

# Keystone XL Pipeline: Undermining U.S. Energy Security and Sending Tar Sands Overseas

January 2012



#### Authors

Anthony Swift, *NRDC*

Lorne Stockman, *Oil Change International*

Luke Tonachel, *NRDC*



## **Acknowledgments**

Thanks to the reviewers of this report Susan Casey-Lefkowitz (NRDC), Danielle Droitsch (NRDC), Steve Kretzmann, (Oil Change International) and Nathan Lemphers (The Pembina Institute). Special thanks to Elizabeth Shope for her assistance.

## **About the Natural Resources Defense Council**

The Natural Resources Defense Council is an international nonprofit environmental organization with more than 1.3 million members and online activists. Since 1970, our lawyers, scientists, and other environmental specialists have worked to protect the world's natural resources, public health, and the environment. NRDC has offices in New York City, Washington, D.C., Los Angeles, San Francisco, Chicago, Montana, and Beijing. For more information please visit [www.nrdc.org](http://www.nrdc.org).

## **About Oil Change International**

Oil Change International campaigns to expose the true costs of fossil fuels and facilitate the coming transition towards clean energy. We are dedicated to identifying and overcoming political and economic barriers to that transition. Visit us at [www.priceofoil.org](http://www.priceofoil.org) for more information. To find out how much money your Congressional Representatives take from fossil fuel interests, visit [www.DirtyEnergyMoney.com](http://www.DirtyEnergyMoney.com).

*NRDC Director of Communications: Phil Gutis*

*NRDC Deputy Director of Communications: Lisa Goffredi*

*NRDC Publications Director: Alex Kennaugh*

*Design and Production: Sue Rossi and Tanja Bos*

© Natural Resources Defense Council and Oil Change International, January 2012.

Report available for download at [www.nrdc.org/energy/kxlsecurity.asp](http://www.nrdc.org/energy/kxlsecurity.asp) and [www.priceofoil.org/kxl-undermining-energy-security](http://www.priceofoil.org/kxl-undermining-energy-security).

## INTRODUCTION

The national debate surrounding the Keystone XL tar sands pipeline has obscured the fact that a key purpose of the pipeline is to export Canadian oil to the world market via the U.S. Gulf Coast—a plan that would threaten the farmlands and water of America’s heartland. Canada isn’t even producing enough oil to fill its existing pipelines, which are running half-empty. So why is Keystone XL such a priority for the oil industry? Because Keystone XL is actually a pipeline that bypasses America in order to maximize Big Oil’s profits.

Keystone XL would skip over refineries and U.S. consumers in the Midwest, allowing tar sands producers to send Canadian crude to Gulf Coast refineries located in tax-free Foreign Trade Zones. From those refineries, tar sands would then be sold to international buyers—at a higher profit to Big Oil.

Today, most Canadian pipelines go to the U.S. Midwest—primarily serving Midwestern U.S. consumers. What the tar sands industry currently lacks is a major pathway to the markets beyond the United States. Here’s the real story: Keystone XL’s backers want to re-direct tar sands oil from the American Midwest to reach the international market where tar sands oil would fetch a higher price. The Keystone XL pipeline would thus add billions of dollars to their annual profits while raising the cost of oil for millions of American consumers in the U.S. heartland.

There are clear alternatives to allowing the United States to be to be an oil conduit merely to accommodate ever-growing profits for big oil companies. As American gasoline consumption continues to shrink, the United States can continue its current trajectory to reduce its oil dependency by making further clean energy investments to improve fuel efficiency and replace oil with environmentally sound renewable fuels. These investments will create tens of thousands more jobs than Keystone XL would without the risk of major oil spills. Taking concrete steps to reduce the country’s oil dependence is critical to increasing U.S. energy security.

*“The Keystone XL pipeline will not reduce America’s dependence on Middle East oil, or do anything to get us off oil completely, which is key to America’s national security future. Much of the oil produced by Keystone won’t go right to American gas-tanks—it is to be exported, meaning we will need to import oil the same as before.”*

—Ret. Brig. Gen. Steve Anderson

## KEYSTONE XL WILL NOT INCREASE AMERICA’S OIL SUPPLY

*“The Keystone XL Pipeline project would create an unnecessary and unprecedented level of excess pipeline capacity between Western Canada and U.S. markets.”*

—National Energy Board written evidence of Enbridge Pipelines Inc., July 30, 2009<sup>1</sup>

The debate surrounding Keystone XL has obscured the fact that Canada does not produce enough tar sands to fill existing pipelines. Canada’s current oil production, including both conventional crude and tar sands, uses less than half of its export pipeline capacity. In 2010, Canada exported less than 2 million barrels per day (bpd) of crude oil.<sup>2</sup> The vast majority of these exports were produced in western Canada and transported to the United States.<sup>3</sup> Canada already has an excess of crude oil export pipelines—enough to export more than 4.2 million bpd (see Table 1).

**Table 1: The total capacity of Western Canada’s existing export pipelines**

Western Canada Export Pipelines	Capacity (barrels per day)
Kinder Morgan Trans Mountain Pipeline	300,000 <sup>a</sup>
Express	280,000 <sup>b</sup>
Bow/Milk River	129,000 <sup>c</sup>
Rangeland	83,000 <sup>d</sup>
Enbridge Mainline Pipeline	2,050,000 <sup>e</sup>
Enbridge Alberta Clipper Pipeline	800,000 <sup>f</sup>
TransCanada Keystone I Pipeline	590,000 <sup>g</sup>
<b>Total Western Canadian Pipeline Export Capacity</b>	<b>4,232,000</b>

<sup>a</sup> Kinder Morgan, Trans Mountain Pipeline System, <http://www.kindermorgan.com/business/canada/transmountain.cfm>.

<sup>b</sup> Kinder Morgan, Express Pipeline System, [http://www.kindermorgan.com/business/canada/express\\_platte.cfm](http://www.kindermorgan.com/business/canada/express_platte.cfm).

<sup>c</sup> EnSys, Keystone XL Assessment, No Expansion, August 12, 2011, [http://cdn.theatlantic.com/static/mt/assets/business/EnSys\\_August\\_Report.pdf](http://cdn.theatlantic.com/static/mt/assets/business/EnSys_August_Report.pdf).

<sup>d</sup> Plains All American Pipeline, Form 10-K, December 31, 2008, [http://edgar.brand.edgar-online.com/EFX\\_dil/EDGARpro.dll?FetchFilingHTML?ID=6441887&SessionID=EzmvHex104tbe77](http://edgar.brand.edgar-online.com/EFX_dil/EDGARpro.dll?FetchFilingHTML?ID=6441887&SessionID=EzmvHex104tbe77).

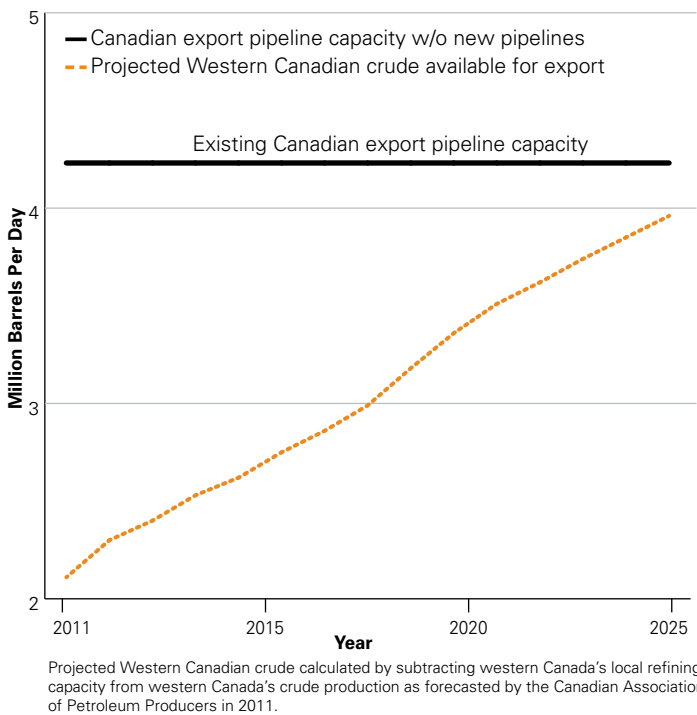
<sup>e</sup> Enbridge Pipelines, Enbridge Northern Gateway Project Application, Sec. 52, 1-7, [https://www.neb-one.gc.ca/il-eng/livelink.exe/fetch/2000/90464/90552/384192/620327/624798/619886/B1-4\\_-\\_Vol\\_2\\_%96\\_Gateway\\_Application\\_%96\\_Economics,\\_Commercial\\_and\\_Financing\\_%28Part\\_1\\_of\\_1%29\\_-\\_A1S9X7\\_.pdf?nodeid=619772&vernum=0](https://www.neb-one.gc.ca/il-eng/livelink.exe/fetch/2000/90464/90552/384192/620327/624798/619886/B1-4_-_Vol_2_%96_Gateway_Application_%96_Economics,_Commercial_and_Financing_%28Part_1_of_1%29_-_A1S9X7_.pdf?nodeid=619772&vernum=0).

<sup>f</sup> 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>.

<sup>g</sup> TransCanada, Keystone Pipeline, <http://www.transcanada.com/100.html>.

There are still more than 2 million bpd of empty space on existing pipelines going from Canada to the United States without Keystone XL. Several oil companies tried to back out of the Alberta Clipper pipeline after it was completed in 2010, asserting that it had been unnecessary and added to an existing glut in pipeline capacity.<sup>4</sup> When TransCanada proposed building Keystone XL, industry voices restated their concern over the level of excess capacity it would create. Enbridge Pipelines Inc., Imperial Oil Limited, and British Petroleum Canada all opposed Keystone XL in proceedings before Canadian regulators after concluding that the pipeline would increase the costs of shipping crude.<sup>5</sup>

**Figure 1: Canadian oil production will not exceed pipeline capacity until 2025**



Canada's current glut of export pipelines to the United States is expected to persist for more than a decade. According to a 2011 forecast of future production by Canadian Association of Petroleum Producers (CAPP), Keystone XL would not be needed until sometime after 2025.<sup>6</sup> Growth in Canada's oil production over the next twenty years is expected to come primarily from its tar sands projects.<sup>7</sup> However, tar sands are among the costliest and most time-intensive sources of crude oil in the world.<sup>8</sup> Shortages in labor and material in Alberta add to the technical challenges of rapid expansion of the tar sands.<sup>9</sup> Hence, while even conventional oil projects take years to advance from prospect to production, Canadian tar sands projects require still more lead time.

### KEYSTONE XL: AN EXPORT PIPELINE WITH TAX-FREE BENEFITS FOR OIL COMPANIES

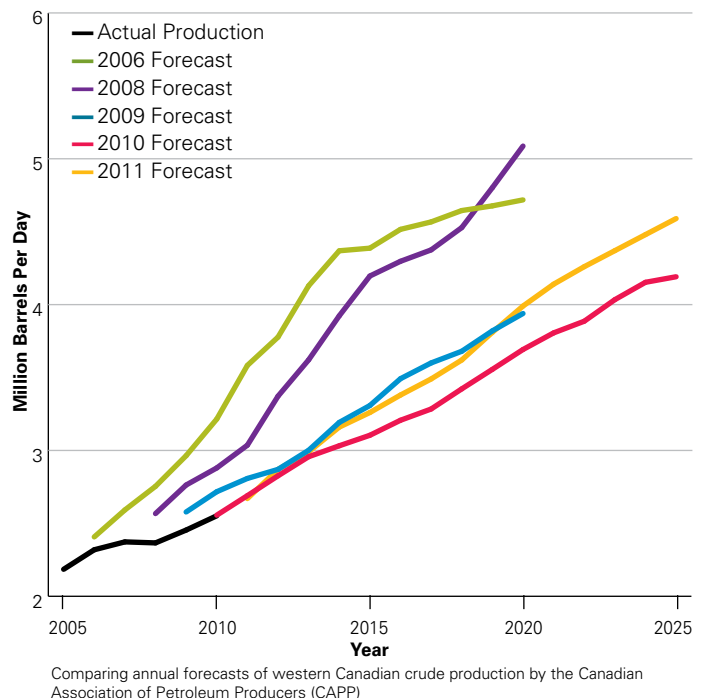
Keystone XL would divert large volumes of Canadian oil currently going to the Midwest to the Gulf Coast, where it will be refined and sold on the world market.<sup>10</sup> The pipeline would be Canada's first major step in diversifying its tar sands oil market away from the United States for the benefit of the major oil companies. To sweeten the deal, many of the refineries on the Gulf Coast happen to be located in Foreign Trade Zones—or tax-free zones—where they can export refined products without paying U.S. duty taxes.<sup>11</sup> Keystone XL facilitates this export trade by providing a source of heavy sour crude that is ideal for producing diesel, which is in high demand on world markets.<sup>12</sup>

The United States is currently the only major customer for tar sands oil, a situation the tar sands industry and its proponents clearly perceive as a problem. As Canada's Natural Resources Minister, Joe Oliver, recently told reporters,

#### Industry Has Historically Overestimated Increases in Canadian Crude Production

The Canadian Association of Petroleum Producers, which provides some of the most commonly cited sources for production forecasts, has consistently overestimated the rate of production growth (see figure 2). The task of forecasting long-term production growth is complicated by uncertainty in the economic and political outlook. However, even in the short term, CAPP's production forecasts have proven unrealistic.

**Figure 2: Forecasts of future Western Canadian crude production have been exaggerated**



“We export 97 percent of our energy to the U.S. and we would like to diversify that.”<sup>13</sup> However, the Canadian government has put the brakes on the two pipeline proposals to export tar sands through its provinces due to opposition from its own public, as well as specific concerns about water and safety.<sup>14</sup>

*“It is a strategic objective of our country to diversify our customer base.”*

—Joe Oliver, Natural Resources Minister of Canada, November 11, 2011<sup>15</sup>

### Gulf Coast Foreign Trade Zones: U.S. Tax Payers Subsidize Oil Industry’s Exports

Gulf Coast refineries in Foreign Trade Zones are able to avoid paying U.S. taxes if they sell their refined products to international buyers. The purpose of zones is to “expedite and encourage foreign commerce” while promoting manufacturing in the United States.<sup>16</sup>

With Keystone XL, the United States is bearing the environmental liability of a 1700 mile pipeline, bypassing U.S. markets for the export potential of the Gulf. Once Canadian oil gets to the tax free zones in the Gulf, it can avoid any U.S. import taxes if it is refined and sold internationally.<sup>17</sup>

Keystone XL will not increase U.S. access to Canadian crude as previously discussed. Rather, it will grant Canadian tar sands oil access to international markets beyond the United States. The Gulf Coast is at the center of an unprecedented increase in U.S. petroleum product exports. Since 2007, U.S. exports of finished petroleum products have jumped 134 percent (see figure 3).<sup>18</sup> The United States now exports nearly 3 million bpd of petroleum products to international buyers.<sup>19</sup> Most of that oil is exported from refineries in the Gulf Coast.<sup>20</sup> More than 25 percent of Gulf Coast operating capacity is now dedicated to export.<sup>21</sup>

*“But the U.S. can compete from the U.S. Gulf Coast in the export business... 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.”*

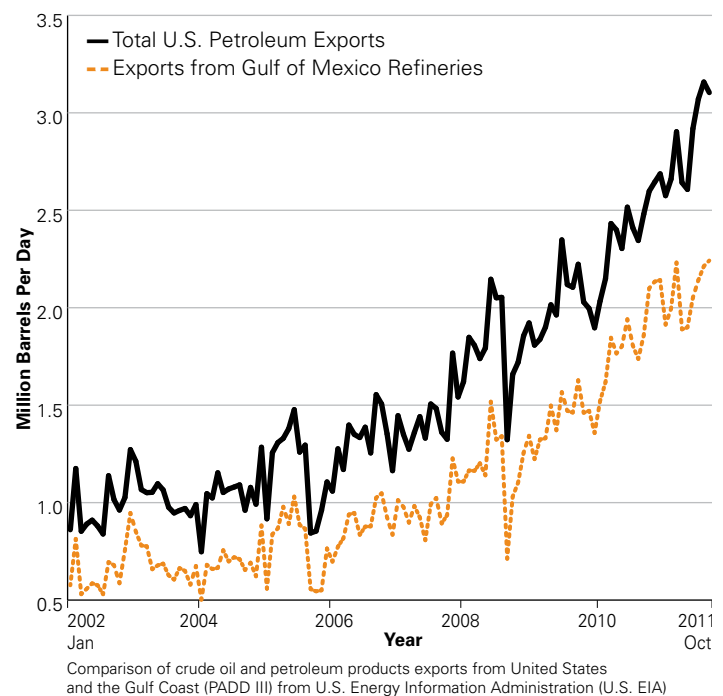
—Bill Klesse, Valero CEO and Chairman, February 2011<sup>22</sup>

Keystone XL plays a central role in a plan to shift Canadian oil from the Midwest—where only U.S. consumers have access to it—to the Gulf Coast—where it may be exported internationally. The specific refineries planning to process the Keystone XL pipeline’s crude are increasing their focus on the export market.<sup>23</sup> Valero, which has committed to

the biggest portion of the pipeline’s capacity, is configuring its Port Arthur refinery to process Keystone XL crude into products for the export market, primarily diesel.<sup>24</sup> The company has been growing its share of the export market and communicated to its investors its intention to maximize that trade via its Port Arthur refinery.<sup>25</sup>

TransCanada recently refused to support a requirement that oil from Keystone XL be dedicated for use in the United States in a recent Congressional hearing.<sup>26</sup> In December 2011, Representative Edward Markey asked TransCanada’s President, Alex Pourbaix, to support a condition that would require the oil on Keystone XL to be used in the United States. Mr. Pourbaix refused, saying that such a requirement would cause refineries to back out of their contracts.<sup>27</sup>

**Figure 3: The growing business of exporting petroleum products from Gulf of Mexico refineries**



### U.S. Oil Demand Shrinks While Gulf Coast Refineries Increase Exports

After declining over the course of the last six years, U.S. oil consumption is expected to remain relatively flat over the next two decades under current policies. Due to car efficiency standards and reduced vehicle miles traveled in the United States, the United States consumes nearly 2 million bpd less oil than it did in 2005.<sup>28</sup> Despite a lack of U.S. demand, Gulf Coast refiners are rapidly expanding their operations to process more oil and export overseas.<sup>29</sup> The growing orientation of Gulf Coast refiners towards exports undermines claims that Keystone XL will replace imports from other countries that are less stable than Canada because Gulf Coast refineries are now serving global, not domestic, demand.

The fact that Gulf Coast refining capacity has increased while U.S. demand is in decline undermines TransCanada's assertion that Keystone XL will replace imports from hostile or unstable regimes. The fact is, oil from the pipeline will be in addition to, not instead of, imports from elsewhere as the Gulf Coast refiners look to meet the demands of the global market they now serve.

### **KEYSTONE XL WILL INCREASE U.S. MIDWESTERN OIL PRICES**

Because Keystone XL will give the tar sands industry access to the Gulf Coast market, where oil prices are higher, approving the pipeline would actually increase the price of oil in the American Midwest. Building Keystone XL would increase the cost of Canadian oil in the United States. Western Canadian crude supplies over twelve percent of oil refined in the United States and 45 percent of the oil processed in Midwestern refineries.<sup>30</sup> An increase to Canadian crude prices from building Keystone XL would have a substantial impact on oil prices, particularly in the Midwest.<sup>31</sup>

When TransCanada initially proposed Keystone XL to Canadian regulators, the company acknowledged that Keystone XL would increase the cost of Canadian crude by \$3 per barrel in the Gulf Coast market and by more than \$6 per barrel in the Midwest crude market.<sup>32</sup> TransCanada estimated that these higher prices would increase the price the U.S. market paid for Canadian crude by between \$2 billion and \$3.9 billion a year.<sup>33</sup>

There are two reasons why Keystone XL will lead to higher U.S. oil prices. The first reason is that Keystone XL is a pipeline to take Canadian oil out of the Midwest where it is locked in the U.S. market. By diverting oil that would have otherwise gone to the Midwest and sending it to the Gulf, where it may be refined and sold as diesel, Keystone XL will reduce U.S. oil supply and increase prices.

Second, Keystone XL will increase the cost to move crude oil by pipeline through the United States. TransCanada has acknowledged that because there is excess export pipeline capacity from Canada, Keystone XL will take oil off of existing cost-of-service pipelines, which will in turn be forced to recover their operating costs from a smaller volume, increasing the per barrel cost of moving oil.<sup>34</sup> TransCanada estimated the cost to move the same amount of crude into the United States would increase by \$1.37 billion in 2013.<sup>35</sup> However, TransCanada pointed out that oil companies would recover these increased costs and make a profit because the U.S. market would be paying higher prices for Canadian crude.<sup>36</sup>

Rather than providing the United States with more Canadian oil, Keystone XL will simply shift oil from the Midwest to the Gulf Coast, where much of it can be exported to international buyers—decreasing U.S. energy supply and increasing the cost of oil in the American Midwest.

### **CANADIAN OIL: NO CURE FOR PRICE SPIKES, OIL SHORTAGES, OR OPEC POWER**

In the event of a major global oil supply disruption—for example, the closure of shipping in the Strait of Hormuz, where around 20 percent of globally traded oil passes daily—Canadian oil supply would not be able to ease the oil price spike that would result. This is because it does not operate with any spare capacity that could be brought into play to ease a sudden shortage.<sup>37</sup> The Canadian industry, like the U.S. industry, is owned and operated by private for-profit corporations that have no interest in investing in production capacity kept idle in case of an emergency. It would take billions of dollars and many months to raise production in response to a sudden decline in global supply.

Tar sands do not enhance energy security simply because they come from a friendly neighbor. Continued reliance on oil empowers all countries that are major oil exporters. Should the Organization of the Petroleum Exporting Countries (OPEC) or any other major exporter choose to cut off supplies to any country, supply shortages and a price spike are likely to affect every major importing country regardless of where they get their oil. Prices were not moderated in the least during 2008 when the oil price hit \$147 per barrel.<sup>38</sup> Canada was the single largest source of foreign oil to the United States at the time, but had no avenues to export significant quantities of crude to other buyers. Canadian oil prices went up with the world market, and U.S. consumers spent \$4 per gallon on gasoline.<sup>39</sup>

---

*Canada... produces only about four percent of total daily production, so it does not influence the world price of oil. Therefore, Canada is a price taker, rather than a price setter."*

—National Energy Board, Government of Canada, January 2, 2012<sup>40</sup>

---

As its government notes, Canada does not influence the world oil price.<sup>41</sup> Indeed, by granting Canadian oil access to the international market beyond the United States, Keystone XL would actually enable Canadian producers to supply refiners that sell petroleum products to the highest global bidder. The only way to protect the United States from the vagaries of unfriendly exporters and volatility on the world oil market is to reduce the American economy's dependence on oil.

Lastly, increasing U.S. dependency on Canadian tar sands will not decrease OPEC's share of the global oil market. OPEC countries earned more than \$1 trillion in 2011 from oil exports and will only see their revenues increase in 2012.<sup>42</sup> Even as tar sands production grows, OPEC's share of the global oil market is expected to increase from 41 percent to 52 percent.<sup>43</sup> With more than three-quarters of the world's proven oil reserves, OPEC producers will always dominate the world's oil market. Canada's 2.3 percent pales in comparison.<sup>44</sup>

## The United States Cannot Insulate Itself From the Global Oil Market

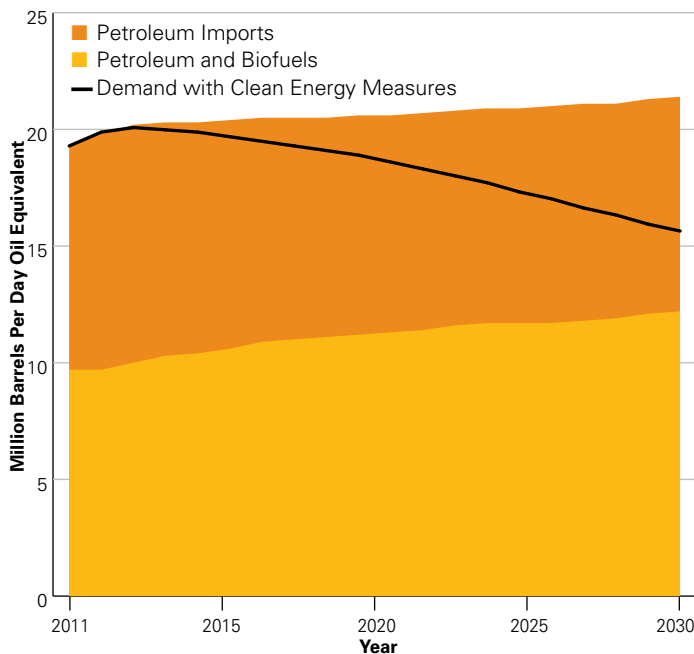
Even if the United States was entirely self sufficient in oil, domestic crude prices would remain coupled to the global market and subject to the global dynamics of supply and demand, as well as international events. The United Kingdom (UK) fuel protests of 2000 are a sobering illustration of that simple point. Even though the UK was entirely energy independent at the time, the almost doubling of global crude prices from early 1999 through the summer of 2000 drove a surge in domestic diesel prices, sparking unrest in a country that was a major crude exporter.<sup>45</sup>

— U.S. Department of Energy, September 2011.

## OIL DEMAND REDUCTION IS THE BEST ENERGY SECURITY POLICY

The only way to reduce America's vulnerability to rising oil prices and volatile supply is by making investments to reduce U.S. oil dependency. If we do not make active choices to secure a clean energy future today, in twenty years our nation will remain where it is now—vulnerable to unstable international oil markets and forced to export its wealth to meet its energy needs. The good news is that there are a number of concrete steps the United States can take today to reduce the impact unstable and expensive oil 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.

**Figure 4: Clean energy policies dramatically reduce U.S. dependence on oil imports**



Petroleum imports and domestic supply calculated using the U.S. EIA's forecast in its 2011 annual energy outlook. Petroleum includes crude oil and natural gas liquids.

Adopting a series of oil savings policies would reduce U.S. oil consumption and imports by 5.7 million bpd in twenty years. 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 big step in the right direction. In 2011, the U.S. Environmental Protection Agency (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.<sup>46</sup> 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.<sup>47</sup> Not only that, these standards are expected to save U.S. car owners \$4,400 over the life of their vehicles.<sup>48</sup>

## Clean Energy Creates More Jobs than Keystone XL

Fortunately, the best investments also protect the local environment, combat climate change, and create home-grown jobs in energy efficiency and renewable energy. According to the Brookings Institution, more than 2.7 million people are working in the U.S. clean energy economy right now—more than the entire fossil fuel industry put together.<sup>49</sup> Between 2003 and 2010, the clean energy sector grew nearly twice as fast as the overall economy.<sup>50</sup>

Investments in petroleum-based projects generate a fourth of the jobs created with the same amount of investment into clean energy jobs.<sup>51</sup> Clean car manufacturers have created more than 151,000 quality long term jobs in the United States while saving consumers billions of dollars at the pump.<sup>52</sup> Moreover, a recent study found the United States can gain as many as 1.9 million more jobs with a comprehensive energy policy.<sup>53</sup> These clean energy jobs are real, long-term, and number in the millions. Next to these jobs in clean technology, Keystone XL, which will create only 2,500 to 4,650 temporary construction jobs, according to data TransCanada supplied to the U.S. Department of State, is a paltry jobs package.<sup>54</sup>

**Table 2: National oil saving plan: a great stride toward U.S. energy independence in twenty years**

<b>Clean Energy Measures</b>	<b>Description</b>	<b>Potential Oil Savings in 2030 (million bbl/d)</b>
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 <sub>2</sub> 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 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 VMT 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
<b>TOTAL</b>		<b>5.7</b>

*The Obama administration’s recent standards to improve new automobile and truck fuel efficiency are a huge step in the right direction. The technology exists to strengthen new vehicle efficiency farther while also taking simple steps to improve that of the on-road stock through fuel-efficient tires, motor oil, and truck aero-dynamic retrofits.*

*The next biggest single opportunity for oil savings is through policies that result in more transportation alternatives to driving alone in a car. Through better public transit and community planning we can make daily commutes and errands without a car. Investing wisely in our communities and transportation infrastructure is a critical task for Congress as it considers reauthorization of the Transportation Bill.*

### **KEYSTONE XL ROBS AMERICA OF AN ENERGY SECURE FUTURE**

In the short term, the pipeline will put U.S. landowners, water, and the environment at risk in return for higher oil prices and diminished oil supply. In the long term, Keystone XL represents the wrong direction for a country at an energy crossroads. The national debate surrounding Keystone XL

is not about our energy situation now—it is about being mindful of the sort of energy future we want for our country. There is a different route. Building better cars that reduce carbon pollution and developing clean energy technologies provides more energy security to the U.S. than an export pipeline from Canada. This route takes us to millions of new jobs and clean air benefits, making our nation a leader in the international clean energy market.



## Endnotes

- 1 National Energy Board, Written Evidence of Enbridge Energy, pg. 5, [https://www.neb-one.gc.ca/ll-eng/livelink.exe/fetch/2000/90464/90552/418396/550305/556601/559189/565142/C-7-4b\\_-\\_Written\\_Evidence\\_of\\_Enbridge\\_Pipelines\\_Inc\\_-\\_A1K7K4?nodeid=565231&vernum=0](https://www.neb-one.gc.ca/ll-eng/livelink.exe/fetch/2000/90464/90552/418396/550305/556601/559189/565142/C-7-4b_-_Written_Evidence_of_Enbridge_Pipelines_Inc_-_A1K7K4?nodeid=565231&vernum=0).
- 2 National Energy Board, Total Crude Exports 2011, <http://www.neb-one.gc.ca/clf-nsi/mrgynfmrn/ststtc/crdlndptrlmprdct/2011/ttlcrdlxprt2011.xls>.
- 3 In 2011, 91% of Canada's crude oil and equivalents were produced in western Canada. National Energy Board, Estimated Production of Canadian Crude Oil and Equivalent, 2011, <http://www.neb-one.gc.ca/clf-nsi/mrgynfmrn/ststtc/crdlndptrlmprdct/stmtdprdctn-eng.html>.
- 4 Nathan VanderKlippe, "Energy giants battle over costs of oil sands pipeline," Feb. 3, 2010, Globe and Mail, <http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/energy-giants-battle-overcosts-of-oil-sands-pipeline/article1455350/> (accessed January 10, 2012).
- 5 National Energy Board, Reasons for Decision, TransCanada Keystone Pipeline GP Ltd., March 2010, pg. 16, [https://www.neb-one.gc.ca/ll-eng/livelink.exe/fetch/2000/90464/90552/418396/550305/604643/604441/A1S1E7\\_-\\_OH-1-2009\\_Reasons\\_for\\_Decision.pdf?nodeid=604637&vernum=0](https://www.neb-one.gc.ca/ll-eng/livelink.exe/fetch/2000/90464/90552/418396/550305/604643/604441/A1S1E7_-_OH-1-2009_Reasons_for_Decision.pdf?nodeid=604637&vernum=0).
- 6 Western Canadian export pipeline capacity is over 4.2 million bpd. By 2015, the Canadian Association of Petroleum Producers expects local Western Canadian refinery capacity to have increased to over 0.6 million bpd. To exceed its current pipeline capacity, western Canadian provinces would need to reach 4.8 million bpd – a figure they are not anticipated to reach after 2025. CAPP, *Crude Oil, Markets, & Pipelines*, June 2010, pg. 27; EnSys Energy & Systems, Inc. *Keystone XL Assessment – Final Report*. p. 30. December 23, 2010, <http://www.keystonepipeline-xl.state.gov/clientsite/keystonexl.nsf/AssmtDrftAcct.pdf>.
- 7 Canadian Association of Petroleum Producers (CAPP), *Crude Oil, Markets, & Pipelines*, June 2010, pg. 3.
- 8 The Royal Society of Canada. *Environmental and Health Impacts of Canada's Oil Sands Industry*, December 2010, pg. 2 <http://www.rsc.ca/documents/expert/RSC%20report%20complete%20secured%209Mb.pdf>.
- 9 Alberta Finance and Enterprise, *Alberta Industry Sector Performance and Prospects*, May, 2009, pg. 13-14, <http://albertacanada.com/documents/ABIndustrySector.pdf>.
- 10 EnSys, *Keystone XL Assessment – Final Report*, p.112.
- 11 U.S. Import Administration. U.S. Foreign Trade Zones: FTZ No. 116, Port Arthur, Texas. (Motiva Enterprises = Shell; Premcor Refining Group = Valero.) <http://ia.ita.doc.gov/ftzpage/letters/ftzlist-map.html#texas>.
- 12 Oil Change International, *Exporting Energy Security: Keystone XL Exposed*, Sept. 2011, pp. 5-6, <http://priceofoil.org/2011/08/31/report-exporting-energy-security-keystone-xl-exposed/>.
- 13 Margo McDiarmid, *Canada looks to diversify oil exports*, CBC News, Sept. 13, 2011, <http://www.cbc.ca/news/politics/story/2011/09/13/pol-oliver-pipeline-oil-exports.html>.
- 14 Lauren Krugel, *Enbridge to hold hearings into Line 9B Reversal in Ontario*, The Canadian Press, Dec. 6, 2011, <http://ca.finance.yahoo.com/news/NEB-hold-hearings-Enbridge-capress-1286023375.html>; Rebecca Penty, et. al., *Northern Gateway pipeline decision will be delayed until late 2013: panel*, Calgary Herald, Dec. 7, 2011, <http://www.vancouver.sun.com/business/Northern+Gateway+pipeline+decision+will+delayed+until+late+2013+panel/5820686/story.html>.
- 15 Associated Press, *Canada displeased after US delays oil pipeline*, Nov. 11, 2011, <http://www.pennlive.com/newsflash/index.ssf/story/canada-displeased-after-us-delays-oil-pipeline/ead35f0baaf4803a84208facb3fb1f1>.
- 16 Vance Poe and Mike Heldebrand, *Why Zones Are Important to the Oil Refining Business in the U.S.*, NAFTAZ, [http://www.naftz.org/resource/collection/EFD869A5-F2E9-4FC4-AC9C-845C677C70D4/Why\\_Zones\\_are\\_Important\\_to\\_the\\_Oil\\_Refining\\_Business.pdf](http://www.naftz.org/resource/collection/EFD869A5-F2E9-4FC4-AC9C-845C677C70D4/Why_Zones_are_Important_to_the_Oil_Refining_Business.pdf).
- 17 The foreign-trade zone program is a federally designated program pursuant to the Foreign-Trade Zones Act of 1934. Because many refined products are taxed at a lower rate than the raw crude oil, these tax free zones FTZ's in the Midwest grant refineries some tax advantages and allow them to defer paying taxes until they sell refined products in the U.S. market.
- 18 U.S. Energy Information Administration (EIA) September 07, 2011. *U.S. exports of petroleum products increase as markets become more globally integrated*. <http://www.eia.gov/today-inenergy/detail.cfm?id=2970#>.
- 19 U.S. Energy Information Administration, *Weekly U.S. Exports of Total Petroleum Products*, Jan. 5, 2012, <http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=WRPEXUS2&f=W>.
- 20 U.S. Energy Information Administration, *Gulf Coast (PADD 3) Exports of Finished Petroleum Products*, Dec. 29, 2011, <http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MTPEXP32&f=M>.
- 21 Of 8,516,000 bpd of operating refining capacity in PADD 3, 2,242,000 bpd was exported in October 2011. U.S. Energy Information Administration, *Petroleum and Other Liquids, Number and Capacity of Petroleum Refineries*, [http://www.eia.gov/dnav/pet/pet\\_pnp\\_cap1\\_dcu\\_R30\\_a.htm](http://www.eia.gov/dnav/pet/pet_pnp_cap1_dcu_R30_a.htm) (2006-2011) and *Exports (2011)* [http://www.eia.gov/dnav/pet/pet\\_move\\_exp\\_dc\\_R30-Z00\\_mbbldpd\\_m.htm](http://www.eia.gov/dnav/pet/pet_move_exp_dc_R30-Z00_mbbldpd_m.htm).
- 22 Valero Energy Corp. Presentation Transcript. Credit Suisse Group Energy Summit. 10 February 2011. Available from CQ FD Disclosure.
- 23 Oil Change International, September 2011. *Exporting Energy Security: Keystone XL Exposed*, <http://priceofoil.org/2011/08/31/report-exporting-energy-security-keystone-xl-exposed/>.
- 24 Valero, Investor Presentation, pg. 38, January 2012, <http://www.valero.com/InvestorRelations/Pages/EventsPresentations.aspx>; Rich Marcogliese, *Session 1: Today's vision—tomorrow's reality?* Presentation given at the 40th Annual Engineering and Construction Contracting Association Conference in Scottsdale, Arizona, September 4, 2008.
- 25 Bill Klesse, Event Brief of Q3 2010 Valero Energy Corp. Earnings Conference Call, October, 26 2010.
- 26 U.S. House Energy and Power Subcommittee Hearing, Dec. 2, 2011, Question and answer by U.S. Representative Ed Markey to TransCanada representative Alex Pourbiax. <http://www.youtube.com/watch?v=VucRPHJtvGU>.
- 27 U.S. House Energy and Power Subcommittee Hearing, Dec. 2, 2011, Question and answer by U.S. Representative Ed Markey to TransCanada representative Alex Pourbiax. <http://www.youtube.com/watch?v=VucRPHJtvGU>.
- 28 U.S. Energy Information Administration, *Petroleum and Other Liquids. Product Supplied (2005-2010)* [http://www.eia.gov/dnav/pet/pet\\_cons\\_psup\\_dc\\_nus\\_mbbldpd\\_a.htm](http://www.eia.gov/dnav/pet/pet_cons_psup_dc_nus_mbbldpd_a.htm).
- 29 U.S. Energy Information Administration, *Petroleum and Other Liquids. Annual Gulf Coast (PADD3) Refinery Operable Atmospheric Crude Oil Distillation Capacity as of January 1, (1980-2011)*. [http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=8\\_NA\\_8D0\\_R30\\_4&f=A](http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=8_NA_8D0_R30_4&f=A).

- 30 In 2011, the Midwestern refinery district in PADD II refined an average of 3.35 million bpd, of which 1.5 million bpd was imported from Canada. U.S. Energy Information Administration, PAD District by Country of Origin, 12-29-11, [http://www.eia.gov/dnav/pet/pet\\_move\\_impcp\\_a2\\_r20\\_ep00\\_ip0\\_mbbldpd\\_a.htm](http://www.eia.gov/dnav/pet/pet_move_impcp_a2_r20_ep00_ip0_mbbldpd_a.htm); U.S. Energy Information Administration, Midwest Net Refinery Inputs, 12-29-11, [http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=M\\_EPCO\\_YIY\\_R20\\_2&f=M](http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=M_EPCO_YIY_R20_2&f=M). PADD II includes Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, Ohio, Oklahoma, Tennessee, and Wisconsin. U.S. Energy Information Administration, Refinery Utilization and Capacity, 12-29-11, <http://www.eia.gov/oog/info/twip/padddef.html>. The United States refined an average of 15.3 million bpd in 2011, of which 1.85 million bpd was sourced from western Canada. U.S. Energy Information Administration, Refinery Utilization and Capacity, 12-29-11, [http://www.eia.gov/dnav/pet/pet\\_pnp\\_unc\\_dcu\\_r20\\_m.htm](http://www.eia.gov/dnav/pet/pet_pnp_unc_dcu_r20_m.htm); Crude Oil, Markets, & Pipelines, June 2011, pg. 9, <http://www.capp.ca/getdoc.aspx?DocId=190838>.
- 31 TransCanada estimated that Keystone XL would increase Midwestern oil price by \$6 a barrel. TransCanada Report to NEB, Appendix 3-1: Supply and Market Assessment, Purvin and Gertz Inc., at 28, available at [https://www.neb-one.gc.ca/ll-eng/Livelihood.exe/fetch/2000/90464/90552/418396/550305/556487/549220/B-1f\\_\\_Supply\\_and\\_Markets\\_%28Tab\\_3%29\\_incl\\_\\_Appendix\\_3.1\\_\\_A1I9R7?nodeid=549324&vernum=0&redirect=3](https://www.neb-one.gc.ca/ll-eng/Livelihood.exe/fetch/2000/90464/90552/418396/550305/556487/549220/B-1f__Supply_and_Markets_%28Tab_3%29_incl__Appendix_3.1__A1I9R7?nodeid=549324&vernum=0&redirect=3).
- 32 TransCanada, *Western Canadian Crude Supply and Markets*. February 12, 2009. Application to the National Energy Board (February 2009), Appendix 3-1, at 28.
- 33 *Id.* at 29.
- 34 TransCanada Keystone Pipeline GP LTD., Application for Certificate of Public Convenience and Necessity, Keystone XL Pipeline, Sept. 3, 2009, Appendix A, at pps. 11, 18, available at [https://www.neb-one.gc.ca/ll-eng/Livelihood.exe/fetch/2000/90464/90552/418396/550305/556487/569072/B-23b\\_\\_Keystone\\_Reply\\_Evidence\\_-\\_A1L1T6\\_.pdf?nodeid=569189&vernum=0&redirect=](https://www.neb-one.gc.ca/ll-eng/Livelihood.exe/fetch/2000/90464/90552/418396/550305/556487/569072/B-23b__Keystone_Reply_Evidence_-_A1L1T6_.pdf?nodeid=569189&vernum=0&redirect=)
- 35 TransCanada submitted an analysis of Keystone XL's market impacts prepared on its behalf by Purvin & Gertz to support its applications before the Canadian regulators. TransCanada Keystone Pipeline GP LTD., Application for Certificate of Public Convenience and Necessity, Keystone XL Pipeline, Sept. 3, 2009, Appendix A, at 18 (Adobe pg. 36), available at [https://www.neb-one.gc.ca/ll-eng/Livelihood.exe/fetch/2000/90464/90552/418396/550305/556487/569072/B-23b\\_\\_Keystone\\_Reply\\_Evidence\\_-\\_A1L1T6\\_.pdf?nodeid=569189&vernum=0&redirect=](https://www.neb-one.gc.ca/ll-eng/Livelihood.exe/fetch/2000/90464/90552/418396/550305/556487/569072/B-23b__Keystone_Reply_Evidence_-_A1L1T6_.pdf?nodeid=569189&vernum=0&redirect=)
- 36 *Id.* at 17-18.
- 37 Heinrich Stiftung, *Marginal Oil - What is driving oil companies dirtier and deeper?*, Friends of the Earth Europe, pg. 19, [http://www.boell.de/downloads/Marginal\\_Oil\\_Layout\\_13.PDF](http://www.boell.de/downloads/Marginal_Oil_Layout_13.PDF).
- 38 Jerome Paris, \$140 oil and speculation Energy Bulletin, June 26, 2008, <http://www.energybulletin.net/node/45594>;
- 39 Oil Change International, *Why Canadian tar sands oil cannot insulate the U.S. from oil price shocks*, March 2011, <http://priceofoil.org/tarsands-doesnot-address-energysecurity/>.
- 40 National Energy Board, *Crude Oil and Petroleum Products - How Canadian Markets Work*, Jan. w, 2012, <http://www.neb.gc.ca/clf-nsi/rnrgynfmrn/prcng/crdlndptrlmpdrcts/cndnmrkt-eng.html>.
- 41 National Energy Board, *Crude Oil and Petroleum Products - How Canadian Markets Work*, 10-28-2011 (<http://www.neb.gc.ca/clf-nsi/rnrgynfmrn/prcng/crdlndptrlmpdrcts/cndnmrkt-eng.html>).
- 42 U.S. Energy Information Administration (EIA), August 2011. *OPEC Revenues Fact Sheet*. <http://www.eia.gov/countries/regions-topics.cfm?fips=OPEC>
- 43 International Energy Agency (IEA) 2011. *World Energy Outlook 2011*.
- 44 BP Statistical Review of World Energy, June 2011, p. 6. [http://www.bp.com/liveassets/bp\\_internet/globalbp/globalbp\\_uk\\_english/reports\\_and\\_publications/statistical\\_energy\\_review\\_2011/STAGING/local\\_assets/pdf/statistical\\_review\\_of\\_world\\_energy\\_full\\_report\\_2011.pdf](http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/reports_and_publications/statistical_energy_review_2011/STAGING/local_assets/pdf/statistical_review_of_world_energy_full_report_2011.pdf)
- 45 U.S. Department of Energy, September 2011. *Report on the First Quadrennial Technology Review*. P.18. [http://energy.gov/sites/prod/files/QTR\\_report.pdf](http://energy.gov/sites/prod/files/QTR_report.pdf).
- 46 U.S. Environmental Protection Agency, *EPA and DOT Propose Next Phase in Historic National Program for Light-duty Vehicles*, Nov. 16, 2011. <http://www.epa.gov/otaq/climate/regulations.htm>.
- 47 *Id.*
- 48 *Id.*
- 49 Brookings, *Sizing the Clean Economy: A National and Regional Green Jobs Assessment*, Dec. 2, 2011, [http://www.brookings.edu/reports/2011/0713\\_clean\\_economy.aspx](http://www.brookings.edu/reports/2011/0713_clean_economy.aspx).
- 50 *Id.*
- 51 Robert Pollin, *Green Recovery: A Program to Create Good Jobs and Start Building a Low-Carbon Economy*, University of Massachusetts Amherst PERI, September 2008. [http://www.peri.umass.edu/green\\_recovery/](http://www.peri.umass.edu/green_recovery/).
- 52 United Autoworkers et. al., *Supplying Ingenuity: U.S. Suppliers of Clean Fuel Efficient Vehicle Technologies*, August 2011 (<http://www.nrdc.org/transportation/autosuppliers/>).
- 53 David Roland-Hoult, Fredrich Kahrl, *Clean Energy and Climate Policy for U.S. Growth and Job Creation*, October 16, 2009, (<http://calclimate.berkeley.edu/sites/default/files/host-Clean%20Energy%20and%20Climate.pdf>).
- 54 US State Department. Final Environmental Impact Statement (FEIS), Socioeconomics, Section 3.10-53, 54. August 26, 2011. <http://www.keystonepipeline-xl.state.gov/clientsite/keyston-exl.nsf?Open>.





**Natural Resources Defense Council**

40 West 20th Street  
New York, NY 10011  
212 727-2700  
Fax 212 727-1773

Beijing

Chicago

Los Angeles

Montana

San Francisco

Washington

**[www.nrdc.org](http://www.nrdc.org)**



**Oil Change International**

236 Massachusetts Ave NE #203  
Washington, DC 20002

**[www.priceofoil.org](http://www.priceofoil.org)**

**[www.dirtyenergymoney.com](http://www.dirtyenergymoney.com)**



[www.nrdc.org/policy](http://www.nrdc.org/policy)  
[www.facebook.com/nrdc.org](http://www.facebook.com/nrdc.org)  
[www.twitter.com/nrdc](http://www.twitter.com/nrdc)

[www.facebook.com/priceofoil](http://www.facebook.com/priceofoil)  
[www.twitter.com/priceofoil](http://www.twitter.com/priceofoil)