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Deep Water, Part 5 - More Plans for Offshore Crude Oil Export Terminals Along The Gulf Coast

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Just as midstream companies are in a fierce competition to build new crude oil pipelines from the Permian to the Gulf Coast, there's a race on to develop what would be the first Gulf Coast terminal in a generation capable of handling fully laden Very Large Crude Carriers. There's a lot at stake. Currently, 2-MMbbl VLCCs can be filled to the brim without reverse lightering only at the Louisiana Offshore Oil Port (LOOP), and even if U.S. crude production continues to rise at a fast clip, it's unlikely that more than another one or two high-capacity, VLCC-ready terminals would be needed over the next five years. And, assuming there's not an overbuild situation, the project or projects that ultimately advance would be expected to be in-demand and highly utilized — VLCCs are the preferred mode of transporting crude to Asia and other far-away markets, and being able to fully load VLCCs saves the considerable cost and time associated with reverse lightering these supertankers in deep water. Today, we conclude our series on the fast-paced efforts to develop export terminals in waters deep enough to float VLCCs chock-full of oil.

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This is the fifth episode in our series. In [Part 1](#), we discussed the ongoing boom in U.S. crude oil exports, which have been rising steadily since the 40-year ban on most exports was lifted in December 2015. Crude exports averaged 590 Mb/d in 2016, 1.1 MMb/d in 2017, and more than 1.8 MMb/d so far in 2018. While 2-MMbbl VLCCs are by far the most cost-efficient way to haul crude to Asia, their very large physical dimensions restrict the number of land-based terminals they can use. A typical VLCC is about 1,100 feet long, with a beam (or width) of nearly 200 feet and a fully loaded draft of 72 feet.

And even those land-based terminals that can accommodate VLCCs can only load these supertankers part-way — “reverse lightering” out in deeper, open waters is required to fill a VLCC to the brim. (LOOP — green diamond in Figure 1 — is the only facility along the Gulf Coast that can fully load a VLCC today.) We also reviewed the joint plan by Oiltanking, Enbridge and Kinder Morgan to develop a crude export terminal 30 miles off the coast of Freeport, TX (yellow diamond). In [Part 2](#), we considered JupiterMLP’s proposal for an offshore export terminal only six miles off Brownsville (aqua diamond) — and a new long-haul pipeline from the Permian to that South Texas city. Next, in [Part 3](#), we looked at the plan by Trafigura, the international logistics and trading company, to build a deepwater export terminal 15 miles off Corpus Christi (lavender diamond). Each of these projects also calls for the development of several million barrels of onshore storage capacity to support the regular loading of VLCCs. Tallgrass Energy’s plan to build a combination export and import terminal 1.5 miles off the coast of Venice, LA (near the mouth of the Mississippi River) was the subject of [Part 4](#), which also discussed the company’s related plan to build new pipelines (Seahorse and Pelican) to connect the crude oil hub in Cushing (OK) to the hub in St. James (LA), a planned new terminal on the Mississippi in Plaquemines Parish (LA) and the proposed offshore terminal near Venice (orange diamond).

Today, we consider two other plans to develop new Gulf Coast terminals capable of handling fully loaded VLCCs — one of which may actually involve land-based docks. We begin with Enterprise Products Partners’ plan — first unveiled in July (2018) — to build an offshore terminal about 80 miles off the Texas coast, presumably connected to Enterprise’s extensive crude storage and pipeline infrastructure in the Houston/Texas City area. The offshore terminal (pink diamond indicates the general area) would be connected via a 42-inch-diameter pipeline, and would be capable of loading crude at a rate of 85 Mb/hour — fast enough to fill a 2-MMbbl VLCC in 24 hours. Front-end engineering and design (FEED) work and permitting on the project is already under way, and the company has indicated it expects to have permits and other approvals for the facility in hand as soon as early 2020.

Already, two VLCCs have been partially loaded with crude at the Texas City marine terminal owned by Seaway Crude Pipeline Co., a joint venture of Enterprise and Enbridge. Enterprise in June (2018) loaded 1.1 MMbbl onto the *FMPC C Melody* (a 2-MMbbl VLCC) at the Seaway terminal, and in July it did the same with the *Eagle Victoria*. In both cases, the VLCCs then received the balance of their crude via reverse lightering in the Galveston trans-shipment area (TSA) before sailing to their final destinations (look to RBN’s new [Crude Voyager](#) for additional details).

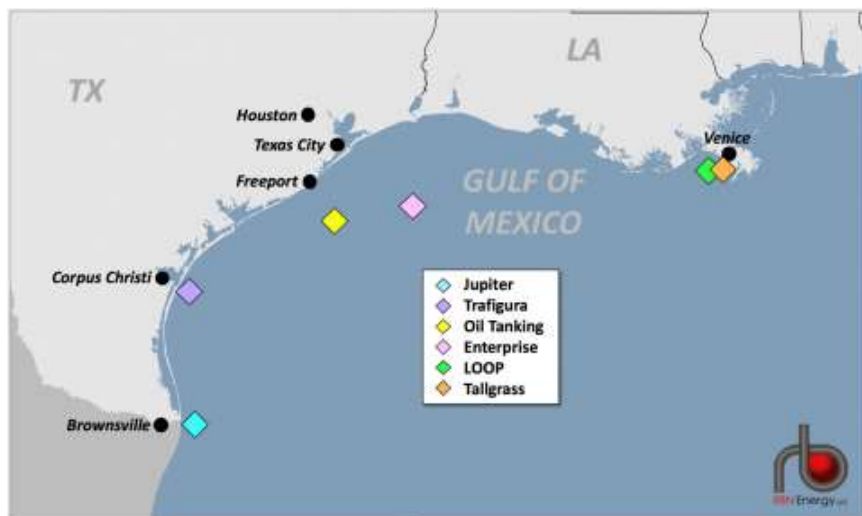


Figure 1. Offshore Crude Export Terminal Projects. Source: RBN (Click to Enlarge)

At the same time, the Port of Corpus Christi is spearheading an effort to develop what could be the Gulf Coast’s first land-based terminal capable of fully loading VLCCs. More specifically, the port is in the midst of a feasibility study to determine whether a VLCC-ready terminal could be developed on a roughly 250-acre tract the port owns on Harbor Island (brown dot in Figure 2), which is located adjacent to Port Aransas (TX) and near the beginning of the Corpus Christi Ship Channel. The

ship channel is currently only 45 feet deep and plans are already well under way to deepen it to 54 feet. Under the Port of Corpus Christi’s Harbor Island development plan, the initial stretch of the ship channel from the Gulf to the channel’s La Quinta Junction (including the proposed terminal site) would be deepened to 75 to 85 feet — a depth sufficient to handle fully laden VLCCs. Still to be determined as part of the feasibility study, which will be completed late this year, is if the supertankers would pull up to a land-based dock on Harbor Island or an offshore buoy very near the island. The Harbor Island

terminal could include as much as 20 MMbbl of onsite crude storage capacity, and would be connected to mainland pipes and other infrastructure via two 30-inch-diameter lines. Port officials have indicated that they do not intend to develop the terminal on their own, and instead, they envision partnering with private-sector entities. Magellan Midstream Partners has been mentioned as a possible affiliate, and Flint Hills Resources — which already has a substantial presence in Corpus Christi — may be another.



Figure 2. Port of Corpus Christi's Harbor Island Project. Source: RBN

A key motivator for the Port of Corpus Christi in its development of a possible Harbor Island terminal may be the potential loss of crude oil exporting volumes through the port (and port revenue) if Trafigura were to proceed with the construction of its planned crude export terminal 15 miles off the coast of Corpus Christi (lavender diamond in Figure 2).



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At the same time, a joint venture of Buckeye Partners, Phillips 66 Partners and Andeavor (now part of Marathon Petroleum) is developing the South Texas Gateway Terminal in Ingleside (red dot) see [Working on a Dream](#). By late 2019, that new facility will offer 3.4 MMbbl of crude storage capacity (expandable to 10 MMbbl-plus), connectivity to the Phillips 66 Partners and Marathon's planned 700-Mb/d [Gray Oak Pipeline](#) from the Permian (expandable to 1 MMb/d), and two deepwater docks. The docks initially will be capable of partially loading VLCCs, with full loading of VLCCs at the docks a possibility later on.

As we said in the intro to today's blog, it's unlikely that more than one or possibly two new crude terminals capable of sending out fully loaded VLCCs will be built — even with rising production in the Permian and other plays — because the volumes necessary to support multiple terminals along the Gulf Coast simply wouldn't be there. That means that the race is on to advance the first offshore terminal to its final investment decision (FID). To win that contest, a proposal would need to offer pipeline access to large volumes of Permian and other crude, as well as favorable economics — that is, development costs (and terminal fees) low enough to convince crude exporters (producers, marketers and/or shippers) to make long-term commitments for terminal through-put capacity. In the end, project development costs need to be low enough to justify the switch from full reverse lightering (or a combination of partial loading at a dock and partial reverse lightering) to full loading of VLCCs in one

place. We'll continue to monitor this race and, given the market pressures at work, it may not be long before there's a winner.



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"Deep Water" is a track off country singer George Strait's 1986 album, 7. "Deep Water" was written by Fred Rose and was first recorded and released by Bob Wills and his Texas Playboys in 1948. George Strait's 7 LP — his seventh album — reached #1 on the Billboard Top Country Albums chart, and #27 on the Billboard Top 200 Albums chart. It produced two #1 hit singles, "Nobody in His Right Mind Would've Left Her" and "It Ain't Cool to be Crazy About You." Personnel on the LP were: George Strait (lead vocals and acoustic guitar), Curtis Young (background vocals), Eddie Bayers (drums), David Hungate (bass), Billy Joe Walker (guitar), Reggie Young (guitar), Richard Bennett (guitar), John Jarvis (piano), Johnny Gimble (fiddle and mandolin) and Paul Franklin (steel guitar).

George Strait is a Texas country music singer, songwriter, actor, and music producer. He has released 29 albums on the MCA label, and has had 61 #1 songs on the country charts, more than any other artist in any genre. He has sold more than 68 million records in the U.S. alone, and has 13 multi-platinum, 33 platinum and 38 gold albums. He holds the record for the most CMA and ACM Awards. He is still recording and on tour through the end of 2018.

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