gulf Coast in the export business... We have record exports coming from the United States, now it's over 800,000 barrels a day. Valero has been exporting over 200,000 barrels a day sending diesel fuel to Europe. During the other season, we send diesel fuel to South America (...)

So there is lot of change that's happened in this business. Part of it has been refinery operations in Venezuela and Mexico, some are not going to come back anytime soon. Curacao, that refinery is down. You just can look around a lot of places and see that there is an opportunity here to put products into these markets.....

On our major projects, and we have more to show you on this, but we have our hydrocracker projects that we started. We actually ordered the equipment in September of 2006. We stopped those projects in 2009 because of the financial crisis recession. We've restarted those. We're going to have those finished. The one at Port Arthur in mid-2012 and the one at St. Charles at the end of '12 and you'll see here what a contribution they will make to our company. Because what they do and I'll talk a little more, but we primarily make diesel fuel there ... We want the diesel fuel, because we see that's where the growth is...

Bill Klesse, Valero CEO and Chairman³²

Now on the hydrocrackers, if you look at the world, diesel fuel is growing at least two times faster than gasoline's growing. It's already a 25 million barrel-a-day business in the world versus gasoline in the 22 million or 23 million barrels a day. We've mentioned that the U.S. Gulf Coast we believe we can export and if hydrocrackers, if we add one other point, you can see that the diesel crack today is at least twice the gasoline crack, maybe almost three times.

Bill Klesse, Valero CEO and Chairman³³

Endnotes

- 1 <http://fuelfix.com/blog/2011/08/25/pressure-builds-on-obama-to-reject-keystone-xl-pipeline/>
- 2 Cambridge Energy Research Associates were one of the first to note the trend. See: <http://www2.cera.com/news/details/1,2318,9568,00.html>. Since then, the International Energy Agency has noted a declining demand trend for oil in the United States and OECD region as a whole. See the World Energy Outlook 2009 and 2010 as well as the Medium Term Oil and Gas Market Report 2010 and 2011. Also see the Peak Oil Market reports from Deutsche Bank's oil analyst team: http://www.petrocapita.com/attachments/128_Deutsche%20Bank%20-%20The%20Peak%20Oil%20Market.pdf and <http://bioage.typepad.com/files/1223fm-05.pdf>
- 3 <http://www.whitehouse.gov/the-press-office/2011/07/29/president-obama-announces-historic-545-mpg-fuel-efficiency-standard>
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- 5 Annual Energy Outlook, 2011. <http://www.eia.gov/forecasts/aeo/index.cfm>
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