Diesel inventories in the United States and around the world are low and there is growing concern about what tight supplies could mean heading into a cold winter. Below, AFPM's industry analysts explain (1) what's behind this particular supply chain challenge, (2) how U.S. refiners are adapting operations to meet consumer needs (i.e., running full out and maximizing distillate production) and (3) the role government might play in bringing about resolution.

Is There a Diesel Shortage, and How Bad Is It?

Distillate supplies are "tight," not "short."

This is an important distinction. To be short on a product implies that there isn't enough of it out there to meet everyone's needs. That's not the challenge we're facing with diesel or heating oil in the United States. On the whole, we have enough, and we continue to produce enough, but the supply chain has to move distillate from production centers to the markets where it's needed most, and if there is a sudden increase in demand or a sudden drop in supply, we might run into problems. It takes time to transport distillate by ship, rail, pipeline and truck, and, if there are sudden drops in supply or increases in demand some regions may experience temporary product shortfalls and the need to allocate or temporarily limit diesel supplies to consumers. If and when this happens, refiners and the broader liquid fuel supply chain will continue to work to get product to those areas. Panic buying or waiting until the last minute to replenish supplies are two mistakes we must avoid.

Distillate inventories are not a finite representation of how much is left in the United States (aka we aren't going to "run out" in 25 days).

There's been a flood of headlines recently focused on the ~25-days' worth of diesel currently in storage in the United States. Too many people with big platforms are making the mistake of interpreting this data like a countdown clock. They are wrong to do this. The United States does not depend solely on diesel in inventory to supply our country's daily needs. Refineries produce diesel every day—about 5 million barrels per day on top of the diesel we have in storage—and these production volumes are primarily what's satisfying the market. The reason why inventory matters and why we don't want to be glib about declining volumes is because distillate in storage is helpful insurance, like a rainy-day fund. Still, even the combination of distillate in storage and new distillate production doesn't mean that every single region in the United States will be insulated from temporary disruptions. Stored product might not be close to areas with particularly tight supplies and there might be additional transportation bottlenecks that make it harder to get distillate to every corner of the country.

Distillate supplies are tight because of a post-pandemic imbalance between supply and demand.

All global commodity markets reflect the balance or imbalance between supply and demand. Both global crude oil production and refining capacity fell significantly over the course of the pandemic. In the aftermath, U.S. demand for distillate has completely returned to pre-pandemic levels. Crude oil production and refining have not. Refining, specifically, saw the permanent shuttering or conversions of several facilities around the world in the last couple years so there is less overall refining capacity available to meet today's fuel demand. The refining sector is in the midst of a global rebalancing. New refineries and refinery expansions are preparing to come online, but this will not be immediate, nor will most of these projects be located in the same markets where petroleum refining capacity was lost, so the fuel supply chain will need to adapt.

Certain regions—including the U.S. Northeast and California—are more exposed in a tight-supplied market. Europe is also in a vulnerable position.

Whenever fuel supplies are tight compared to demand, prices increase. But the price story is bigger and more complex than that. There are additional costs that must be factored in when it comes to securing product and supplying regional markets, one of which is transportation. It costs more to deliver product to isolated regions with limited refining and/or pipeline capacity, so product sold in those regions reflects those higher expenses.

In the United States, New England has no refineries and essentially no pipeline connectivity to major U.S. refining centers. Product needs to move in by much more expensive means, primarily via marine vessels from the global market (it would take 5 days for a marine delivery from Quebec, 10 days from the Gulf, and 20+ days if product was first transported from the Gulf to the mid-Atlantic via pipeline and then via marine vessel to New England). Given current distillate production from U.S. refineries, there is enough to keep New England supplied—providing there are enough Jones Act vessels to get it there—and there is some supply in storage, but it's possible high seasonal demands and Jones Act constraints could cause temporary disruptions.

Unlike New England, California is home to significant fuel refining capacity. However, California is also severely disconnected from the rest of the U.S. refining system and, therefore, must be largely self-sustaining. When in-state refineries experience disruptions, the California market supplements with imports. Buying anything from further away costs more to transport. It always does.

Europe experienced considerable refining capacity losses amid the pandemic and now faces uncertainty regarding any refined product previously supplied by Russia. To supply European consumers, regional inventories are being tapped and product is being imported from further away in the global market.

Supplies are more stretched for middle distillates, like diesel and heating oil, than for gasoline because global demand tends to be stronger and

more consistent for those products.

Diesel is the primary fuel for our global economy. Demand for diesel transportation fuel doesn't wane with the seasons—for example, there's no "summer driving season" for diesel like there is for gasoline. That's why, right now—fall heading into winter—we're seeing tighter diesel fuel supplies than gasoline stores, even though gasoline inventories are also low compared to the five-year average.

What Refiners Are Doing

U.S. refineries are producing as much fuel as we safely can and we're adjusting our operations to maximize production of diesel. Still, U.S. refineries cannot fix a global supply challenge alone.

For most of this year, U.S. refineries have been running full-out, committing as much of our refining capacity to fuel production as we safely and responsibly can. Our utilization rates are almost always above 90%, and they have been for the past several years with the exception of those affected by COVID. We make more liquid fuels and refined products every day than any other country. In fact, U.S. refineries make more refined products every day than the U.S. market consumes. High utilization rates like ours are only possible if refineries are in good condition and mechanically advanced. That is not the case for much of the world's refining kit, hence the much lower 82% global utilization rate.

The United States is a "gasoline-first" economy and the world's largest consumer of gasoline. Fittingly, our refineries are typically configured to maximize gasoline production, but we do have flexibility. Because of sharp demand for diesel in the U.S. East Coast, Midwest and globally, U.S. refiners continue to adjust operations to maximize diesel outputs. We expect to see more trend in this direction as facilities complete their switchover to winter gasoline blends and refineries resume full operations after maintenance projects.

Planned refinery builds and expansion projects already underway will replace capacity lost during the pandemic, but those projects will take time to come online.

When all planned global refining projects come online, every bit of capacity lost during the pandemic will have been replaced, but, importantly, located in different parts of the world—where fuel demand is most expected to grow.

In the U.S. Gulf Coast region, there are some refinery expansions underway that will add close to 350,000 barrels of daily capacity. Because of the location of these projects, however, the U.S. Northeast and West Coast will still experience the same challenges in finding economic ways to secure and transport fuel products to meet regional demand. A strategy to improve transportation policies and promote and expand U.S. pipeline projects and other competitively priced infrastructure would better position these regions and the consumers who live there.

The Role of Policy

Tight supplies and low fuel inventories are serious because they mean we have less flexibility to meet demand in the event of unforeseen disruptions or acute demand spikes. The federal government has reportedly been exploring a few courses of action to build up fuel inventories. Refiners feel very strongly that some of the paths being considered by the Biden administration would cause more harm to the global market and consumers and inadvertently contribute to supply shortages. We cover the downsides here.

One of the takeaways every state governor and federal policymaker should glean from our current situation is that policy environments that are hostile to liquid fuel production and energy infrastructure, like pipelines, can lead to greater energy insecurity and regional vulnerability. Blocking infrastructure projects, increasing operating costs for fuel manufacturers and pushing for a phaseout of refineries, irrespective of consumer demand, is poor and risky policymaking and a disservice to American consumers. While correcting these challenges will take time, the Biden Administration can immediately take action to grant Jones Act waivers to increase the number of vessels capable of delivering American-refined diesel fuel and heating oil to consumers in the mid-Atlantic and New England.

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