Central Atlantic Region Most Impacted by PES Closure

Refinery shutdown means higher product prices.

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Data Sources for This Publication
U.S. Census
EIA

To discover more about the data sources used, click here.

Increased Imports

The catastrophic fire and subsequent closure of Philadelphia Energy Solutions' 335,000 barrel/day refinery in Philadelphia, Pennsylvania, represents the loss of 16.5% of gasoline and 27% of distillate supply to the Department of Energy Petroleum Administration for Defense District 1B Central Atlantic region. The fire and closure of PES caused CME Nymex gasoline prices to jump 8% and diesel prices to increase 4% between June 20 and July 1 with further increases to be expected this summer as supplies tighten. The loss of PES leaves a large gap in supplies that will be filled by increased imports in the short term but could prompt expansion to existing pipelines supplying the region. This note reviews the market impact of the PES loss.

In an April note, "February Shutdown Threatens PADD 1 Product Supply," we described how outages at Atlantic Coast refineries earlier this year threatened shortages of refined products and higher prices. Reduced heavy Canadian crude throughput at PBF Energy's Delaware City, Delaware, and Paulsboro, New Jersey, refineries due to underwater rail economics made matters worse. Crude runs at PADD 1 refineries have averaged 81.5% of capacity between January 1 and June 21, 2019, according to Energy Information Administration weekly data versus 88.7% during the same period last year. So far, both gasoline and diesel inventories are below their 10-year averages, and we expect the supply position to tighten further this summer.

Central Atlantic

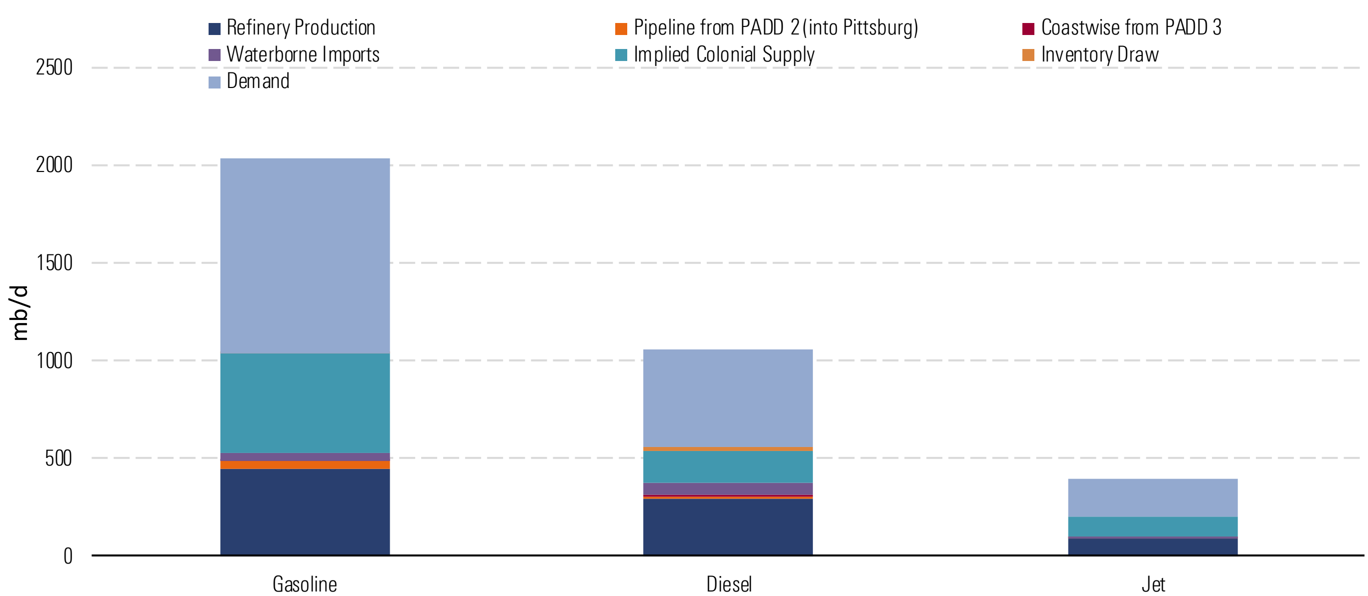
The PADD 1B Central Atlantic region consists of New Jersey, Pennsylvania, Delaware, Maryland, New York, and the District of Columbia. Based on Energy Information Administration consumption data, estimated demand in the region during 2018 averaged 1.0 million barrels/day for gasoline, 0.5 mmb/d for distillate and 0.2 mmb/d for jet kerosene. This demand was primarily supplied by a combination of local production, pipeline supplies from outside the region, shipments up the coast from Gulf Coast refineries, and imports into Philadelphia and New York.

In 2018, the five Central Atlantic refineries (Phillips 66 Bayway, PES, PBF Delaware, PBF Paulsboro, and Monroe Trainer) processed between them an average 958 mb/d of crude to produce 450 mb/d of gasoline, 290 mb/d of distillate, and 86 mb/d of jet kerosene based on average yields for the district over the year. Imports into New York and Philadelphia averaged 62 mb/d of diesel, 38 mb/d of gasoline, and 8 mb/d of jet according to U.S. Census data. Pipeline flows from Ohio in PADD 2 into the Pittsburg region in Western Pennsylvania were estimated by EIA to average 33 mb/d of gasoline, 15 mb/d of diesel, and

3 mb/d of jet fuel. During 2018, Central Atlantic gasoline inventories were drawn down by 2 mb/d and diesel by 18 mb/d.

The balance of Central Atlantic supply comes from Colonial pipeline, a 5,500-mile system stretching from Houston, Texas, through the Southeast to Greensboro, North Carolina, and then north to Linden, New Jersey, that ships over 2 mmb/d of refined products. The 885 mb/d Line 3 section of Colonial between Greensboro and Linden feeds terminals in Philadelphia, New Jersey, and New York with distillate and gasoline. There is no public data for deliveries to each point on Colonial, so we estimated supply into the Central Atlantic region by balancing other sources of supply with regional demand. That calculation produced estimated Colonial flows into PADD 1B of 511 mb/d of gasoline, 171 mb/d of diesel, and 103 mb/d of jet/kero during 2018. Exhibit 1 shows the Central Atlantic region refined product balances.

Exhibit 1 Central Atlantic Refined Product Supply/Demand Balance



Source: EIA U.S, Customs, Morningstar.

During 2018, the PES refinery produced an estimated 150 mb/d of gasoline and 134 mb/d of distillate fuel (mostly diesel with a smaller volume of jet kerosene). These volumes represented about 16.5% of Central Atlantic gasoline demand of 1.0 mmb/d (adding 10% ethanol blend to the PES production) and 27% of the distillate market. The loss of gasoline is significant, coming as it does in the middle of the summer driving season. The loss of distillate potentially has an even bigger impact next winter because many Central Atlantic households still rely on distillate for home heating. The International Maritime Organization's implementation of new low-sulfur ships bunker regulations in January 2020 is expected to tighten low-sulfur diesel supplies this winter, threatening East Coast consumers with higher prices and possible supply shortages.

Imports

In the short term, replacing PES refined product supplies relies on increasing imports into New York and Philadelphia. Although coastwise shipments from Gulf Coast refineries would appear to be more readily available, these could be more expensive than imports from further afield because of the Jones Act shipping requirement that movements between domestic ports be made on U.S. flag vessels that cost more to operate than international vessels. Additional imports to the U.S. East Coast could come from Canadian Atlantic Coast refineries to the north as well as from Northwest Europe. The availability of additional product from these suppliers will determine price escalation.

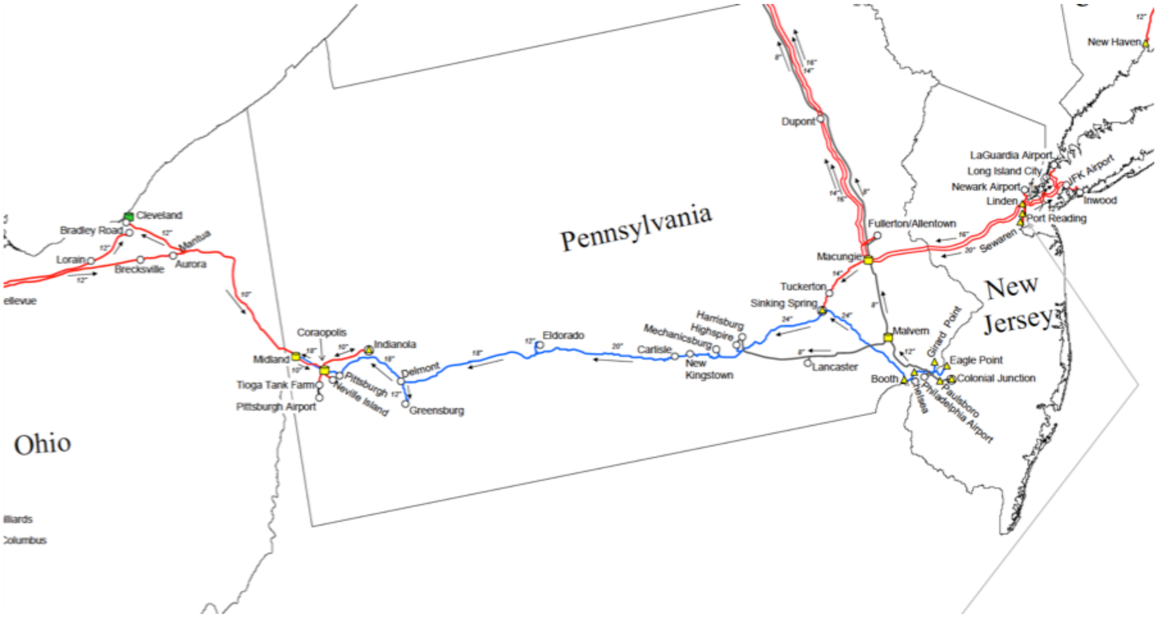
Colonial

In the longer term, assuming that PES isn't restarted, the most economic new supplies into the Central Atlantic region—assuming imports are relatively more expensive—would be pipeline deliveries on Colonial or from PADD 2 in Ohio. The Colonial pipeline is currently running close to capacity year-round, so would need to be expanded to accommodate the close to 300 mb/d of additional refined product now missing from PES. Colonial expansion has been considered in the past and pump station and other line improvements added 160 mb/d to the existing Greensboro/Linden Line 3 in 2013 and 2014. However, additional expansion now requires new pipe in the ground that would be both expensive and contentious because of the route through a highly populated area.

Laurel

That leaves possible expansion of pipeline flows into the Central Atlantic region from Ohio in PADD 2. The quickest way to accomplish those flows would be via the Buckeye-owned Laurel pipeline system that currently moves refined product from the Philadelphia region west across Pennsylvania to Pittsburg (Exhibit 2). The potential reversal of the Buckeye Laurel pipeline would allow increased flows of refined product from Midwest refineries (PBF Toledo, Husky Toledo, and Marathon's Detroit, Michigan, and Lima, Ohio, plants). These refineries have access to ample supplies of shale crude from North Dakota as well as cheap Canadian heavy supplies and could expand output to meet PADD 1 demand.

Exhibit 2 Buckeye Laurel Pipeline



Source: Buckeye

PADD 2 refineries already supply product as far as Pittsburg via the Buckeye system as well as Sunoco Logistic's Allegheny Access pipeline. In recent years Buckeye has campaigned to reverse Laurel between Coreopolis near Pittsburg and Altoona in Central Pennsylvania—so far to no avail. A Pennsylvania Utility Commission administrative law judge denied Buckeye's request to reverse Laurel in April 2018, and in June 2019, the Federal Energy Regulatory Commission denied Buckeye's request for a new west to east tariff between Coreopolis and Altoona that would have kept westbound flows running to appease the PA UC while offering bidirectional service. Major objectors to Buckeye's Laurel reversal campaign included PES and fellow Philadelphia refiner Monroe Energy—both key suppliers into Central Pennsylvania. The closure of PES may prove a turning point in the ongoing argument over Laurel reversal.

Future

In the meantime, East Coast consumers can expect to pay more for gasoline and diesel this year following the loss of PES capacity. Other refiners in PADD 1 will benefit from those higher prices and tighter supplies. But continued lack of pipeline access to domestic shale and Canadian heavy crudes still places these refineries at a disadvantage compared with their competitors on the Gulf Coast and in the Midwest. In the end, expansion of pipeline supplies from PADD 2 could increase competitive pressure on remaining plants in the Central Atlantic region.

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