

## **Petrochemicals Factbox: Plants planning restarts post-Harvey**

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ExxonMobil on Tuesday was working to restart polyethylene plants in Beaumont and Mont Belvieu, Texas, more than a week after Hurricane Harvey's assault on the Houston area and far southeast Texas.

More than 50% of US ethylene capacity remained offline as ExxonMobil and other producers looked toward resuming operations, first ensuring they had access to electricity, water and other basics before restarting facilities. Resumption of normal production could take time as ports, railroads and other critical logistics fully restore operations in Harvey's wake.

ExxonMobil's Beaumont refinery took on some floodwater, but the chemical plant was dry and the company was initiating startup at the 1 million mt/year polyethylene plant, spokesman Aaron Stryk said Tuesday. He had no update on the shuttered steam cracker at Beaumont, which can produce 827,273 mt/year of ethylene.

Stryk also said ExxonMobil's polyethylene plant in Mont Belvieu, about 30 miles east of Houston, was "progressing startup activities" after shutting last week.

ExxonMobil manufactures more than 1 million mt/year of polyethylene at the plant, and will add another 1.3 million mt/year of capacity with two plants currently undergoing commissioning. The company also aims to add another 650,000 mt/year of polyethylene capacity at Beaumont by 2019.

Harvey's assault knocked out pumps at Beaumont's two water plants early Thursday, leaving the waterlogged city -- and its industrial facilities -- without running water. Engineers from ExxonMobil and two other companies on Friday rigged a temporary pump to move water from the swollen Neches River to a water plant that restored some running water for toilet flushes and bathing.

### **PRODUCTION**

\* Formosa Plastics said on Tuesday that one of the olefins crackers at its Point Comfort, Texas, complex had begun a startup sequence, according to a notice on the company's website. Formosa said additional in-plant utilities were operating as well, and management teams were assessing production resumption constraints, such as rail service availability and port operations.

\* LyondellBasell's chemical plants along the US Gulf Coast were in post-Harvey "recovery phase," a spokeswoman said Tuesday. Spokeswoman Chevalier Gray declined comment on restart timelines or production rates for operations in Corpus Christi, Victoria, Matagorda and along the Houston Ship Channel. Lyondell said in a regulatory filing it had initiated "planned startup activities" for its 772,727 mt/year cracker at its complex in Corpus Christi, Texas, where Harvey came ashore August 25 as a Category 4 hurricane. The filing with the Texas Commission on Environmental Quality indicated flaring could last to October 1.

\* Over the weekend, Arkema ignited six of nine containers that held warming organic peroxides that had not yet ignited on their own to allow them to burn out. The company shut the plant August 25 as Harvey reached the middle Texas coast, and kept the peroxides in containers that had to be refrigerated to keep the chemicals stable. Harvey swamped the site with six feet of water and knocked out multiple refrigeration methods in nine containers, prompting emergency officials to impose a 1.5-mile evacuation zone around the plant and wait for the chemicals to ignite and burn as they warmed up and degraded. Three containers did so on their own, but the company decided Sunday to ignite the rest. Market sources said the plant shutdown likely will affect PP, PVC and PE markets.

\* Enterprise Products Partners said Tuesday that its Mont Belvieu complex had resumed commercial service, including six propylene splitters. The company's marine terminals on the Houston Ship Channel, including its ethane and polymer-grade propylene export facilities, also had resumed loadings.

\* Huntsman is in various stages of startup at four Texas chemical sites that had been shut for Harvey, with operations resumed at Houston and Freeport locations, a company spokeswoman said Tuesday. The Chocolate Bayou, Dayton and Port Neches sites in Texas were expected to resume full operations as engineering and pre-startup safety checks are completed, and raw materials become available, Huntsman spokeswoman Nancy Turner said. Another company spokeswoman had said late last week that the Conroe specialty chemicals site had begun restart operations.

\* Dow Chemical's Seadrift, Texas, site remained shut Tuesday, while its Freeport, Texas, site was operational. Company spokesman Jarrod Erpelding said Dow may have to cut rates as logistics necessary to receive raw materials and move output may be limited. Dow makes 1.68 million mt/year of ethylene at its Freeport site, and aims to increase that by 1.5 million mt/year with a new cracker slated to start up soon. Shell's Deer Park refinery and chemical complex also remained shut, as did DuPont's cracker in Orange, Texas, which became part of Dow's lineup when the companies' \$130 billion merger closed August 31.

\* BASF's joint-venture complex in Port Arthur was still operating at reduced rates Tuesday, spokesman Bob Nelson said in an email, though the company could shut down as widespread flooding continued to prevent inbound and outbound logistics to receive raw materials and move products to markets.

#### Major US petrochemical complexes impacted by Harvey

Company/Complex Location Ethylene kt/yr Status

ExxonMobil Baytown Baytown, Texas 2,143 Partially operational

Dow Chemical Freeport Freeport, Texas 1,000 Restarting Thursday

BASF/Total Port Arthur Port Arthur, Texas 900 Reduced rates Wednesday

CP Chem Port Arthur, Texas 830 Shut down Wednesday

DuPont Orange, Texas 680 Shut down Wednesday

ExxonMobil Beaumont Beaumont, Texas 827 Shut down Tuesday

Flint Hills Resources Port Arthur, Texas 623 Shut down Tuesday

Huntsman Port Neches Port Neches, Texas 200 Shut down Monday

LyondellBasell Channelview, Texas 1,750 Reduced rates Sunday  
LyondellBasell La Porte La Porte, Texas 790 Shut down Sunday  
Ineos Chocolate Bayou Alvin, Texas 1,750 Shut down Sunday  
Shell Deer Park Deer Park, Texas 836 Shut down Sunday  
CP Chem Sweeny Sweeny, Texas 1,855 Shut down Sunday  
CP Chem Cedar Bayou Baytown, Texas 835 Shut down Saturday  
LyondellBasell CC C.Christi, Texas 1,134 Shut down Friday  
OxyChem-Mexichem Ingleside, Texas 550 Shut down Thursday  
Formosa Plastics P. Comfort, Texas 1,499 Shut down Thursday

Force majeure declarations to date

Company Product(s) Location Date

LyondellBasell Acetic acid La Porte, Texas 31-Aug

Olin EDC Freeport, Texas 31-Aug

Olin Chlor-Alkali Freeport, Texas 31-Aug

OxyVinyls PVC Deer Park, Texas 31-Aug

OxyVinyls PVC Pasadena, Texas 31-Aug

Ascend Acrylonitrile Alvin, Texas 29-Aug

Celanese VAM Pasadena, Texas 29-Aug

CP Chem HDPE Cedar Bayou, Texas 29-Aug

CP Chem HDPE Orange, Texas 29-Aug

CP Chem HDPE Pasadena, Texas 29-Aug

CP Chem LDPE Cedar Bayou, Texas 29-Aug

CP Chem LLDPE Cedar Bayou, Texas 29-Aug

Formosa Chlor-Alkali Point Comfort, Texas 29-Aug

Formosa PVC Point Comfort, Texas 29-Aug

LyondellBasell Benzene Channelview, Texas 29-Aug

LyondellBasell Ethylene Glycol Bayport, Texas 29-Aug

LyondellBasell Ethylene Oxide Bayport, Texas 29-Aug

LyondellBasell IPA Channelview, Texas 29-Aug

LyondellBasell Propylene glycol Pasadena, Texas 29-Aug

LyondellBasell Styrene Channelview, Texas 29-Aug

Total PP La Porte, Texas 29-Aug

Equistar Chemicals HDPE Matagorda, Texas 28-Aug

Equistar Chemicals HDPE Victoria, Texas 28-Aug

Equistar Chemicals HDPE Alvin, Texas 28-Aug

Equistar Chemicals LDPE, LLDPE La Porte, Texas 28-Aug

Formosa Plastics HDPE, LLDPE Point Comfort, Texas 28-Aug

Formosa Plastics PP Point Comfort, Texas 28-Aug

Formosa Plastics PVC Point Comfort, Texas 28-Aug

Formosa Plastics Chlor-alkali Point Comfort, Texas 28-Aug

Ineos PP La Porte, Texas 28-Aug

Ineos PP Alvin, Texas 28-Aug

## PRICING

\* Spot ethylene held stable at 29.5 cents/lb FD USG on Tuesday, while October shed 0.5 cent to 30 cents/lb FD USG. Trading activity was below typical levels, sources said, stemming from both uncertainty surrounding the situation along the US Gulf Coast following the impact from Hurricane Harvey.

\* US polymer-grade propylene held flat Tuesday at 4 1/2-month highs, assessed at 43.25-43.75 cents/lb FD USG for prompt- and forward-month deliveries. Market trading activity continued to be talked scarce, as producers were seemingly out of the market throughout the day, with only bids being relayed by participants.

\* The US acrylonitrile export price rose \$100 week on week, assessed Tuesday at \$1,475-\$1,485/mt FOB USG amid production issues and forces majeure as a result of Hurricane Harvey.

\* Latin American buyers continued to report tight polyethylene and polypropylene supply from the US, and those who could source US-origin resins were still encountering offers 4%-8% higher than pre-Harvey levels, sources said.

\* US spot benzene prices fell 7 cents Tuesday with September and October DDP prices closing at 273 and 271 cents/gal, respectively. Prices shook off gains in crude as October crude futures gained \$1.37, settling at \$48.66/b. US benzene prices were unfazed by stronger downstream styrene values, which rose 2.75-3.50 cents with September and October closing at 61.75 and 61.25 cents/lb FOB USG, respectively.

\* US spot toluene pricing decreased 6 cents on Tuesday, assessed at 245 cents/gal FOB USG along with forward month pricing assessed at 242 cents/gal FOB USG. Spot and forward month mixed xylenes also fell 6 cents/gal to be assessed at 247 and 243 cents/gal FOB USG, respectively.

\* Dow Chemical plans to raise its Brazilian polyethylene prices for the second time this month, according to a letter. After implementing a September 1 increase of Real 300/mt (around \$95/mt) on all polyethylene sold in Brazil, Dow plans to raise its Brazilian polyethylene prices by another Real 300/mt effective September 15, according to a letter to customers obtained by S&P Global Platts.

## LOGISTICS

\* Both of Port Houston's container terminals were open to ships and two-way traffic had been restored in the Houston Ship Channel up to the Interstate 610 bridge near Petrobras' Pasadena refinery. However, drafts were limited to 40 feet, or five feet less than normal, north of the container terminals as the Army Corps of Engineers investigated an obstruction between Kinder Morgan's BOSTCO dirty oils and distillates terminal and Baytown.

\* Ports in Freeport, Texas City and Galveston were open with draft limits of 38 feet for Freeport and 37 feet for the others.

\* Ports in Beaumont, Port Arthur and Orange remained closed with currents too unsafe for vessel traffic, Sabine Pilots said.

\* Ports in Corpus Christi and Point Comfort also were open with draft restrictions of 43 feet and 31 feet, respectively.

\* Union Pacific said in a customer notice Tuesday that its Baytown and La Porte operations had resumed, as had service running west of Victoria, Texas, and just north of Ingleside -- all areas near petrochemical plants. The railroad said it was

focused on reopening lines between Houston and Beaumont, which would open service into Texas from Louisiana.

\* BNSF Railway also had restored service in the Houston area, but had yet to restore lines to Beaumont and some rail yards in that region. The Union Pacific and BNSF railroads continue to assess damage from Harvey.

\* Kansas City Southern lifted its southbound and northbound cross-border embargoes over the weekend, restoring traffic to and from Houston. However, speed limits were restricted to 10 mph because of saturated conditions and continued repair work, the company said in a customer notice. While embargoes for Houston, Corpus Christi, Victoria and Rosenberg two and from Laredo were lifted, the company's Harvey-related force majeure remained in effect. Embargoes for traffic through the company's Beaumont subdivision remained in effect Tuesday with traffic unable to pass.