

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

U.S. Energy Renaissance Endangered

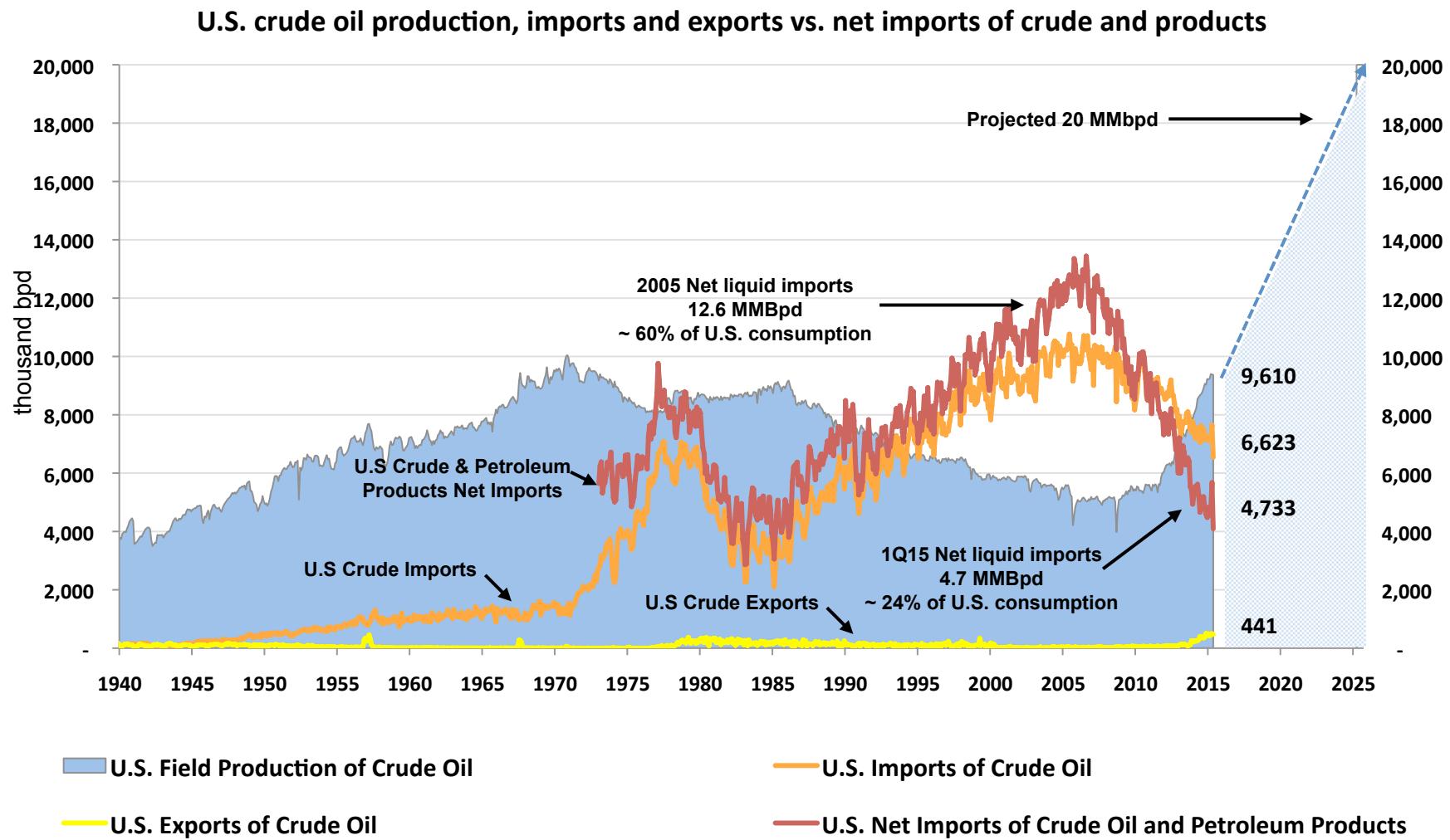
2015 EIA Energy Conference

June 16, 2015

What is the Domestic Energy Producers Alliance?

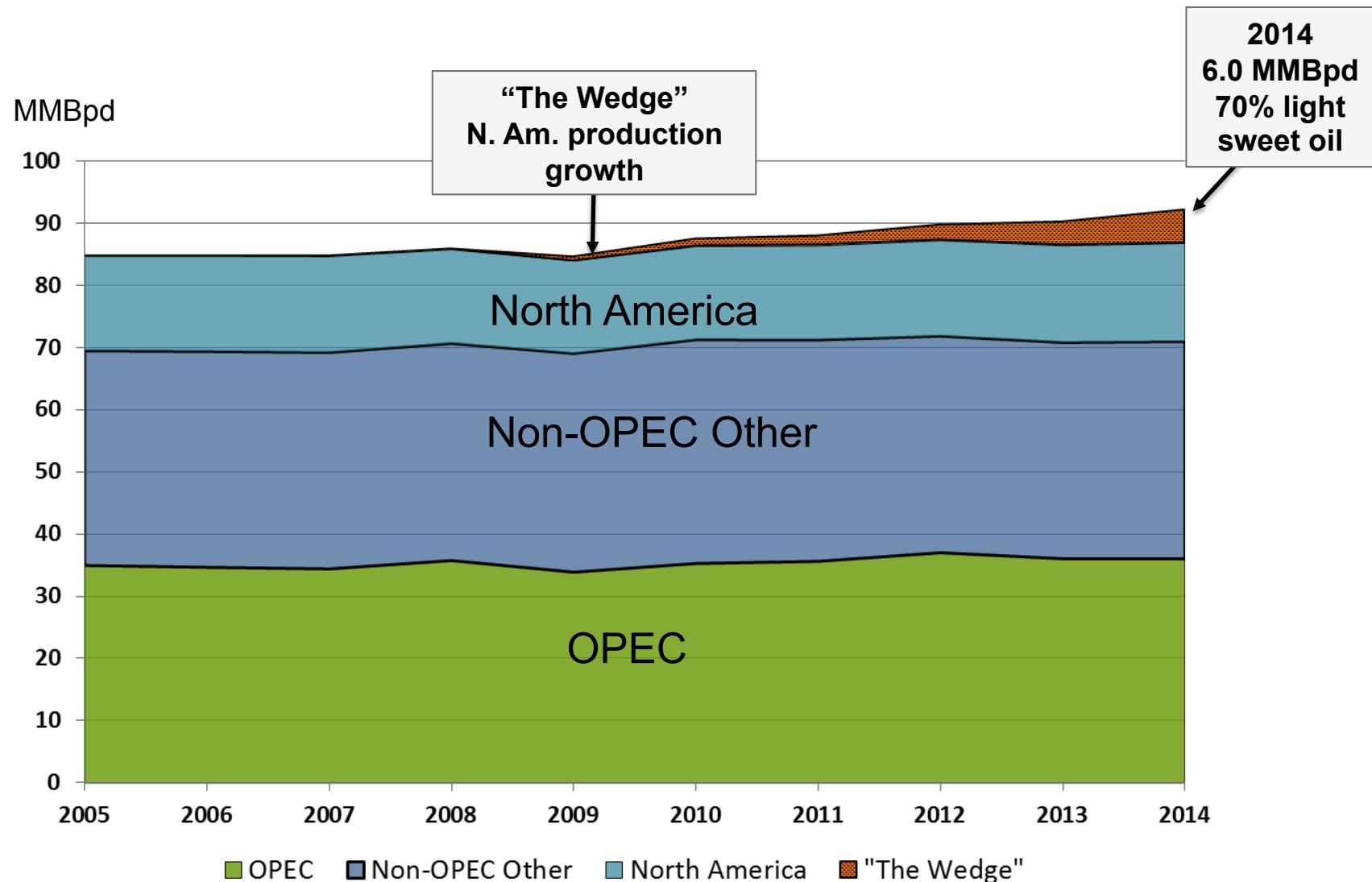
- An alliance of:
 - U.S. independent producers, royalty owners and organizations
 - Oilfield service companies
 - State and national oil & natural gas associations consisting of 10,000 members
 - National Association of Royalty Owners (NARO) Affiliation consisting of 10 million American royalty owners
- 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



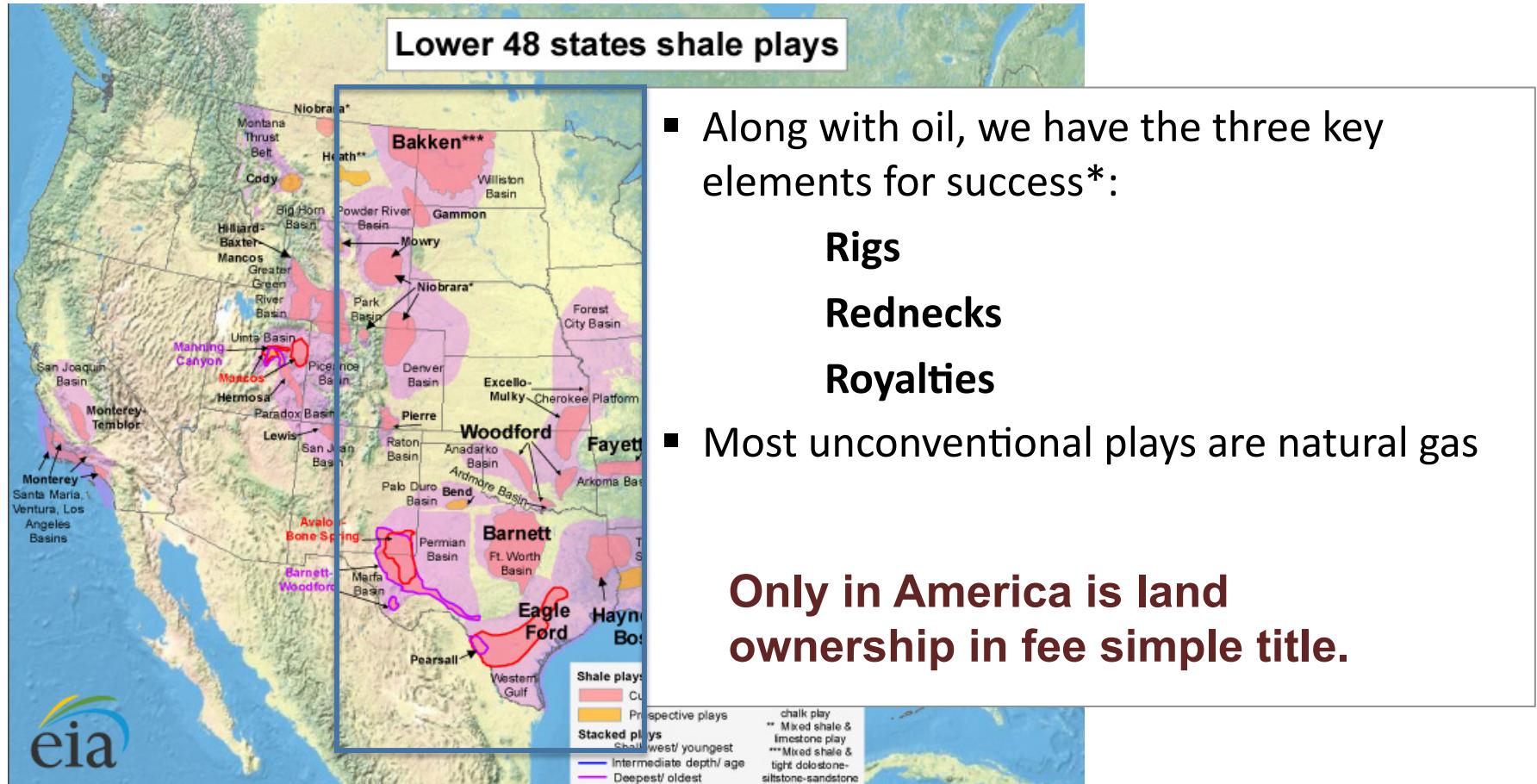
Source: EIA. Mar-May 2015 data calculated as averages of weekly data.

World Petroleum and Other Liquids Production

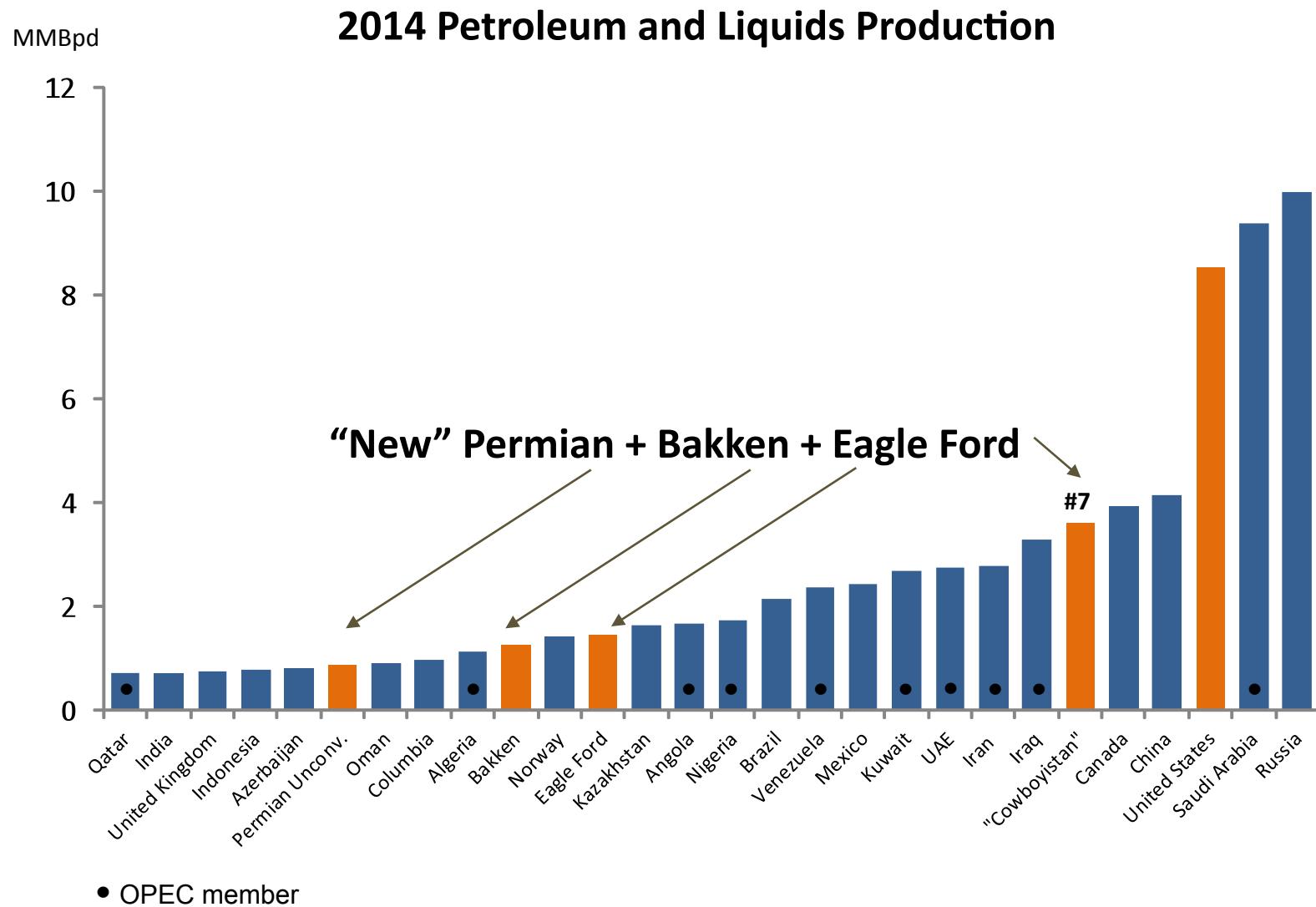


Bakken + Eagle Ford + “New” Permian

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

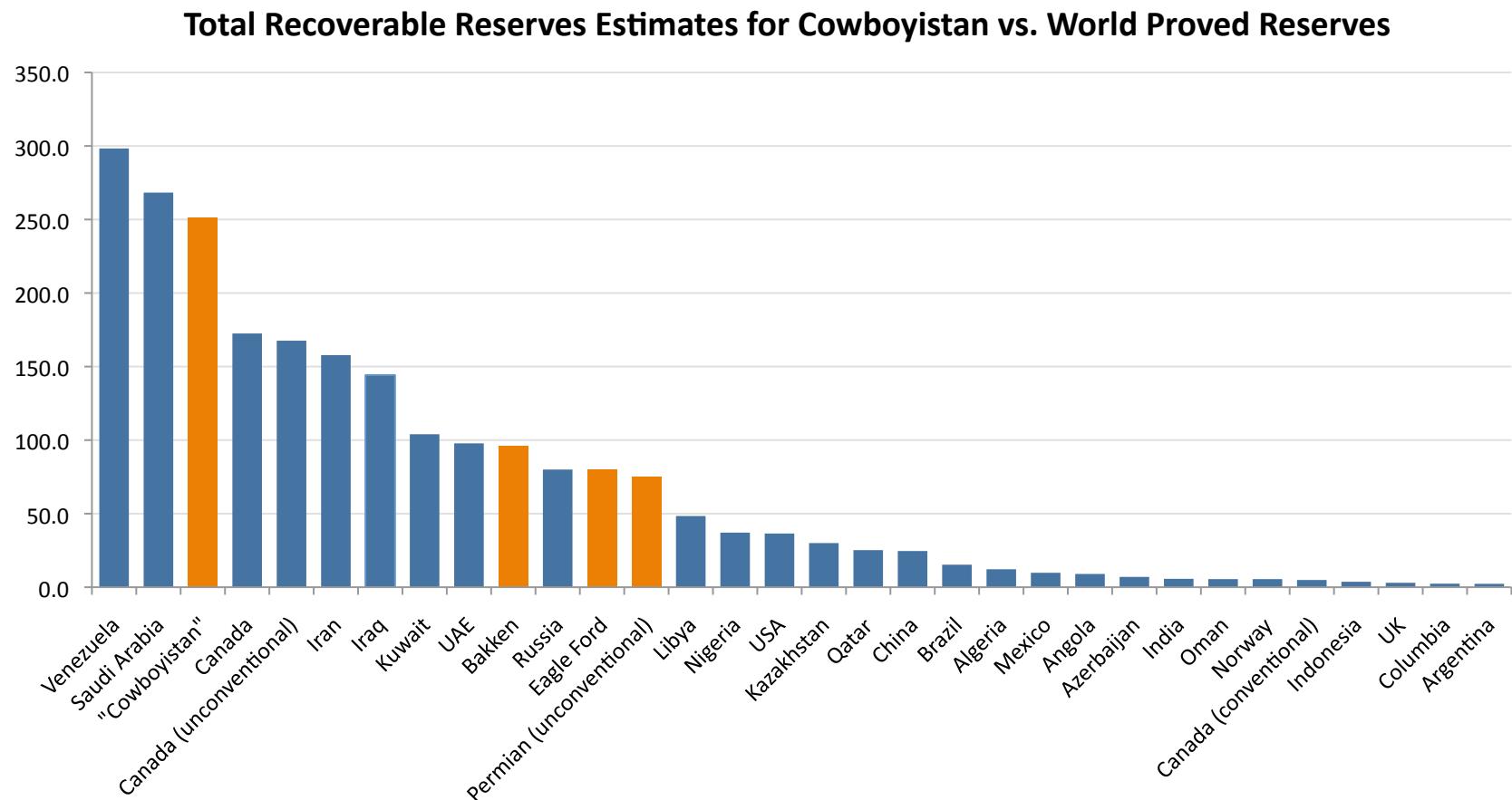


3 Key Plays = World's #7 Liquids Producer



Source: IHS CERA and DI database, 2014

3 Key Plays' Reserve Potential



<http://www.eia.gov/naturalgas/crudeoilreserves/> for proved reserves. DEPA estimates for Cowboyistan potential.

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

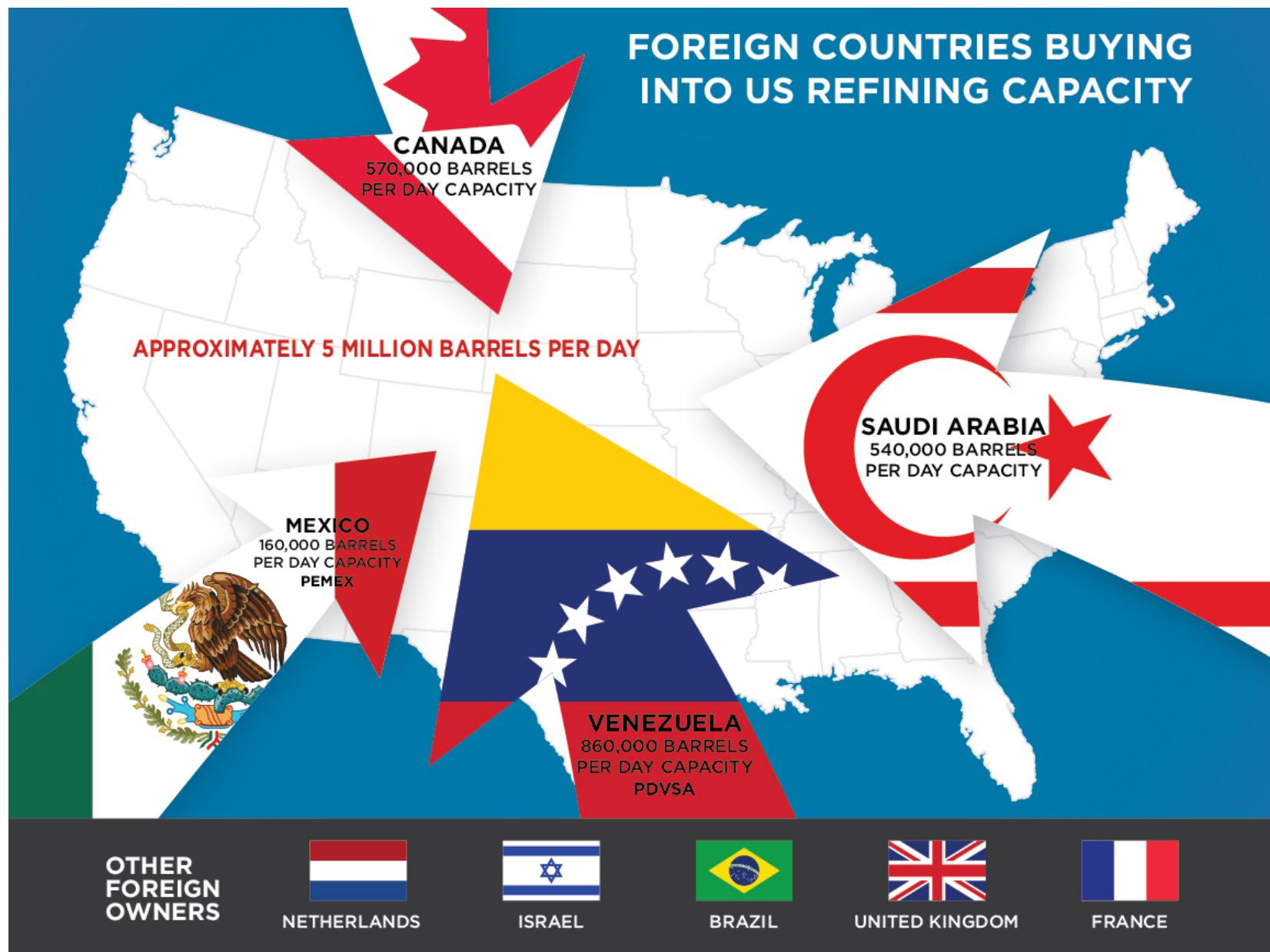
“Maybe we will go to \$200 if there is a real shortage of supply because of the lack of investment.”

FINANCIAL TIMES

Saudi Arabia sees success in fight to retain dominance of global oil

- Output strategy squeezes US shale • Price fall 'deterred' investment in costly sources





Source: EIA foreign capacity weighted by percent ownership.

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

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

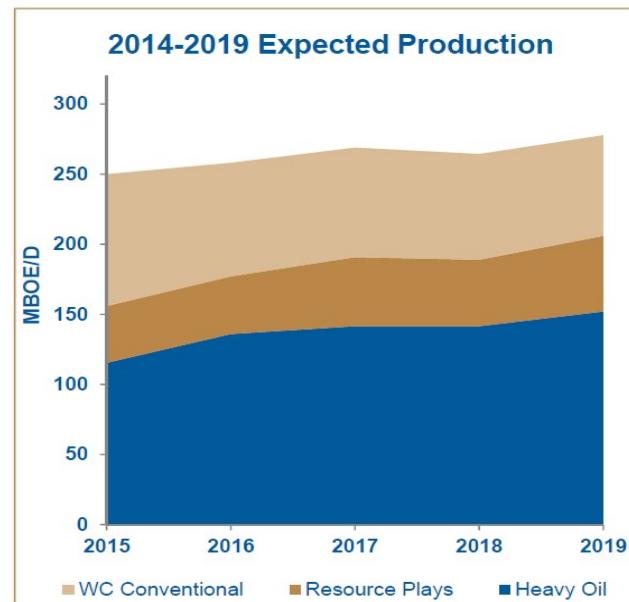
Calculated Conversion of US Sweet Refineries by Canadian Heavy Sour Developers w/Preferential Processing Rights to the Exclusion of Indigenous US Crude

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

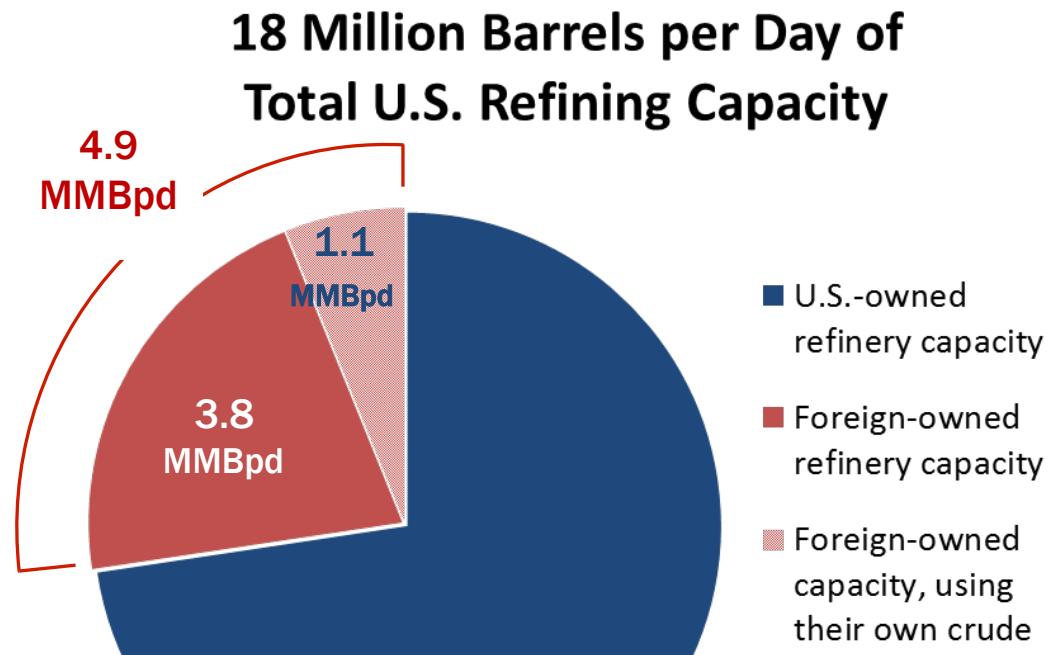


Canadian-Owned Companies Converting U.S. Refineries to Run Canadian Heavy Sour/Bitumen

- 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

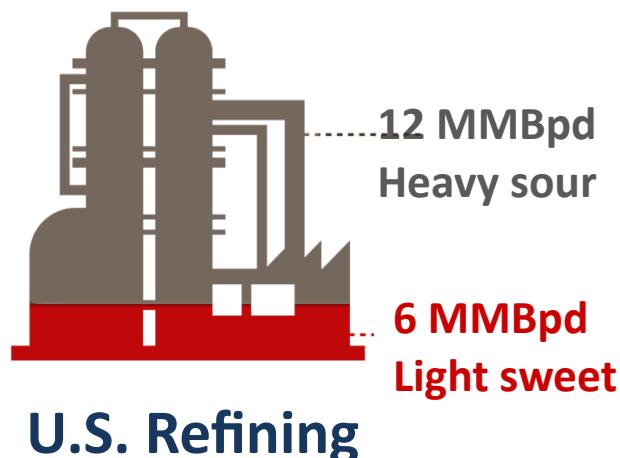
- Foreign entities have acquired significant U.S. refinery assets since the 1980s
- Foreign-owned refineries have financial agreements that allow them to exclude domestic-sourced crude
- Foreign-owned refineries currently import 1.1 MMBpd of oil from their own country (i.e., Saudi's Motiva importing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



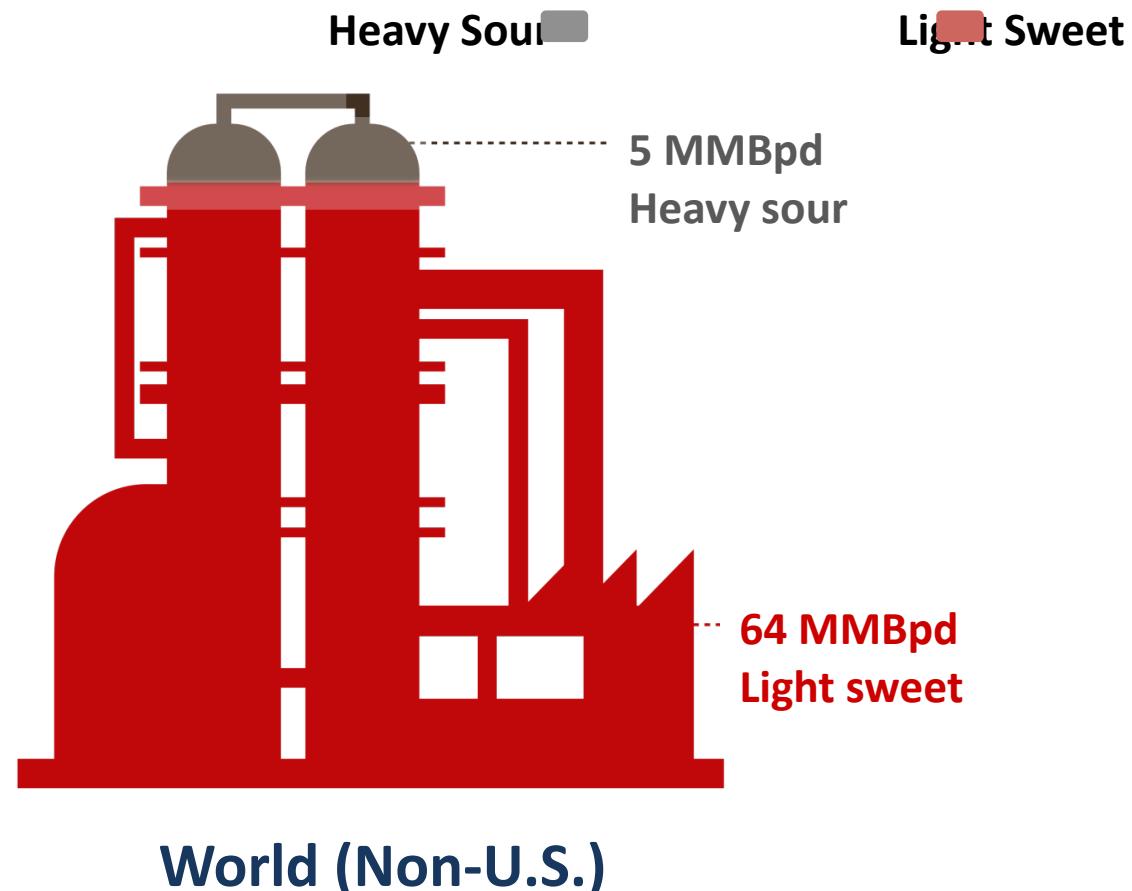
The mismatch in sour vs. sweet refining capacity and the disadvantage of U.S. export laws allows foreign refiners to import their own crude, process it in U.S. refineries, and then ship refined product overseas at no advantage to U.S. consumers.

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.



U.S. Refining

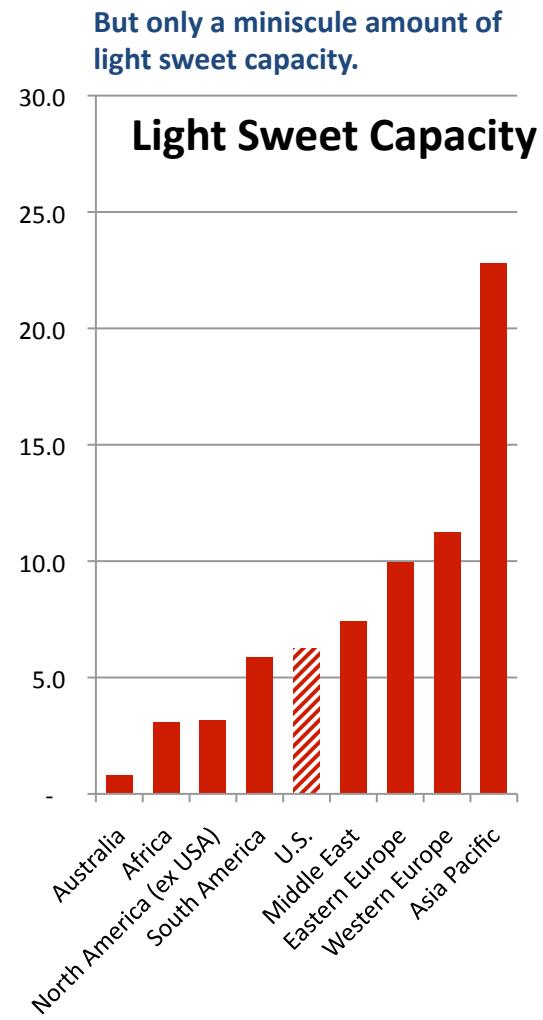
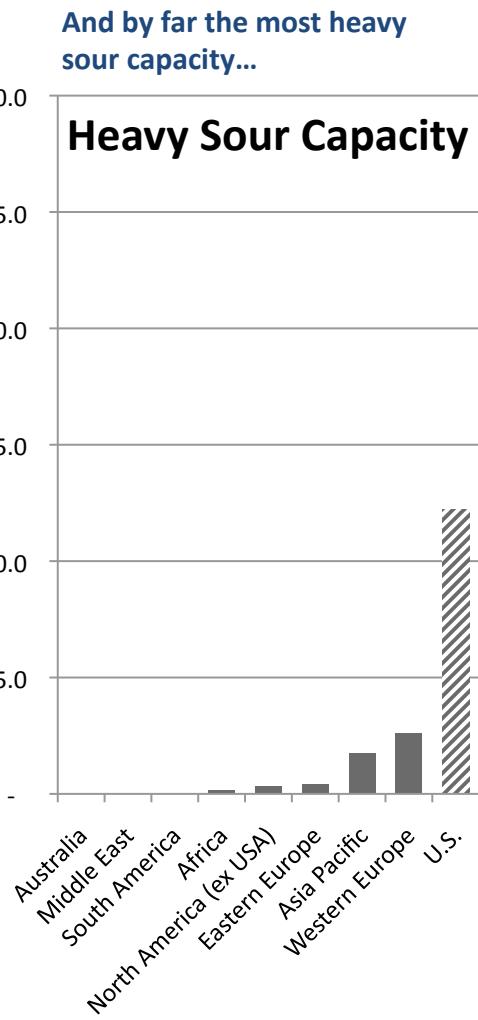
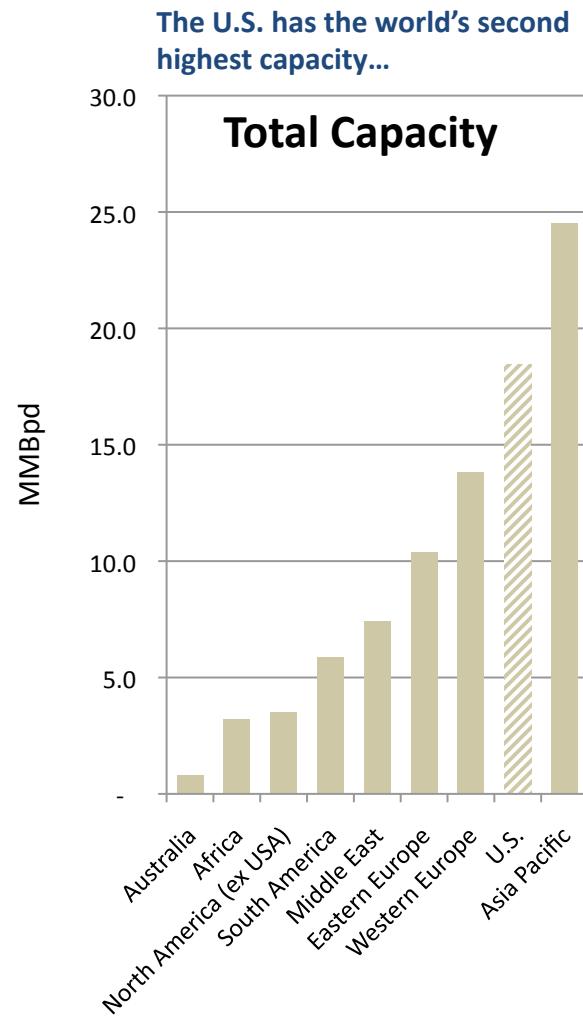


World (Non-U.S.)

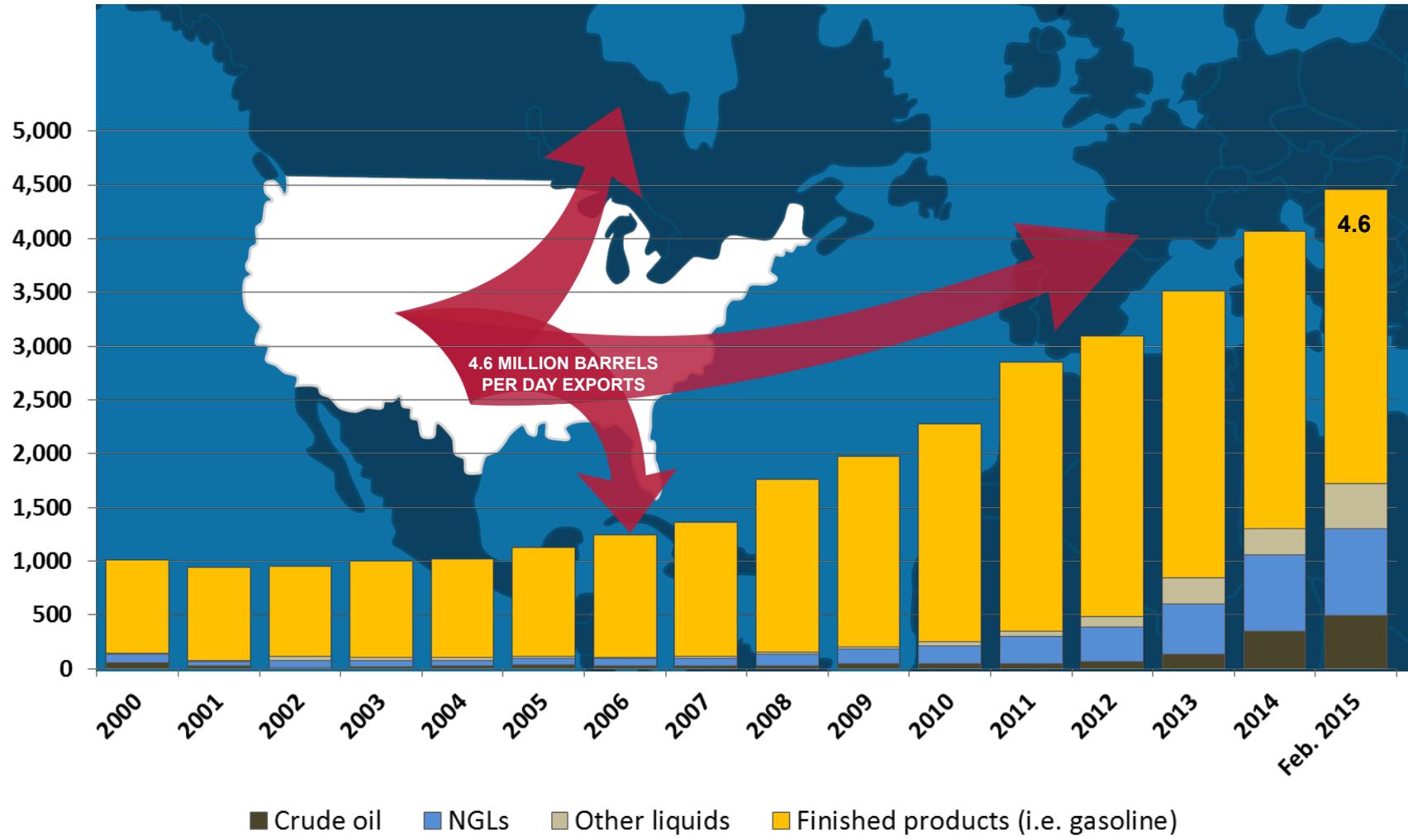
Source: *Oil & Gas Journal* 2014 Refinery Survey (2013 numbers)

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

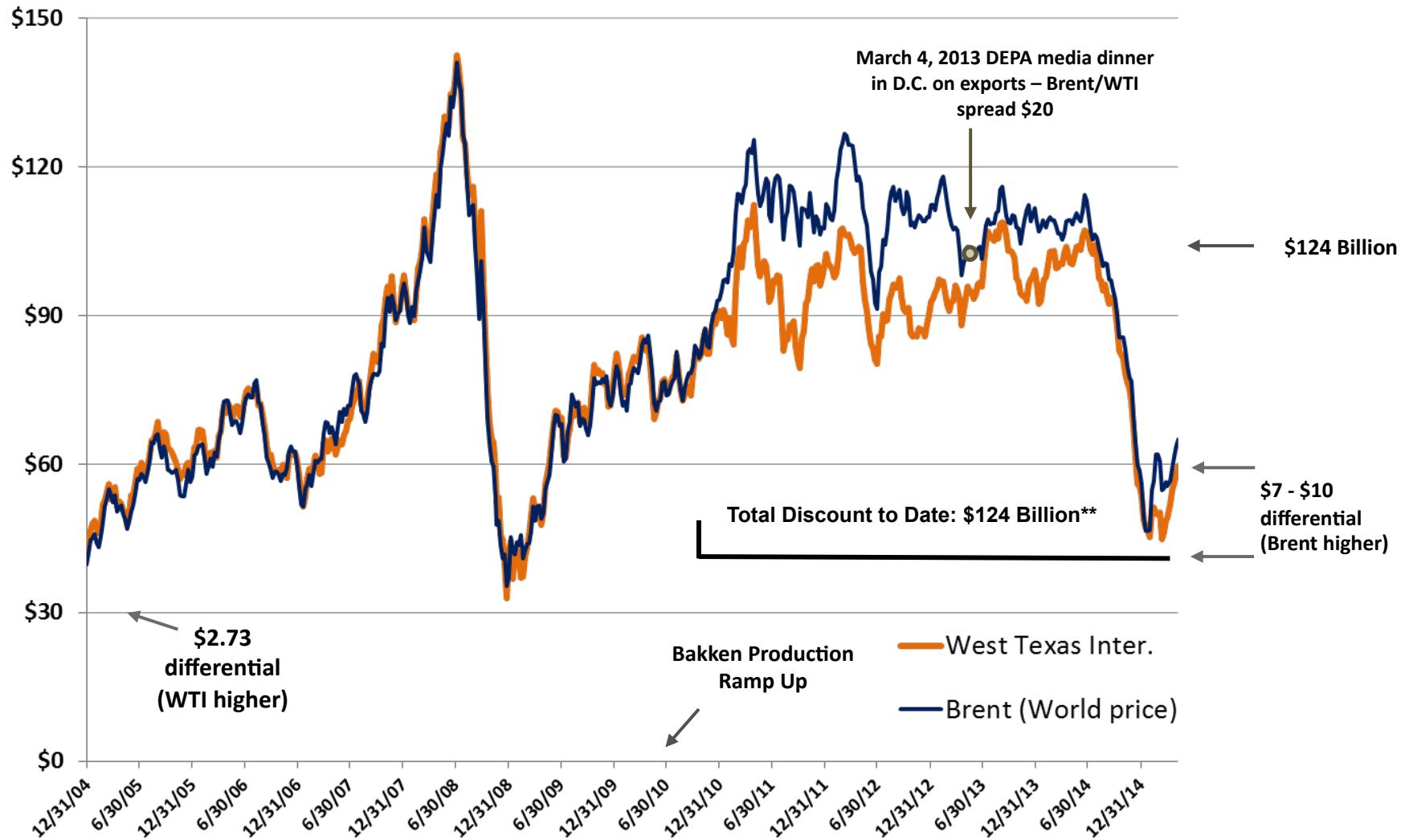


U.S. Exports of Petroleum and Refined Products

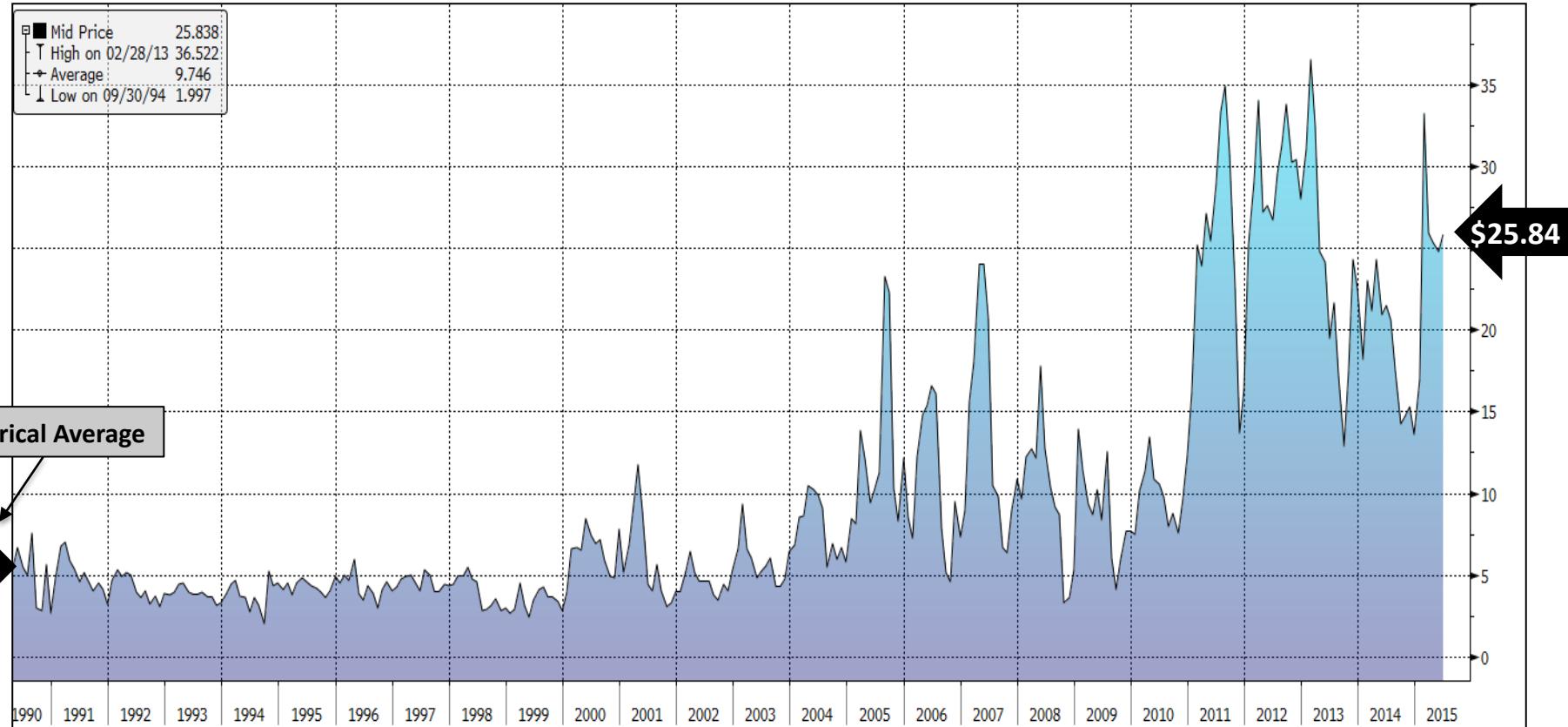


*Source: EIA

WTI vs. Brent Oil Price History Since 2005

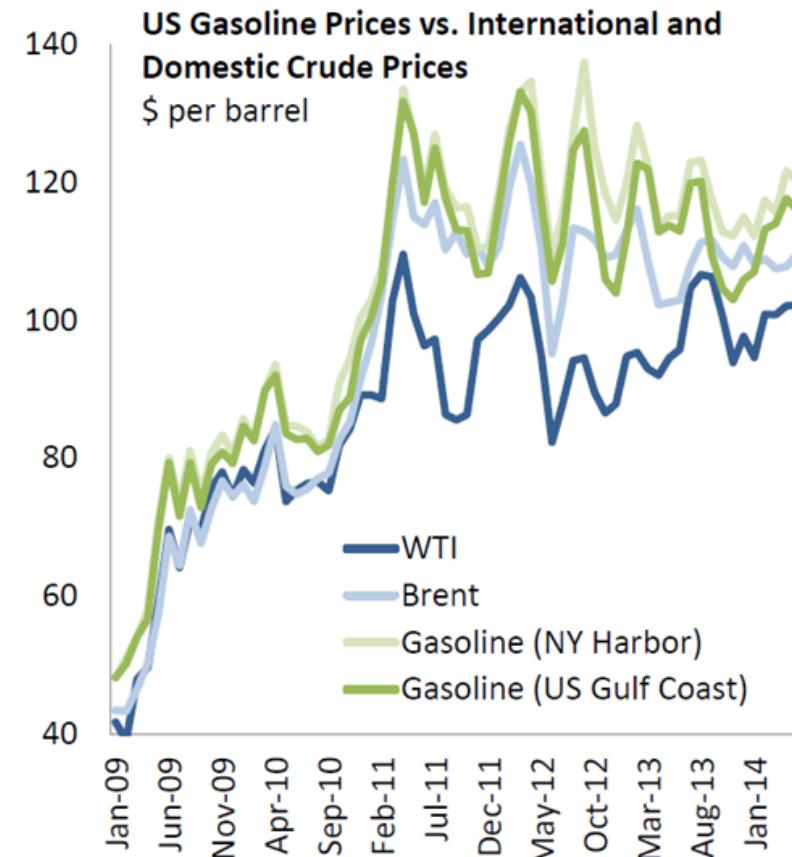
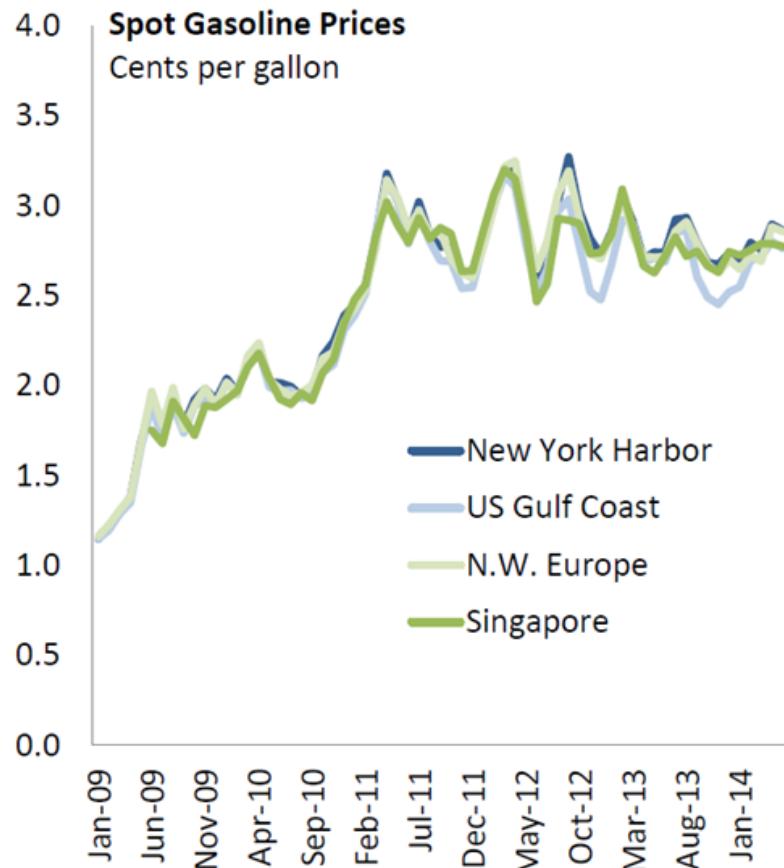


Refiner Crack Spread History Since 1990



“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

U.S. Gasoline Prices are Set in Global Product Market, So U.S. Price Does Not Pass Through to Consumers



Source: EIA, Bloomberg

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

In favor of lifting the ban:

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

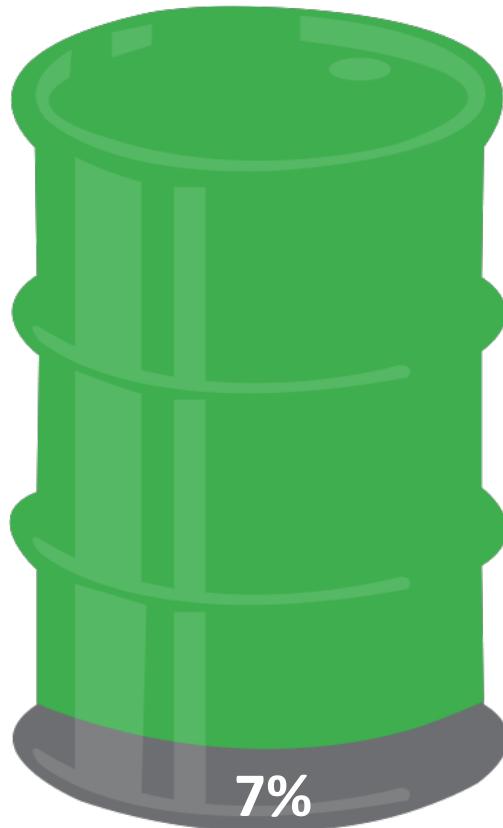
"It is time to let American oil trade freely on the global market, just as other U.S. energy commodities are traded in the global economy." *Ryan Lance, Chairman and CEO, ConocoPhillips*

"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

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."

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

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.**

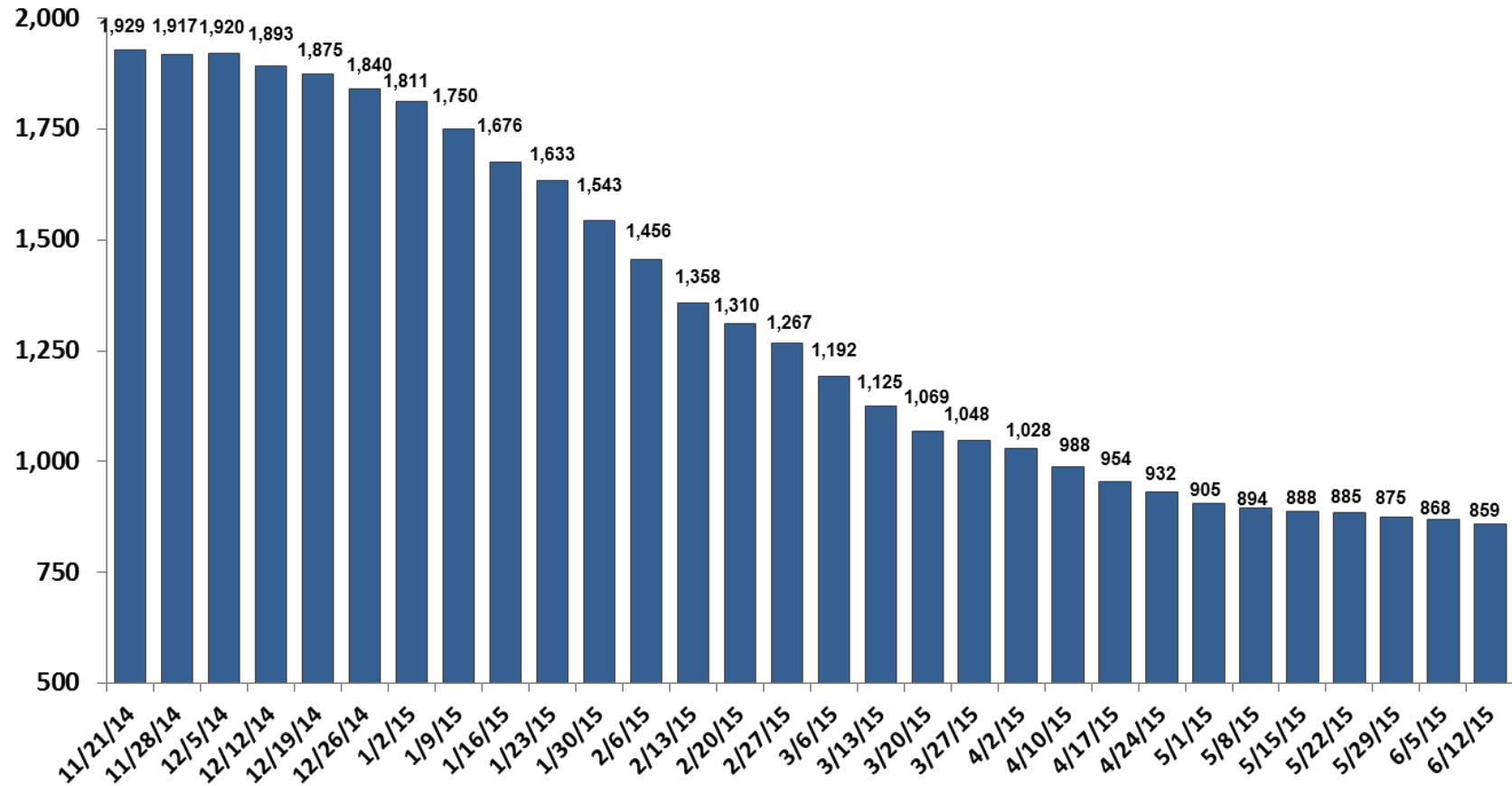


We see plentiful supplies of light sweet crude available at attractive prices



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.**

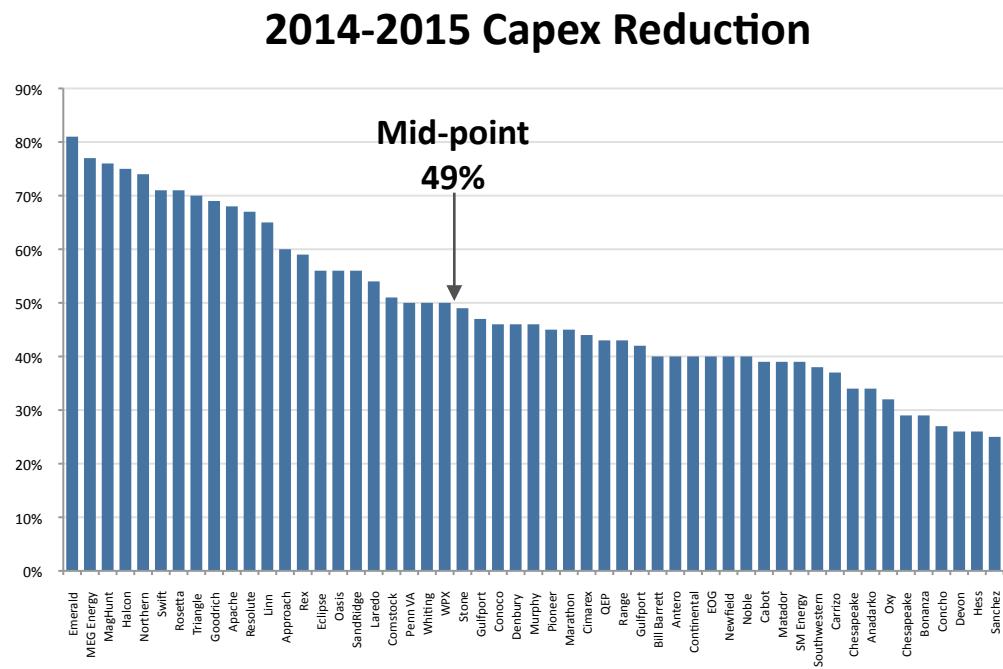
U.S. Rig Count in Rapid Decline



U.S. rig count has declined by 1,070 rigs, or 55% 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

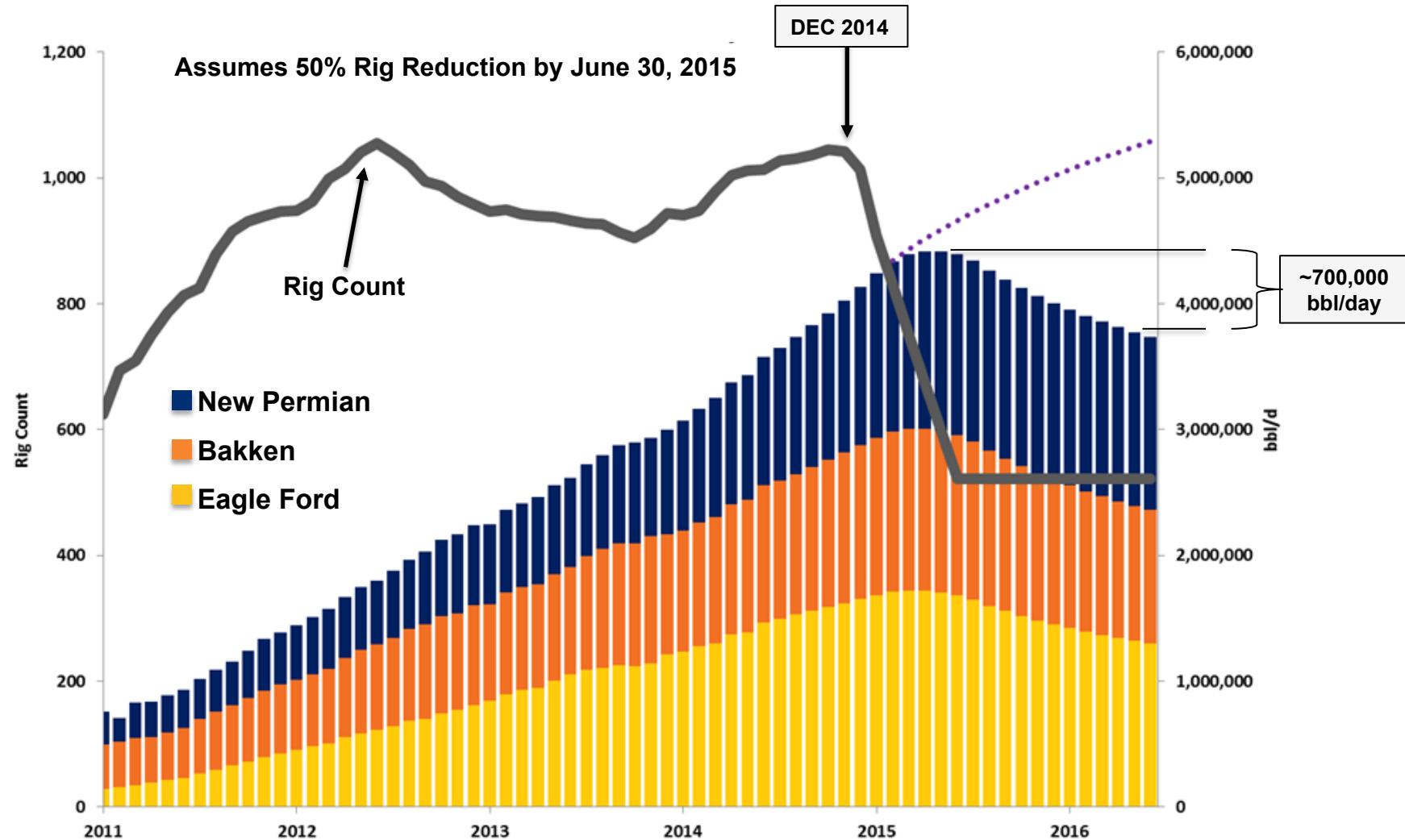
- Capex cut by as much as 81% (Emerald)
- Drop drilling rigs
- Defer well completions – saves 60% of CWC
 - Avoid selling flush oil and gas production in a poor market
 - Wait for service costs to fall before completing wells
- Shut in high-cost stripper wells temporarily
- Shut in production – some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



- **\$63B** in capital expenditure reductions already announced for 2015*
- **126,363 direct industry layoffs***
- **~379,000 to 505,000 in-direct industry jobs lost****

Three Plays, Industry 50% Cut Case

Industry production, excluding legacy Permian 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

U.S. Oil Revolution is Shaping World Events*

Ken Hersh, CEO of NGP Energy Capital Management:

- “The impact of the Lower 48 oil and gas revolution is, and will be, the single-most defining aspect on this planet today that will shape the next 50 years.”
- The ramifications of the U.S. moving from being primarily an oil consumer to being both a producer and consumer of oil, will shape global events for the next 50 years as oil scarcity gives way to oil abundance.
- Hersh describes the transition as a “paradigm shift.”
- World politics were now re-orienting away from a concept of “resource scarcity” and toward “resource abundance.”
- The U.S. is living in the past with our export restrictions....that’s a holdover from our scarce mentality...”

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

- Adds 1% to GDP growth.
- Eliminates/drastically 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. Menendez 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

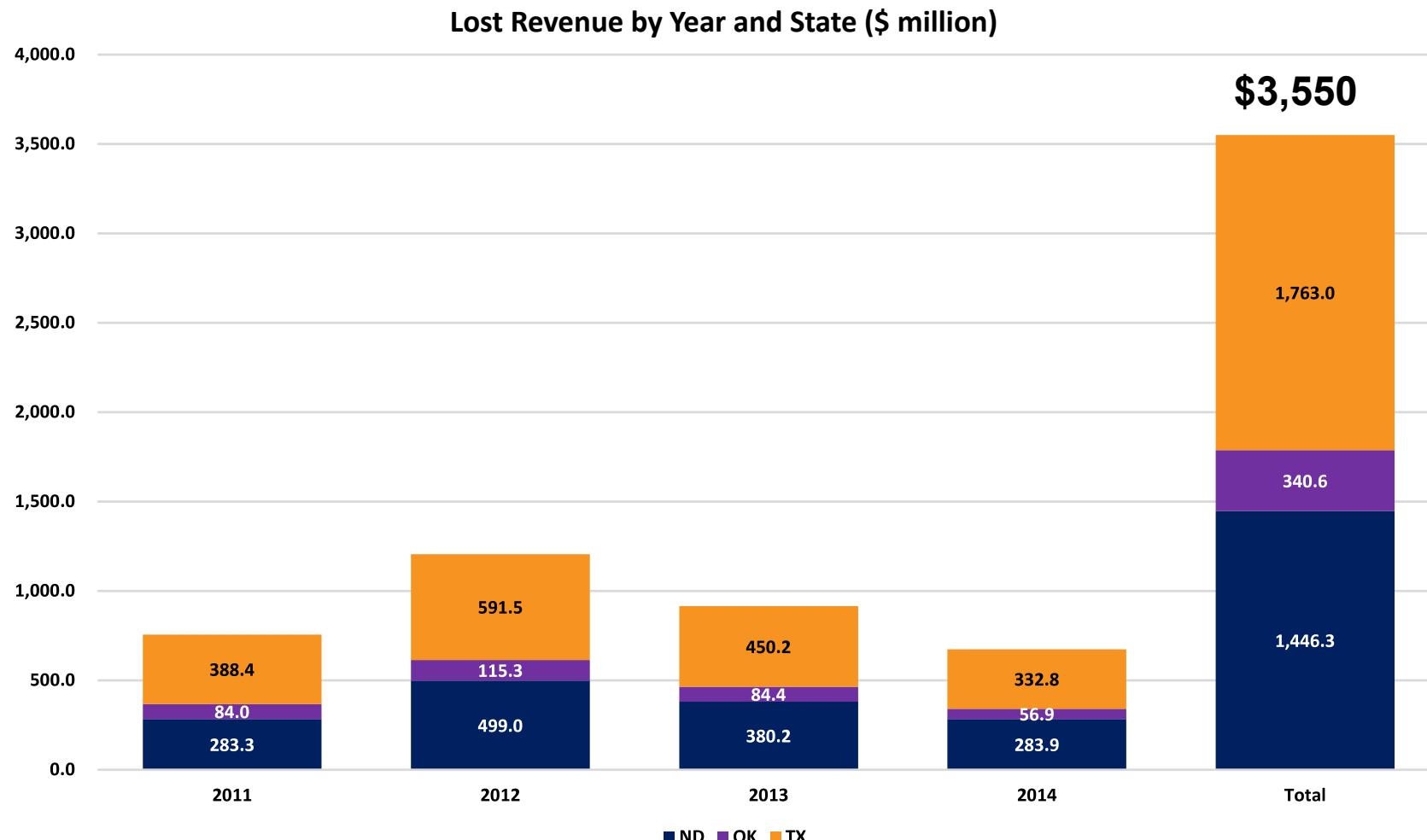
- **ICF International:** Lower gasoline prices as a result of ending the crude export ban **could save American consumers up to \$5.8 billion per year, on average, over the 2015 – 2035 period.** (December 15, 2014, PACE, *Ten Key Questions about the Crude Oil Export Ban*)
- **IHS Energy:** Lifting restrictions 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

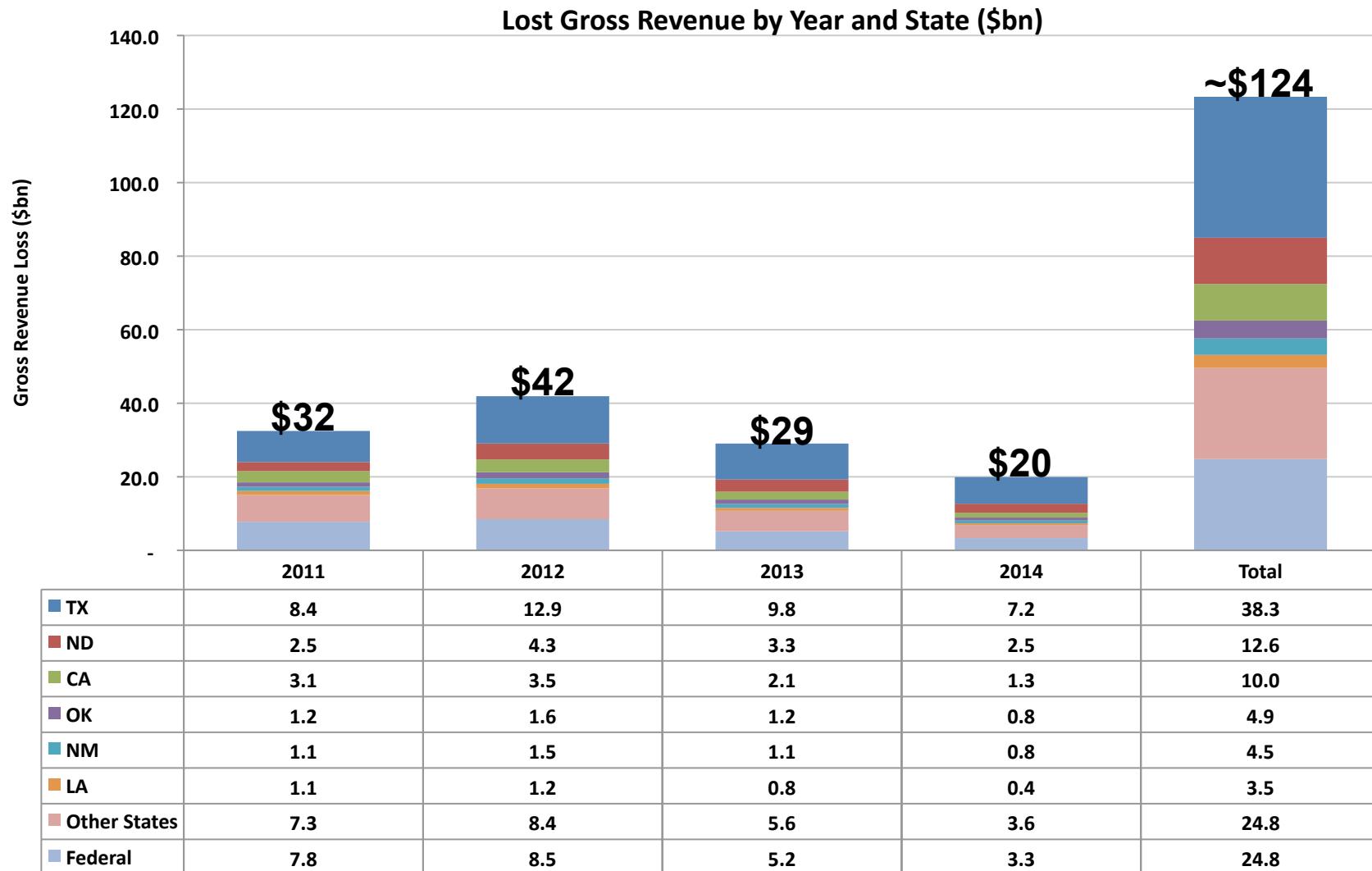
State Tax Revenue Lost *(Brent – WTI) Differential*



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

Total Lost Revenue

(Brent – WTI) Differential



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
 8. Center for a New American Security
 9. Harvard Business School

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.

*Sources: PACE and USGS

U.S. Energy Renaissance at Risk

Currently

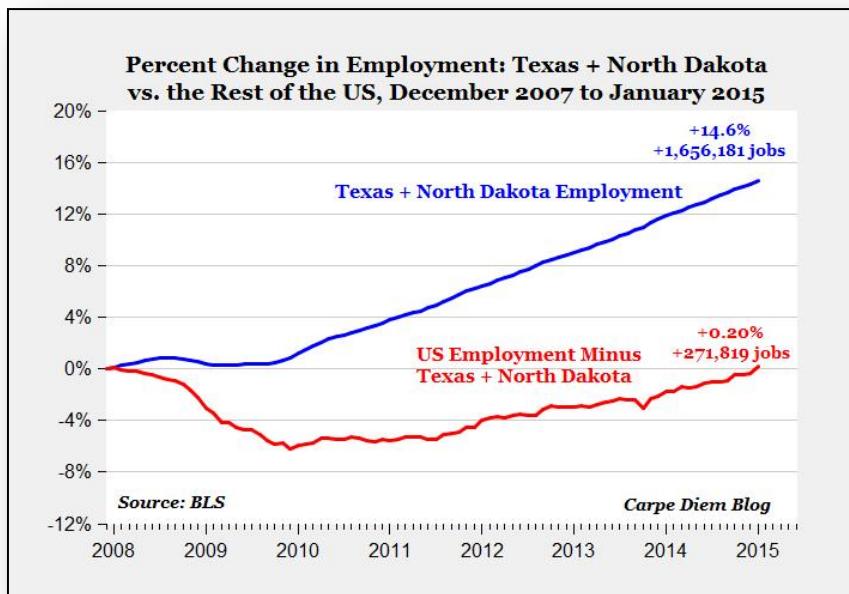
1. LNG import facilities are now being retrofitted to EXPORT LNG abroad. U.S. has assured long-term self-sufficiency in natural gas.
2. Net imports of petroleum liquids have fallen to 25% of U.S. consumption, near the limit that will be difficult to exceed because **25% of U.S. refinery capacity is foreign-owned**.
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

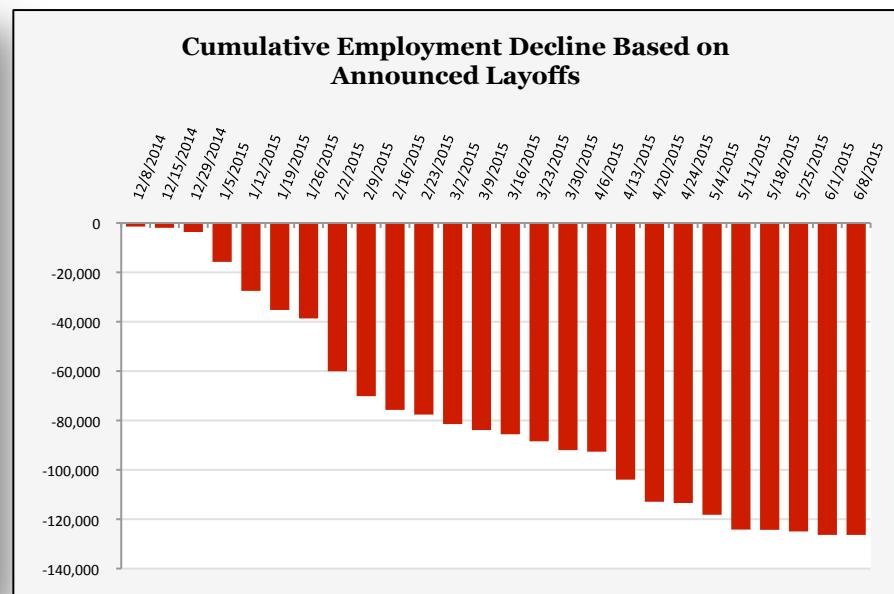
Energy production in Texas and North Dakota helped pull the U.S. out of the Great Recession. **"Since Dec. 2007, Texas + ND ("Cowboyistan") created 6 jobs for every 1 job created in the other 48 states and DC."**

Dr. Mark Perry, University of Michigan at Flint

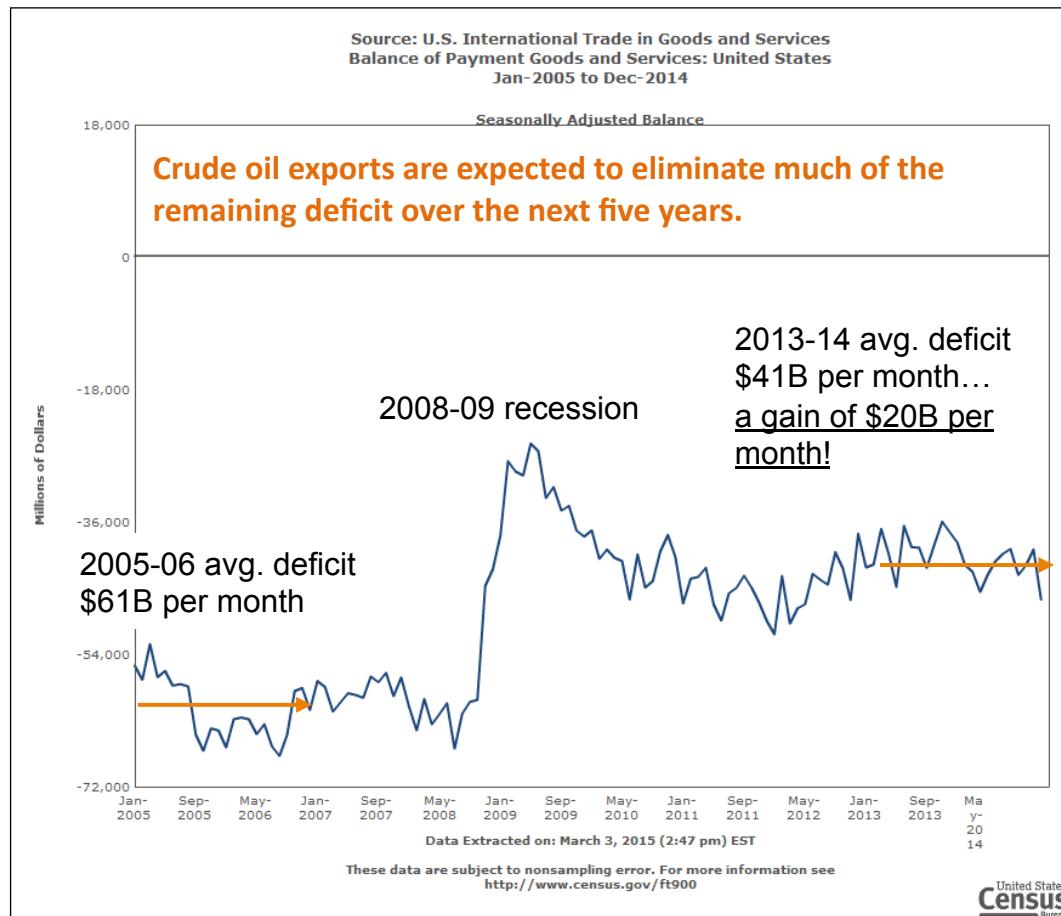
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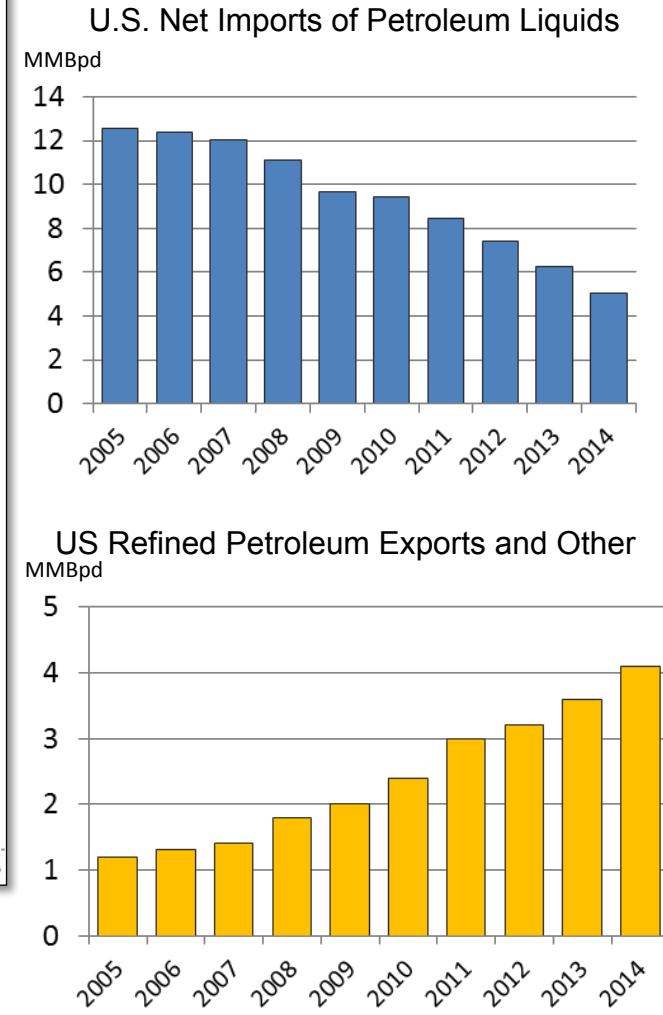
What Is



Trade Deficit Reduction since 2005



What happened?



Weekly Oil Rigs vs Oil Production

