
Reversing LOOP Would Boost Crude Exports

Significant potential to increase shipments.

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Data Sources for This Publication

Energy Information Administration
 BOEM
 Louisiana DNR

To discover more about the data sources used, [click here](#).

The Time Is Right

A week ago, the Louisiana Offshore Oil Port solicited shipper interest in loading crude onto tankers for export from its marine terminal. The port requires shipper commitment to justify investment to accommodate outbound flows. The only U.S. deep-water port that can handle the largest oil tankers, LOOP came on line in 1981 providing import-only service, since exports were not contemplated when U.S. production was believed to be in terminal decline. With domestic crude production increasing again and U.S. crude export restrictions lifted at the end of 2015, the timing appears to be right for this investment. In this note, we look at current port flows and discuss existing advantages and future possibilities for a two-way LOOP.

LOOP Terminal

As we discussed in a two-part April note (see “Can LOOP Ever Be A Gulf Coast Cushing – [Part 1](#) and [Part 2](#)”), LOOP consists of three mooring buoys located 18 miles offshore in 110 feet of water in the Gulf of Mexico. These buoys can accommodate “very large” and “ultra-large” crude carriers, or VLCCs and ULCCs, that hold between 2 million and 3 million barrels of oil. The LOOP terminal unloads these huge tankers into a 25-mile subsea pipeline to the Clovelly, Louisiana, storage facility. Clovelly storage has 71 million barrels of nameplate capacity, consisting of eight underground salt dome caverns and 21 above-ground tanks.

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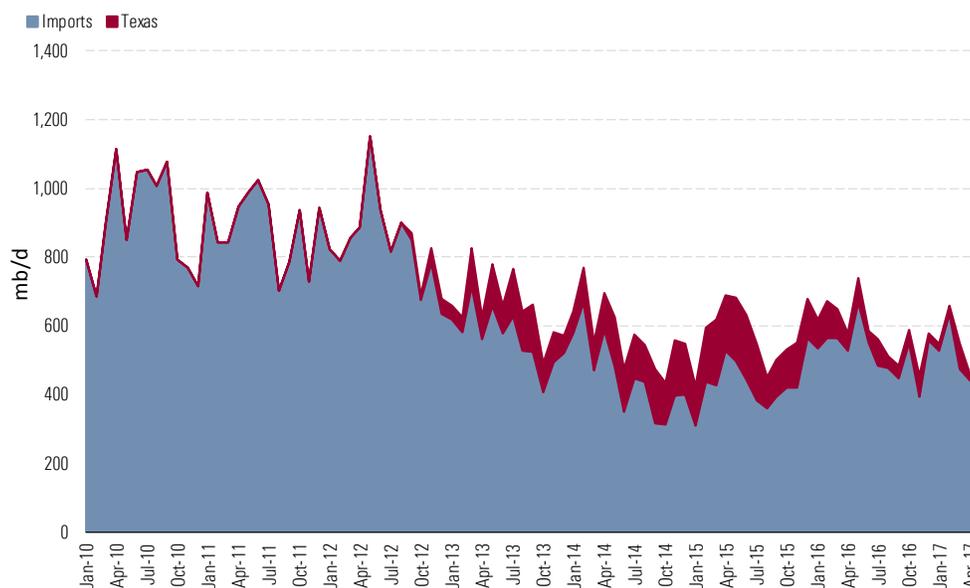
The storage at Clovelly is connected by pipeline to approximately 2.4 million barrels of downstream refining capacity in the Louisiana Gulf Coast region and via the LOCAP pipeline connection to St. James, Louisiana, from where crude can be delivered to Midwest refineries on the Capline pipeline. Refiners rely on LOOP storage to buffer large incoming streams of crude from tankers, as well as offshore Gulf of Mexico production. The terminal stores crude until it is needed downstream and then blends and delivers it in smaller batches for processing.

Inbound Volume

Exhibit 1 shows monthly crude volumes imported through LOOP since 2010 reported by the Louisiana Department of Natural Resources. In 2010, shipments averaged 900 thousand barrels/day but have fallen since then by 35% to 585 mb/d in 2016 because increased domestic shale production has reduced import demand. Before September 2012, LOOP only handled imports (blue shading) but since then has accommodated domestic crude delivered by smaller Jones Act tankers and barges. These domestic shipments have all been delivered to LOOP from Texas (red shading) and consist of shale crude and

condensate from the Eagle Ford basin. Shipments from Texas were just 12 mb/d in September 2012 but increased to 191 mb/d at their peak in June 2015 before a sharp fall in crude prices slowed Eagle Ford drilling and production by the end of that year. Falling inbound volumes have allowed LOOP to consider making up for lost terminal traffic by investing in export capability as well—making the terminal bidirectional.

Exhibit 1 Inbound Shipments Through LOOP

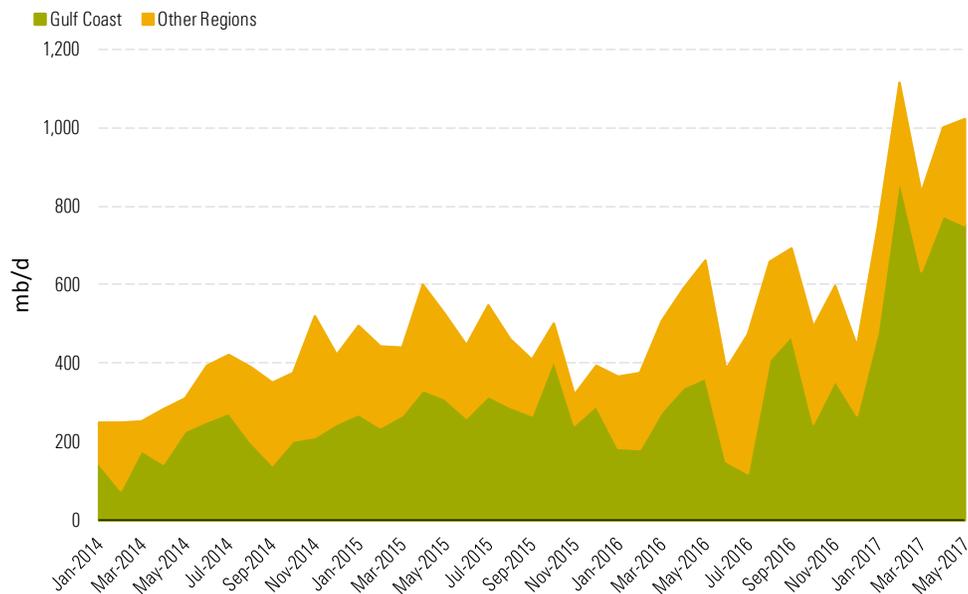


Source: Louisiana Department of Natural Resources

In addition to inbound tankers, LOOP's Clovelly hub receives deep-water Gulf of Mexico production from two pipeline systems—Mars and Endymion. We estimate (based on Shell SEC filings and Bureau of Energy Management production data) that these pipelines deliver between 500 and 600 mb/d of Mars, Amberjack, and Thunder Horse crude into LOOP storage. In addition to offshore crude, LOOP also receives crude from the Shell Midstream Zydeco pipeline system that delivers up to 350 mb/d from Houston, Texas, to St. James, Louisiana. In total, LOOP offshore terminal and Clovelly storage hub probably receive about 1.1 mmb/d of crude, but with the decline in Texas volumes since 2015, more is now arriving by pipeline than through the offshore terminal.

Leaping Exports

At the same time as LOOP inbound tanker shipments are declining, U.S. crude production and exports are increasing. Exhibit 2 shows monthly Energy Information Administration data for U.S. crude exports. Since restrictions were lifted in December 2015, overall U.S. crude exports have expanded—up 12% in 2016 to average 520 mb/d and leaping 89% year over year to average 944 mb/d between January and May 2017. According to EIA, the majority of U.S. crude exports came from the Gulf Coast region (green shading in Exhibit 2), with about 30%-40% from other regions (yellow shading).

Exhibit 2 U.S. Crude Exports

Source: EIA, Morningstar

Even as crude exports take off, the U.S. remains a net importer, and that is unlikely to change soon since refinery consumption of about 17 mmb/d is nearly double current domestic production. Because refiners prefer the heavier import grades, their plants were built to process over growing light domestic shale supplies, U.S. exports of homegrown crude are expanding. But the pattern of U.S. crude exports so far has been opportunistic, based on price arbitrage or overseas refiners wanting to “buy and try” U.S. grades, rather than a deliberate process. Aside from price opportunity, the expansion of crude exports has also been constrained by a lack of Gulf Coast infrastructure.

Immediate Advantage

Reversing LOOP offers three immediate advantages to remedy infrastructure constraints and put U.S. exports on a more permanent footing. First, as the only U.S. deep-water port that can handle VLCC and ULCC tankers, LOOP would lower freight costs. Not only do these huge tankers make crude transport cheaper—allowing U.S. exporters to compete in Asian markets—but the unique LOOP demand for both inbound and outbound crude would mean the same vessels could be used for both, reducing round-trip costs and making the port very attractive for shippers.

Second, LOOP's connection to Clovelly's above-ground tankage would allow shippers to blend different crude grades as required by customers. This process is now carried out extensively at Caribbean deep-water ports that LOOP would compete with as a crude export hub (see our July 2016 note [The Caribbean Storage Market](#)). Additionally, the huge underground cavern storage facilities at LOOP would comfortably facilitate the accumulation of 3 million-barrel cargoes by exporters.

Third, LOOP is connected to over 0.5 mmb/d of offshore production from Mars and Thunder Horse that has proved attractive to exporters this year (see our February 2017 note [U.S. Crude Exports to Asia](#)). These exports are currently shipped by pipeline to St. James, Louisiana, placed on smaller tankers and trans-shipped to VLCCs in Caribbean deep-water ports. LOOP can also receive Texas shale crude via the marine terminal or the Zydeco pipeline.

Future Connections

Two additional advantages could be developed in the future.

Bayou Bridge

A LOOP connection could be extended to the 480 mb/d Bayou Bridge pipeline between Nederland, Texas, and St. James, Louisiana, that is expected completed by the end of 2017. Bayou Bridge links the Dakota Access Pipeline to St. James, allowing Bakken shale crude to reach the Louisiana Gulf Coast by pipeline for the first time. If exporters can deliver from DAPL into LOOP, this may encourage increased production in North Dakota for the export market. The DAPL connection through Patoka, Illinois, also offers a possibility to export Canadian crude through LOOP.

Capline Reversal

Today, LOOP is connected to the largest U.S. domestic crude conduit, the 1.2 mmb/d Capline pipeline running north from St. James, Louisiana, to Patoka, Illinois. There has been much discussion about reversing Capline to flow south — especially after the Plains/Valero Diamond pipeline from Cushing, Oklahoma, to Memphis, Tennessee is completed in 2018 — removing the need to ship barrels north on Capline. If Capline is reversed it could encourage more export shipments of Bakken and or Canadian crude through LOOP.

Drawbacks

While LOOP has current and future potential advantages for exporters there are a couple of drawbacks to using the port. The first is that LOOP has limited connections to Texas crude production delivered into the Houston, Texas, market. Most current growth in domestic drilling and production is based in the West Texas Permian, but new pipelines out of that basin will deliver to Houston and Corpus Christi, Texas, rather than Louisiana.

Using LOOP for exports will allow larger tankers, but as we discussed last month ([LNG and LPG Shippers Celebrate Panama Anniversary](#)), VLCCs and ULCCs are too big to go through the Panama Canal, so they have to take longer Cape routes to Asia. A U.S. West Coast export terminal would have greater value than LOOP for shipping crude to Asian markets. However, since no crude pipelines exist between Texas production and the West Coast today, this alternative is a long way from implementation.

Direction of Crude Exports

The extent of shipper interest in the LOOP reversal plan will determine the direction of U.S. crude exports over the next several years. If shippers are willing to make a commitment to reversing LOOP, then they will have to line up customers for regular export shipments. This will change the current opportunistic

ad-hoc arrangements into something closer to the rapidly expanding on-purpose U.S. exports of liquefied natural gas and liquid petroleum gas that we have seen develop in the past five years, both of which have attracted midstream investment and commitment to term exports. Higher export volumes facilitated by a competitive port like LOOP would expand the impact of shale in world crude markets.

Conversely, insufficient shipper interest in the LOOP reversal idea will suggest a ceiling on international demand for shale crude. That ceiling could pose a greater constraint on future production than lower prices or OPEC production cuts. ■■

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