Defining the Debate: Crude Oil Exports

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Energy Policy Research Foundation, Inc. (EPRINC)
Brookings Task Force
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About EPRINC

- www.eprinc.org
- Infrastructure Paper http://eprinc.org/wp-content/uploads/2013/10/EPRINC-PIPELINES-TRAINS-TRUCKS-OCT31.pdf
- Rin App http://eprinc.org/2014/02/rins-around-rosy-app-available-ios/

Nature of Topic

Timeline of Discussion

- Talk during past few years in analyst and think tank community
- Adam Seminski publically talks about crude oil exports in 2012
- During the course of 2013 several new pipelines came online to alter the flow of crude from the Permian to the Gulf Coast (historically Permian to Cushing) in addition to new pipeline capacity from the Cushing to the Gulf, Eagle Ford production passes 1 mbd, and refinery maintenance coupled with rising production pressures LLS prices in Nov 2013

What's Happening

- Large volumes of light sweet crude and condensate of varying grades (in addition to NGLs) came on the market with limited infrastructure options
- Refineries in the Gulf are beginning to see the pressure of too many light ends and their capability to handle increasing volumes of light sweet crude
- Gasoline demand is relatively flat in the U.S. so there is only so much need for gasoline blending components and condensate
- Natural gasoline from NGLs is in more demand from Canada as a diluent

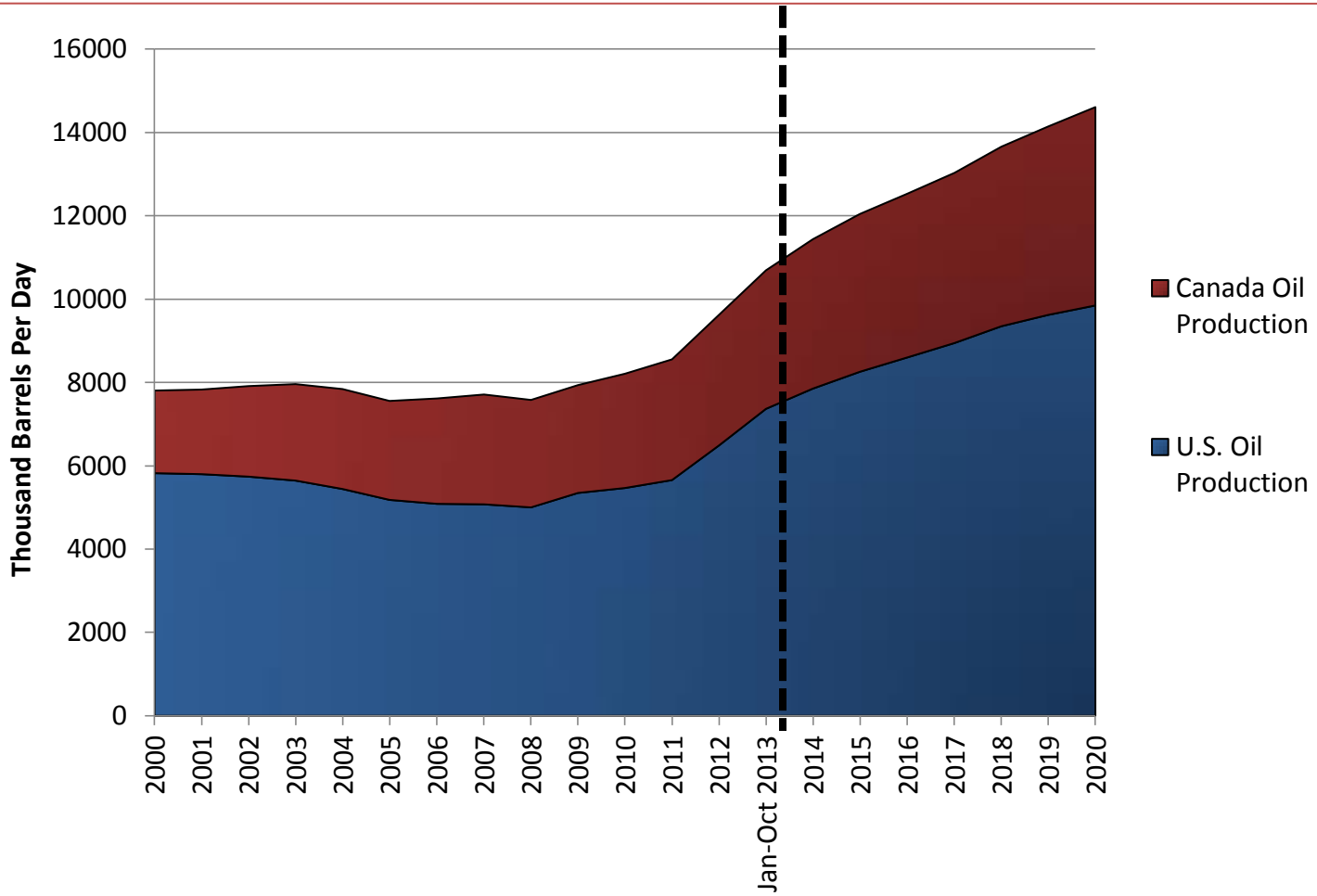
The Debate, Speculative Impacts, Issues

- Major producers such as Shell and Exxon have come out in support of lifting the ban on exports, but refiners are mixed. Both PES and PBF of the East Coast have come out against crude oil exports while AFPM has come out in support of lifting the ban.
  - East Coast refineries benefit from discounts and have invested in crude by rail
  - Gulf Coast refineries export a considerable amount of product
- While discussion and debate on this topic is beginning to take place in both the U.S. and abroad, word from the actual regulatory bodies has been limited. Current discussions around crude oil exports and their direct impact are therefore *highly speculative*
- Should exports be allowed the impact on the market would depend on the nature of the export permits and their transparency. What type of hydrocarbons exported? i.e. crude or condensate and the volumes allotted
- Trouble defining "crude oil" and "condensate"
- While there is potential to export small volumes from the East Coast and the West Coast, the bulk of exports would likely be dispatched from the **Gulf Coast**

Impacts and Issues.....continued

- Both crude and condensate exports would advantage Gulf Coast producers in the Eagle Ford and the Permian Basin where there would be a relatively low cost to transport crude or condensate to the Gulf and then export it
- Condensate exports would highly benefit Eagle Ford (Gulf Coast) producers and potentially condensate production in the Utica (Ohio)
- WTI prices would likely increase, however, the degree to which the Brent WTI spread would narrow depends on the volume and market impact of exports
- Gulf Coast prices would likely move up and stay at parity with Brent prices
- Crude exports would not likely solve the infrastructure dilemmas facing northern landlocked crudes in the Bakken and in Canada due to the lack of pipeline capacity from the region to the coasts
    - While WTI prices would likely increase there would still be a pricing differential for those crudes without adequate transportation means to Cushing or the Gulf Coast.
    - It could alter incentives to move crude oil into Cushing
    - Crude by rail issues remain
    - There are winners and losers in the upstream, midstream, and downstream

North American Oil Production and Forecast

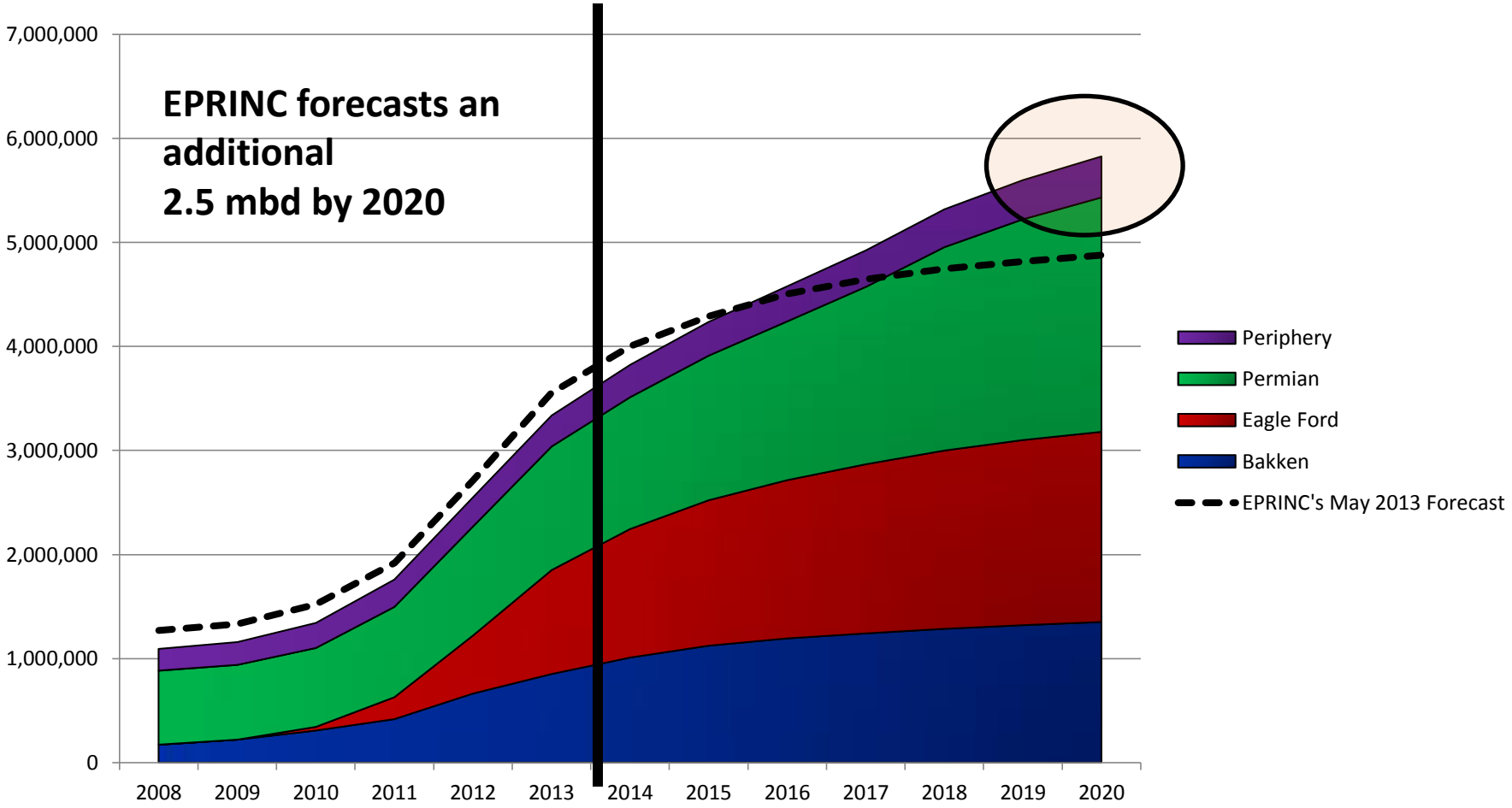


Dec 2013 Oil Production

U.S. 7.9 mbd
Canada 3.7 mbd

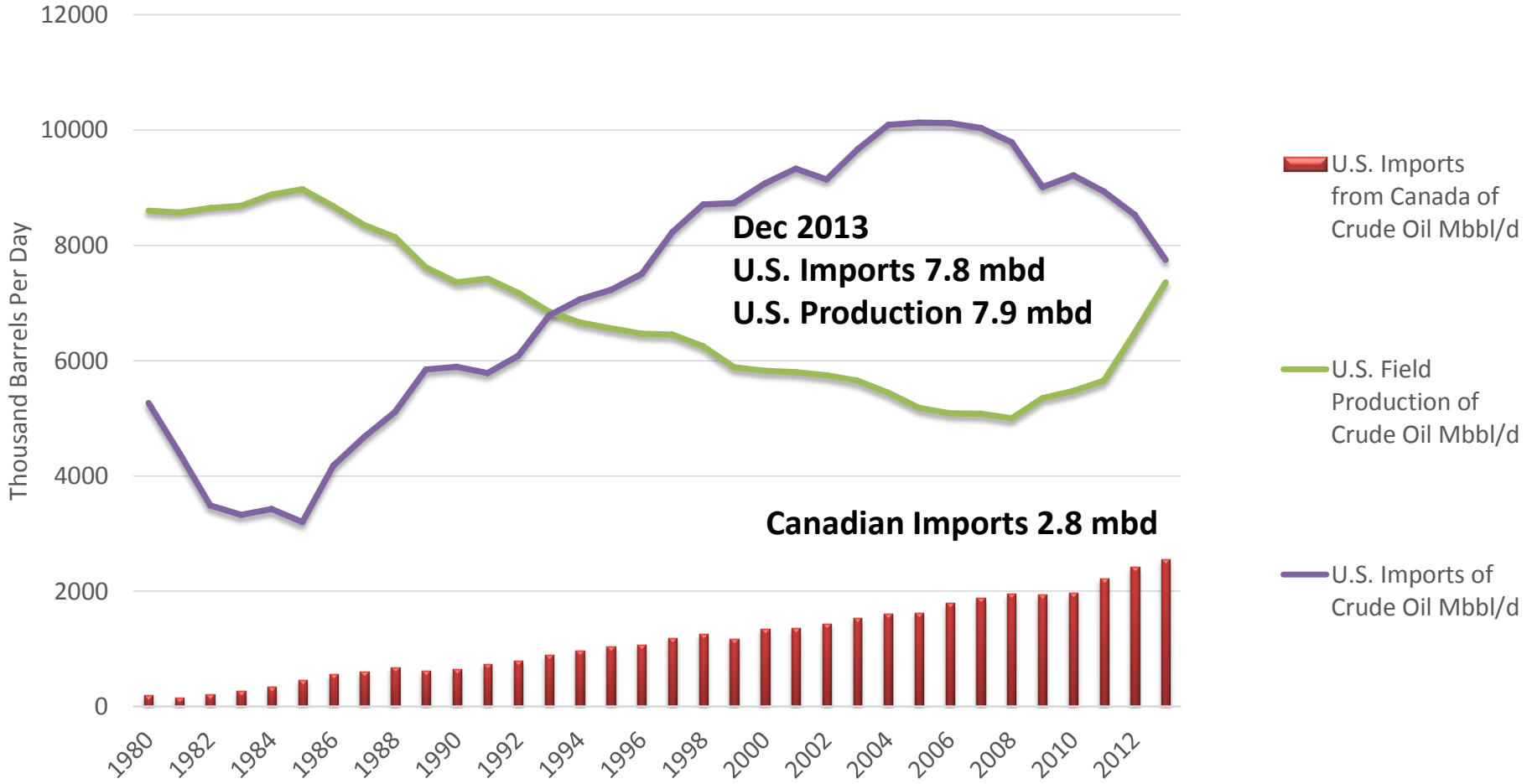
Source: EIA, Canadian CAPP forecast, EPRINC U.S. forecast, EPRINC Mexico , and EPRINC estimates

Jan 2014 EPRINC's Forecast for Major U.S. Shale Plays



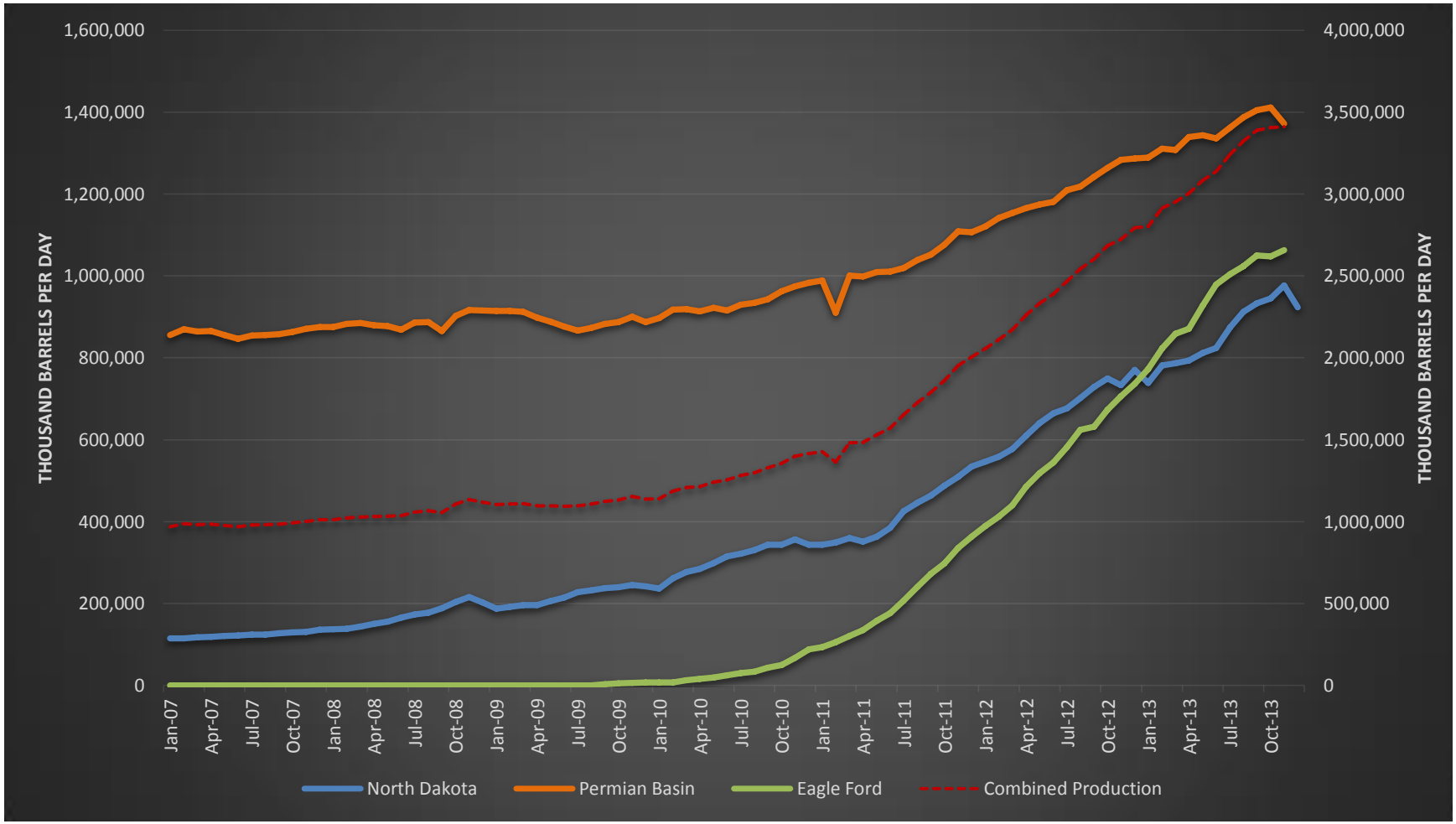
Source: HPDI data with EPRINC forecast estimates

U.S. Total Imports, U.S. Production, U.S. Canadian Imports



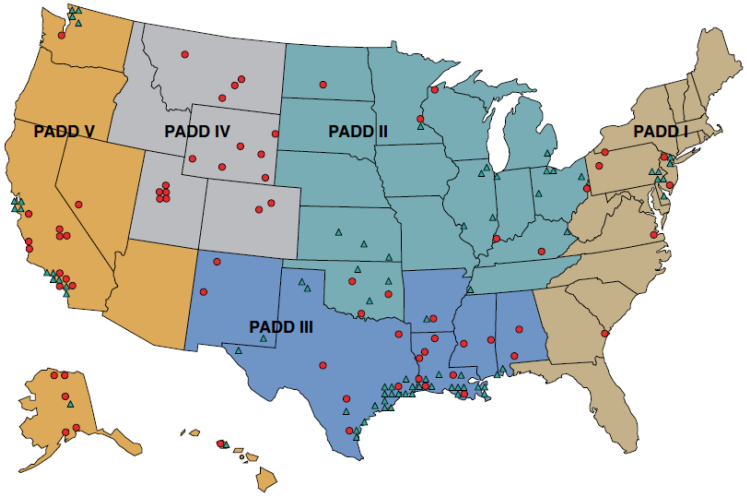
Source: EIA

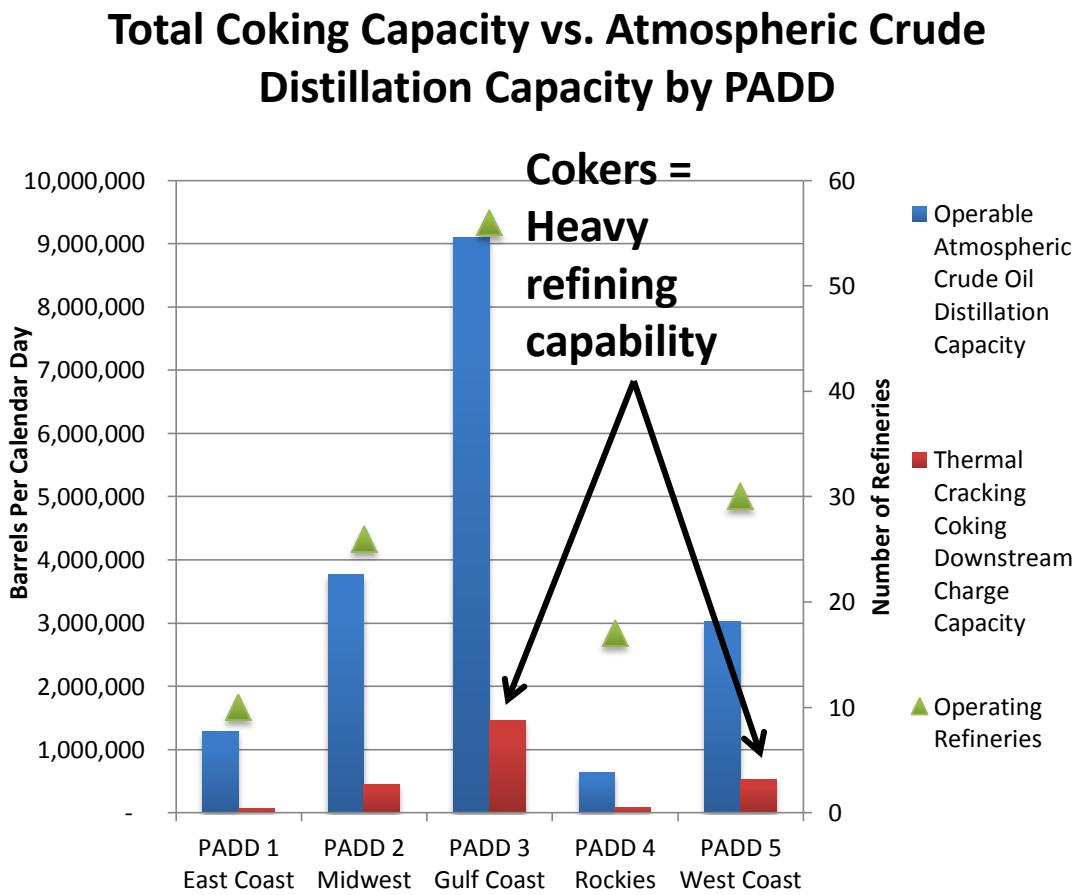
Shale Oil Play Production



Source: HPDI Feb 2013

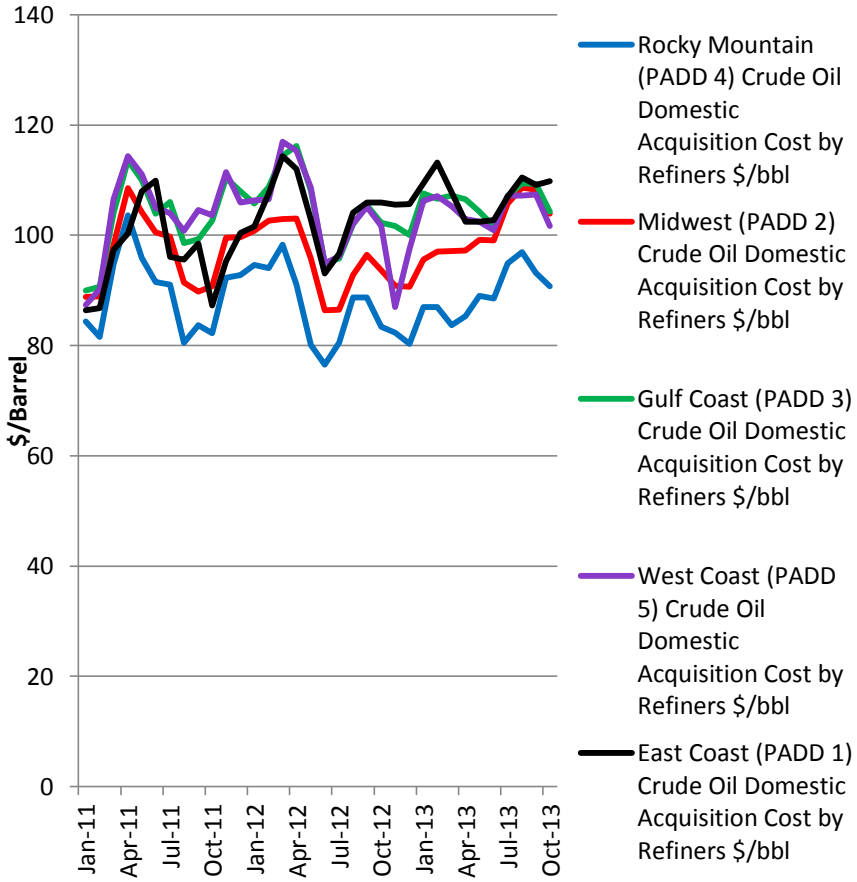
Simple vs. Complex

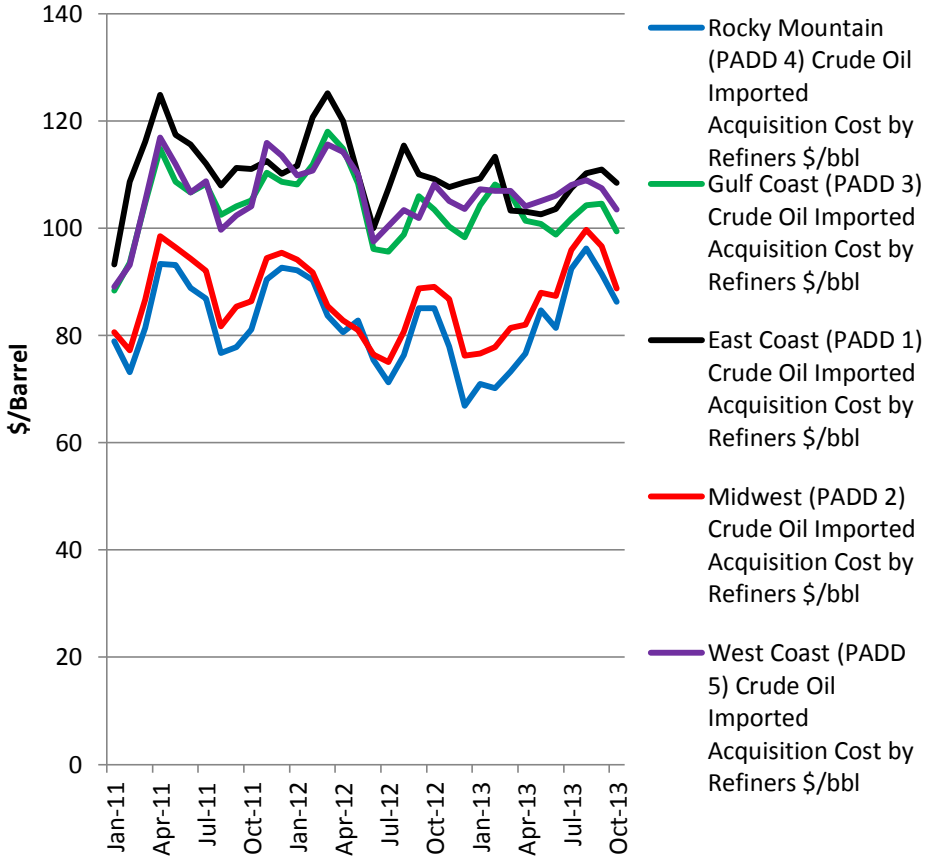




Source: AFPM map, EIA data for graph

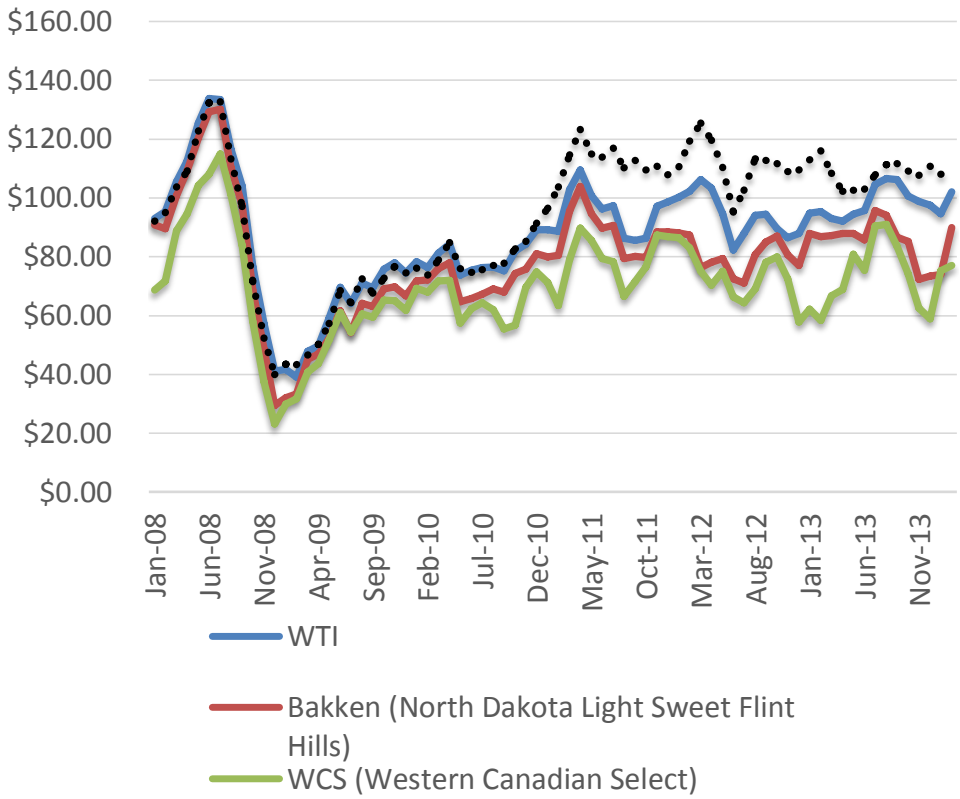
Domestic vs. Imported RAC

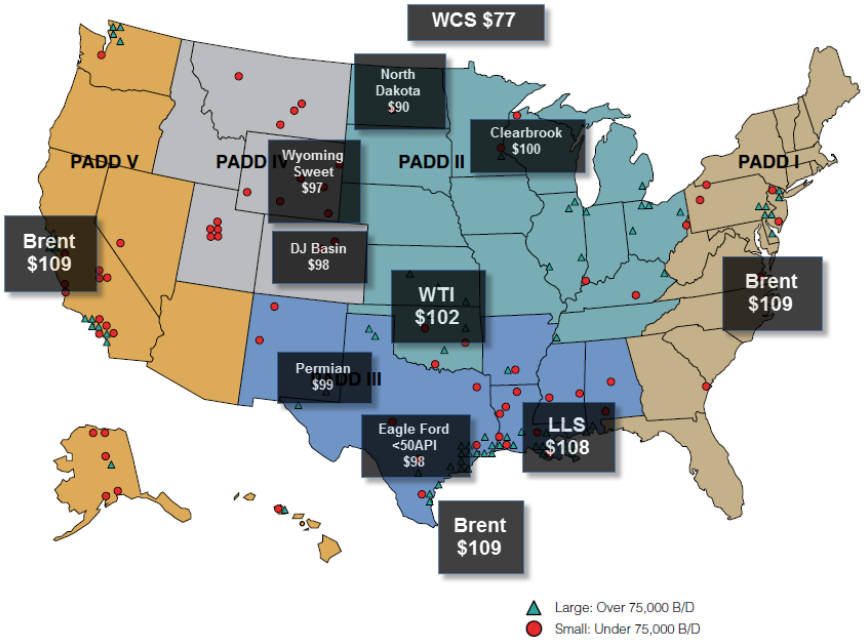




Source: EIA

Regional Pricing Disparities

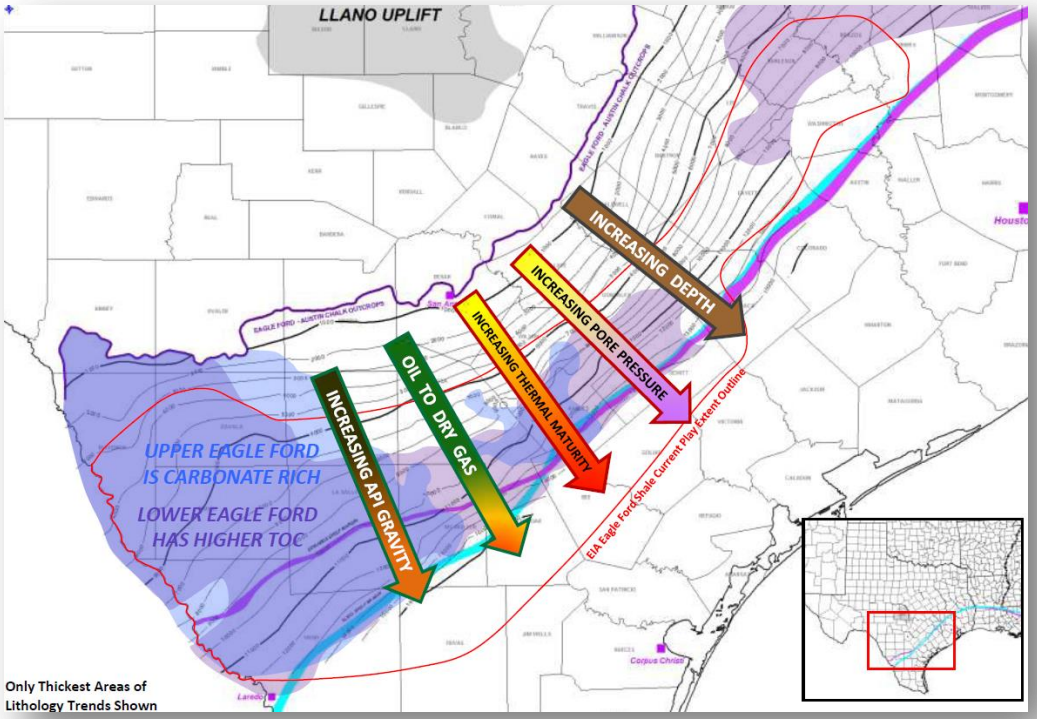


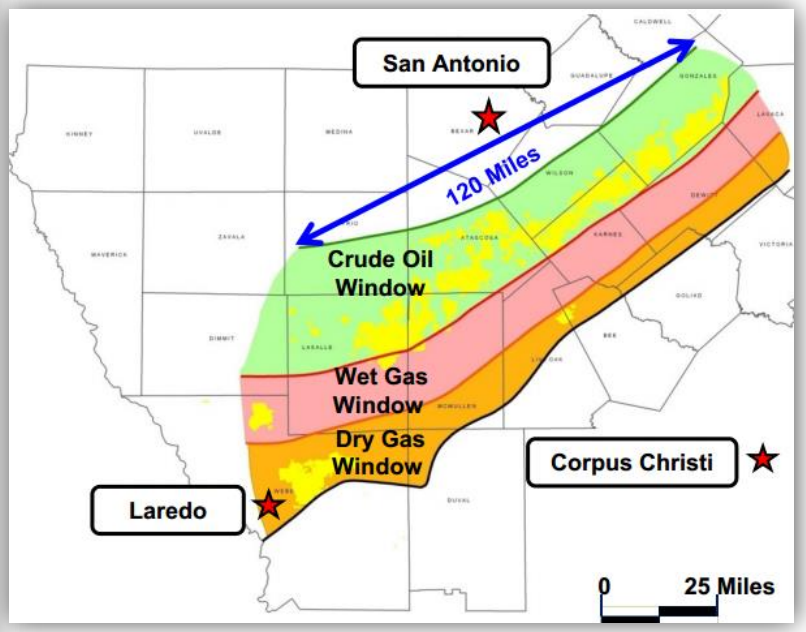


- **Western Canadian Select -$25 to WTI**

Source: Flint Hills, EIA, CME Group, and estimates

Geology of the Eagle Ford = Varying Liquid Grades





Source: Momentum Oil and Gas LLC, DUG Eagle Ford Conference Presentation Oct 2011; EOG Investor Presentation Feb 2014;

Those differences are impacting prices

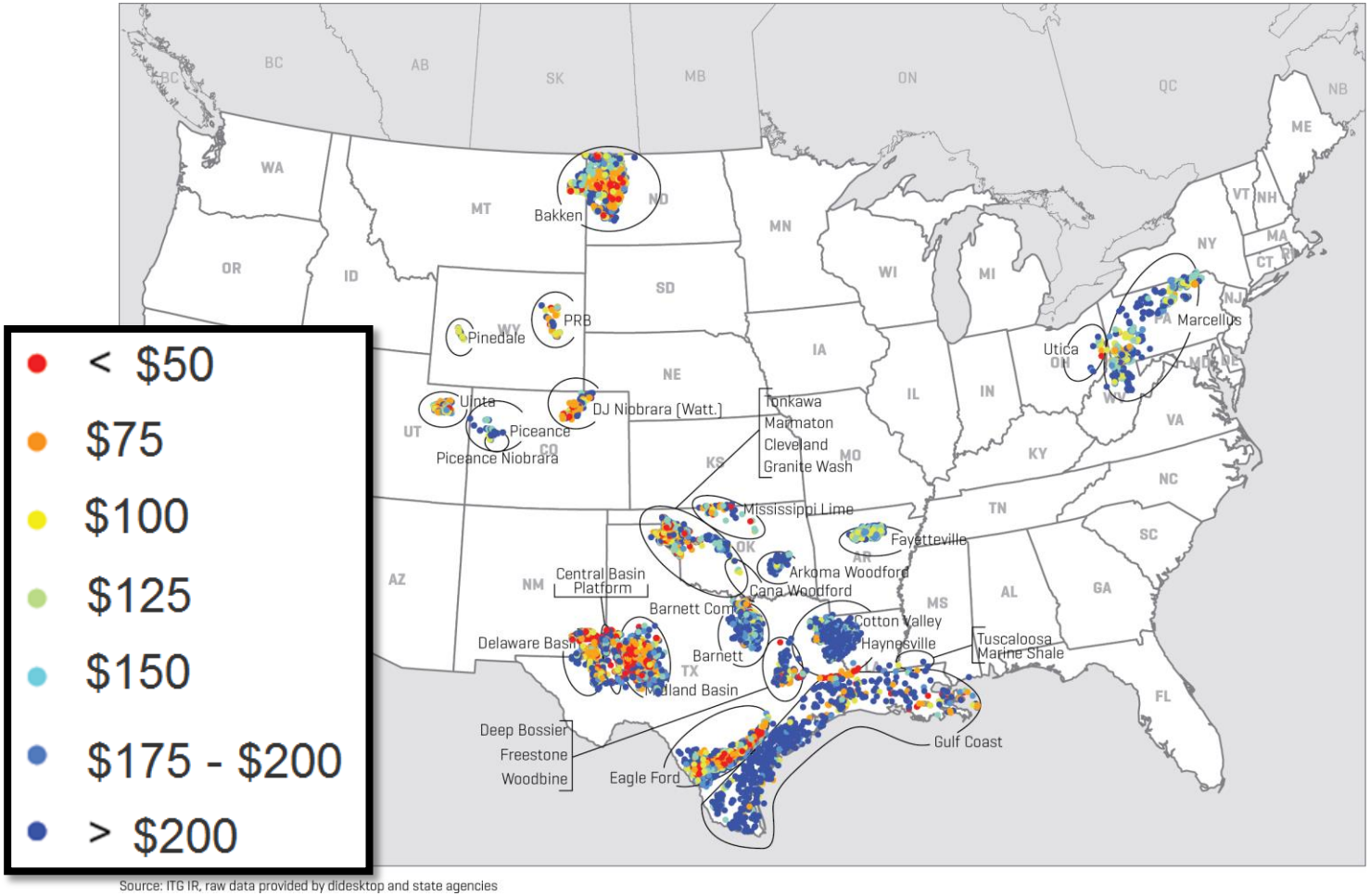
FLINT HILLS RESOURCES CRUDE OIL POSTINGS
P.O. BOX 2917, WICHITA, KS 67201

Effective 7:00 A.M., on dates shown below, and subject to its division orders as amended and supplemented, contracts and other agreements, FLINT HILLS RESOURCES, LP will pay the following prices per barrel of 42 U.S. gallons for merchantable crude oil purchased and delivered into pipelines or facilities authorized by FLINT HILLS RESOURCES, LP, in the fields or area designated below. The following prices are for informational purposes only, do not constitute an offer, and are subject to change or revisions without notice.

Effective Date	02/18/14	02/19/14	02/20/14	02/21/14	02/24/14	02/25/14	02/26/14	
Bulletin	20140028	20140029	20140030	20140031	20140032	20140033	20140034	EDQ
TEXAS								
Eagle Ford Condensate, equal to or greater than 60 API	91.7500 *	92.5000 *	92.2500 *	91.5000 *	92.0000 *	91.0000 *	91.7500 *	
Eagle Ford Light, equal to or greater than 50 API and less than 60 API	96.7500 *	97.5000 *	97.2500 *	96.5000 *	97.0000 *	96.0000 *	96.7500 *	
Eagle Ford Sour	96.0000 *	96.7500 *	96.5000 *	95.7500 *	96.2500 *	95.2500 *	96.0000 *	
Eagle Ford West Condensate, equal to or greater than 60 API	91.7500 *	92.5000 *	92.2500 *	91.5000 *	92.0000 *	91.0000 *	91.7500 *	
Eagle Ford West Light, equal to greater than 50 API and less 60 API	96.7500 *	97.5000 *	97.2500 *	96.5000 *	97.0000 *	96.0000 *	96.7500 *	
Eagle Ford West Sour	96.0000 *	96.7500 *	96.5000 *	95.7500 *	96.2500 *	95.2500 *	96.0000 *	
Eagle Ford West, crude oil less than 50 API	98.2500 *	99.0000 *	98.7500 *	98.0000 *	98.5000 *	97.5000 *	98.2500 *	
Eagle Ford, crude oil less than 50 API	98.2500 *	99.0000 *	98.7500 *	98.0000 *	98.5000 *	97.5000 *	98.2500 *	
Giddings Sweet Texas	97.0000 *	97.7500 *	97.5000 *	96.7500 *	97.2500 *	96.2500 *	97.0000 *	
Gulf Coast Mix	97.0000 *	97.7500 *	97.5000 *	96.7500 *	97.2500 *	96.2500 *	97.0000 *	
Pearsall Sweet	96.7500 *	97.5000 *	97.2500 *	96.5000 *	97.0000 *	96.0000 *	96.7500 *	
South Texas Heavy	98.2500 *	99.0000 *	98.7500 *	98.0000 *	98.5000 *	97.5000 *	98.2500 *	
South Texas Light Sweet	98.2500 *	99.0000 *	98.7500 *	98.0000 *	98.5000 *	97.5000 *	98.2500 *	
South Texas Sour	96.0000 *	96.7500 *	96.5000 *	95.7500 *	96.2500 *	95.2500 *	96.0000 *	
South Texas Sweet	98.2500 *	99.0000 *	98.7500 *	98.0000 *	98.5000 *	97.5000 *	98.2500 *	
South Texas Valley Sweet	97.0000 *	97.7500 *	97.5000 *	96.7500 *	97.2500 *	96.2500 *	97.0000 *	
Upper Texas Gulf Coast	97.2500 *	98.0000 *	97.7500 *	97.0000 *	97.5000 *	96.5000 *	97.2500 *	
West Texas/New Mexico Intermediate	99.0000 *	99.7500 *	99.5000 *	98.7500 *	99.2500 *	98.2500 *	99.0000 *	

Source: Flint Hills Resources

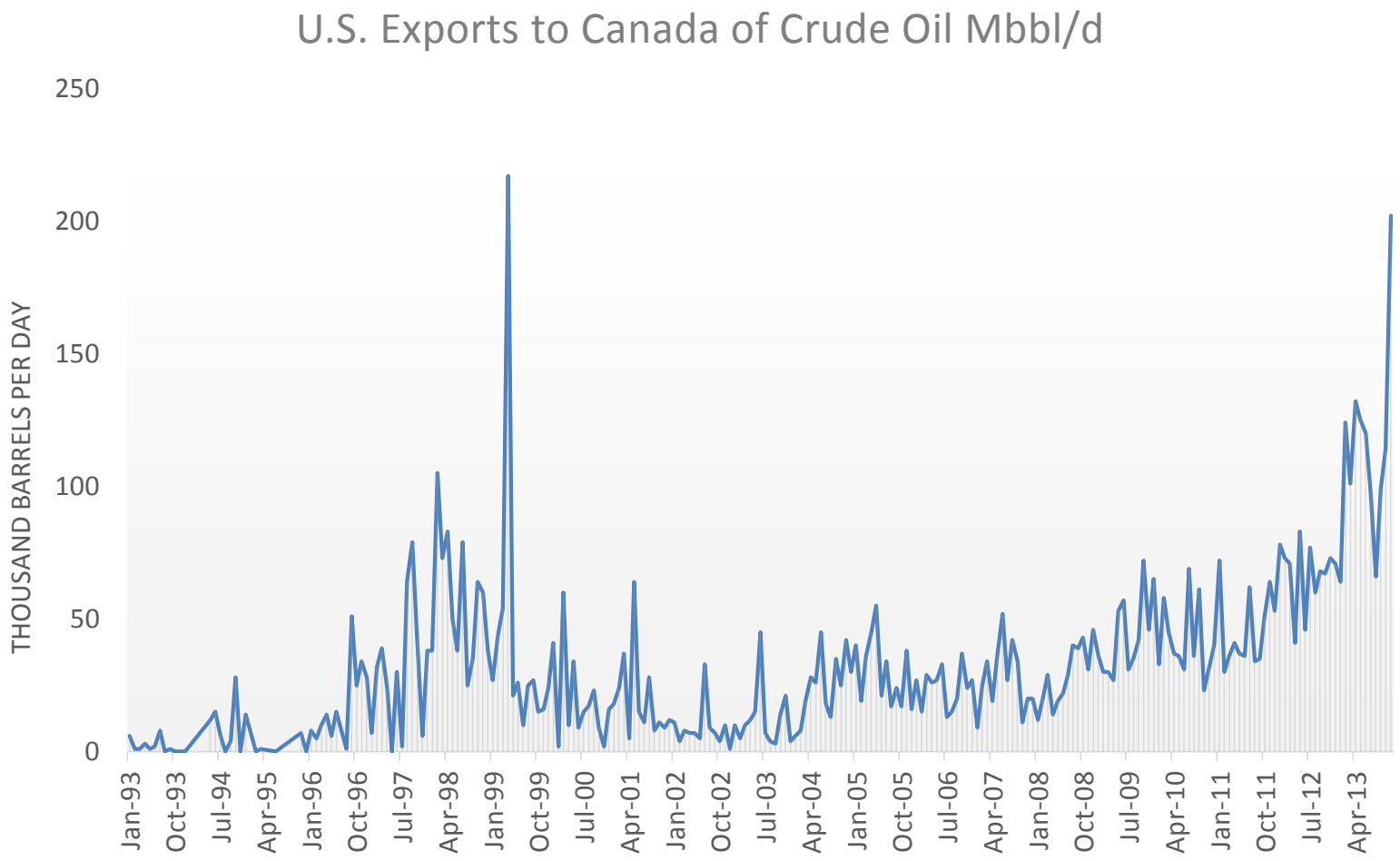
Regional Discounts Matter with High Cost Production



Source: ITG IR, raw data provided by dideskop and state agencies

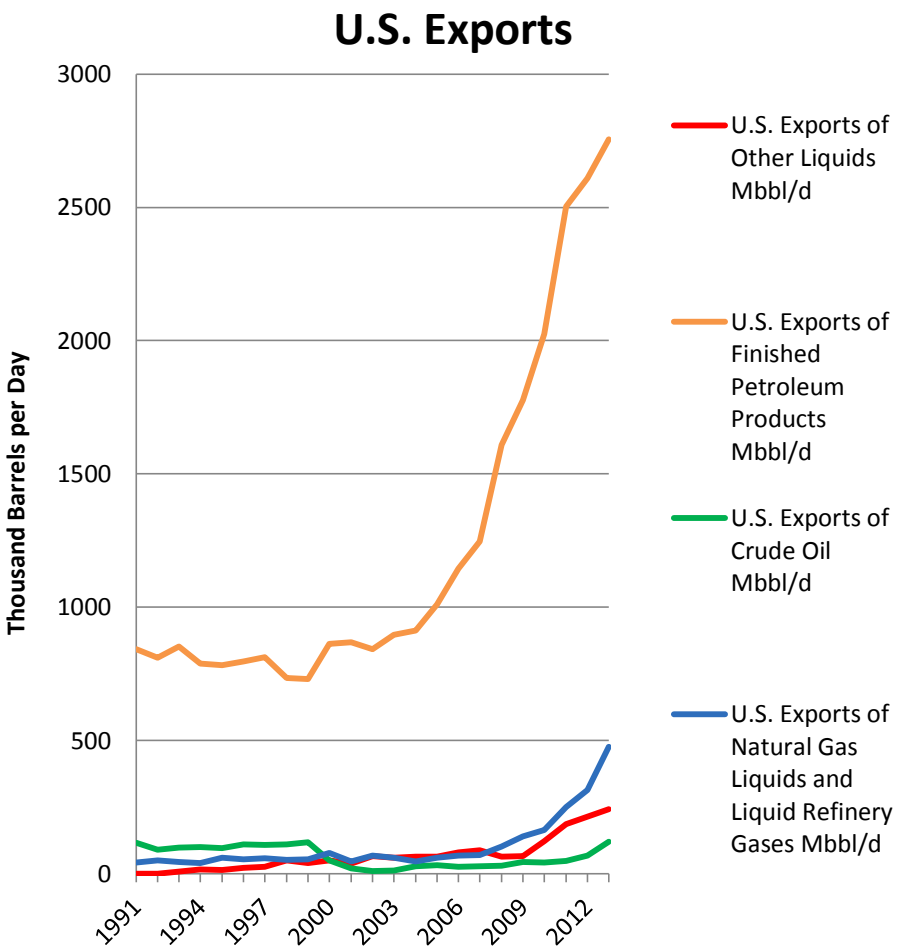
Source: ITG Investment Presentation Nov 2012

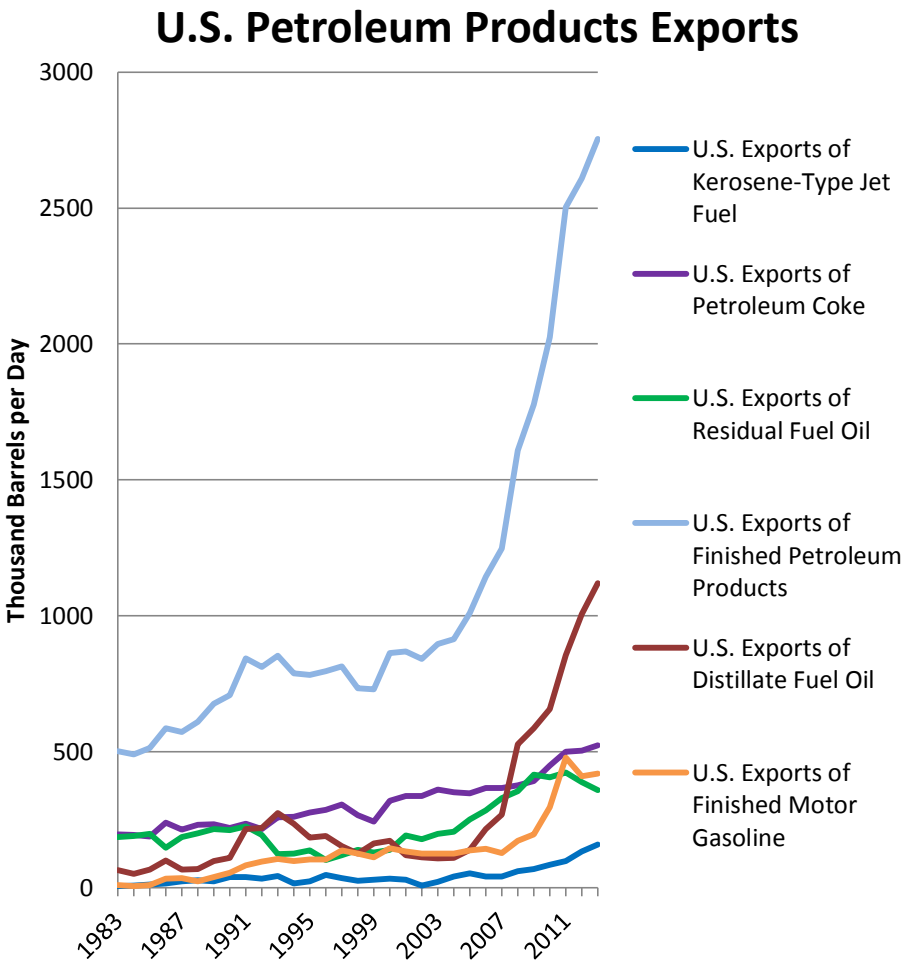
Total U.S. Crude Oil Exports



Source: EIA

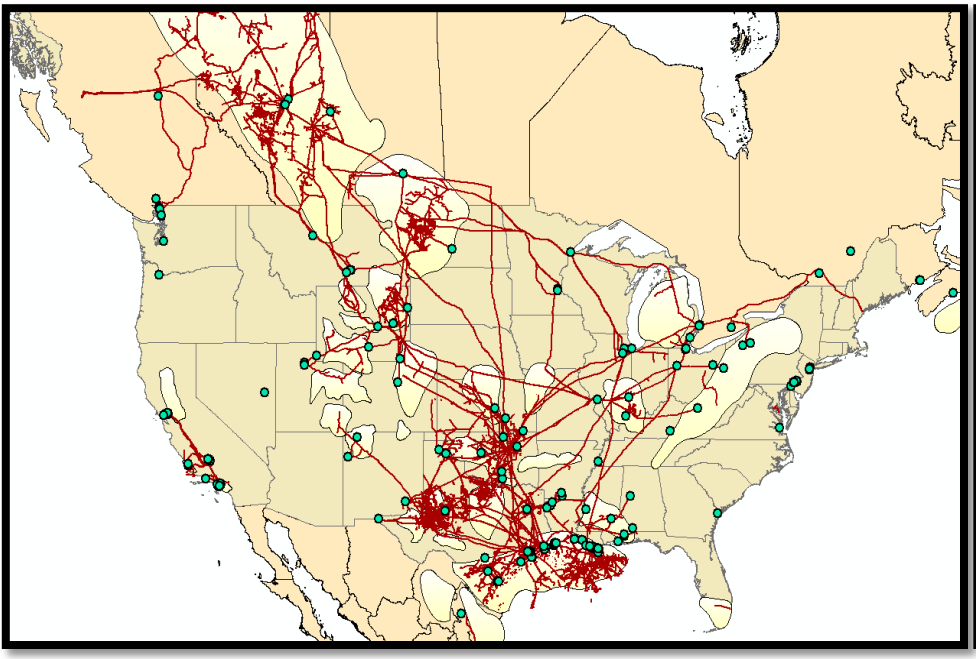
U.S. Exports of Petroleum and Petroleum Product

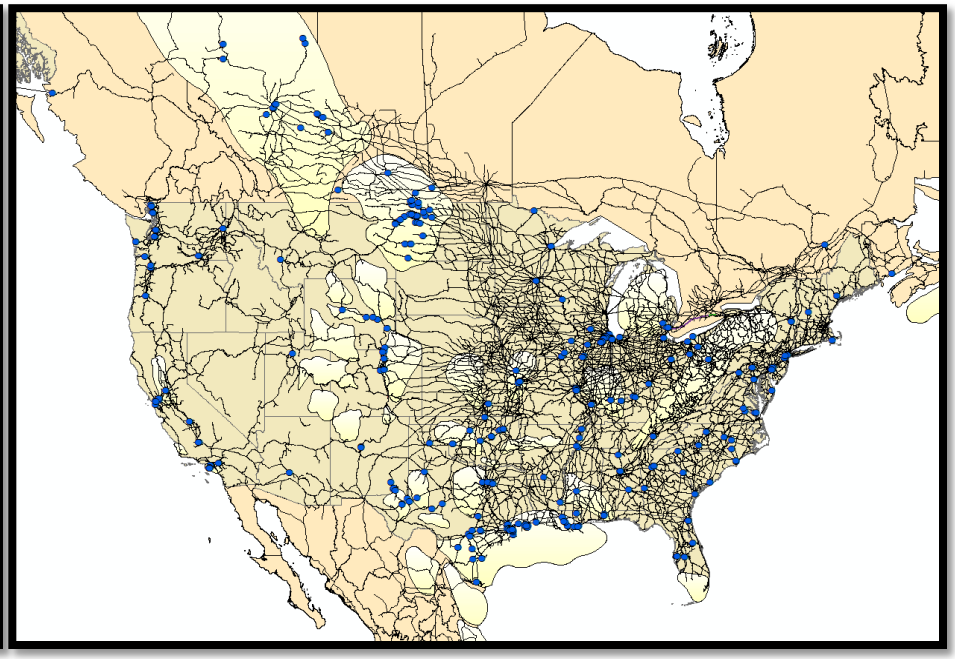




Source: EIA

Infrastructure Challenges will Remain





- **Severely limited due to lack of Keystone XL and lack of historical build out to the coasts – system designed to import into the Gulf and move up**

- **New markets**
- **Diversification**
- **Neat Barrels**
- **Nimble - Quickly adjustable**
- **Optionality for Canadian and U.S. crude, NGLS, and other petroleum products**

Source: EPRINC Maps using Hart Energy data and ArcGIS Mapping software