PADD 1 Distillate Shortage Threatens Winter Price Spikes
Shortfall since PES refinery shutdown in June.

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

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

Deficit Could Double

Refined product supply in Petroleum Administration for Defense District 1, which comprises Atlantic Coast states from New England to Florida, has been in trouble all year. Maintenance issues beset refineries during the first quarter, and then in June, the region's largest refinery, a 355 thousand barrel/day plant owned by Philadelphia Energy Solutions, was shuttered after a fire. The loss of the PES output would've been manageable if overseas imports had taken up the slack. But although gasoline imports increased, distillate shipments have been lower than normal since June. As a result, the PADD 1 distillate market has been drawing 163 mb/d from inventory since mid-August, according to weekly Energy Information Administration reports. That deficit will increase when the weather turns cold and heating oil demand kicks in. With stocks below 10-year lows and market prices not attracting new supplies, the shortage threatens price spikes this winter. A threatened strike by union workers at the Phillips 66 Bayway refinery could make matters worse. This note looks at what's behind the PADD 1 distillate shortage.

Previously on PADD 1

We've tracked the plight of refiners in PADD 1 over the past three years, beginning with a comprehensive outlook on refining in the region in October 2016 (East Coast Refining After the Shale Boom). In April, we looked at how and why PADD 1 refiners reduced throughput during the first quarter of this year, including the impact on PBF Energy's two refineries in Delaware City, Delaware, and Paulsboro, New Jersey, of Canadian heavy crude curtailments (East Coast Refiners Lose Canadian Heavy Card) and the impact of low PADD 1 refinery throughput on refined product supply (February Shutdown Threatens PADD 1 Product Supply). In June, we described how the PES closure would mostly affect the Central Atlantic refining district fed by Philadelphia refineries (Central Atlantic Region Most Impacted by PES Closure). At that time, it looked as though an increase in refined product imports would resolve any product shortage issues in the short term with the potential reversal of the Buckeye Laurel pipeline offering prospects for increased product shipments from the Midwest to help make up for the loss of PES output in the longer term.

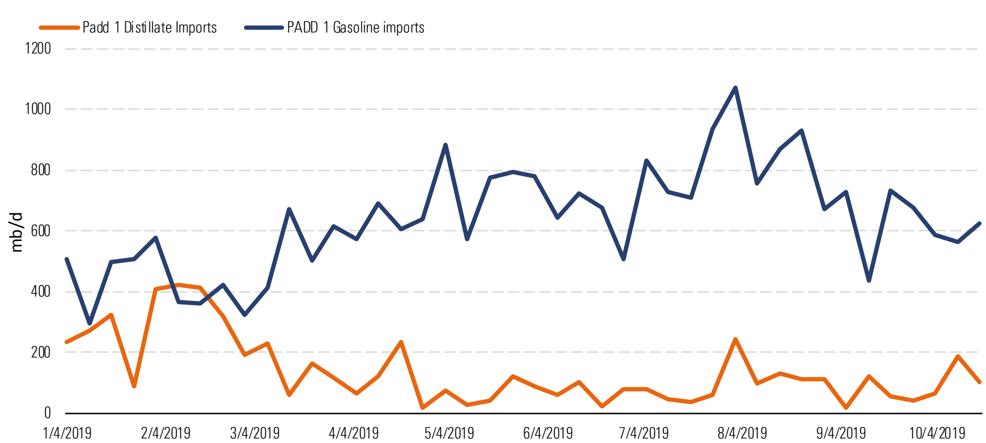
PADD 1 Supply

We begin this analysis with a recap of the big picture for PADD 1 refined product supply of gasoline and distillate. Distillate includes diesel used for road transport and heating oil used primarily for home heating. PADD 1 is net short of refined products because refining capacity that was 1.2 million barrels/day before the PES closure only produces about 800 mb/d of gasoline and distillate, according to 2018 annual average data from the EIA. That volume met only 20% of regional demand for 2.9 mmb/d of gasoline and 1.3 mmb/d of distillate in 2018. The shortfall was primarily met with supplies shipped into PADD 1 by pipeline, barge, and tanker from the Gulf Coast PADD 3 region, which averaged 1.8 mmb/d of gasoline and 0.8 mmb/d of distillate in 2018—the majority moving on the 2.7 mmb/d Colonial pipeline system that runs up the East Coast from Houston to Linden, New Jersey. The balance of PADD 1 demand last year was met by overseas imports, which averaged 0.6 mmb/d of gasoline and 0.15 mmb/d of distillate during 2018. The difference this year is that refinery crude throughput averaged only 989 mb/d between January and June and just 834 mb/d since the PES fire, leaving the region increasingly reliant on outside supplies.

Falling Imports

Filling the gap left by the PES shutdown means replacing significant gasoline and distillate supplies to the Central Atlantic area. As our July analysis concluded, the best short-term source of those extra barrels is overseas imports. That's because the cheapest domestic supply route to PADD 1 is the Colonial pipeline, which typically runs full, and the alternatives of barge and tanker shipments from the Gulf Coast are more expensive than imports because of the Jones Act requirement to use costlier U.S. flag ships between domestic ports. But despite being the best option available, and although there was a jump in gasoline imports, a counterintuitive decline in distillate imports since the PES fire has left PADD 1 short of the latter fuel. Exhibit 1 shows weekly gasoline (blue line) and distillate (orange line) imports to the East Coast region since January. Gasoline shipments before mid-June averaged 567 mb/d, increasing since by 158 mb/d to an average 725 mb/d. At the same time, distillate imports that averaged 177 mb/d before mid-June declined since then by 88 mb/d to 89 mb/d through Oct. 18, according to EIA. This anomaly in balancing PADD 1 distillate supplies is partly explained by the PES shutdown happening during the summer driving season, when gasoline supply is top of mind, and that distillate demand is higher during the winter heating months in the Northeast. But market price signals are also to blame for the lack of replacement distillate shipments into PADD 1 since the PES fire.

Exhibit 1 Gasoline and Distillate Imports to PADD 1



Source: EIA.

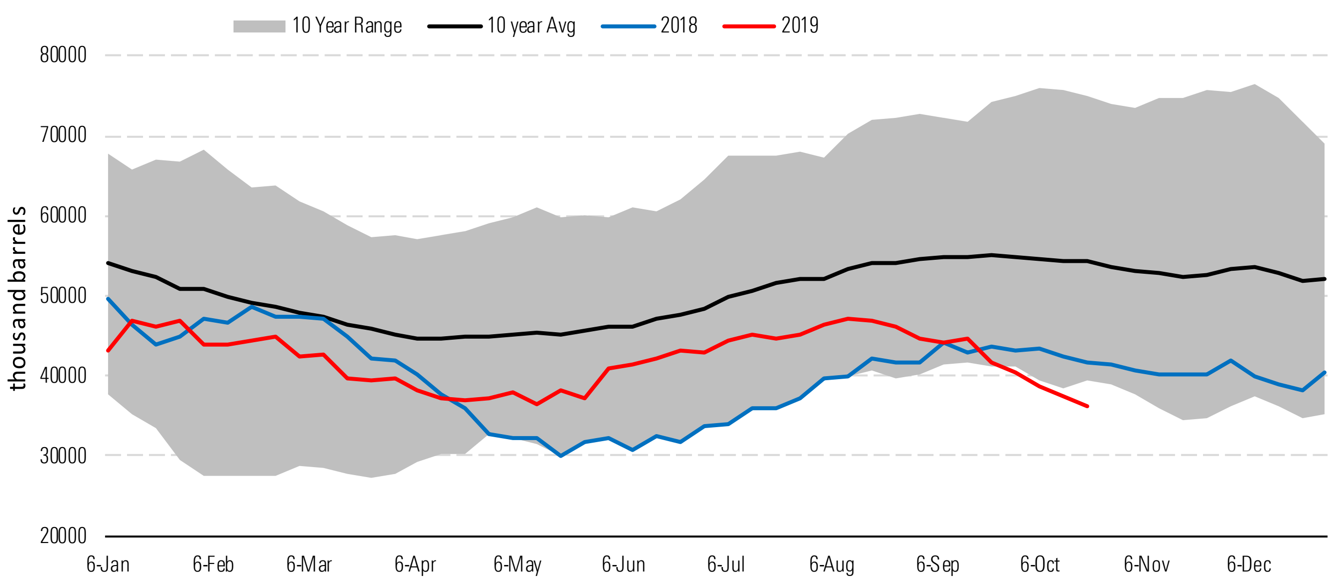
Price Signals Fail

The typical source of distillate imports to PADD 1 is Canadian or Northwest European refineries. Yet this year through October, the average premium of prompt-month CME New York delivered ultra-low-sulfur diesel futures over the equivalent ICE Northwest Europe low-sulfur gasoil contract has been just over $0.04/gallon, or $1.70/barrel. That New York premium barely covers the import freight cost, explaining the dearth of inbound shipments. The New York diesel price premium over the Gulf Coast averaged about $0.05/gallon between January and October this year and $0.045/gallon since June, removing financial incentive to ship more product on the Colonial pipeline, which has a $0.06/gallon tariff, or by more expensive Jones Act compliant barges and tankers. Shipping distillate into PADD 1 is further discouraged by the backwardated shape of the CME diesel futures curve, where prices for delivery in November are higher than for any month between December and August 2020. The forward price discount reduces the incentive to ship distillate to PADD 1 and removes any incentive to store supplies once they arrive in the region.

Shrinking Inventory

The net shortage of distillate in PADD 1 and the failure of imports or other domestic supplies to take up the slack has left inventories hemorrhaging since August in the wake of the PES shutdown. Weekly EIA data shows PADD 1 distillate inventories down over 11 million barrels over the past two months between Aug. 11 and Oct. 18. That works out to a daily drawdown of 163 mb/d. The Oct. 18 inventory of 36.1 million barrels is now well below the 10-year range for this time of year and 34% below the 10-year average even as inventories are supposed to be higher coming into the winter season (Exhibit 2).

Exhibit 2 Seasonal Distillate Stocks in PADD 1



Source: EIA, Morningstar Commodities.

Polar Vortex or Strike?

Given the low inventory levels for this time of year and a market structure that is not yet attracting new supplies to make up the regional shortfall, the advent of cold weather in the Northeast will push up distillate prices to encourage new domestic or import shipments. If there is a prolonged period of cold weather, the lack of inventory could cause supply disruption in those parts of the Northeast still reliant on home heating oil. Aside from Mother Nature, the net distillate shortage in PADD 1 is likely to be compounded by the upcoming International Maritime Organization regulations reducing the sulfur levels in ship bunkers from January 2020 onward. That regulation is expected to require additional low-sulfur diesel supplies to blend high-sulfur fuel oil into compliant ultra-low-sulfur fuel oil. Market expectations are that IMO 2020 will raise diesel prices generally, meaning that PADD 1 prices will have to push higher to compete. Finally, a threatened strike by workers at the 258 mb/d Phillips 66 refinery in Bayway, New Jersey could knock out the region's largest remaining plant after negotiations over a new contract broke down October 17. That would accelerate product shortfalls and threaten a significant runup in prices. The net result of these ongoing supply threats will be higher diesel and heating costs in PADD 1 this winter with the distinct possibility of price spikes in the case of a polar vortex event.

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For More Information

+1 800 546-9646 North America
+44 20 3194 1455 Europe
commoditydata-sales@morningstar.com

MORNINGSTAR®

22 West Washington Street
Chicago, IL 60602 USA