Hurricanes and Retail Fuel Prices

NOAA Forecasts 2014 Atlantic Hurricane Season

In May, the National Oceanic and Atmospheric Administration (NOAA) predicted a "near-normal" or "below-normal" hurricane season for the Atlantic region. NOAA specifically forecast a 70% likelihood of 8–13 storms worthy of being assigned names, 3–6 of which could become hurricanes, and 1–2 of which could be considered major hurricanes. NOAA reported that the region has experienced higher than normal hurricane activity in 12 of the last 20 years, but this pattern will be offset by the El Niño weather pattern and cooling temperatures of the Atlantic Ocean. The effect of major storms on the U.S. petroleum infrastructure and retail fuel prices is always of interest. This document is intended to provide some context on how storms impact the U.S. market. The U.S. Energy Information Administration (EIA) has also published a report on how weather and other events can cause fuel supply disruptions.

When Storms Hit the Gulf Coast

As past experience shows, it only takes one storm to affect the fuels market. When storms hit the Gulf Coast, they have the potential to resonate throughout the nation's fuels markets. According to EIA, the Gulf of Mexico receives approximately 57% of the crude oil imports that enter the United States each day and accounts for nearly 20% of domestic crude oil production through off-shore operations. Combined, the Gulf is responsible for nearly 38% of all oil used in the United States, and this does not take into consideration on-land production located near the Gulf of Mexico and subject to the effects of Gulf Coast storms.

Furthermore, refineries located in Texas and Louisiana along the Gulf Coast represent 45% of U.S. refining capacity. This region distributes significant quantities of finished motor gasoline and diesel fuel to the other regions of the country via pipelines that originate in the Gulf Coast region. In 2013, nearly 30% of the finished motor gasoline and distillate fuel consumed in the U.S. was distributed from this region to other parts of the country.

Gulf Coast Petroleum Infrastructure

When a hurricane hits the Gulf Coast, in addition to potentially disrupting crude oil production, import delivery and refinery operations, it can take pipelines offline for a period of time. First, there is the temporary shutdown during the hurricane itself and the resulting loss of power to the pumping stations during and after the hurricane. Second, pipelines must remain full to prevent the mixing of products. Without refinery production keeping supplies steady, pipelines must slow down deliveries, creating temporary shortages at terminals along their delivery route.

When Storms Hit the East Coast
The East Coast, although not the hub of petroleum-related activity compared to the Gulf Coast, represents critical infrastructure. According to EIA, the East Coast consumes 57% of all finished motor gasoline in the nation and 31% of the distillate fuel. Of this demand, 42% comes from refineries in the region, 31% from pipelines that originate elsewhere in the county and 27% from imports. Major pipelines, which carry more than 800,000 barrels per day of refined product, run up the East Coast. In addition, the New York Harbor is a highly active port that receives approximately 600,000 barrels per day. When a major storm affects the East Coast, it can shut down the New York Harbor, disrupt these pipelines and compromise the refining infrastructure, leaving the most populated region in the United States in a very difficult situation.

If Storms Hit the West Coast
While not often a major story, there is the potential for major events (storms, earthquakes, floods, fires) to affect the West Coast fuel operations. The reverberations of such events throughout the nation may not be as evident, but can be real. California represents 7% of U.S. crude oil production, 14% of crude oil imports and is home to 17 operating refineries with a combined capacity of 1.9 million barrels per day, representing nearly 11% of the nation's refining capacity. Insulating other regions from significant effects associated with a West Coast disruption is the fact that most of the refined product produced in the region is designed specifically to meet California air quality standards and is consumed almost exclusively within California and its neighboring states (including Hawaii). If production goes offline for any reason, the West Coast may experience more dramatic market effects than other areas of the country because there are few refineries outside the area that can provide supplemental supplies. Other regions would be affected by the impact of the disruption on commodities markets and by the diversion of product to the West Coast in the event that fuel specifications are waived to allow supplemental supplies to enter the market.

Retail Price Response to Fuel Disruptions
Following a natural disaster such as a hurricane, significant attention turns to the retail price of gasoline and diesel. Supply outages, or even potential outages, can result in changes in the wholesale price of fuel that is quickly reflected at the local fuel retailer. This is often incorrectly interpreted as the retailer seeking to profit — or "price gouge" — from the situation.

Retailers have very little control over the prices they post at their locations. According to the Oil Price Information Service (OPIS), the 2013 retail markup (the difference between the wholesale cost of the fuel and the retail price charged) was only 5.4% of the retail price of gasoline. After factoring in the costs associated with selling fuel, the average pre-tax profit per gallon for a retailer in 2013 was approximately 2 – 4 cents. (For more information about contributing factors to the retail price of fuel and retailer pricing decisions, go to nacsonline.com/gasprices.)

When disruptions occur, retailers – who often receive multiple shipments each day - are susceptible to changes in product availability and volatile wholesale prices. During disasters, retailers receive frequent updates from their suppliers alerting them to changes in wholesale prices and limitations on fuel supplies in their regions. Retailers selling branded fuel may incur price increases and be limited in their access to fuel. Retailers selling unbranded fuel, however, experience the most dramatic price increases and could be denied access to volume because the refiners focus on satisfying their contractual obligations first. In either case, retail prices react.

In addition to disruptions in the production and distribution of refined product to retail, along with the associated changes in costs and prices, another major challenge in the aftermath of a storm is the lack of power.

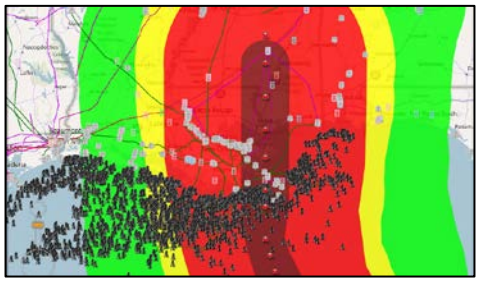
Electricity is required to operate pipelines and wholesale terminals, where fuel is loaded into trucks for delivery. Further, electricity is required to operate retail fuel pumps — even if retailers have fuel, they may not have electricity to operate their stores.

Once power is restored, many expect the system to immediately return to "business as usual," but stores may not have enough fuel in inventory to satisfy consumer demand. In the run-up to a storm, many consumers change their fuel purchasing behavior and top off their tanks in preparation. Some retailers have reported as much as a 400% increase in fuel sales in the days leading up to an anticipated storm. This depletes inventories at local convenience stores and gas stations, and causes delays in resupply efforts, prolonging the disruptions that contribute to fuel outages.

Past Experience Helps Explain Market Behavior

While it is impossible to predict what could happen to market conditions and retail prices in the event of a future hurricane, evaluating the experiences from past supply disruptions is instructive. Below are some facts about how the market has reacted to two major Gulf Coast hurricanes and Superstorm Sandy:

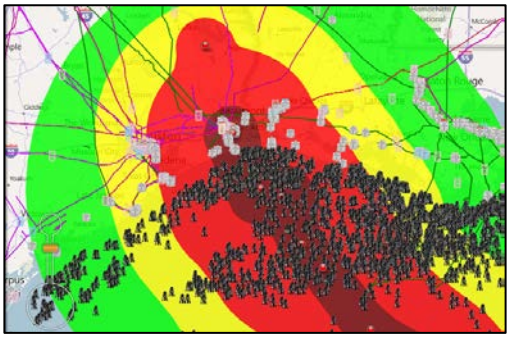
Hurricane Katrina: After Katrina made landfall on August 29, 2005, Gulf Coast oil production was down more than 88% and 10% of the nation's refining infrastructure was offline. The major pipelines originating in the area (Colonial and Plantation) were inoperable until early September, and then only at partial capacity. Owners of wholesale terminal and storage facilities did not know when they would receive additional supplies. As a result of limited supplies and continued demand, wholesale prices increased.



Hurricane Katrina

Some retailers reported wholesale price increases of up to $1.00 per gallon overnight, forcing them to increase their retail prices in response. However, competition did not allow them to fully recover their increased costs, resulting in lower margins and sometimes losses on each gallon sold. According to OPIS, the week after Katrina, the national average wholesale price for gasoline increased 19.6%, but retail price increased only 13.6%.

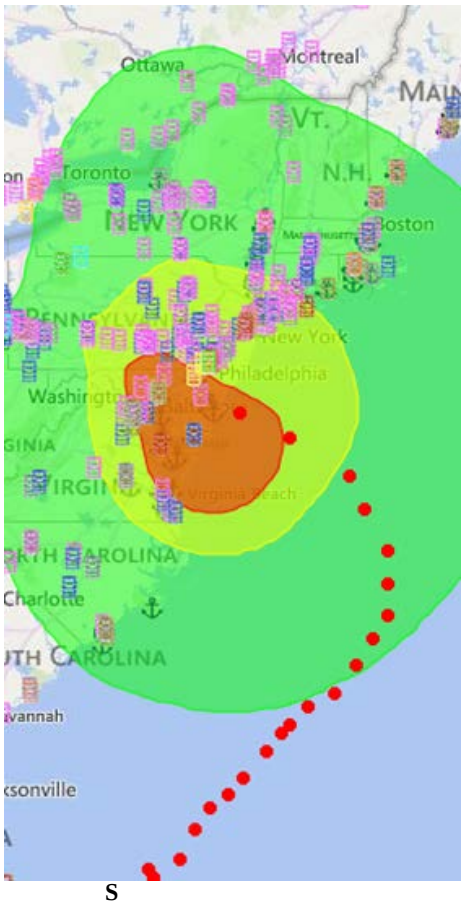
Hurricane Rita: When Rita struck the Gulf Coast on September 23, 2005, operations were still interrupted due to Katrina, with about 5% of refining capacity remaining offline. The one-two punch from Hurricane Rita shut down another 10% of the region's refining capacity. The market was protected somewhat by higher-than-average product inventories in storage, which provided some time for the refineries to come back online. Still, that week's wholesale prices nationwide jumped 9.5% and retail prices followed at 4.5%.



Hurricane Rita

Superstorm Sandy: Although not a hurricane, Sandy inflicted devastating damage to the East Coast in late October 2012. At one point, 8.3 million people were without electricity and the storm's power forced refineries to shut operations, closed down the Colonial and Buckeye pipelines, shuttered fuel terminals throughout the northeastern region and forced the New York Harbor to suspend operations. This combination of factors played havoc on the fuels market, limiting the delivery of supplies and preventing the restoration of service in a timely manner. The effect on the market, however, was different from what was experienced after recent Gulf Coast storms. The primary challenge was the lack of supply and the inability to deliver to consumers the supply that was available. The numbers indicate, however, that the disruption to the market must have reduced demand enough to help to offset inflationary pressures on prices caused by the storm. According to OPIS, the northeast witnessed a steady decline in retail prices, dropping from $3.898 at the end of September to $3.603 by the end of November.

Read more about the effect of Sandy on the retail fuels market at www.nacsoline.com.



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Superstorm Sandy