Beaumont-Port Arthur Crude Exports to Double by 2021?

Planned pipeline capacity could add 2 mmb/d of supply.

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Data Sources for This Publication
EIA
U.S. Census
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To discover more about the data sources used, click here.

Shallow Draft Limits

So far in 2019 (Jan. 1 through Oct. 31), daily average crude exports from the Beaumont-Port Arthur region of Texas accounted for 26% of Gulf Coast totals, ahead of Corpus Christi with 25% and behind Houston's 41%, according to RBN Energy. During the first half of this year, our analysis shows that the BPA region received an average 2.9 million barrels a day of net crude supply from domestic pipelines and imports with local refineries in Texas and Lake Charles, Louisiana, consuming an average 2.0 mmb/d. The balance contributed to an average 0.8 mmb/d of exports between January and September, according to U.S. Census data. If planned pipeline expansion into BPA over the next two years is completed, over 1 mmb/d of additional crude exports will need to leave BPA terminals to balance the market. Yet growing exports are constrained by the shallow draft of the Sabine Neches channel, which limits vessels to Aframax or partially loaded Suezmax tankers. This note looks at current and future export capacity out of BPA.

Previously

This is the third in a series documenting crude export capacity along the Gulf Coast, where overseas shipments have expanded eightfold from just under 300 mb/d on average in 2016 to 2.7 mmb/d between January and August 2019, according to the Energy Information Administration. In August, we looked at current and future export capacity out of the Port of Corpus Christi, where new pipelines from the Permian are bringing increased crude volumes to docks (see Corpus Christi Constraints Threaten Crude Exports). Since that analysis, Port of Corpus Christi's plans to build out onshore docks at Harbor Island with capacity to fully load 2 million-barrel very large crude carriers have been cast into doubt by private equity investor Carlyle Group pulling out of the Lone Star Ports consortium financing the necessary channel dredging. Two projects to build single-point mooring buoy terminals offshore Corpus Christi in the Gulf of Mexico handling VLCCs are still progressing through the permitting process. An October note covered export dock developments in the Houston region (see Houston Crude Export Capacity Adequate for Now). Like most Gulf Coast ports, Houston shipments are constrained by the absence of deep-water docks that can load VLCCs; plans have been submitted for permitting three single-point mooring buoys off the coast at Freeport and Texas City. If built, offshore terminal projects will bring relief to crowded Gulf Coast docks that currently transship smaller vessels used to load VLCCs out in the Gulf of Mexico. But these terminals are expected to take two years at least in permitting and another year to build, meaning they won't be operational until 2023.

BPA Terminals Today

Crude exports are today shipped out of three terminals in the BPA region (Exhibit 1). The largest by far is the Energy Transfer Nederland terminal, formerly operated by Sunoco Logistics. The Nederland terminal boasts a massive 28 million barrels of above-ground crude storage and has five ship docks, the largest of which can berth a partially laden 1 million-barrel Suezmax tanker. The terminal also has four smaller barge docks and, according to company presentations, can load as much as 1.5 mmb/d of crude. The Phillips 66 Beaumont terminal is also located along the Sabine Neches waterway in Nederland, Texas, and has two ship docks—one for crude and one for refined products—as well as a barge dock. The ship dock can accommodate Aframax tankers holding about 600,000 barrels with a 40-foot draft loading at a rate of 480 mb/d. The Phillips 66 terminal has 10.9 million barrels of crude storage capacity. The third BPA terminal used for crude export is the Enterprise Products Beaumont West terminal, which boasts 4.1 million barrels of storage, five ship docks, and two barge docks with a maximum loading rate of 600 mb/d. The Enterprise terminal accommodates Aframax vessels and is linked by the Seaway pipeline to the ECHO crude terminal in Houston.

Exhibit 1 Beaumont-Port Arthur Terminals

Terminal	Operator	Crude Storage MMBbl	Largest Vessel Size	Load Rate mmb/d
Nederland	Energy Transfer	28	Suezmax	1.25
P66 Beaumont	Phillips 66	11	Aframax	0.48
Enterprise West	Enterprise Product Partners	4	Aframax	0.6

Source: Company presentations.

There are no currently announced plans to expand these three terminals. One reason for the lack of expansion plans is the 40-foot draft of the Sabine Neches channel, which restricts traffic to fully laden Aframax and partially laden Suezmax tankers. An Army Corps of Engineers project underway to dredge the channel deeper and wider will only increase the draft to 48 feet, which still won't accommodate a fully laden Suezmax. During its second-quarter earnings call in August, Energy Transfer announced it was considering developing an offshore single-point mooring buoy that could be used to load VLCC tankers directly. In the meantime, the BPA region is limited to loading smaller tankers, and exports on VLCCs to Asian customers must be loaded by transshipment in the deep-water Gulf of Mexico.

Crude Supply

Despite vessel draft limitations at the docks, there's no lack of crude supply coming into the BPA region that needs to be exported if it's not consumed by local refineries or shipped east to Louisiana. The BPA region is a destination point for at least six pipeline systems with nameplate capacity of 3.0 mmb/d that bring crude directly from Houston, offshore Gulf of Mexico, North Dakota, the Midwest Cushing, Oklahoma, terminal (supplied from the Rockies, Western Canada, and North Dakota), the West Texas Permian Basin, and the Central Texas Eaglebine formation. The Jefferson rail terminal that delivers light domestic and heavy Canadian crude by rail also serves PBA. Exhibit 2 lists the incoming pipelines together with an indication of flows into PBA during the first half of 2019, which averaged about 2.4

mmb/d, according to Texas Railroad Commission reports. In addition to domestic crude, BPA area refineries also imported an average 1 mmb/d of overseas crude this year, according to EIA data. Such imports are typically heavier grades that Gulf Coast refineries are configured to extract more value from than lighter shale crude.

Exhibit 2 Incoming Crude Pipelines

Pipeline	Operator	Origin	Destination	Capacity mb/d	H1 2019 Flows into BPA mb/d
Seaway	Enterprise	Cushing via Houston ECHO	Beaumont West	700	306
Permian Express	Energy Transfer	Permian, Wichita Falls	Nederland	640	716
Marketlink	TC Energy	Cushing	Nederland	750	710
DAPL / ETCOP	Energy Transfer	North Dakota via Patoka	Nederland	670	475
CHOPS	Genesis Energy	Gulf of Mexico	Nederland	115	115
Zydeco	Shell Midstream	Houston	St. James	375	0
Eaglebine	Energy Transfer	Hearne	Nederland	100	68
			Total	**3350**	**2390**

Source: Texas Railroad Commission.

Crude Demand

Crude demand in the BPA region consists primarily of refinery processing, although about 0.5 mmb/d is shipped east by pipeline to refineries in Louisiana. There are four refineries in the BPA Texas Gulf Coast region and another three across the Sabine River in Lake Charles, Louisiana. Among them, these seven refineries have nameplate crude processing capacity of 2.3 mmb/d. Most of that feedstock comes from domestic crude supplied by pipeline to BPA—including from the Gulf of Mexico as well as the 1 mmb/d of imports mentioned above—the majority of which are delivered by vessel with smaller quantities arriving by pipeline and rail from Canada. We estimate average refinery demand between January and June 2019 based on EIA percentage utilization data for Texas and Louisiana Gulf Coast refineries at 92% of actual capacity, or 2.0 mmb/d. Our estimates for the BPA region leave a balance of 0.9 mmb/d between supply and demand during the first half of 2019. U.S. Census data shows BPA region crude exports that averaged 0.8 mmb/d consumed most of that balance.

More on the Way

Although crude production in the shale basins is slowing this year, overall output continues to increase, especially from the prolific Permian. Announced plans for new pipelines to accommodate increased production from the Permian, the Rockies, and North Dakota will (if built) deliver an additional 1.7 mmb/d of crude to the BPA region by the end of 2021, including at least 1 mmb/d on the ExxonMobil sponsored Wink-Webster project. Also adding to BPA supply is Energy Transfer's proposed 500 mb/d Ted Collins pipeline linking the Houston Fuel Oil Terminal, which the company recently acquired as part of its purchase of SemGroup, to Nederland. Total new pipeline capacity of 2.2 mmb/d will be offset by the 250 mb/d expansion of ExxonMobil's Beaumont refinery to be completed by 2022. Before then, crude from the new pipelines will more than double export requirements over 2019 year-to-date totals.

Capacity Overload?

On paper, Energy Transfer's huge Nederland terminal can load 1.25 mmb/d of crude onto vessels, and between them, the Phillips 66 Beaumont and Enterprise terminals can load another 1 mmb/d. That capacity should handle increased flows from new pipelines, especially if Permian production growth takes a while to fill ExxonMobil's 1 mmb/d pipeline, although ship traffic in the Sabine Neches channel could become an issue. Without access to deeper-water facilities, increasing crude exports into the BPA region could be hampered by vessel size restrictions. In Houston and Corpus Christi, midstream companies are planning offshore buoy terminals to bypass onshore congestion, but BPA has yet to submit such a project for permitting. Longer term, that omission may require more crude coming into BPA to flow further east to the Louisiana Offshore Oil Port, as that facility—so far, the only deep-water terminal on the Gulf Coast—ramps up its export capability. In the short term, the result will be increased traffic congestion at BPA docks.

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