
Will New Permian Crude Capacity Overshoot?

Pipelines to double basin takeaway.

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Data Sources for This Publication

U.S. Energy Information Administration

CME Group

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

Exceeds Forecast Output

The latest U.S. Energy Information Administration's Monthly Drilling Productivity Report, published Feb. 19, estimates first-quarter Permian Basin crude output at just less than 4 million barrels per day, up 2.5 mmb/d over the past five years. That dramatic growth has not come without volatility. Three times rapid production growth has run up against pipeline takeaway constraints as new capacity failed to keep pace with output. And pipeline capacity has at times far exceeded output, as it did when the price crash in 2015 slowed production. After congestion last year caused heavy price discounting, new pipeline capacity expected on line in the next three years will more than double Permian takeaway and far exceeds forecast output. This note reviews the ups and downs of Permian crude takeaway capacity and our expectations for the basin out to 2021.

This analysis is partly based on a webinar presentation on Feb. 21 with our partners at Platts S&P Global, covering crude oil and natural gas Permian takeaway. A copy of Morningstar's slide deck is available [here](#).

Too Much Too Late

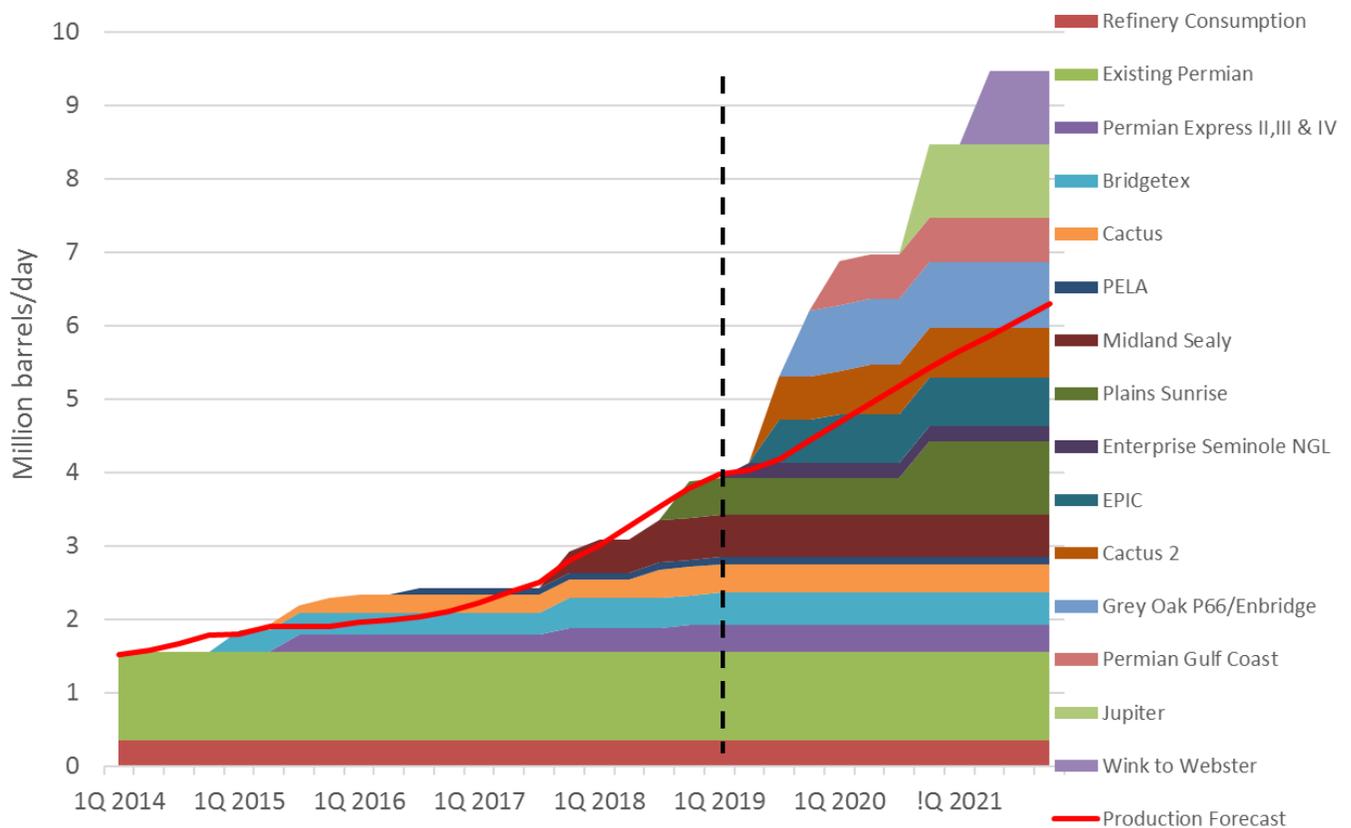
Since the start of 2014, Permian crude production has exceeded pipeline takeaway capacity three times: in the summer of 2014, the fall of 2017, and the last three quarters of 2018. There is typically a lag between new pipelines being needed and capacity coming on line. Too much capacity often shows up too late. For example, new capacity showed up in spades after 2014 just as the 2015 price crash slowed production, leaving new pipelines only half full. When production took off again at the end of 2016 it quickly outpaced new capacity, leading to congestion in 2017 and again in 2018. This cycle of under- and overbuilding reflects the inefficiency of the midstream infrastructure investment cycle that requires shipper support up front and can be delayed by permitting issues. Rapid productivity gains in the Permian have not helped planners, either.

We last looked at the Permian takeaway stack back in August 2018 (see [The Permian Triangle – Midland Discounts Encourage Exports](#)) when congestion pushed Midland prices \$18/barrel below Cushing and \$24/barrel below Houston. That situation was exacerbated by the absence of ready alternatives to get crude to market. A lack of tank cars and loading capacity plus the reluctance of railroads to invest in fixing a temporary problem without better guarantees meant rail couldn't help shift crude to market. Truck transport was constrained by a lack of tanker trucks and drivers available to make 1,000-mile round trips to the Gulf Coast from West Texas and New Mexico.

Massive Overshoot

The 2018 Permian congestion was finally relieved by the Plains Sunrise expansion project coming on line at the end of the year, but the lengthy crunch spurred a slew of new projects that were lagged by nearly a year and are only expected to begin coming on line at the end of 2019. However, these new projects pitched to relieve the 2018 congestion and premised on continued rapid production growth currently look to have massively overshoot demand. Exhibit 1 shows crude production (blue line) from the first quarter of 2014 through the fourth quarter of 2021, with the shaded areas representing in-region refinery capacity (red), pipelines built before 2014 (green), and takeaway pipelines built between 2014 and 2019 as well as new projects coming on line over the next three years to the end of 2021 (left of the black dotted line).

Exhibit 1 Permian Takeaway Stack 2014-21



Source: Morningstar, company presentations, EIA.

Project List

According to EIA data, Permian crude production jumped 270% from 1.5 mmb/d to 4.0 mmb/d during the five years between first-quarter 2014 and first-quarter 2019. We forecast output to grow again by 2.3 mmb/d to 6.3 mmb/d by the final quarter of 2021. Although takeaway capacity will be tight during 2019, we do not expect a repeat of 2018 congestion. In addition to Plains Sunrise, the Enterprise Seminole pipeline, expected on line next month, will tide shippers over until the EPIC and Cactus 2 projects come into service sometime in the third quarter. Those two pipelines will be followed by the 900 mb/d Phillips 66 Andeavor Gray Oak project at the end of this year. Two projects due on line in 2020 are the 600 mb/d Permian Gulf Coast pipeline to Houston to be built by a group that includes Energy Transfer, Magellan, Marathon, and Delek and the 1 mmb/d Jupiter project sponsored by private equity group Charon System Advisors. Last on the current list is another 1 mmb/d project, the ExxonMobil/Plains/Lotus Midstream joint venture Wink to Webster pipeline that is expected on line in the second quarter of 2021. More details on each of these projects are listed in Exhibit 2. The capacity adds up to just over 5 mmb/d—more than today's crude output in the basin.

Exhibit 2 Permian Takeaway Pipeline Projects 2019-21

Project	Owners	Origin	Destination	Capacity (Mb/d)	Online Date
Seminole NGL Repurpose	Enterprise Product Partners	Hobbs TX	Houston	200	Apr-19
EPIC	Ares Mgt, Texstar, CCI & Ironwood	Orla, Midland, TX	Corpus Christi	675	600 Mb/d Q3 2019 675 Mb/d Q1 2020
Cactus 2	Orla, Wink, Midland, Crane, Plains	McCamey, TX	Corpus Christi, Ingleside	670	585 Mb/d Q3 2019 670 Mb/d Apr 2020
Gray Oak	Phillips 66 (75%) Andeavor (25%)	Reeves, Loving, Winkler, Crane TX	Corpus Christi, Sweeny, Freeport	900	Q4 2019
Permian Gulf Coast	Energy Transfer, Magellan, MPLX, Delek	Midland	Houston MEH, Nederland	600	Q1 2020
Jupiter	JupiterMLP, Charon System Advisors	Midland, Pecos, Crane, TX	Three Rivers, Corpus Christi, Brownsville	1000	Q4 2020
Wink to Webster	Plains, ExxonMobil, Lotus Midstream	Wink, Midland, TX	Baytown, Webster, Beaumont, TX	1000	Q2 2021
Total				5045	

Source: Morningstar, company presentations.

With production only expected to grow by 2.3 mmb/d over the next three years, the near doubling of takeaway capacity is clearly going to be overbuilt if completed as planned and on time. Yet many of these projects have commercial shippers attached, including major oil companies such as ExxonMobil and Chevron that are now among the largest producers in the Permian (see our recent note [Permian](#)

[Majors Expand Downstream Processing](#)). These large producers are interested in long-term stable oil flows to provide returns to investors, and they have taken an industrial approach to production in the Permian that demands secure takeaway capacity. Given all the new production, midstream companies like Plains, Energy Transfer, Magellan, and Enterprise are also eager to secure new shippers with pipeline projects that feed their downstream terminal facilities in Cushing, Houston, and Nederland.

Robbing Peter to Pay Paul

Nevertheless, the extent of the anticipated overbuild is such that consolidation of some of these projects seems inevitable. The Permian Gulf Coast and Wink to Webster pipelines that have similar origin and destination points have been cited as two projects that could be combined. If there's no consolidation, then midstream companies could be forced to discount term contract fees on their new pipes to attract business away from older systems that charge higher rates. That amounts to robbing Peter to pay Paul. The beneficiaries of such capacity competition are producers and shippers that secure lower contract rates. Midstream companies lose out by discounting their term rates for new customers and potentially losing existing shippers to cheaper competitors. They may hope to boost returns from new shippers once capacity is tight again or to make up long-haul discounts through extra fees from storage and terminal charges as they move barrels from wellhead to refinery.

Wave of VLCC Dock Projects

During this next phase of Permian expansion, we believe access to adequate dock capacity in Corpus Christi or Houston plays an important part in attracting term shippers to new pipeline projects (see our December 2018 note [Pipeline Plans Suggest Tsunami of Crude Exports](#)). That's because most new shale production is headed to export markets in Europe and Asia. The desire to access export markets competitively by keeping freight costs down lies behind the wave of very large crude carrier, or VLCC, dock facility announcements during the past six months. We count eight current proposals to build offshore buoy systems or deep-water docks along the Gulf Coast. These dock projects suggest that pipeline systems need to boast access to deep-water loading facilities to attract new shippers.

Summary

Permian production growth in the past five years has been phenomenal, and the basin still has huge potential. Midstream companies have mostly kept pace with production growth, although inefficiency in the build-out process has caused takeaway congestion three times, with the 2018 crunch having the most impact on prices. Perhaps because of that painful experience, the current backlog of new pipeline projects represents double the capacity production forecasts are calling for. If all the projects are completed on time, the result will be fierce competition for shippers that will hurt pipeline companies and benefit producers in the short term. Until the next time growing output runs up against constraints and the cycle repeats. ■■■

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