

# Crude Oil Export Legislation Necessary to Resolve U.S. Refining Shortage

U.S. Energy Renaissance Endangered

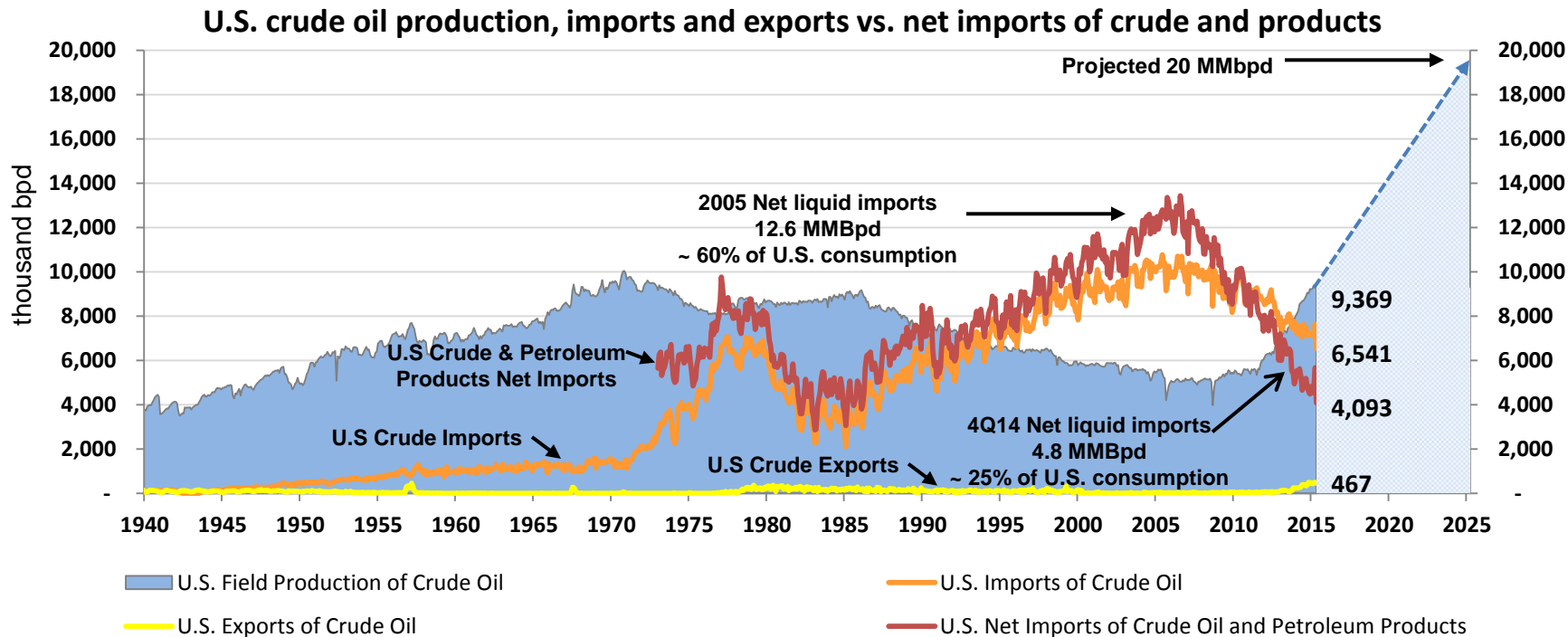
FT Energy Strategies Summit

May 14, 2015

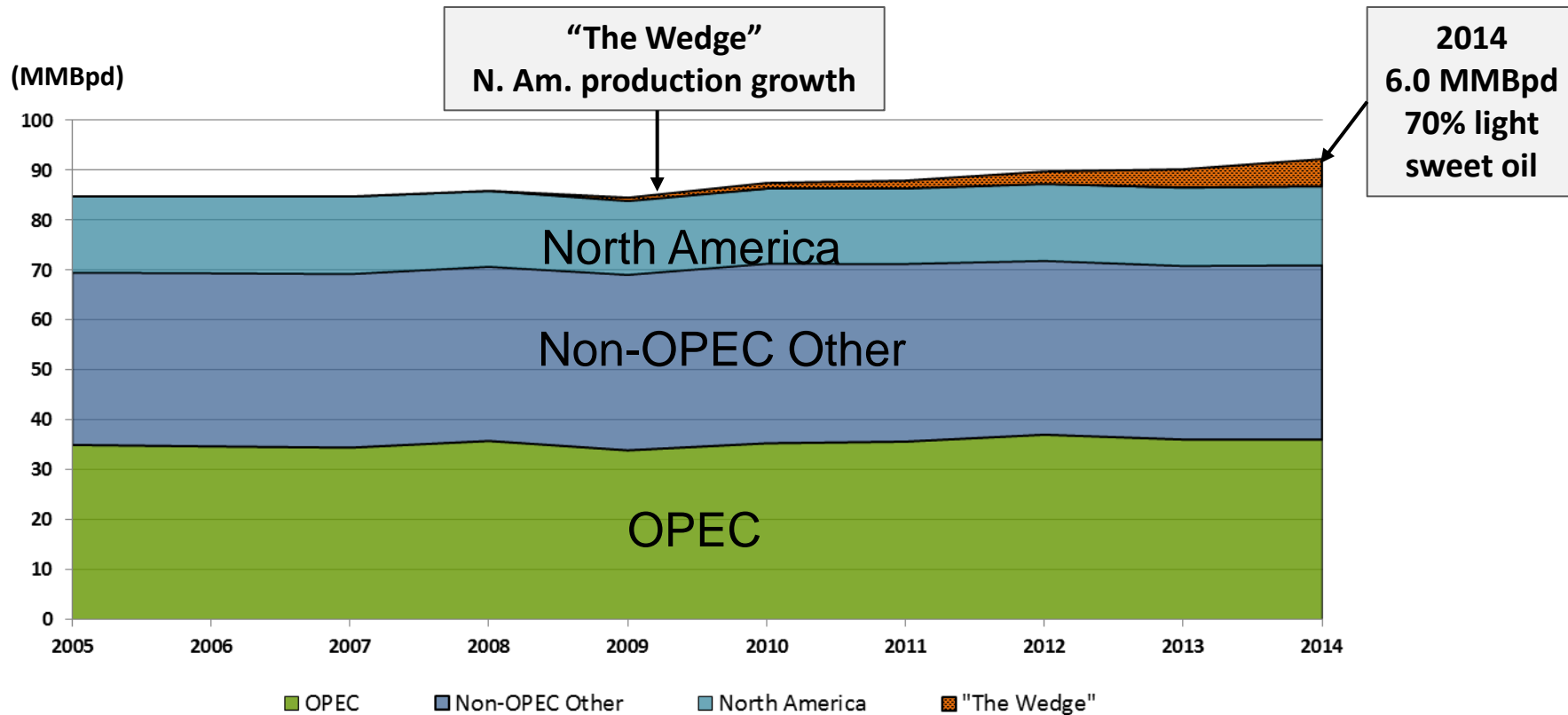
# What is the Domestic Energy Producers Alliance?

- An alliance of:
  - U.S. independent producers, royalty owners and organizations
  - Oilfield service companies
  - State and national oil & natural gas associations consisting of 10,000 members
  - National Association of Royalty Owners (NARO) Affiliation consisting of 10 million American royalty owners
  
- DEPA Supports the Proposal to the US Refining Shortage:
  - **Congressional, bi-partisan legislation to lift the harmful crude export ban, an enforcement tool remnant of President Nixon's failed 1970's policy on price controls**

# From Scarcity to Energy Abundance in America

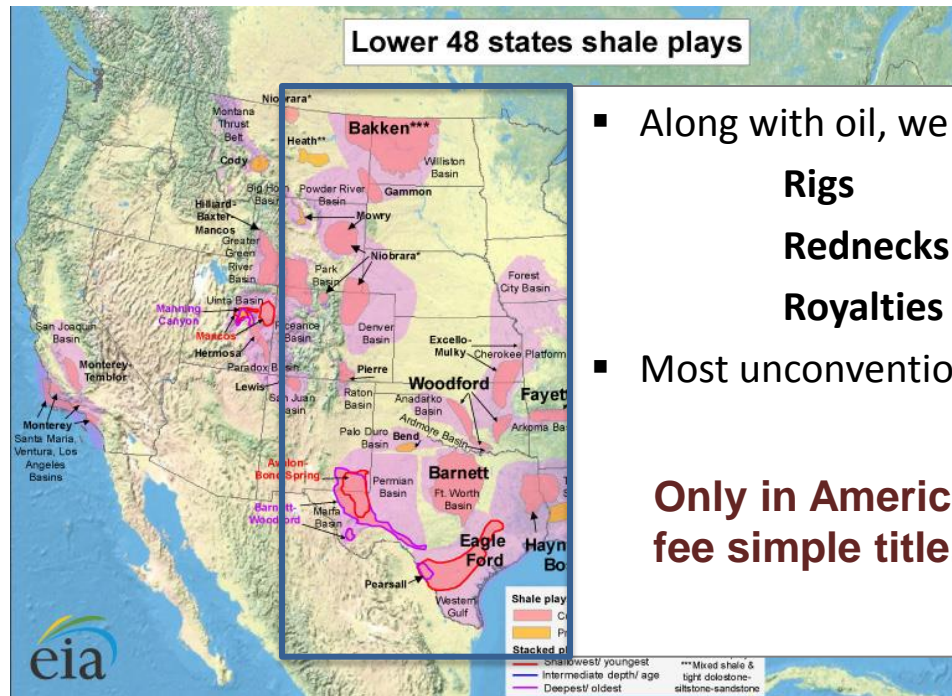


# World Petroleum and Other Liquids Production



# Bakken + Eagle Ford + “New” Permian

70% of U.S. production growth is from these three plays  
50% of world production growth is from these three plays



- Along with oil, we have the three key elements for success\*:

**Rigs**

**Rednecks**

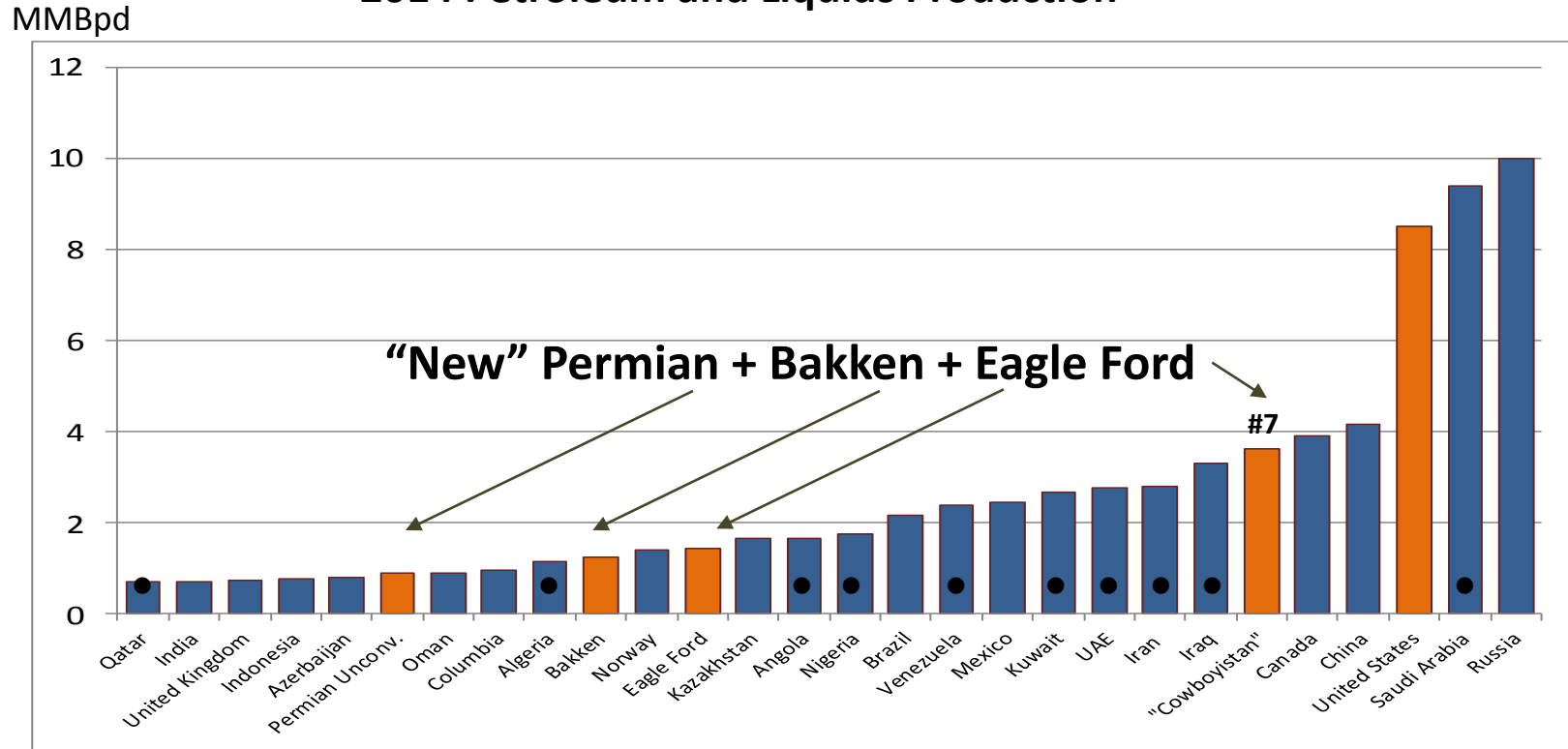
**Royalties**

- Most unconventional plays are natural gas

**Only in America is land ownership in fee simple title.**

# 3 Key Plays = World's #7 Liquids Producer

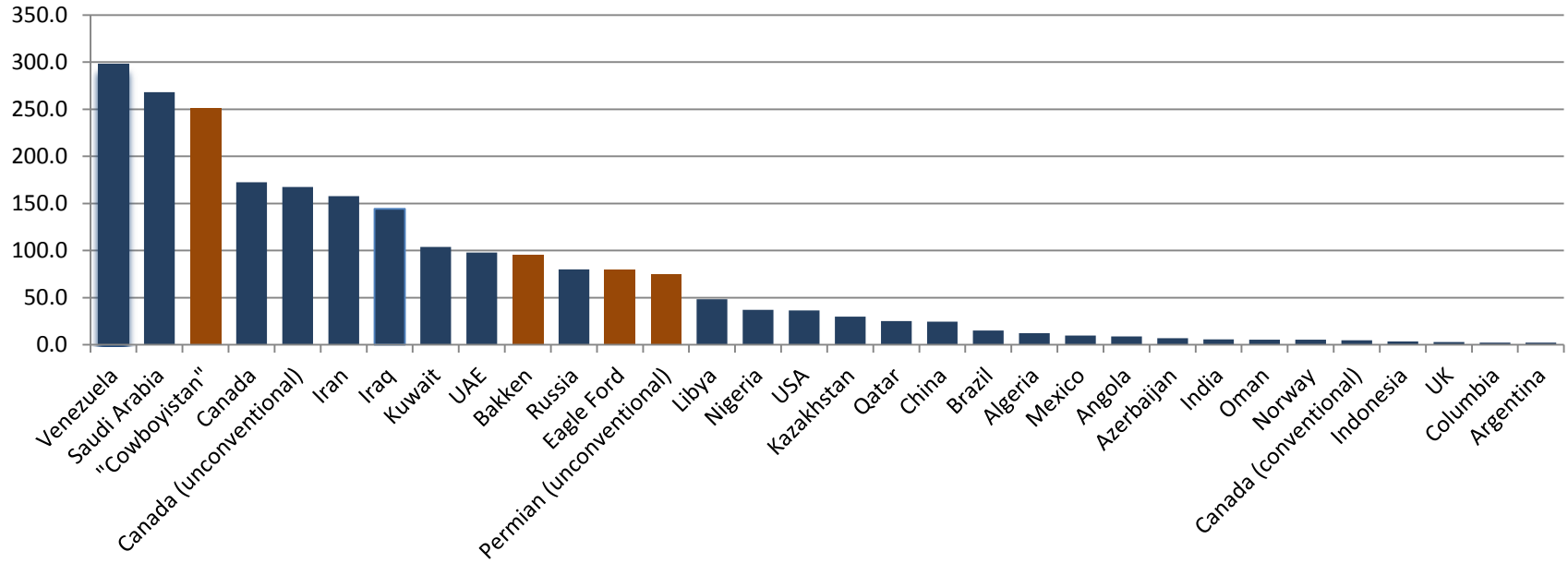
## 2014 Petroleum and Liquids Production



● OPEC member

# 3 Key Plays' Reserve Potential

Total Recoverable Reserves Estimates for Cowboyistan vs. World Proved Reserves



# U.S. Energy Renaissance Endangered By 2 Key Factors

1. OPEC manipulation by predatory pricing practices to drive U.S. producers out of business
2. The combination of restricted U.S. refining capacity and an archaic export ban on U.S. crude oil

TIME Magazine, April 20, 2015

**“OPEC says the demand for oil – its oil – will rise during 2015 because the cartel is winning its price war against U.S. shale producers by driving them out of business.”**

The Wall Street Journal, April 16, 2015

**“The boom in U.S. oil supplies will end in 2015, the Organization of Petroleum Exporting Countries said...”**

The Wall Street Journal, March 8, 2015

**“OPEC’s top official said that the cartel’s decision to continue pumping crude in the face of collapsing prices is hurting the U.S. shale-oil industry and that a global pullback on investment could lead to a shortage that will push the market upward again.”**

OPEC Chief, The Wall Street Journal, March 8, 2015

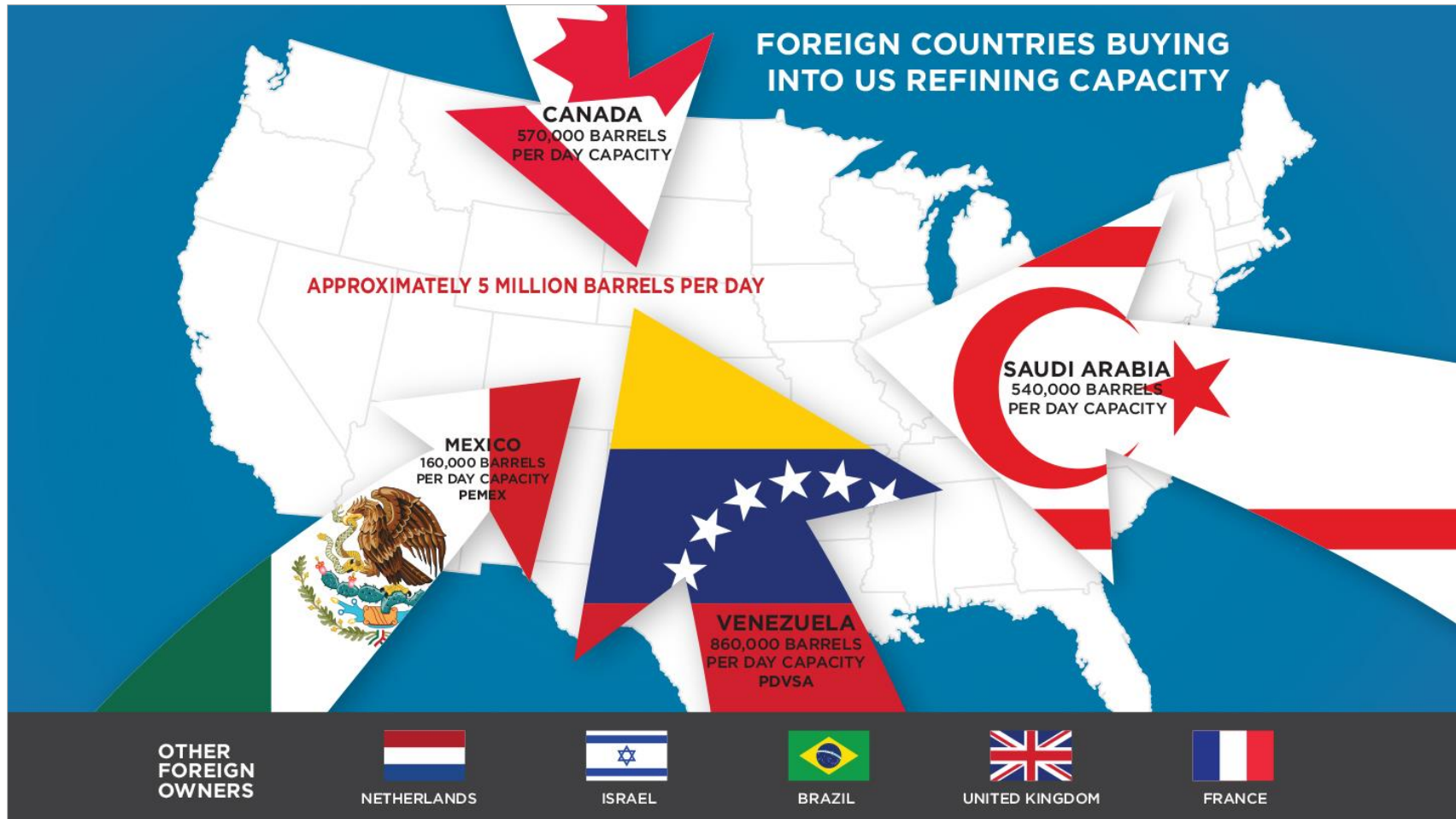
**“Projects are being canceled. Investments are being revised. Costs are being squeezed... When OPEC didn’t reduce its production, everything collapsed for the U.S. shale-oil-rig market.”**

OPEC Chief, Reuters, January 26, 2015

















































**“Maybe we will go to \$200 if there is a real shortage of supply because of the lack of investment.”**





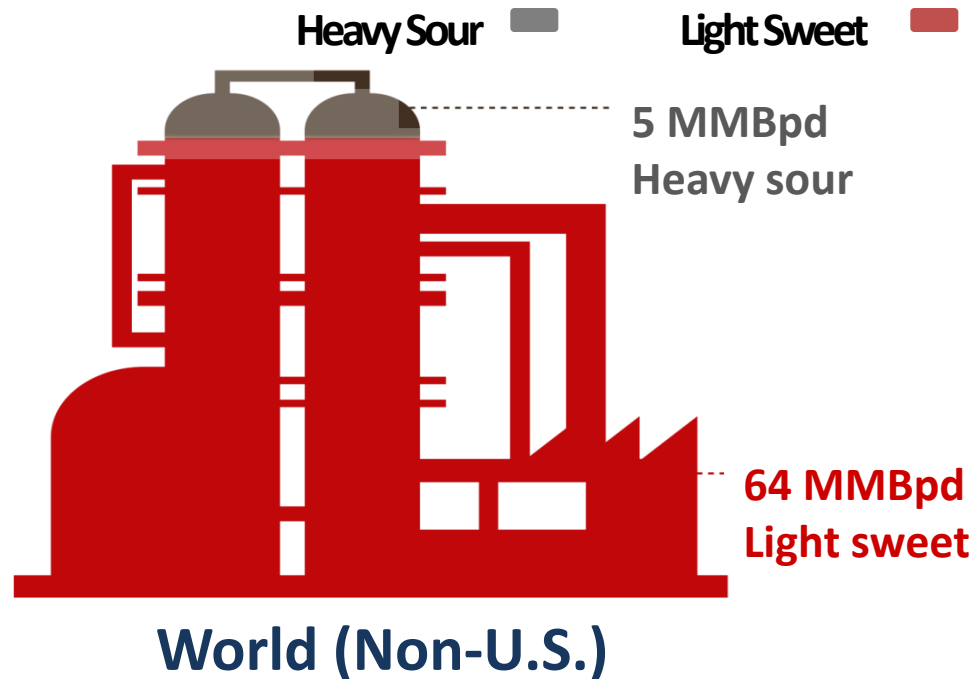
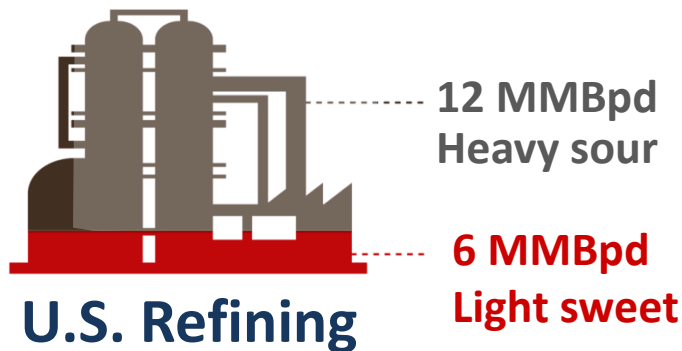


# Foreign Ownership in U.S. Refineries: 1988 - Present

1988	1989	1991	1993	1997	1998	1999	2000	2001	
<p><b>NOV</b>  Saudi Arabia Saudi Aramco &amp; Texaco (JV) 307,500 B/D</p> <p><b>DEC</b>  UK BP 77,500 B/D</p> <p><b>DEC</b>  UK Ultramar 65,000 B/D</p> <p><b>DEC</b>  China Sinochem &amp; Coastal (JV) 25,000 B/D</p> <p><b>DEC</b>  Venezuela CITGO 65,000 B/D</p>	<p><b>JAN</b>  UK BP 126,000 B/D</p> <p><b>NOV</b>  Venezuela Unocal &amp; CITGO (JV) 73,500 B/D</p>	<p><b>DEC</b>  Netherlands Shell sells to Unocal -120,00 B/D</p>	<p><b>APR</b>  Mexico Shell &amp; Deer Park, TX refinery (JV) 108,000 B/D</p> <p><b>APR</b>  Netherlands Shell &amp; Deer Park TX refinery (JV) -108,000 B/D</p> <p><b>JUL</b>  Venezuela Lyondell &amp; CITGO (JV) 265,000 B/D</p>	<p><b>MAY</b>  Venezuela Unocal sells JV sake to CITGO 73,500 B/D</p> <p><b>SEP</b>  China Sinochem &amp; Coastal refinery closes -25,000 B/D</p>	<p><b>JAN</b>  Netherlands Shell &amp; Texaco (JV)</p> <p><b>JAN</b>  Venezuela Mobil &amp; CITGO (JV) 91,000 B/D</p> <p><b>JUL</b>  Saudi Arabia Aramco/Texaco &amp; Shell (JV)</p> <p><b>AUG</b>  Netherlands Shell sells to Tesoro -142,000 B/D</p> <p><b>DEC</b>  UK BP 1,043,000 B/D</p>	<p><b>JUL</b>  France/Belgium Total SA merges with Fina 369,000 B/D</p> <p><b>NOV</b>  Netherlands Shell sells to Frontier -52,500 B/D</p>	<p><b>APR</b>  UK BP 498,000 B/D</p> <p><b>AUG</b>  Israel Alon 58,500 B/D</p> <p><b>AUG</b>  France Total SA sells to Alon -58,500 B/D</p> <p><b>SEP</b>  UK BP sells to Tosco -250,000 B/D</p> <p><b>SEP</b>  UK Ultramar 156,000 B/D</p>	<p><b>SEP</b>  UK BP sells to Tosco -116,000 B/D</p> <p><b>DEC</b>  Netherlands Shell 145,000 B/D</p>	
2002	2003	2004	2005	2006	2007	2008	2010	2012	2013
<p><b>MAR</b>  Saudi Arabia Aramco/Texaco leave JV; Shell at 100%</p>	<p><b>AUG</b>  Canada Suncor 60,000 B/D</p>	<p><b>MAY</b>  Saudi Arabia/ Netherlands JV sells to Premcor -175,000 B/D</p>	<p><b>JAN</b>  Belgium Astra 117,000 B/D</p> <p><b>JUN</b>  Canada Suncor 32,000 B/D</p>	<p><b>AUG</b>  Netherlands Lyondell buys out CITGO</p> <p><b>DEC</b>  Canada ConocoPhillips &amp; EnCana (JV) 226,000 B/D</p> <p><b>DEC</b>  Belgium Astra &amp; Petrobras (JV) -58,500 B/D</p> <p><b>DEC</b>  Brazil Astra &amp; Petrobras (JV) 58,500 B/D</p>	<p><b>MAY</b>  Netherlands Shell sells to Tesoro -104,000 B/D</p> <p><b>JUL</b>  Canada Husky 146,000 B/D</p>	<p><b>APR</b>  Canada BP &amp; Husky (JV) 63,000 B/D</p> <p><b>APR</b>  UK BP &amp; Husky (JV) -63,000 B/D</p> <p><b>JUL</b>  Israel Alon 80,000 B/D</p> <p><b>DEC</b>  Brazil Astra sells to Petrobras 58,500 B/D</p> <p><b>DEC</b>  Belgium Astra sells to Petrobras -58,500 B/D</p>	<p><b>JUN</b>  Israel Alon 70,000 B/D</p>	<p><b>MAY</b>  Saudi Arabia Port Arthur, TX refinery expansion 162,500 B/D</p> <p><b>MAY</b>  Netherlands Port Arthur, TX refinery expansion 162,500 B/D</p>	<p><b>FEB</b>  UK BP sells to Marathon -475,000 B/D</p> <p><b>JUN</b>  UK BP sells to Tosco -246,000 B/D</p>

# Most Light Sweet Refining Capacity Is Located Outside of the U.S. as a Result of Foreign Refinery Conversions

*\$85 billion has been spent since 1990 to reconfigure U.S. refineries to run heavy sour oil. Much of this investment was made by foreign countries with exclusive agreements to process their crude even at the exclusion of U.S.-produced crude oil.*

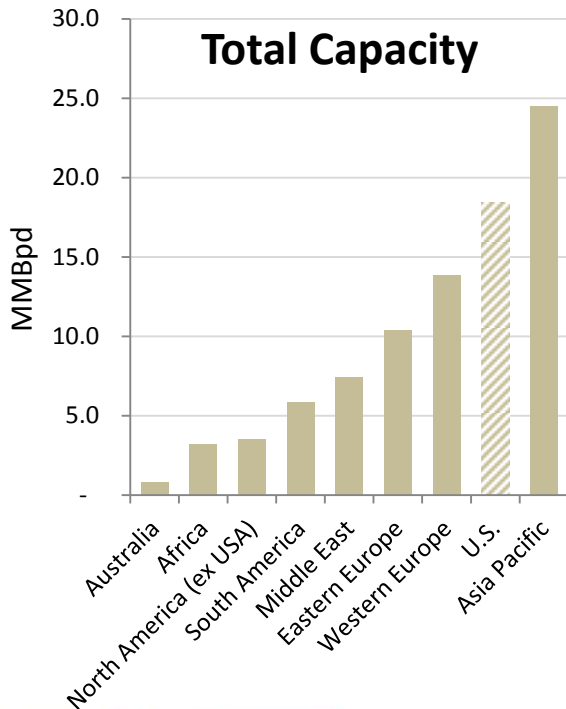


Source: Oil & Gas Journal 2014 Refinery Survey (2013 numbers)

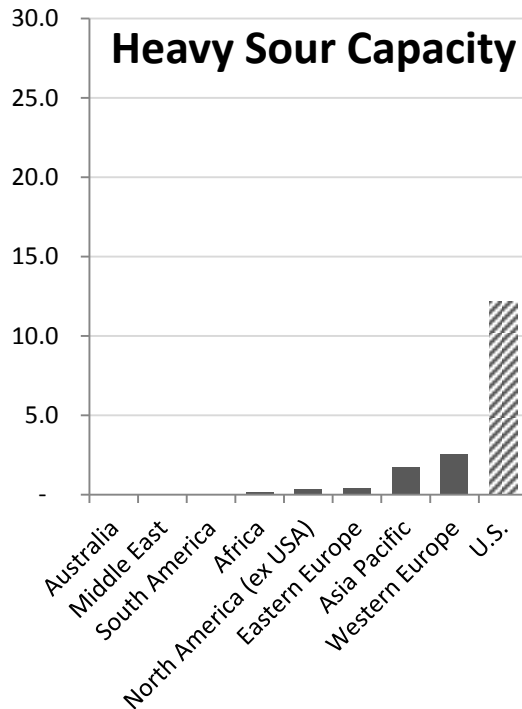
Nelson Complexity Index (NCI) is the industry standard for measuring the relative cost of constructing the components that make up a petroleum refinery. The index can range from 1 (most simple) to over 15 (most complex).

# Refining Capacity in the World

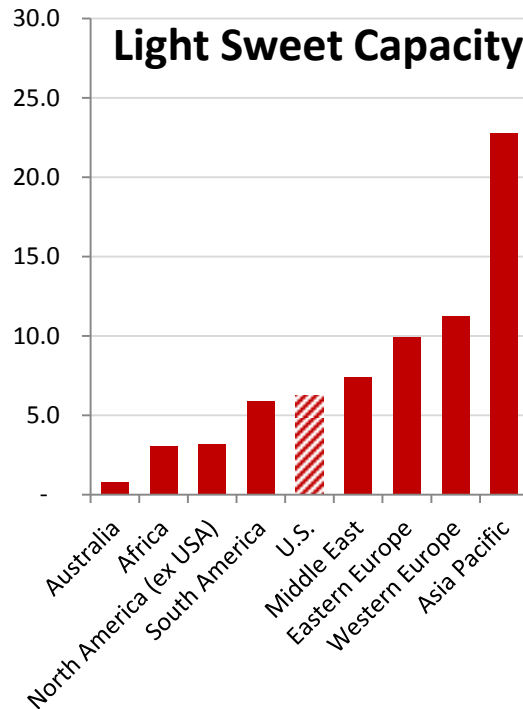
The U.S. has the world's second highest capacity...



And by far the most heavy sour capacity...



But only a miniscule amount of light sweet capacity.



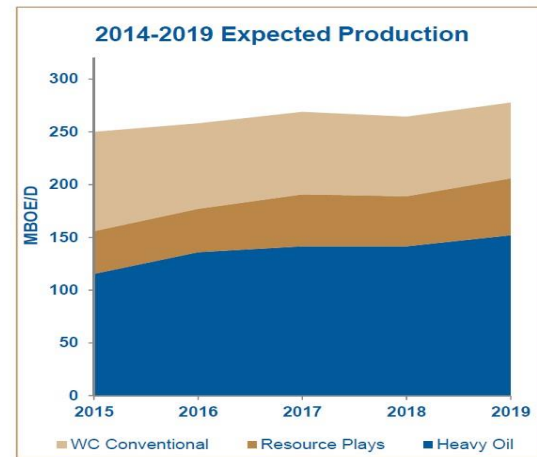
# Calculated Conversion of US Sweet Refineries by Canadian Heavy Sour Developers w/Preferential Processing Rights to the Exclusion of Indigenous US Crude

## Example: Husky Oil Purchase of the Lima, Ohio Refinery

### Downstream

In Downstream, the Company worked to better position its assets with a number of cost-efficient initiatives. These included significant investments at the **Lima** Refinery to process heavier feedstock as the Company prepares to bring on more heavy oil thermal projects in Western Canada.

Project	Forecast Net Production Adds (BOE/D)
<b>Near-Term (2015-2016)</b>	
<b>Heavy Oil Thermals</b> Four sanctioned projects	33,500
<b>Downstream</b> South Sask. Gathering System expansion	N/A
<b>Mid-Term (2017-2019)</b>	
<b>Heavy Oil Thermals</b> Two identified projects	13,500
<b>Downstream</b> Lima Refinery Crude Flexibility project	N/A
<b>Long-Term (2020+)</b>	
<b>Heavy Oil Thermals</b> Two identified projects	20,000

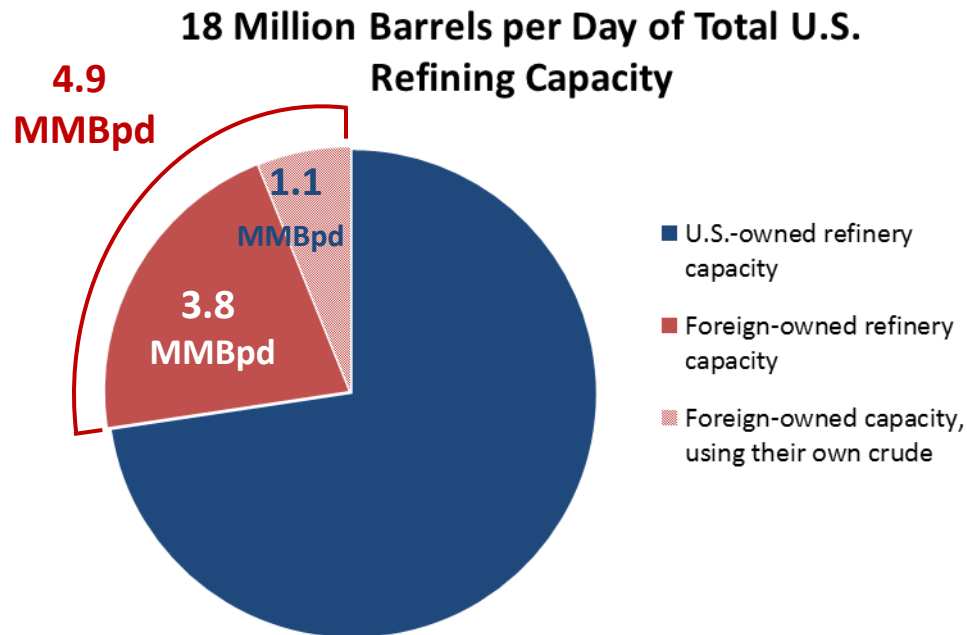


# Canadian-Owned Companies Converting U.S. Refineries to Run Canadian Heavy Sour/Bitumen

- Husky Energy -- (Calgary)** In July 2007, acquired 155,000 Bpd Lima, OH refinery with plan to invest C\$500MM to displace 40,000 Bpd light sweet oil with Canadian heavy oil.  
In 2008, acquired 50% interest in Toledo, OH refinery with 135,000 Bpd capacity. "Husky will have first call on up to 50 percent of the Toledo refining capacity for Husky's share of bitumen production."
- Encana/Conoco -- (Calgary)** Established JV in 2007 in which Encana received 50% ownership in two ConocoPhillips refineries in exchange for COP joint ownership of oil sands projects. Announced plan to invest \$5.3B to expand Wood River, IL (306,000 Bpd) and Borger, TX (146,000 Bpd) refineries' bitumen processing capacity from 30,000 Bpd to 275,000 Bpd. Both conversion projects were in service by 2011.
- Suncor Energy -- (Calgary)** Paid \$150MM in 2003 to purchase ConocoPhillips' Rocky Mountain assets, including a 60,500 Bpd refinery in Denver, and \$30MM in 2005 to buy Valero's adjacent refinery. Spent \$445MM to expand the plant to 103,000 Bpd capacity and upgrade the facility to "handle a wider range of [Canadian] oil sands."

# 28% of U.S. Refining Capacity is Foreign-Owned

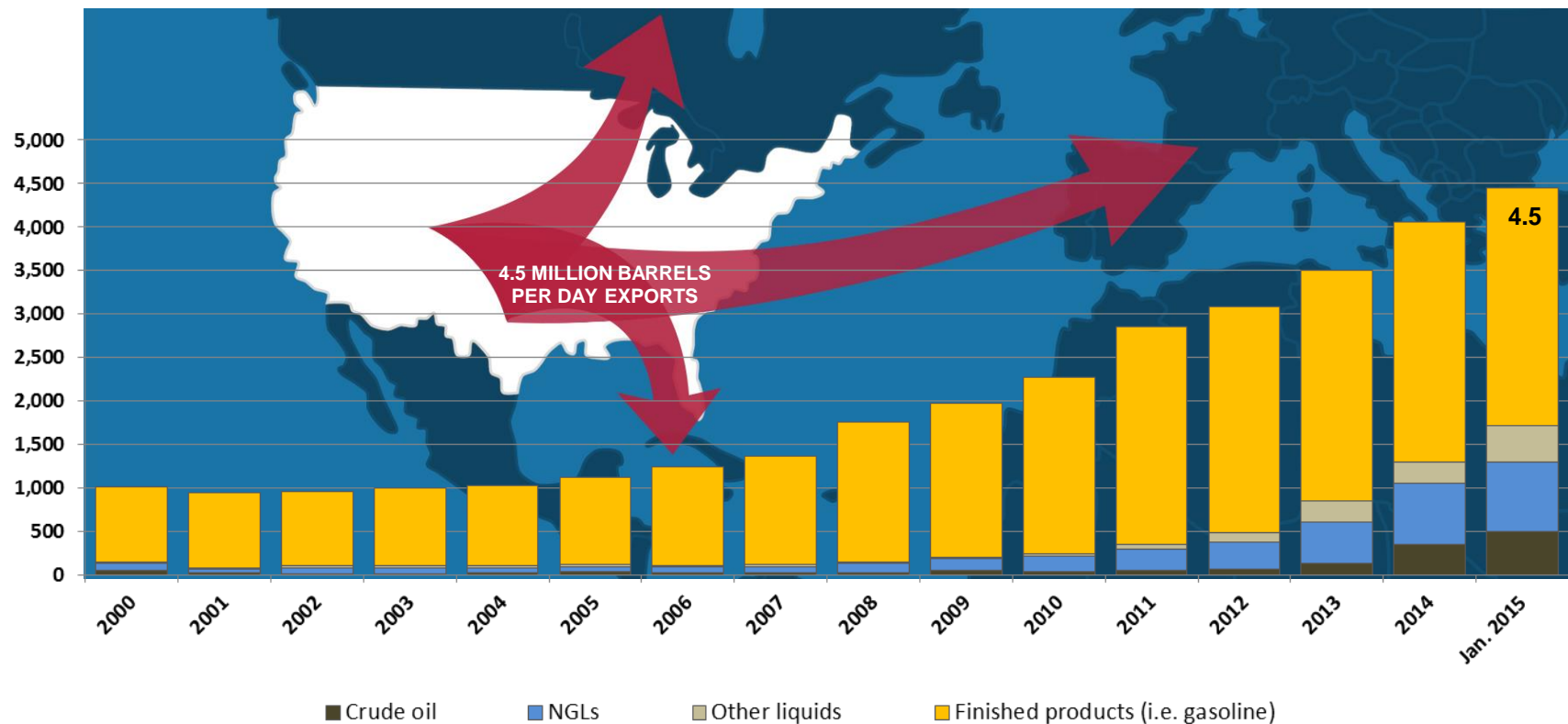
- Foreign entities have acquired significant U.S. refinery assets since the 1980s
- Foreign-owned refineries have financial agreements that allow them to exclude domestic-sourced crude
- Foreign-owned refineries currently import 1.1 MMBpd of oil from their own country (i.e., Saudi's Motiva importing Saudi crude)
- Foreign-owned refineries could source ~4.9 MMBpd of foreign crude imports, putting U.S. producers at an even greater disadvantage



The mismatch in sour vs. sweet refining capacity and the disadvantage of U.S. export laws allows foreign refiners to import their own crude, process it in U.S. refineries, and then ship refined product overseas at no advantage to U.S. consumers.



# U.S. Exports of Petroleum and Refined Products



Crude oil

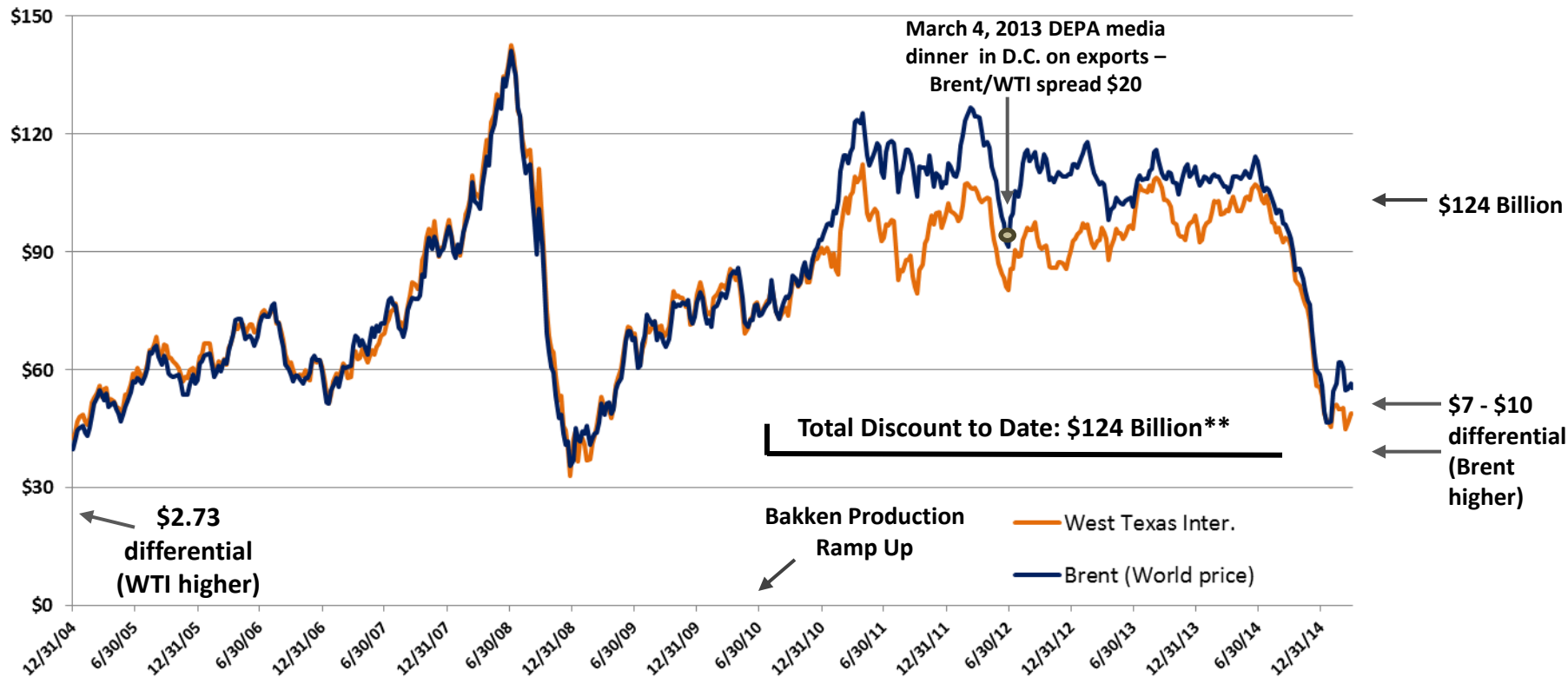
NGLs

Other liquids

Finished products (i.e. gasoline)



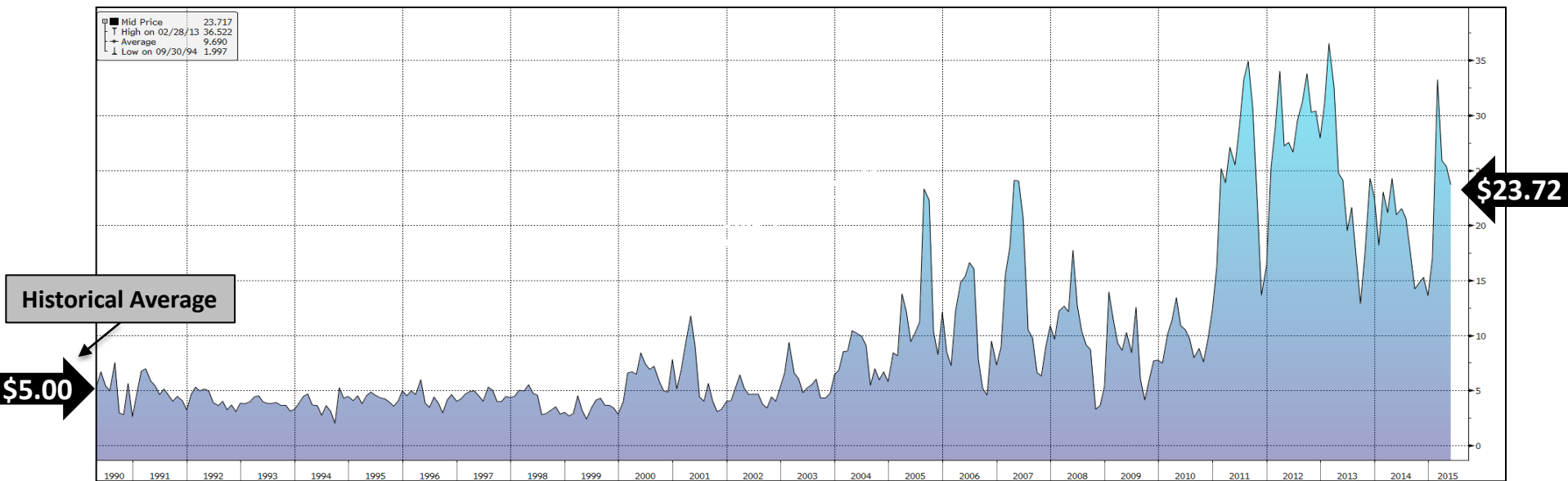
# WTI vs. Brent Oil Price History Since 2005



\*\* Represents the largest policy-driven wealth transfer in U.S. industry history

\*Source: EIA

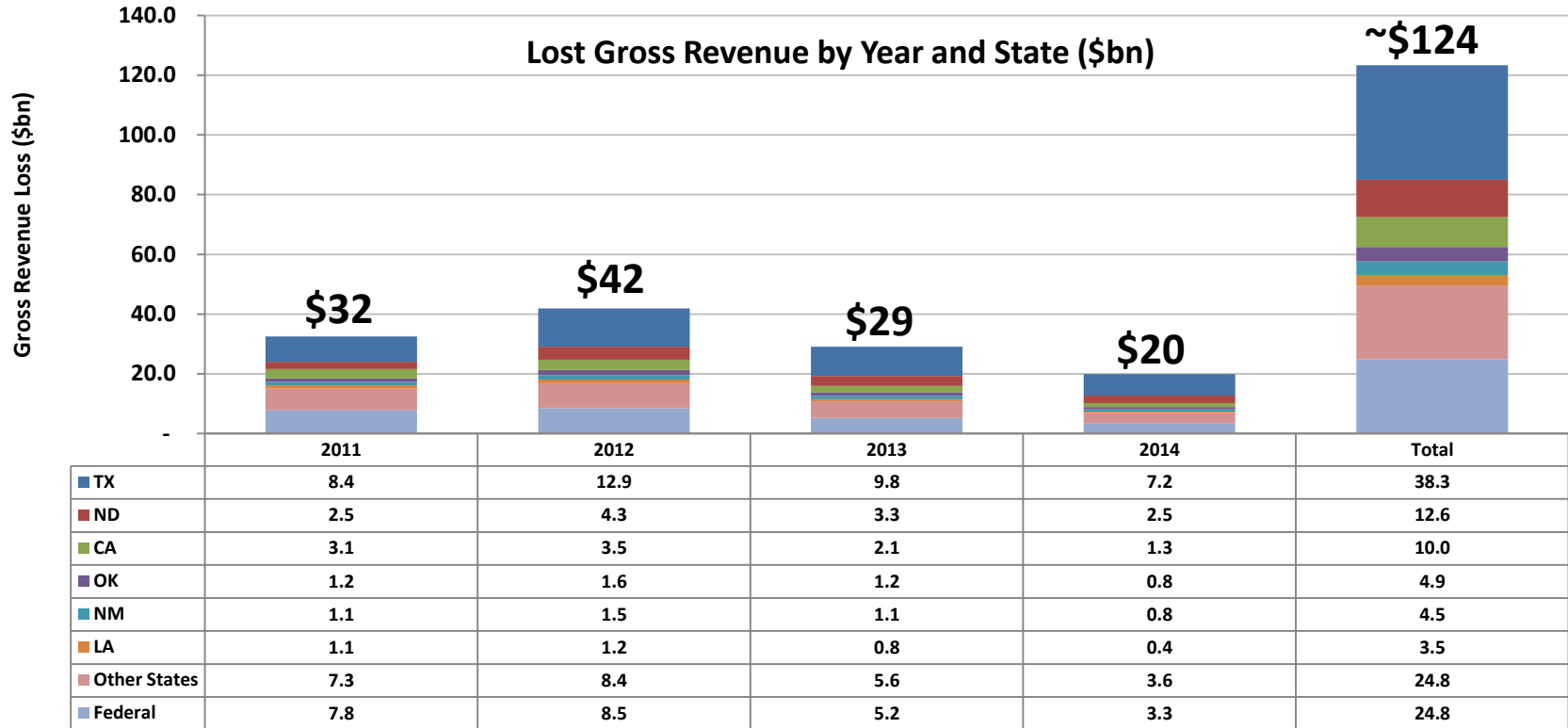
# Refiner Crack Spread History Since 1990



“Crack spread” is the difference between price of a barrel of unrefined crude oil vs. the total value of refined products from that barrel (after “cracking”), as reported on a daily basis. Crack spreads reported daily via OPIS (Oil Price Information Service), Platts McGraw Hill Financial, and Argus Media Limited

# Total Lost Revenue













## (Brent – WTI) Differential



Note: assumes gross revenue loss = crude oil production volume \* (Brent – WTI) differential.

Sources: EIA, Bloomberg.

# Global Light Sweet Refineries In Jeopardy: U.S. Crude Export Opportunities by Country

	Australia	Caltex AUS, Kurnell	135,000	Closed
		Caltex AUS, Lytton	108,600	Closed
	Japan	BP, Bulwer Island	96,850	Closed
		Cosmo Oil, Chiba	228,000	Closed
		JX Nippon, Muroran	180,000	Closed
		Kyokuto, Ichihara, Chiba	171,500	Closed
		Cosmo Oil, Yokkaichi	147,250	Closed, partially
	South Korea	Idemitsu Kosan, Shunan, Yamaguchi	114,000	Closed
		Nansei Sekiyu, Okinawa	100,000	Closed
		SK Innovation, Incheon	275,000	Closed
		Chinese Petro, Kaohsiung	270,000	Closed, partially
	Taiwan			
	Lithuania	AB Mazeikiu, Mazeikiu	190,000	For sale/under review
	Germany	Deutsche Shell, Harburg	107,000	Closed
	Greece	Holborn Europa, Harburg	78,000	Closed
		Hellenic Petro, Thessaloniki	66,500	Closed
	Ireland	Phillips 66, Whitegate	71,000	Closed
	Italy	Api Raffineria, Falconara, Marittima	82,900	Closed
		Italiana Energia, Mantova	69,420	Closed
	Sweden	Shell Raffinaderi, Gothenburg	80,000	Closed
	Switzerland	Tamoil SA, Collombey	72,000	Closed
	UK	Murco Petroleum, Milford Haven	105,682	Closed to re-open, new owner
		Essar UK, Stanlow	272,000	Closed, partially
		Total SA, Killingholme S. Humberside	206,705	Closed

Closed

Closed, partially

Closed to re-open, new owner

For sale/under review

Operating Status Change since OGJ 2014 Worldwide Refinery Survey; Industry, consultant and industry reports.

*Nelson Complexity Index (NCI) is the industry standard for measuring the relative cost of constructing the components that make up a petroleum refinery. The index can range from 1 (most simple) to over 15 (most complex).*

3.2 Million

Total Capacity

at Risk

Operating Status Change since OGI 2014  
Worldwide Refinery Survey; Industry,  
consultant and industry reports.

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standard for measuring the relative cost of  
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**3.2 Million  
Total Capacity  
at Risk**

# What the U.S. Refiners are Telling Investors About Captive Light Sweet Crude



Favorable price dislocations between North American crude and rest of world...

**~2.6 million bpd of refining capacity has been or is scheduled to be rationalized in the Atlantic Basin**



IPO Filing Feb. 17, 2015 – “Upon our formation, we believed that rapid growth in the production of light, sweet domestic crude oil from developing shale formations such as the Bakken, Eagle Ford and Permian...**would create opportunities to secure domestic crude oil at advantaged prices relative to other sources of crude oil.**”



Positioned to **capitalize on advantaged crude oil production. Advantaged crude oil provides higher margins.**



We see plentiful supplies of light sweet **crude available at attractive prices**



Attractive niche product markets with advantaged crude supply. Refineries are well-positioned for exposure to the growing supply of lower cost domestic and Canadian crude oil. **Discounted feeds drive higher gross margins/barrel.**



# Are U.S. Refiners Really Opposed to Crude Exports?

## In favor of lifting the ban:

Chevron, Royal Dutch Shell, Exxon-Mobil, Marathon Oil, ConocoPhillips

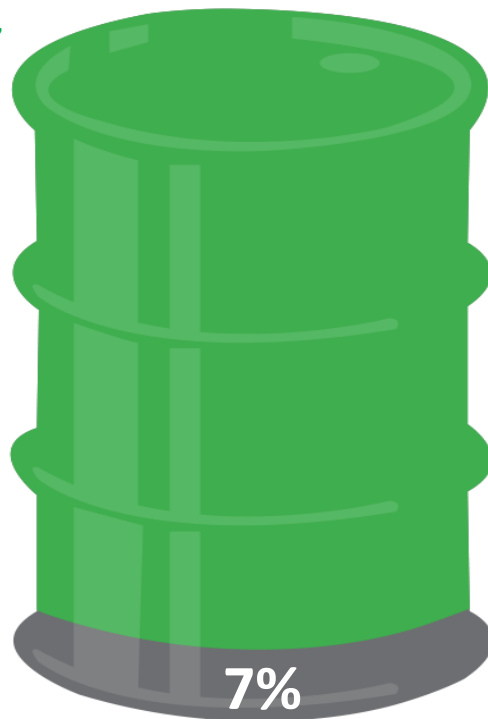
"It is time to let American oil trade freely on the global market, just as other U.S. energy commodities are traded in the global economy." *Ryan Lance, Chairman and CEO, ConocoPhillips*

"We fully support the elimination of the ban on crude exports. We believe the long-term interests of the U.S. are best served by exports." *Rhonda I. Zygocki - Executive Vice President, Policy and Planning, Chevron*

"In the current debates about LNG and crude oil exports, economists and leaders from across the political spectrum, from all sides, agree that free trade would lead to increased investment, more jobs and, importantly, increased production." *Rex Tillerson - Chairman and Chief Executive Officer, Exxon-Mobil*

"Policy makers here in the US should embrace a truly liberalized diverse and global energy market ... [US oil and natural gas exports] would reinforce the long term future of North American energy production ... and help to make the global energy system much more stable." *Ben van Beurden - Chief Executive Officer, Royal Dutch Shell*

"[Allowing oil exports] will encourage further investments in oil and gas exploration and production, create more jobs, (and) improve the balance of trade." *Lee Warren - Manager - Internal & External Communications, Marathon Oil Corporation*



We do not oppose lifting the existing restrictions on U.S. crude oil exports, Congress should pursue U.S. policies that promote a free marketplace for all competitors. *Charles T. Drevna, President, American Fuel & Petrochemical Manufacturers*

## In favor

**Only a few companies oppose lifting the ban on exports!**

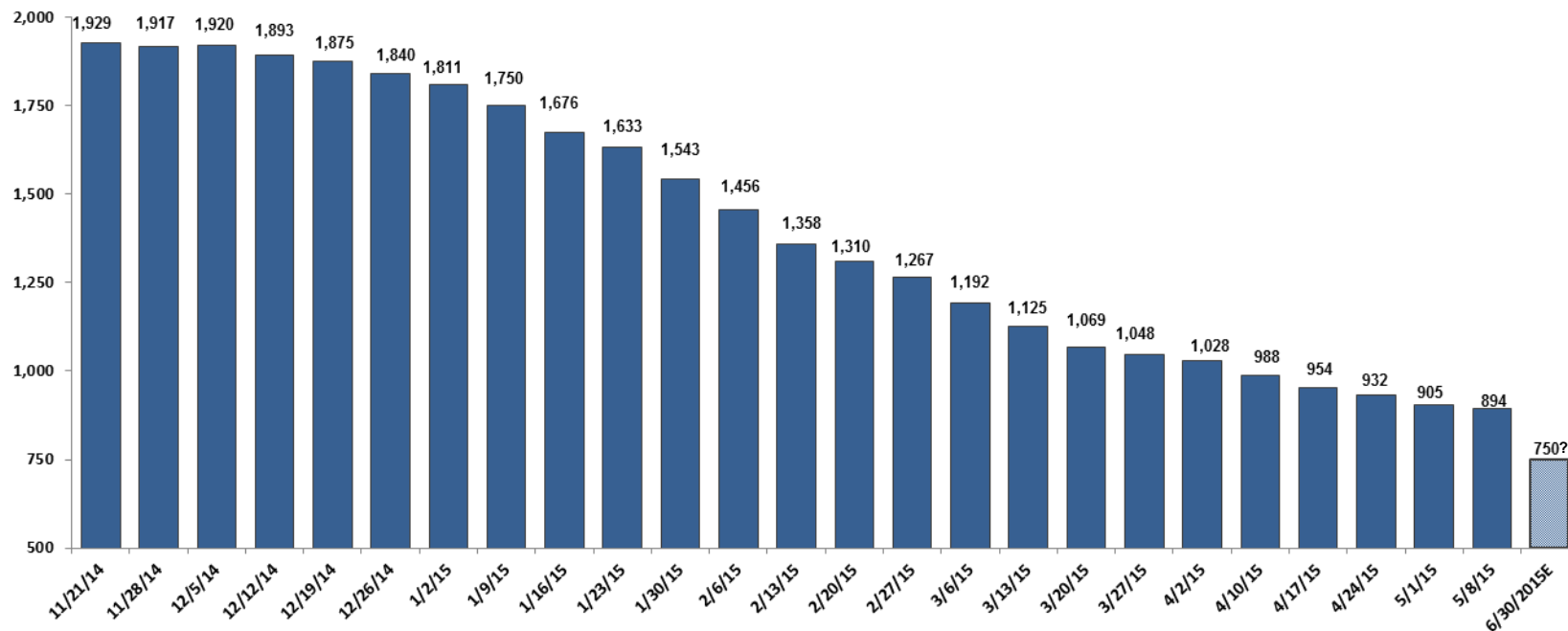
## Opposed:

- C.R.U.D.E. Lobbying Group
- Alon, Delta, PBF, PES

## Philadelphia Energy Solutions IPO filing –

"Upon our formation, we believed that rapid growth in the production of light, sweet domestic crude oil from developing shale formations such as the Bakken, Eagle Ford and Permian... **would create opportunities to secure domestic crude oil at advantaged prices** relative to other sources of crude oil."

# U.S. Rig Count in Rapid Decline

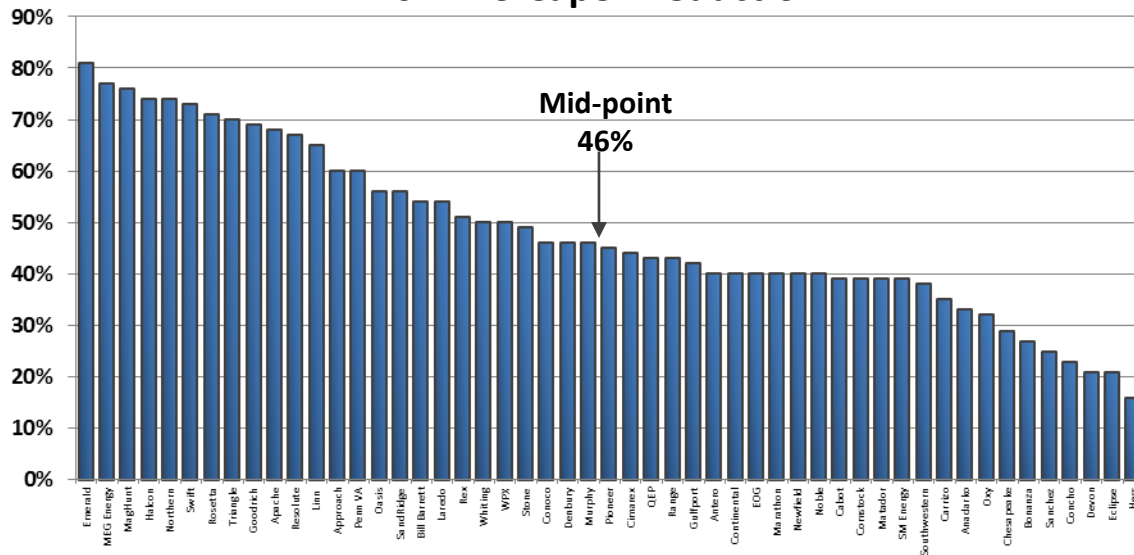


**U.S. rig count has declined by 1,035 rigs, or 54% since mid-November\*. One rig laydown equals the loss of 120 direct and indirect jobs.**

# Current Response of U.S. Producers to OPEC Manipulation of Oil Prices

- Capex cut by as much as 81% (Emerald)
- Drop drilling rigs
- Defer well completions – saves 60% of CWC
  - Avoid selling flush oil and gas production in a poor market
  - Wait for service costs to fall before completing wells
- Shut in high-cost stripper wells temporarily
- Shut in production – some operators don't have to sell

2014-15 Capex Reduction



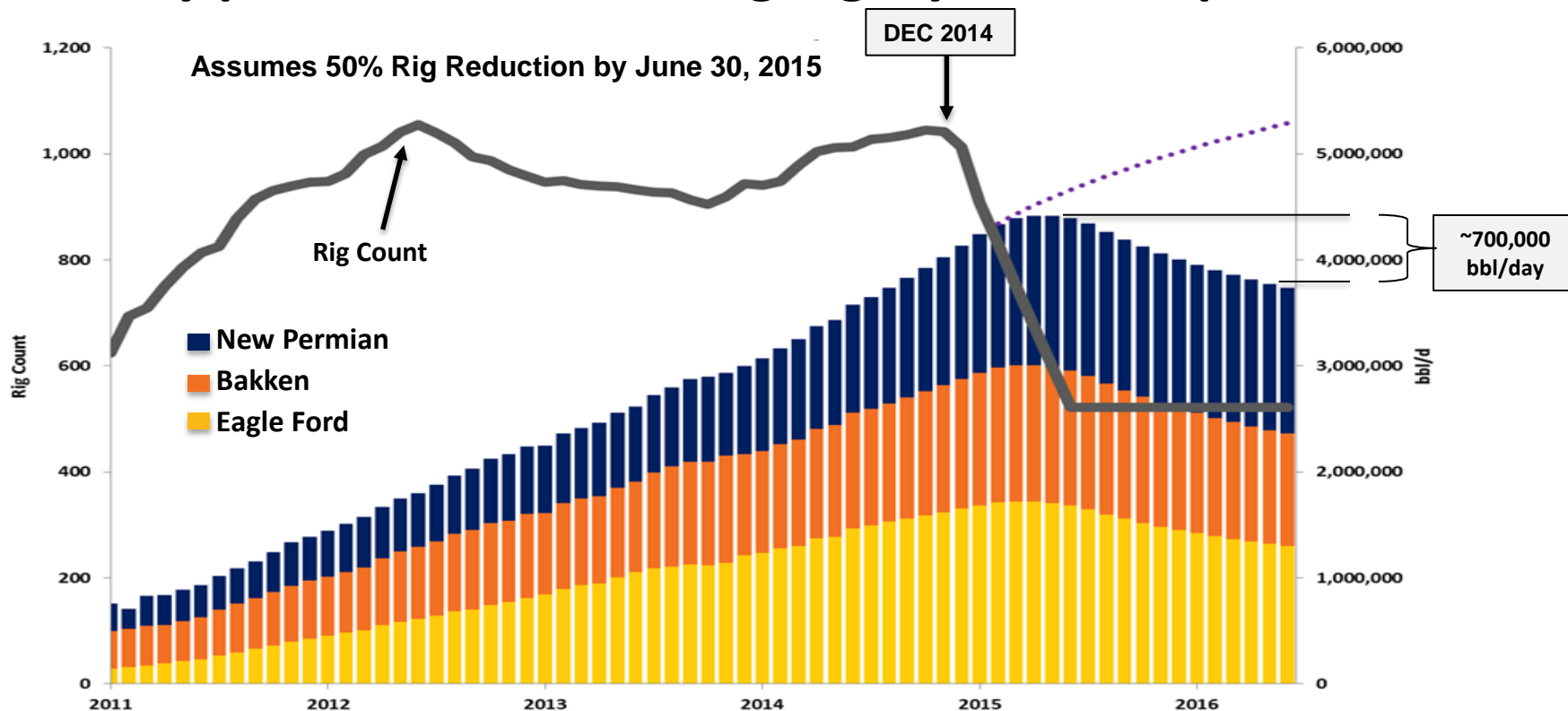
- **\$63B** in capital expenditure reductions already announced for 2015.
- **121,168 layoffs**

Source: Company announcements as of 5/8/15



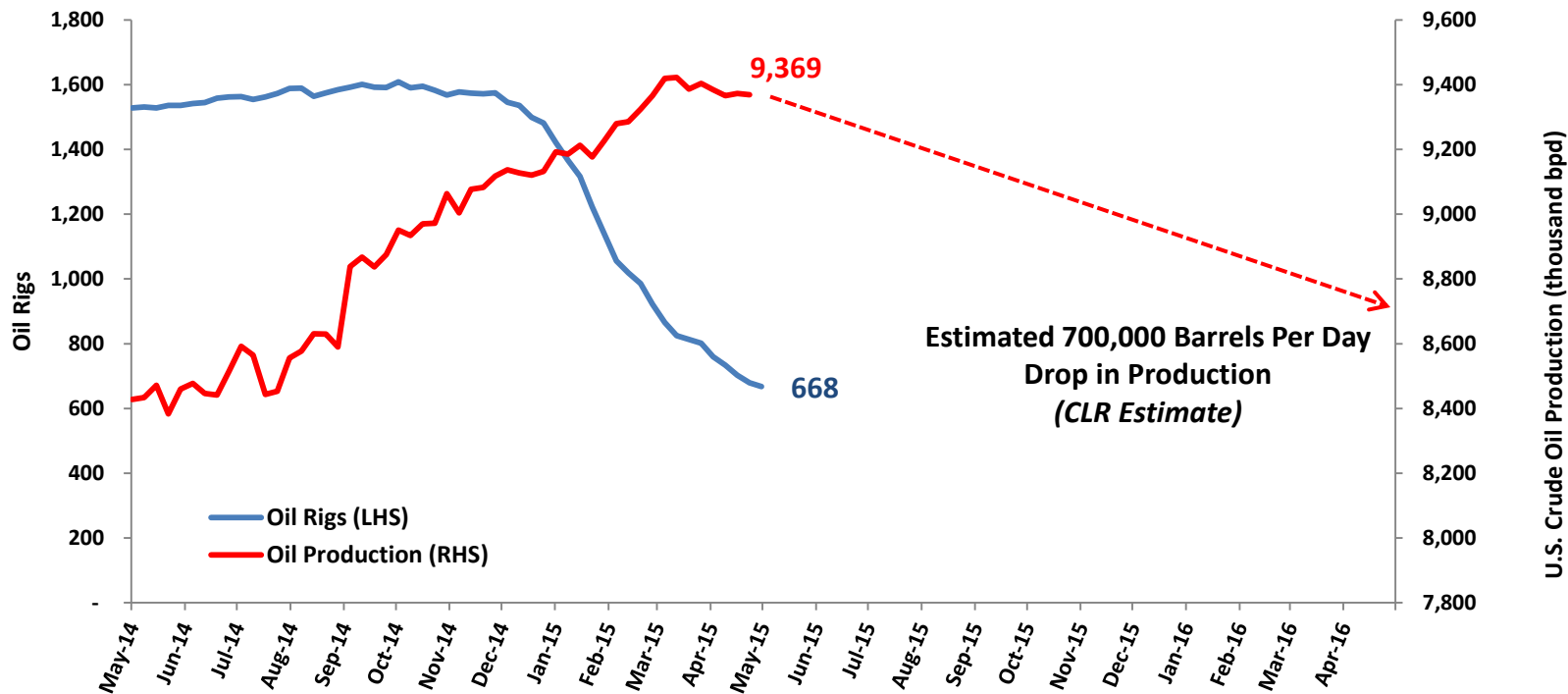
# Three Plays, Industry 50% Cut Case

## Industry production, excluding legacy Permian production



Note: Assumes an 8% increase in productivity due to high grading

# Weekly Oil Rigs vs Oil Production



# U.S. Senate Testimony Favoring Lifting the Ban

“More broadly, the revolution in the production of “unconventional” oil and gas has been one of the major contributors to the U.S. economic recovery, estimated by IHS to have added nearly 1% to U.S. GDP annually, on average, over the past six years – accounting for nearly 40% of overall GDP growth in that time.

...It is rare that policy options arise in the energy world that offer such **overwhelming, unmitigated benefits** as allowing American producers to export crude oil to international markets. The recently released IHS report, *Unleashing the Supply Chain*, documents the benefits across the economy from 2016-2030:

- \$86 billion in additional GDP,
- about 400,000 new jobs annually,
- 25% higher pay for workers in the energy industry supply chain – an additional \$158 per household, and
- \$1.3 trillion in federal, state and municipal revenue from corporate and personal taxes.”

**Carlos Pascual**  
**Senior Vice President, IHS**  
**Testimony to the U.S. Senate Committee on**  
**Energy and Natural Resources**  
**March 19, 2015**

# Re-Asserting America's Energy Leadership with Crude Oil Exports

- Adds 1% to GDP growth.
- Eliminates/dramatically reduces the U.S. trade deficit.
- De-intensifies the Middle East's strategic importance, especially Iran.
- Ends OPEC dominance once and for all.
- Reduces our European allies' dependence on Russia.
- Jobs – puts Americans back to work here.
- Lowers and stabilizes gasoline prices for U.S. consumers.
- Fair, free trade is consistent with American principles.
- American producers have been forced to take on the role of the world's swing producer, but we are cut off from exporting oil to world markets, making it impossible to accomplish.
- The U.S. energy renaissance is pro-environment, producing premium quality oil vs. heavy sour.
- Provides U.S. energy independence by 2020.
- America can once again be the growth engine of the world for the next 50 years as we were post-WWII.
- Saves American lives!

# Lower Gasoline Prices

- **Allowing U.S. exports actually corrects a market distortion. Correcting the distortion, in turn, ultimately lowers the price of global oil.** (December 2, 2014, **PACE**, *The ABC's of the Crude Oil Export Ban and Gasoline Prices*)
- **IHS Energy:** Since US gasoline is priced off global gasoline prices, not domestic crude prices, the reduction will flow back into lower prices at the pump – **reducing the gasoline price 8 cents a gallon. The savings for motorists is \$265 billion over the 2016 – 2030 period.** (December 2, 2014, **PACE**, *The ABC's of the Crude Oil Export Ban and Gasoline Prices*)
- **The Congressional Budget Office, IHS Energy, ICF International, Columbia University and The Brookings Institution, among others,** have all concluded through their own independent analyses that removing the current ban on U.S. crude oil exports would result in lower gasoline prices here at home. (January 22, 2015, **PACE**, *Fact Check: Sens. Menedez and Markey Letter to Commerce Dept.*)
- Lifting the ban could result in an equally large reduction in refined product prices [including gasoline] due to a more relaxed OPEC response, up to 12 cents per gallon in our analysis. (January 20, 2015, **Columbia University**, *Navigating the Crude Oil Export Debate*).
- Resources for the Future: Gasoline prices decline by 1.8 to 4.6 cents per gallon on average if the crude oil export restrictions are removed. (October 20, 2014, **U.S. Government Accountability Office**, *Changing Crude Oil Markets*)
- **ICF International:** Petroleum product prices decline by 1.5 to 2.4 cents per gallon on average from 2015 – 2035 if restrictions are removed. (September 9, 2014, **Brookings Institution**, *Changing Markets Economic Opportunities from Lifting the US Ban on Crude Oil Exports*)
- **NERA:** Petroleum product prices decline by 3 cents per gallon on average from 2015 - 2035 if restrictions are lifted. (September 9, 2014, **Brookings Institution**, *Changing Markets Economic Opportunities from Lifting the US Ban on Crude Oil Exports*)
- **Rice University:** “We also find empirical support... that lifting the ban on crude oil exports **would not raise gasoline prices in the US.** Since refined products, such as gasoline, can be freely traded in the international market, the prices of refined products sold in the US are in parity relationship with international prices.... **Thus, the discounted prices of oil produced in the US are not reflected in US gasoline and refined product prices.**” (Baker Institute for Public Policy, March 27, 2015)

# Consumer Stability

- **ICF International:** Lower gasoline prices as a result of ending the crude export ban **could save American consumers up to \$5.8 billion per year, on average, over the 2015 – 2035 period.** (December 15, 2014, PACE, *Ten Key Questions about the Crude Oil Export Ban*)
- **IHS Energy:** Lifting restrictions on crude oil exports will increase real household disposable income in the forecast due to an investment-led expansion in economic activity and a lower unemployment rate. (November 2014, PACE, *Lifting the Crude Oil Export Ban Benefits US Consumers*)
- **ICF International:** Given the international nature of US petroleum product movements, 2013 US petroleum product prices were between \$.29 and \$.94 per gallon lower than they would have otherwise been without horizontal multi-stage hydraulic fracturing. This reduction saved US consumers an estimated \$63 to \$248 billion in 2013 and estimated cumulative saving of between \$165 and \$624 billion from 2008 to 2013. (November 2014, PACE, *Lifting the Crude Oil Export Ban Benefits US Consumers*)
- **Brookings Institution:** The welfare benefits to US households derive from higher real incomes from higher wages and lower gasoline prices. (November 2014, PACE, *Lifting the Crude Oil Export Ban Benefits US Consumers*)
- Lifting the ban will have a .4 percent change in welfare (the broadest measure of net economic benefits to US residents) inciting a positive change in the US economy across all scenarios. (September 9, 2014, **Brookings Institution**, *Changing Markets Economic Opportunities from Lifting the US Ban on Crude Oil Exports*)
- Removing the crude oil export restrictions is likely to increase domestic crude oil prices but decrease consumer fuel prices. (October 20, 2014, **U.S. Government Accountability Office**, *Changing Crude Oil Markets*)
- Repealing the ban will have a **positive effect on the consumer and the economy – including a reduction in the price at the pump for consumers;** expanded public finances through generation of additional tax revenue; a reduction in trade deficit; as well as increased GDP, job creation and overall investment. (October 20, 2014, **U.S. Government Accountability Office**, *Changing Crude Oil Markets*)

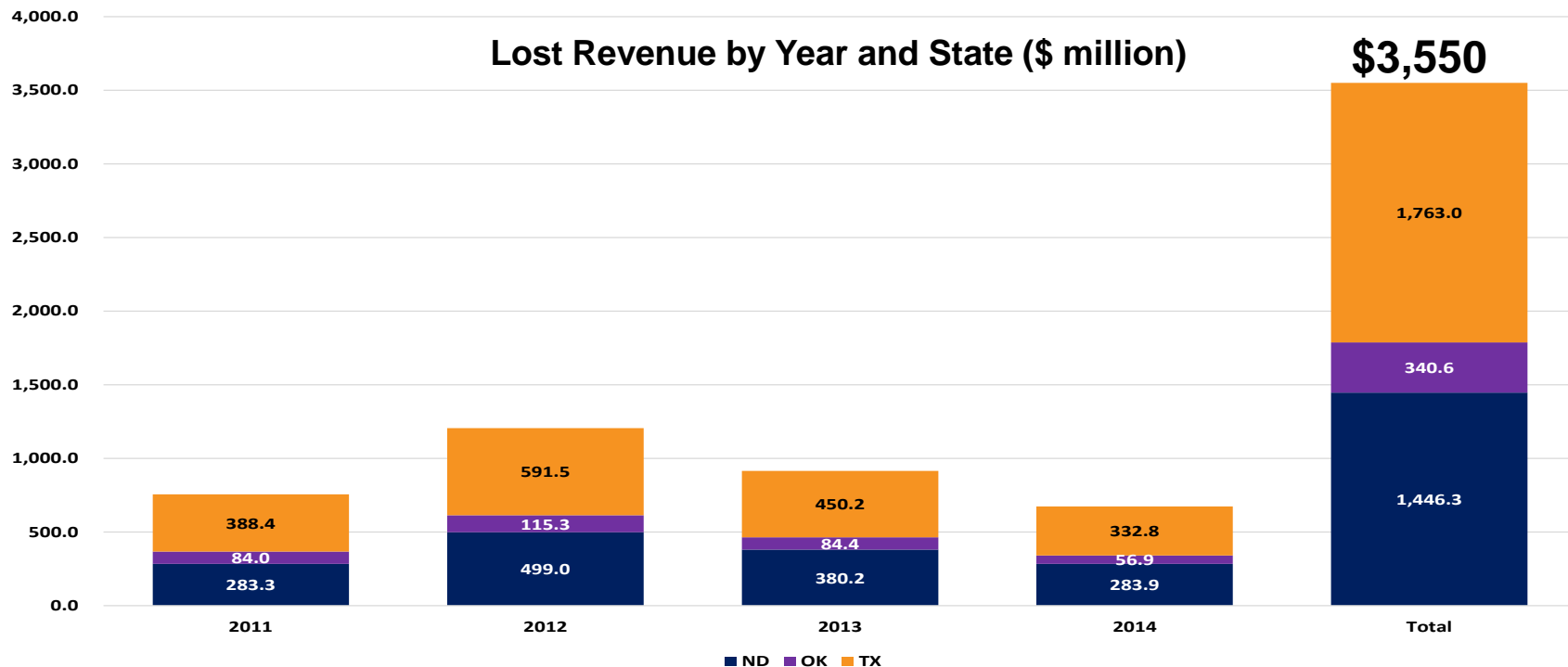
# **Impact of Decision Not to Eliminate Crude Oil Export Ban**

- **Effectively eliminates American oil and gas development**
- **Drives oil and gas development overseas**
- **Eradicates high-paying, middle class U.S. jobs**
- **Ends the American energy renaissance**
- **We will not achieve energy independence in America**
- **Creates and perpetuates the short-supply cycle in America**
- **Drives gasoline prices up**
- **Insures OPEC dominance and the power of hostile nations**
- **Funds terrorism**
- **Continues to fund Iranian aggression in the Middle East**

# Appendix



# State Tax Revenue Lost (Brent – WTI) Differential



Note: assumes revenue loss = crude oil production volume \* (Brent – WTI) differential \* tax rate.

Sources: EIA, Bloomberg.

# Unintended Consequence of Outdated U.S. Crude Export Policy:

## *Domestic Oil Producers Forced to Subsidize North American Refiners*

- Captured domestic crude production trades at a discount to oil of similar quality in the world market
- The U.S. consumer does not benefit from artificially low domestic crude prices as refiners sell domestic and exported product at world prices
- The smartest minds agree: Overturning the U.S. crude export ban will not raise prices for consumers
  1. U.S. Energy Information Administration (EIA) – Adam Sieminski
  2. Congressional Budget Office (CBO)
  3. The Center on Global Energy Policy - Jason Bordoff
  4. Brookings Institution – Larry Summers
  5. IHS – Daniel Yergin
  6. Aspen Institute – Tom Duesterberg
  7. Baker Institute for Public Policy, Rice University – Ken Medlock

# What the Analysts are Saying.....

- **“Low Prices Are Dramatically Slowing Near-term US Production Growth.”** - RBC Capital Markets, 4/16/15
- **“A decline in production is expected.”** - Raymond James Equity Research, 4/15/15
- **“We are expecting growth to turn negative in 2H15.”** – RBC Capital Markets, 4/15/15
- **“We’re going off an inevitable cliff because of the shrinking rig counts.”** - Carl Larry, head of oil and gas for Frost & Sullivan LP, 4/13/15
- **“Advances in oil-drilling technologies are no longer enough to offset the rigs being idled by U.S. producers.”**  
- Paul Horsnell, global head of commodities research at Standard Chartered Plc in London, 4/13/15 Research Note
- **“Growth could go to zero on a month-over-month basis as soon as May.”** - Richard Hastings, macroeconomic strategist at Global Hunter Securities
- **Deutsche Bank, Goldman Sachs and IHS have projected that U.S. oil production growth will end, at least temporarily, with futures near a six-year low.**
- **“Output from the prolific tight rock formations, such as North Dakota’s Bakken Shale, will decline 57,000 barrels a day in May.”** - EIA, 4/13/15

# U.S. Energy Renaissance at Risk - Background

1. Post-1970s consensus: America was running out of oil and natural gas, and imports would increase unabated into the future. To combat this threat:
  - President Nixon imposed price controls after the 1973 Arab oil embargo.
  - U.S. later banned oil exports as an enforcement tool of this policy.
2. Given that gas production was declining, facilities were built in Texas, Louisiana, Maryland and California to import LNG from abroad.
3. A calculated conversion of \$85B spent over 25 years\* of US sweet refinery assets to process heavy crude from Mexico, Venezuela and Canada to provide those countries downstream outlets for their current heavy sour crude production and future tar-sand development needs.
4. However, we, the small U.S. Independents, developed new horizontal technologies in the 1990s and used them to discover a vast new supply of natural gas in tight rock reservoirs – 100+ years of new supply\* – a real game-changer!
5. These same technologies led to the discovery of the three new crude oil resource plays, the Bakken, Eagle Ford and “new” Permian unconventional, which have generated 50% of the world’s oil production growth since 2008. The U.S. accounts for 75% of world oil production growth since 2005, and these resource plays represent ~40+ years of new light sweet crude oil supply.
6. Due to the conversion of US sweet crude refineries, we are unable to obtain domestic refinery space for this premium-grade product and must seek international sweet crude refinery space.

# U.S. Energy Renaissance at Risk

## Currently

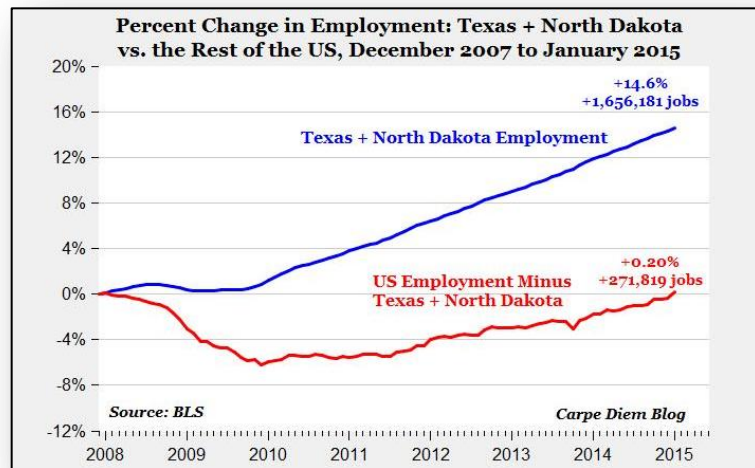
1. LNG import facilities are now being retrofitted to EXPORT LNG abroad. U.S. has assured long-term self-sufficiency in natural gas.
2. Net imports of petroleum liquids have fallen to 25% of U.S. consumption, near the limit that will be difficult to exceed because **25% of U.S. refinery capacity is foreign-owned**.
3. Compounding this problem, since 2010 many U.S. light sweet oil refineries have been reconfigured by their foreign owners to process heavy sour/bitumen. **Result: Light oil refining capacity is severely limited in the U.S.**
4. **The U.S. is within 5 MMBpd of being entirely self-sufficient in crude oil**, which is equal to the daily capacity of foreign-owned refineries in the U.S.
5. Since 2008 the domestic energy renaissance has been the leading provider of jobs and strength to the U.S. economy.
6. **A continued ban on the fair trade of domestic oil could push the country back into recession**, due to mounting job losses, higher gasoline prices and reduced capital spending.

# Oil and Gas Has Driven U.S. Jobs Growth

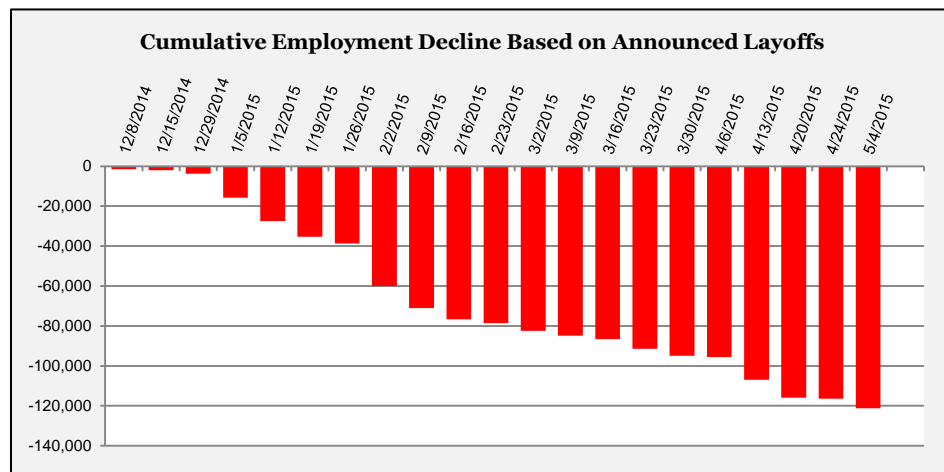
Energy production in Texas and North Dakota helped pull the U.S. out of the Great Recession. **“Since Dec. 2007, Texas + ND ("Cowboyistan") created 6 jobs for every 1 job created in the other 48 states and DC.”**

Dr. Mark Perry, University of Michigan at Flint

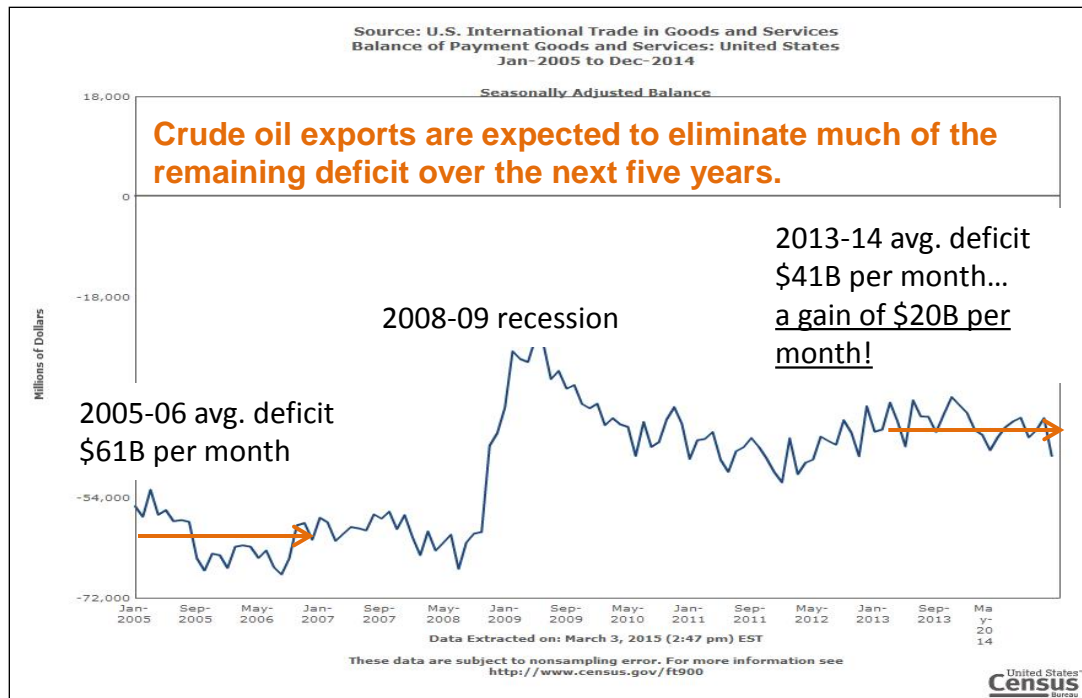
## What Was



## What Is

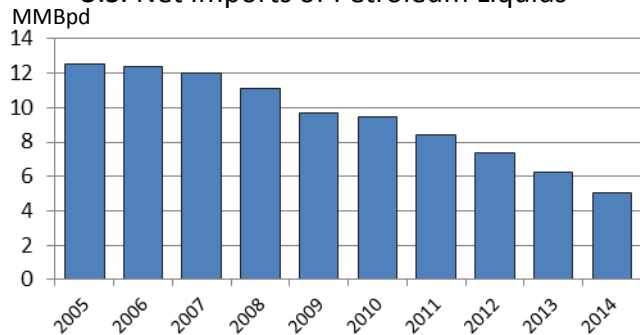


# Trade Deficit Reduction since 2005



## What happened?

### U.S. Net Imports of Petroleum Liquids



### US Refined Petroleum Exports and Other

