

---

# New Shale Export Boom Should Seek West Coast Outlets

## Increased production headed to constrained Gulf Coast docks.

---

### Morningstar Commodities Research

9 March 2017

---

Sandy Fielden  
Director, Oil and Products Research  
+1 512 431-8044  
sandy.fielden@morningstar.com

---

### Data Sources Used in this Publication

- ▶ Port of Corpus Christi
- ▶ U.S. Energy Information Administration

To discover more about the data sources used, [Click Here](#)

---

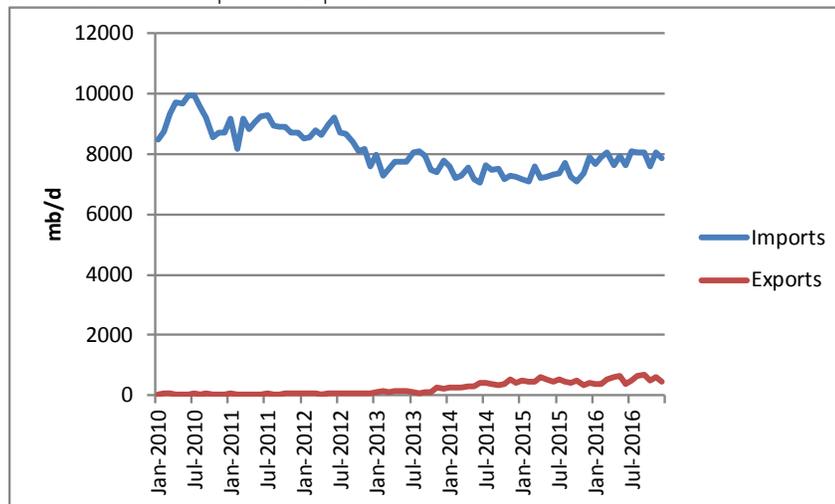
### Rosy Future

Last month, we looked at rising U.S. crude exports in January and February 2017 and tied the surge to an arbitrage window opening to Asia for medium heavy crudes such as those produced offshore in the Gulf of Mexico (see [Crude Exports Top 1 Million Barrels/Day to Plug OPEC Gap](#)). The arbitrage to Asia was itself triggered by OPEC production cuts designed to prop up international crude prices. We noted that the resulting U.S. exports were opportunistic, driven by short-term price arbitrage rather than a long-term demand for U.S. crude. Since then, the U.S. crude market has been marching to an upbeat drum, with forecasts for new shale production appearing to increase by the hour even as crude inventories maintain record levels. Major oil companies, like ExxonMobil, Chevron, and Shell, are all jumping on the shale bandwagon. With longer-term crude production forecasts by the International Energy Agency falling short of demand, the U.S. oil patch is contemplating a rosy future for domestic production provided prices remain above \$50/barrel.

### Limited Domestic Market

If higher oil prices are sustained (and after this week's price retreat, that may be a big if) and a new shale production boom materializes to rival that seen between 2011 and 2014, when U.S. production increased by 1 million barrels/day each year, then a market has to be found for rising crude output. By the end of 2017, IHS predicts that shale production could jump by 500 mb/d, and the U.S. Energy Information Administration is predicting U.S. output will reach 10 million barrels/day in 2018. The most obvious market for more shale crude is domestic consumption, given that the U.S. continues to import 7-8 mmb/d of crude to meet refinery demand (Exhibit 1).

Unfortunately, most imported crude is made up of heavier grades that more U.S. refineries are configured to process, while new shale production is light or very light crude that refiners have to blend with heavy grades to process without losing throughput capacity. During the previous boom, the U.S. market was saturated with too much light crude, and producers had to discount domestic barrels to attract buyers—a situation exacerbated by federal regulations restricting crude exports except to Canada. The lifting of the export restrictions in December 2015 has opened up access for U.S. producers to ship shale crude overseas, but so far the nature of exports has been opportunistic rather than systematic.

**Exhibit 1** U.S. Crude Imports and Exports

Source: EIA

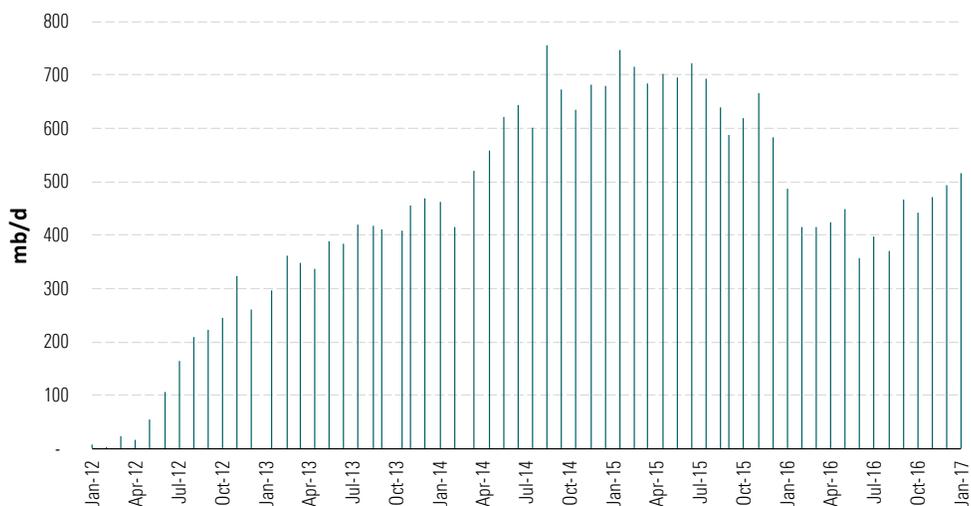
Refiners have made some investment to absorb more light crude and push out imports (see our July 2016 note [Gulf Coast Refiners Penalized for Running the Lights](#)). However, these investments have shown limited success, as light crude prices increased with the new demand when shale production faltered after the price crash in 2014. The end of the export restrictions also leveled the playing field for domestic crude, increasing prices to international levels and reducing the incentive for refiners to adapt their systems to take advantage of price discounts. A half dozen specialist stand-alone condensate splitters were planned, but only two are currently operating, and their margins are far lower than expected (see our September 2016 note [Kinder Morgan Splitter](#)). The Buckeye Processing splitter in Corpus Christi, Texas, is operating, but term throughput partner Trafigura is attempting to terminate a term contract for another 50 mb/d splitter built by Magellan in Corpus and is being sued by the latter. CCI has delayed construction on its permitted 100 mb/d splitter project in Corpus until 2018. Investment in new refinery capacity has been touted, but is so far restricted to smaller plants planned close to producing regions in the Bakken (Meridian Energy Group 55 mb/d Davis refinery) and the Permian (MMEX Resources 50 mb/d).

For U.S. refiners that have invested in heavy crude processing—particularly at the Gulf Coast and in the Midwest—the margins from processing heavier crude continue to be more attractive, which we explained in our August 2016 note [Gulf Coast Refiners Enjoy Higher Margins From Processing Heavy Crude](#). Continued competitive prices for heavy crude and U.S. technology/investment advantage mean changing to light crude is hard to justify. Structural changes in the refining industry such as those expected to result from the International Maritime Organization’s lowering of bunker fuel sulfur specifications in 2020 (see our November 2016 note [Marine Bunker Deadline](#)) also favor sophisticated refineries that transform heavy crude components into light transport fuels. These changes will penalize simpler refineries that continue to produce residual fuel oil, which will have a shrinking market if ship owners gravitate to low-sulfur marine diesel to meet the new regulations.

### Misplaced Gulf Coast Focus

The net result is that a new boom in shale production is unlikely to be absorbed by domestic refiners. To that end, current plans to market new shale crude all revolve around delivering it to the Gulf Coast—Houston (Enterprise Midland to Sealy pipeline), Nederland (the Energy Transfer DAPL pipeline), and Corpus Christi (expansion of the Plains Cactus pipeline). The latest Epic Pipeline proposal announced this week, sponsored by TexStar Midstream Logistics, Castleon Commodities International, and Ironwood Midstream Energy Partners, envisions transporting up to 440 mb/d of crude and condensate from the Permian Basin to Corpus Christi. Midstream companies are building out marine dock crude export facilities in Houston (see our recent note [Houston Infrastructure](#)). Outbound waterborne crude shipments from Corpus Christi to domestic and international destinations are creeping up again after slumping when production dipped in 2015 and 2016, according to the city's port statistics (Exhibit 2). The mantra appears to be: Ship crude to the Gulf Coast and an export market will materialize.

**Exhibit 2** Corpus Christi Crude and Condensate Outbound



Source: Port of Corpus Christi, Morningstar

However, we believe that simply pumping more crude to the Gulf Coast for export is not the best approach to finding a long-term export market. Most Gulf Coast marine infrastructure is disadvantaged for exports. There are no deep-water ports that can accommodate the very large crude carriers, or VLCCs, and ultra large crude carriers except the Louisiana Offshore Oil Port, which currently only handles imports. That means export cargo size is effectively limited to the midsize aframax vessels, which can carry about 750,000 barrels. Corpus Christi is potentially investing in port upgrades to accommodate larger Suezmax vessels (1 million barrels). Assembling a VLCC cargo for export requires lightering smaller tankers to a large vessel parked offshore or in the Caribbean, which adds \$0.50/barrel or more to freight costs. There has been some discussion of reversing the LOOP to handle exports as well as imports, but this is reportedly a very expensive proposition that has so far not left the drawing board.

Another limitation of the Gulf Coast is the lack of access for the largest crude carriers to Asia through the Panama Canal. The canal was expanded in June 2016, but can still only accommodate New Panamax vessels holding 600,000 barrels, meaning VLCCs need to take the longer, more expensive Cape route to the Pacific. Crude can be shipped across the isthmus via the 600 mb/d Trans Panamanian pipeline, but that requires shipment to the pipeline origin and terminal fees at both ends to unload and reload the cargo.

### **West Coast Alternative**

Given the current disadvantages of the Gulf Coast as a loading point for U.S. crude exports, we believe that rising shale production will cause midstream infrastructure companies to reconsider shipping domestic crude to the West Coast. Currently, this option is effectively closed because of a lack of pipeline capacity linking producing regions in Texas, North Dakota, and the Rockies to Pacific tidewater. Various plans to ship crude from the Bakken or the Permian to West Coast docks by rail have fallen by the wayside or delayed because of environmental and shipping cost concerns. During the last shale boom, two pipeline projects were proposed. The first was the 2013 Kinder Morgan Freedom pipeline from El Paso, Texas, to Bakersfield, California, that involved converting a gas pipeline to crude. That project failed to attract producer support in the face of competitive pipelines being developed to the Gulf Coast. The Freedom pipeline would have shipped Permian crude to California, but that state's refineries run on a diet of heavier sour crude. With the export ban in place at the time, the project did not attract enough refiner support to be viable. A second project, the Questar Southern Trails pipeline conversion was canceled in 2016. That project would have converted the western section of the Questar gas pipeline to ship oil directly into Los Angeles' refining center, but it failed because it relied on more expensive and controversial rail shipments to the pipeline's origin in eastern California.

Yet there are perhaps stronger arguments today for building a pipeline or pipelines to the West Coast. Such an outlet would open access to deep-water ports that can accommodate the largest oil tankers. Exports would have efficient and quicker access to growing Asian refinery demand. The right West Coast pipeline project could also take advantage of access to growing Canadian heavy crude supplies, such as those to be delivered to Vancouver when the Kinder Morgan Trans Mountain Express expansion (see our January 2017 outlook covering [Pacific Northwest Refineries](#)). By combining access to Canadian heavy crude and shale supplies from the Bakken or West Texas, shippers could blend crudes for export to meet a range of refiner requirements across Asia.

### **Who Will Step Up?**

At the moment, there is no such West Coast crude pipeline/export project on the drawing board that we are aware of. But if the U.S. it to take the marketing of shale crude seriously, rather than selling cargoes on an ad-hoc basis when the price is right, we believe it might be time to consider a more structural approach. Recent enthusiasm for shale crude production expressed by majors ExxonMobil, Chevron, and Shell could well be a catalyst for a West Coast project. These larger companies are more accustomed to the long-term commitments, and risks associated with such large-scale infrastructure investments. ■■■

**About Morningstar® Commodities Research™**

Morningstar Commodities Research provides independent, fundamental research differentiated by a consistent focus on the competitive dynamics in worldwide commodities markets. This joint effort between Morningstar's Research and Commodities & Energy groups leverages the expertise of Morningstar's 23 energy, utilities, basic materials, and commodities analysts as well as Morningstar's extensive data platform. Morningstar Commodities Research initially will focus on North American power and natural gas markets with plans to expand coverage of other markets worldwide.

Morningstar, Inc. is a leading provider of independent investment research in North America, Europe, Australia, and Asia. The company offers an extensive line of products and services for individuals, financial advisors, and institutions. Morningstar's Commodities & Energy group provides superior quality market data and analytical products for energy data management systems, financial and agricultural data management, historical analysis, trading, risk management, and forecasting.

**For More Information**

+1 800 546-9646 North America

+44 20 3194 1455 Europe

commoditydata-sales@morningstar.com



22 West Washington Street  
Chicago, IL 60602 USA

©2017 Morningstar. All Rights Reserved. Unless otherwise provided in a separate agreement, you may use this report only in the country in which its original distributor is based. The information, data, analyses, and opinions presented herein do not constitute investment advice; are provided solely for informational purposes and therefore are not an offer to buy or sell a security; and are not warranted to be correct, complete, or accurate. The opinions expressed are as of the date written and are subject to change without notice. Except as otherwise required by law, Morningstar shall not be responsible for any trading decisions, damages, or other losses resulting from, or related to, the information, data, analyses, or opinions or their use. References to "Morningstar Credit Ratings" refer to ratings issued by Morningstar Credit Ratings, LLC, a credit rating agency registered with the Securities and Exchange Commission as a nationally recognized statistical rating organization ("NRSRO"). Under its NRSRO registration, Morningstar Credit Ratings issues credit ratings on financial institutions (e.g., banks), corporate issuers, and asset-backed securities. While Morningstar Credit Ratings issues credit ratings on insurance companies, those ratings are not issued under its NRSRO registration. All Morningstar credit ratings and related analysis are solely statements of opinion and not statements of fact or recommendations to purchase, hold, or sell any securities or make any other investment decisions. Morningstar credit ratings and related analysis should not be considered without an understanding and review of our methodologies, disclaimers, disclosures, and other important information found at <https://ratingagency.morningstar.com>. The information contained herein is the proprietary property of Morningstar and may not be reproduced, in whole or in part, or used in any manner, without the prior written consent of Morningstar. To license the research, call +1 312 696-6869.