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# Crude Pipeline Developers Hit the Brakes

## Production rout delays projects.

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

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**Data Sources for This Publication**

EIA

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

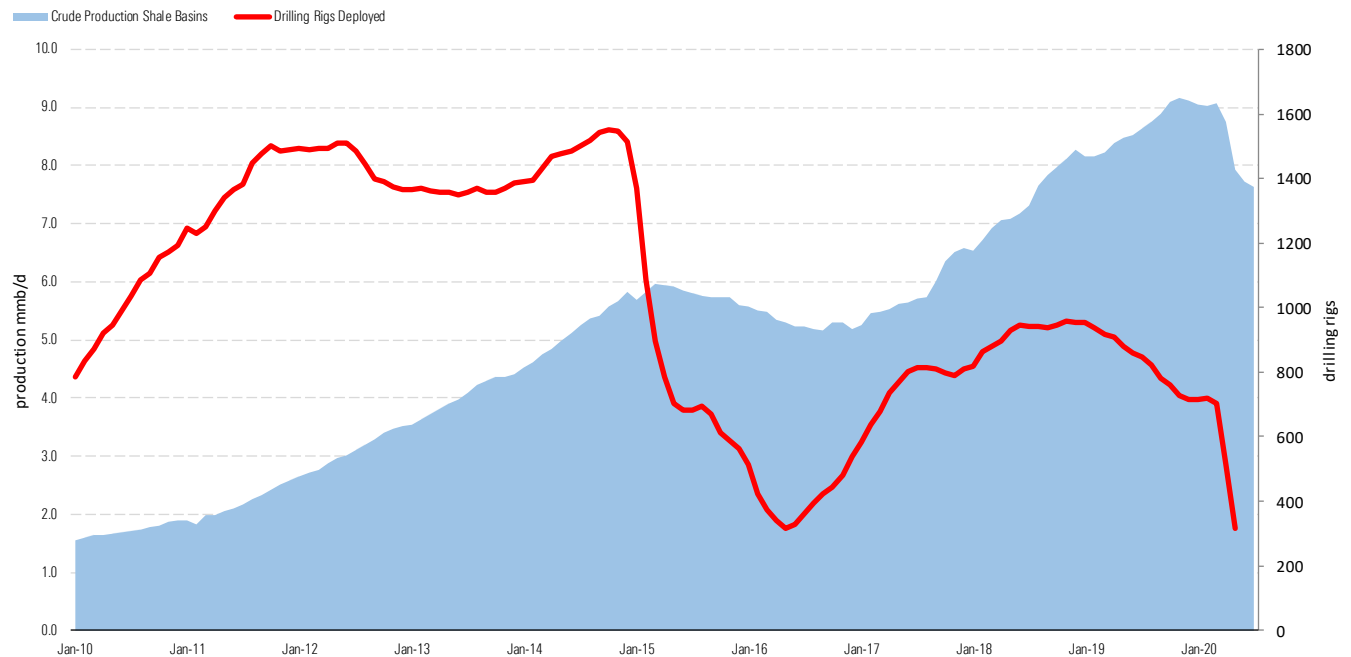
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**Midstream Curtailment**

According to a database of projects recently published by the Energy Information Administration, 2020 was supposed to be a record year for crude pipeline build-out. The negative impact of the coronavirus on oil prices and domestic production have now put paid to most of those plans. Even if projects aren't on hold, they're delayed by developers. This note provides analysis of project status data to understand the extent of midstream pipeline curtailment this year and next.

**Shale Production**

Exhibit 1 shows monthly shale crude production since January 2010 (blue shaded area) and drilling rigs deployed (red line) as of June 15, 2020. The data is from the EIA's monthly Drilling Productivity Report that covers the seven major shale basins. Crude production in these basins has fallen 17% from a peak of 9.61 million barrels/day in November 2019 to a forecast 7.6 mmb/d in July 2020—down 1.5 mmb/d in nine months. The number of drilling rigs in shale basins peaked at 958 back in November 2018 and has fallen since by two thirds to 316 rigs in May 2020—dropping 45% in the past two months to the lowest value ever in the shale era. Looking forward, the EIA's June Short-Term Energy Outlook report anticipates annual average total United States crude output will fall by 1.0 mmb/d this year to 11.2 mmb/d in 2020 and 10.9 mmb/d in 2021.

**Exhibit 1** Shale Crude Production and Rig Count Since 2010

Source: EIA, Morningstar.

These drilling and production curtailments due to COVID-19 have already taken a heavy human toll. Cuts in operating and drilling budgets by U.S. producers have cost about 84,000 jobs in oil services, drilling and extraction, and pipeline companies since early February according to a Rystad Energy Report citing the Bureau of Labor Statistics data.

With production curtailments causing output to drop rapidly and a virtual furlough on new drilling, recovery to levels close to a year ago will require significant investment in new drilling just to recover legacy well production losses. These legacy losses reflect the rapid decline in the rate of existing shale wells that have to be replaced by new completions just to keep production level and were running at 1.3 mmb/d in May across all shale basins, according to the EIA's DPR.

### Infrastructure

It follows that the slowdown in existing and future production directly impacts the need for new crude infrastructure. If production is lower, existing pipelines can carry the output to market and new or planned projects are no longer needed. Midstream companies are somewhat reticent about canceling projects or announcing delays, so the number of such announcements has been limited since the lockdown began to seriously impact oil prices and production in April. An objective source of data about project progress is the EIA's biannual liquids pipeline database; the latest version was released on June 4. The report tracks all publicly announced pipeline projects including new construction, repurposed pipes (for example from gas to liquids), capacity expansion and direction reversals.

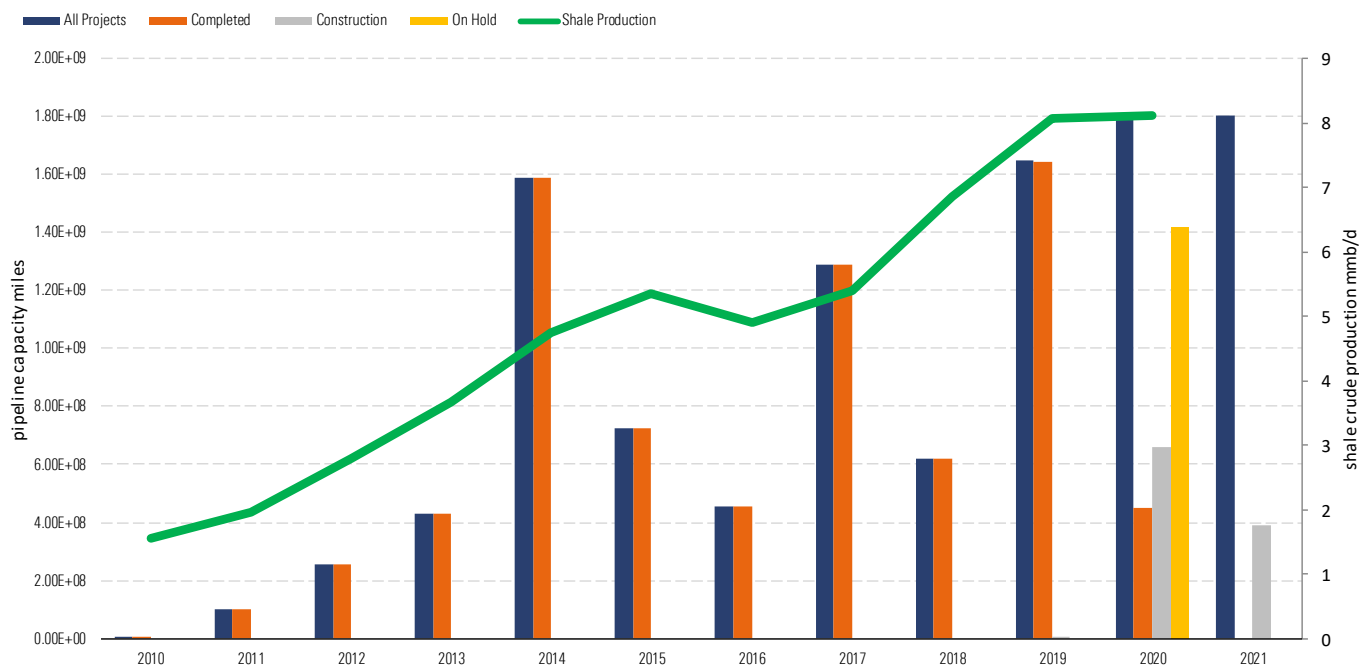
We filtered this database for crude oil projects sorted by the starting year, ignoring projects starting or ending in Canada or in the offshore Gulf of Mexico to concentrate on the impact of shale curtailment. To give long-distance and high-capacity projects appropriate weighting with shorter- or lower-capacity pipelines we multiplied capacity by project miles to create a “project capacity miles” metric. Where necessary we added estimates of mileage and capacity absent from the EIA projects database.

### **Brakes On**

Exhibit 2 shows all crude pipeline projects in continental U.S. (not including offshore or projects originating in Canada) in the EIA database by completion status since 2010. Most projects are complete except those that begun in 2019 and 2020 as well as those planned to start in 2021. Over the period, since 2010, pipeline construction in the lower 48 appears well-correlated with the growth of annual average crude production as estimated by the EIA’s monthly DPR shale report (green line, right axis in Exhibit 2). The decline in pipeline projects that followed an earlier crude price crash and subsequent production decline in 2015 and 2016 is clearly visible.

Stalled production at the end of 2019, as well as this year’s declines outlined above, have put the brakes on pipeline project completions this year and next. The data shows 2020 was expected to be the biggest year so far for crude projects based on capacity miles. As of June 4, however, only 25% of project capacity miles planned to start in 2020 have been completed, consisting primarily of the 600 mb/d EPIC pipeline from the Permian Basin in West Texas to Corpus Christi, Texas as well as a few smaller projects in the Rockies.

**Exhibit 2** Crude Pipeline Project Capacity Miles and Shale Production Since 2010



Source: EIA, Morningstar.

**Under Construction**

A further 37% of remaining capacity miles planned for this year is still under construction—made up of eight projects, the largest of which are the 300 mb/d expansion of Tallgrass Energy’s Pony Express pipeline from Guernsey, Wyoming to Cushing, Oklahoma and the 450 mb/d Enterprise Midland, Texas to Echo, Texas expansion from the Permian to Houston, Texas. In addition, the 300 mb/d reversal of the Marathon-operated Capline pipeline between Patoka, Illinois and St. James, Louisiana is still expected to be constructed next year and the latest 450 mb/d expansion of Enterprise’s Midland to Sealy, Texas pipeline has been officially delayed until 2021. These projects under construction are represented by the gray columns in Exhibit 2.

**On Hold**

Another three pipelines announced to come online by the end of 2020 have yet to start construction and can therefore be assumed to be at least partially delayed. The largest of these is the 1 million barrels/day Jupiter Pipeline between the Permian Basin and Brownsville, Texas via Corpus Christi, Texas. The other two are the 85 mb/d Plains and Delek joint-venture Red River expansion from Cushing, Texas to East Texas and the Marathon Swordfish project from St. James, Louisiana to Clovelly, Louisiana. In addition, the EIA database identifies five projects officially placed on hold by their developers—meaning they don’t have an official start date at the moment. These five represent 40% of the capacity miles planned for both 2020 and 2021 (yellow column in Exhibit 2). The largest of these on-hold projects is the 500 mb/d expansion of the Energy Transfer Dakota Access pipeline between North Dakota and Patoka,

Illinois. This project only involves adding pump capacity rather than new pipeline, so it is not a significant investment. It's currently held up by permitting issues in Illinois but reduced crude output from the Williston Basin in North Dakota may lead Energy Transfer to delay it further. Two of the projects on hold sponsored by Phillips 66, the Liberty pipeline from Wyoming to Cushing and the Ace pipeline from St. James, Louisiana to Clovelly, Louisiana were deferred in March 2020. The other two projects on hold were planned between Cushing and Texas—the Plains All America-sponsored Red Oak project and the Magellan-sponsored Navigator project.

### **Conclusion**

The EIA database evidence suggests the majority of pipeline projects announced for completion in 2020 and 2021 have now ground to a halt. Only a few are still under construction. The rest are either officially on hold or unofficially delayed. It remains to be seen whether shale output will recover to new production records as it did in 2017 and 2018. Since new drilling is required just to fill the deficit caused by legacy well depletions, we don't expect a recovery to 2019 production levels for at least two years, even if higher prices incentivize drilling. Many of the pipeline projects that have fallen by the wayside this year are supported by minimum volume commitments from shippers that require payment if not fulfilled. That means the fate of midstream pipeline companies in this environment is closely tied to that of producers. We expect the result to be consolidation in both sectors of the oil market. ■■■

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**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

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