# Americas petrochemical outlook H2 2018

**Petrochemicals special report**

July 2018

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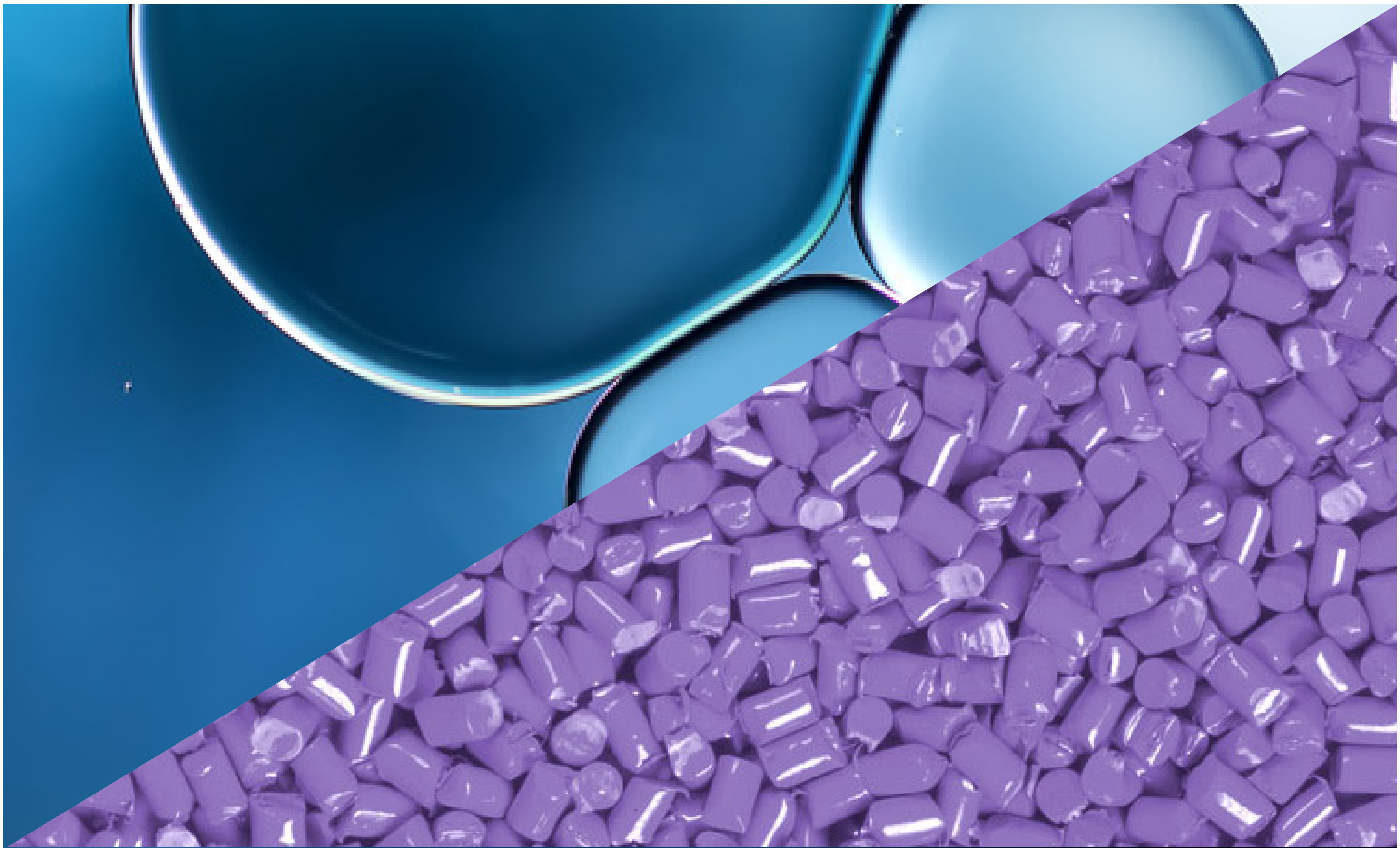


S&P Global Platts

Petrochemicals

## Foreword

Petrochemical market participants in the Americas enter the second half of the year keeping a close eye on the energy complex, feedstock supply and pricing, as well as escalating trade tensions between the US and its North American and European allies and China.

Global oil prices ended the first half at their highest levels since November 2014, pulling naphtha and other key feedstocks along. Propane prices, for example, posted their strongest H1 average since 2014.

Even ethane, which enjoys a stronger correlation to natural gas, kicked off July at 52-month highs on strong export and domestic demand, the latter as more steam crackers are slated to come online in Texas and Louisiana.

Energy's influence was not lost on markets such as benzene, which saw pricing average 13% higher year-on-year for the first six months despite lower demand and volatility. North American propylene posted its strongest average since 2014, fueled further by supply constraints on the refinery and PDH sides.

On the polymer side, polyethylene was firm for most grades for the domestic market and exports, negating, at least temporarily, expectations of substantial price reductions stemming from additional capacities coming online.

This report highlights key themes that stand to shape the industry in the Americas during the second half of 2018.

These include expectations of continued weakness in an oversupplied ethylene market, relative stability in the aromatics space stemming from soft demand from the styrene and blending sectors for benzene and toluene, respectively, and lower pricing for propylene and methanol on improved supply.

The ongoing trade tensions between the US and China will also keep market participants on their toes, as will rising logistics costs in the US – led by a severe driver shortage – and currency behavior in Latin America.

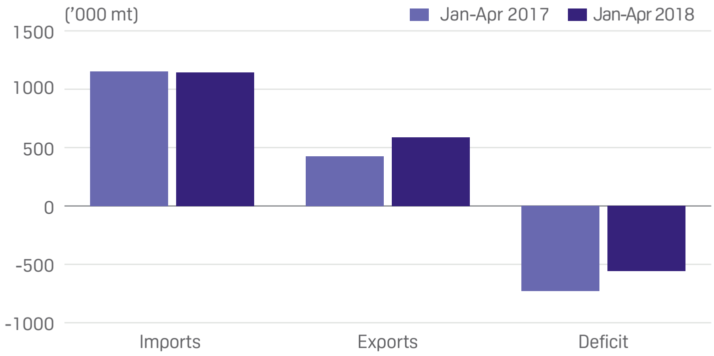
*—Bernardo Fallas*

# AROMATICS

## US spot pricing stands to soften on increased supply

Growing US methanol capacity is likely to soften North American spot prices in the second half of 2018, while the price outlook for Asia remains supported by delayed startups in Iran and continued firm demand from China's

**US METHANOL EXPORTS SOAR YEAR ON YEAR**




Source: US ITC

methanol-to-olefin plants, industry sources said.

Europe, meanwhile, is entering the third quarter of the year with its supply-demand balance tipping from tight to balanced. Despite a higher Q3 contract price settlement, spot prices began the second half of the year on a downwards trend, following highs seen in June.

### US capacity triples, displaces imports

US production capacity is set to grow by 30% in the second half of 2018 with a major expansion on the Gulf Coast. The new supply is expected to soften prices through the second half of the year, market sources said, extending a near 6% decline for the front month since the beginning of 2018, according to S&P Global Platts data.

Natgasoline, a joint venture of OCI and G2X Energy, on June 25 said commercial production had begun at its new 1.75 million mt/year plant in Beaumont, Texas, with ramp-up and inventory build expected over subsequent weeks.

Sources expected material from the new capacity to show up in the market in July, with indications that Natgasoline has already booked some cargoes for China.

The additional capacity extends the rise in domestic production that is transforming the US into a net exporter from a heavy importer amid global demand growth. US methanol capacity has more than tripled in recent years, from 2.25 million mt/year in 2015 to 7.5 million mt/year mid-2018 with Natgasoline's startup.

US exports are increasingly competing with material from Trinidad and Tobago as well as Venezuela, both of which have lost market share in the US and will be turning to new export markets, but it will take time for trade flows to re-adjust, according to market sources.

Venezuela producers have increasingly sought to develop supply agreements in Asia and producers in Trinidad and Tobago will also likely target Asia more in 2019, as product competes in Europe with US exports, sources said.

The development of the global joint venture HELM Proman Methanol AG also marks a significant change in methanol marketing. Helm, Proman, and Southern Chemical linked up for a single global marketing platform across the US, Europe and Asia. Headquartered in Switzerland, with offices in Houston and Singapore, the company said it aims to market material produced by Natgasoline and Methanol Holdings (Trinidad) Ltd from July 1.

### Europe supply woes ease

While Europe will be keeping an eye on shifting Americas trade flows in the second half of the year, the return of Russian material to the net-importing region is likely to bring the biggest near-term supply change, clouded however by ongoing uncertainty over Iranian production. European market participants expect availability to improve during Q3 from the tightness experienced in Q2, when a relatively heavy turnaround schedule was exacerbated by a reduction in Russian imports.

FOB Rotterdam spot prices peaked at Eur394.50/mt (about $462/mt) on June 15 — the highest level since March 13, 2017 — but had already fallen back to Eur351/mt by July 6.

According to sources, Russia placed methanol on a list of hazardous products that could not be transported by rail between May 25 and July 25 with the country hosting the FIFA World Cup.

According to Eurostat data, around 1.9 million mt of methanol wasimported into Europe in the first quarter of 2018, of which around 353,282, orjust under 19%, was imported into Europe from Russia.

However, Russia's Metafrax is expected to stop its 1.2 million mt/year Gubakha plant — the largest methanol production site in Russia — during August for a planned turnaround, according to a source close to the company.

Additional domestic supply is expected towards the end of the year, withNetherlands-based BioMCN in the process of refurbishing a second line at itsDelfzijl site and expecting to start production at the end of 2018. According to the company, the second line will almost double the site's current production capacity, adding 438,000 mt/year.

Meanwhile, uncertainty continues to be a central theme for market participants looking to developments in Iran, as the start dates of long-planned projects remain elusive.

Iran's 1.6 million mt/year Marjan Petrochemical Company at Assaluyeh, will likely begin commercial operations in Q4 — delayed from earlier startup estimates pointing to the first quarter, an Iranian producer said in June.

Furthermore, market participants do not expect Kaveh's 2.3 million mt/year Bushehr facility to be operational until sometime in 2019.

China and India, key importers of Iranian methanol, are likely to benefit most from the additional production.

### China MTO demand remains firm

Iran's startups have indeed been hotly anticipated by China, which imported more than 2.5 million mt in 2017, and India, which relies on Iran for more than 85% of its methanol — however they have been slow to materialize.

Similarly, industry sources in the region expect that volumes from traditional exporters to the US — Trinidad and Tobago and Venezuela — won't be displaced to Asia until the end of this year or early 2019.

Asia demand in the second half of the year will meanwhile come largely from existing methanol-to-olefins plants, underpinned by their downstream profitability, as MTO startups look to skip 2018 altogether, sources said.

China's Connell Chemical's MTO, based in the Northeast province Jilin —the only MTO with the potential to start this year — plans a Q4 startup, but industry sources already predict a delay to early 2019. The 300,000 mt/year MTO is expected to consume 1 million mt/year from local producers and merchant suppliers when completed, sources said.

### Ethylene derivative margins key to MTO rates

With startups out of play, existing MTOs will likely drive H2 demand, but will rely on ethylene derivative margins to maintain operating rates, according to an MTO source.

With MTO-linked polypropylene margins negative at about minus $95/mt on average during the first half of 2018, MTOs are largely reliant on their ethylene downstream to operate — typically monoethylene glycol — with positive margins averaging just above $150/mt over the same period.

Of the major coastal MTOs, Jiangsu Sailboat Petrochemical, also known as Jiangsu Shenghong, is seen by industry sources as the most resilient to firm feedstock prices, due to its diversified mix of non-traditional downstream plants.

Sailboat has announced 35-40 days of maintenance starting July 20 at its 700,000 mt/year MTO at Lianyungang, making it the only major MTO scheduled for a second-half turnaround.

"Methanol prices might dip while Sailboat is away, but with Xingxing [Zhejiang New Energy] and Ningbo Fund Energy back, international supply will remain tight in Q3," a trader said. The 600,000 mt/year units had been shut for maintenance in Q2 with both companies citing poor economics.

Consumption from the three MTOs represents more than a third of China's total annual methanol imports, and all three will likely run at high rates until the end of the year, according to the industry.

"MTOs have financial obligations to fulfill at the end of the year, so will likely operate full during H2 to achieve the cashflow. In earlier years, they took advantage of cheaper methanol during spring and summer lull season, to buffer for pricier feedstock in winter — but between the Middle East turnarounds and Southeast Asia outages, there was never really a lull this year. And now we're entering into high demand season," an analyst said.

Seasonal demand in China will pick up in the fall, as formaldehyde production ramps up during plywood production season and MTBE ramps up in preparation for the driving season, he said.

Demand will peak in winter, just as Chinese natural gas is diverted away from industrial uses and into heating, and the Chinese government's war on pollution hits full swing, blunting production from coal-to-chemical plants in North and East China, the analyst said. All these factors will keep China reliant on imports, supply tight and prices firm for the remainder of the year.

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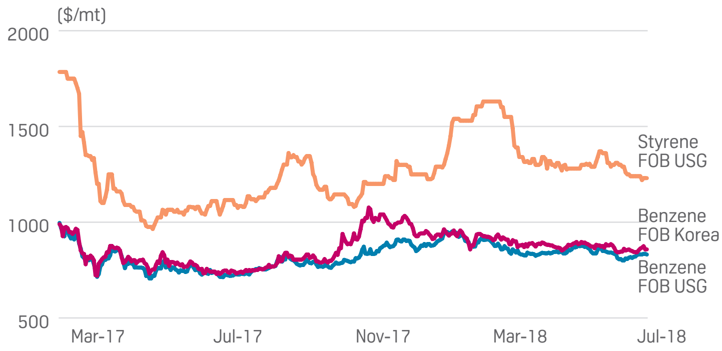
## US benzene demand softens amid China SM antidumping measures

An expected reduction in demand from downstream styrene stands to again lead to relatively stable pricing in the US benzene market during the second half of 2018.

Spot benzene on a DDP basis averaged 298.46 cents/gal ($892.40/mt) during the first half of 2018, more than 13% higher than the same period in 2017, when the average was 285.32 cents/gal, per S&P Global Platts data.

**US BENZENE VOLATILITY LESSENS**




Source: S&P Global Platts

**DUTIABLE LEVEL ON CHINESE STYRENE IMPORTS (%)**

| Company | Initial level | Final level |
|---|---|---|
| Hanwha Total Petrochemical Company | 7.8 | 6.2 |
| Yeochun NCC | 7.8 | 6.2 |
| Lotte Chemical Corporation | 8.4 | 7.5 |
| LG Chemical | 8.0 | 6.6 |
| SK Global Chemical | 8.0 | 6.6 |
| Formosa Chemical Fiber Corp. | 5.0 | 3.8 |
| LyondellBasell | 9.2 | 13.9 |
| Westlake Styrene | 10.7 | 13.7 |
| INEOS Styrolution | 9.6 | 13.9 |
| Americas Styrenics | 9.6 | 13.9 |
| All other US companies | 10.7 | 55.7 |

Source: Ministry of Commerce

The year-on-year increase comes amid a strong energy complex, with crude pricing closing the first half of the year at levels not seen since November 2014.

But perhaps most noteworthy is the fact that spot pricing behavior lacked the volatility that has been the staple of the market in previous years, sticking to a range of around 34 cents/gal for the period.

The recent implementation of antidumping duties by China on US-origin styrene has severely impacted trade flows and, in turn, demand for benzene in the US Gulf Coast region.

Upcoming capacity expansions at the global level stand to further impact these trade flows beyond 2018, market sources have said.

Like many significant changes in the petrochemicals industry, a key variable in the benzene landscape is China, which has undergone massive growth as the country works towards self-sufficiency in segments from paraxylene and PTA to aromatics and polymers.

### Styrene sellers look beyond China

On the aromatics side, the most recent changes have come via the styrene segment. China historically has depended on imports but is boosting production as it seeks to lessen its dependence on US-origin product, for which it recently levied anti-dumping duties.

The Chinese Ministry of Commerce finalized duties of 13-14% on major US styrene producers including LyondellBasell, Westlake Chemical, Styrolution and Americas Styrenics.

As a result, sellers of US-origin styrene saw margins dented, and were forced to look to Europe and Latin America to place some of the volumes previously destined for China.

US spot styrene prices averaged 62.79 cents/lb ($1,384.27/mt) FOB USG during H1 2018, up 5.61 cents/lb year on year, according to Platts data.

Styrene's dynamic had a notable impact on benzene, a key feedstock in the production of the monomer. The US is structurally net short benzene and counts on South Korea, Europe and the likes of Brazil to fill the deficit, which in previous years stood at 100,000 mt or more per month.

With the advent of Chinese anti-dumping duties on styrene, benzene trade flows shifted, and substantial portions of Korean benzene that were previously destined for the US were seen moving to China.

Benzene imports for the first six months of 2018 were estimated near 620,000 mt, for an average of just over 103,000 mt per month. In 2015, import totals were just under 970,000 mt for the same period, according to estimates shared by market participants.

Meanwhile, China's imports of Korea-origin benzene rose to 1.4 million mt in 2017 and are on pace to top the 1 million mt mark again this year, market sources said.

### Volatility reduced, for now

During the first half of the year, the change in trade flows translated into decreased volatility in US benzene prices. Spot prices peaked at 317 cents/gal DDP USG ($947.83/mt) in early January and have not fallen below 283 cents/gal since, per Platts data.

While a 34-cent/gal price spread might seem significant, it is in no way comparable to previous years, when price swings throughout the year were 100 cents/gal and higher.

The lack of volatility has resulted in less liquidity in the benzene market, sources said, leading some trading houses, including Vitol and Koch, to exit aromatics over the past couple of years.

Market expectations for the second half of the year call for US styrene exports to China to remain muted, which stands to impact benzene much like it did in H1 2018.

Lower styrene demand will likely equate to lower benzene demand, which will keep pricing stable and liquidity subdued. Some participants anticipate that styrene makers will have to work even harder to manage run rates and inventories in an effort to keep the US benzene market balanced.

Some have even gone as far as to suggest the benzene market will move away from a pure trading market and morph into more of a distribution-type market.

Market sources said further shifts are likely inevitable, with new benzene capacities expected to come online in the Middle East and the expectation that Chinese demand will continue to displace US demand.

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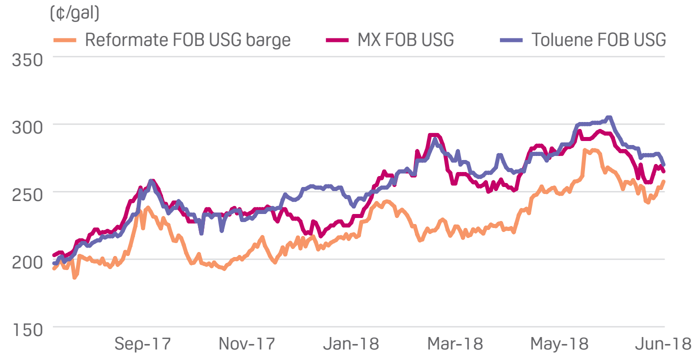
**US AROMATICS vs REFORMATE**




Source: S&P Global Platts

## Toluene tied to benzene, MX follows derivative demand

Activity for mixed xylene and toluene was thin as the first half of 2018 came to a close, as spot prices had established two-month lows in June on the back of thin demand and well-stocked inventory, according to trade participants.

However, spot prices at the end of June were well above levels from the same time a year earlier.

Nitration-grade toluene spot levels ended H1 2018 at 270 cents/gal FOB, up from 197 cents/gal FOB USG one year ago. MX spot levels ended H1 2018 at 265 cents/gal FOB USG, up from 198 cents/gal FOB USG one year ago. The increase was in line with a stronger energy complex.

Toluene and MX prices fell below their blend values in June, which were price floors for the market. Blendstocks such as alkylate and reformate, however, remained a more competitive alternative, with sources still looking to those markets as another price floor for aromatics. For reference, a premium of 20 cents/gal over reformate is considered an attractive level for extraction.

### Economics hinge on benzene

Refining economics were mostly negative moving into H2, with the exception of US MSTDP margins. For toluene, sources said refining economics for the remainder of the year would depend on benzene.

"If we can maintain the spread between benzene and toluene, I think we are OK on TDP margins," said one producer. "If you aren't making money on benzene it may have an impact on TDPs."

Heading into H2 2018, a few producers have built up MX inventory while BP's Texas City unit was down in Q2. But when BP's unit restarted in June, there was still plenty of MX inventory, which contributed to spot levels moving below the 260 cents/gal level in mid-June alongside thin demand and lackluster energy futures. But as energy futures began to move back up in late June, MX and NGT prices followed.

Any increase in MX is expected to be tied to demand from blenders and higher gasoline prices.

Market sources said MX should rebound in the second half of 2018, citing an expected increase in demand from the downstream PX market following a unit restart in early June. But sources also said that PX production may not fully resume until late July or even early August.

PX has been moderately tight heading into H2, even with one unit down in Q2. Sources said that BP had announced a 45% allocation on PTA out of its Cooper River, South Carolina facility, associated with recent production issues in both PX and acetic acid.

Another issue that may have a potential impact on MX demand downstream is the further development of a PTA and PET project in Corpus Christi, Texas. PX demand fell off in H2 2017 as M&G Chemicals financial woes resulted in the temporary shutdown of PTA units at Cangrejera, Mexico, reduced PTA run rates at Suape, Brazil, the closure of its 360,000 mt/year Apple Grove, West Virginia, PET unit, leaving the future of its world-scale PTA and PET project in Corpus Christi uncertain.

But in April 2018, Corpus Christi Polymers LLC, a joint venture lead by Alpek, Indorama and Far Eastern Investment Limited, entered into an agreement to purchase the M&G plant for $1.125 billion. The bid is expected to be finalized sometime in July.

### Freight rises on driver shortage

The aromatics solvents markets are expected to follow direction from the barge spot markets, which is typical. But outside of other factors such has the onset of hurricane season, trade participants will also have to deal with a shortage of trucks. A severe truck driver shortage and newly implemented regulatory limits on drive time are making critical links in US logistics supply chains more costly, prompting companies to raise product prices just to keep up.

Combined with the trucker shortage, the limits on drive time have squeezed short-haul trucking as well as those commonly seen on cross-country interstates. Sources added that with tight truck availability, both buyers and sellers preferred doing business by rail cars. However, rail cars were also seeing higher freight cost as well, which have been added to delivered rail car prices, sources said. The potential for hurricane issues and a shortage of transportation options may also have consumers looking to source additional suppliers, especially after Hurricane Harvey last year, said one distributor.

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# OLEFINS

## US ethylene market to see more length, pressure on pricing

An already oversupplied US ethylene market is slated to see additional length and price pressure in the second half of 2018 as more production capacity comes online in the US Gulf Coast region.

Three new world-scale steam crackers, totaling more than 3.54 million mt/year of ethylene capacity, are expected to come online by the end of 2018.

These are in addition to the 1.5 million mt/year capacity added during second-quarter 2018 with the startup of Chevron Phillips Chemical's new plant at its Cedar Bayou complex in Baytown, Texas. The market also saw more than 2 million mt/year of new capacities come online in 2017.

US ethylene prices have been low because of a glut of output from new capacity, while run rates of derivative plants have lagged behind.

The oversupply situation manifested itself in record-low pricing during Q2, when spot ethylene fell to 12 cents/lb ($264.55/mt) FD USG May 10-11, the lowest level since S&P Global Platts began assessing the olefin in 2004.

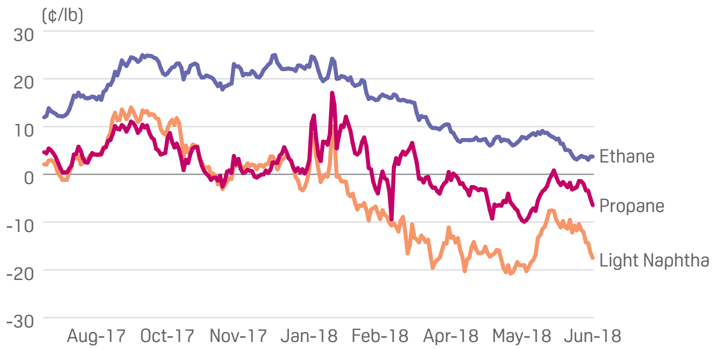
Ethylene closed the first half of the year at 12.75 cents/lb FD basis, averaging 18.39 cents/lb for the period. Spot ethylene averaged just under 28 cents/lb for 2017 and 26.90 cents/lb in 2016.

### More capacity on the way

Additional pressure is expected as ExxonMobil Chemical nears the startup of its 1.5 million mt/year steam cracker in Baytown this summer, the company confirmed.

ExxonMobil's unit was originally expected to start production in Q4 2017, but was one of several projects that experienced delays because of flooding caused by

**US CRACKER MARGINS SINK ON ETHYLENE GLUT**




Source: S&P Global Platts

Hurricane Harvey. Others included CP Chem's Cedar Bayou unit, which came online mid-March, and Indorama Ventures' brownfield project in Lake Charles, Louisiana, which is expected online later this year.

Beyond ExxonMobil's anticipated startup, two Louisiana-based projects are nearing completion. Sasol's new 1.54 million mt/year steam cracker in Lake Charles is slated to begin production in October, while Shintech's 500,000 mt/year cracker in Plaquemine is expected online in Q3.

A recent cracker idling and turnarounds have done little to address the imbalance or prop up pricing, even with feedstock ethane pricing at its highest levels in more than four years.

Spot ethane pricing closed June assessed at 33.50 cents/gal (11.27cents/lb) Non-LST Mont Belvieu pipe — the highest level since late February 2014, per Platts data — on the back of strong domestic and export demand, sources said.

Prompt-month purity ethane averaged 27.20 cents/gal in the first half of 2018, up 9.5% from 2017's 24.84 cents/gal. A forecast by Platts Analytics calls for pricing to remain in the high-20s cents/gal and reach the 31-cent/gal mark by year's end.

### Ethane cracker margins sink to record lows

The combination of low spot ethylene pricing and high feedstock costs were squeezing margins at the cracker level.

US cracker margins closed the first half of the year at the lowest levels since Platts began publishing them in 2011. Margins using ethane as feedstock were estimated June 29 at 3.72 cents/lb, averaging 11.65 cents/lb for the first six months of the year.

It is a stark contrast to 2014, when US cracker margins using ethane as feedstock hit record highs of 72.77 cents/lb in September 2014 and averaged 52.72 cents/lb for the year. Margins using other feedstocks were depressed as well.

In May, CP Chem idled its smallest Texas ethylene unit as US spot ethylene prices lingered at record lows, prompting expectations among some market players that other companies might reduce their output as well.

A key hurdle to balancing the market has been the logistical constraints related to exports. Currently, the US ethylene market counts on only one export terminal, which is located along the Houston Ship Channel. The 300,000 mt/year facility is contracted to Mitsubishi Chemical and operated by Targa Resources.

But that is slated to change as Enterprise Product Partners, in partnership with London-based Navigator Gas, is moving ahead with plans to build a 1 million mt/year export terminal for startup in Q4 2019 at its Morgan's Point facility along the Houston Ship Channel.

Enterprise is one of three companies planning a new US ethylene export terminal and the only one that has begun construction.

Norwegian chemical shipper Odfjell has been planning a 750,000 mt/year ethylene export facility at its terminal closer to the mouth of the ship channel at Bayport.

NOVA Chemicals said in March it had teamed up with Energy Transfer Partners to build an 800,000 mt/year terminal along the US Gulf Coast.

Olefins trading sources said they expect ample supply to last at least another year until the necessary infrastructure to consume that excess supply comes online.

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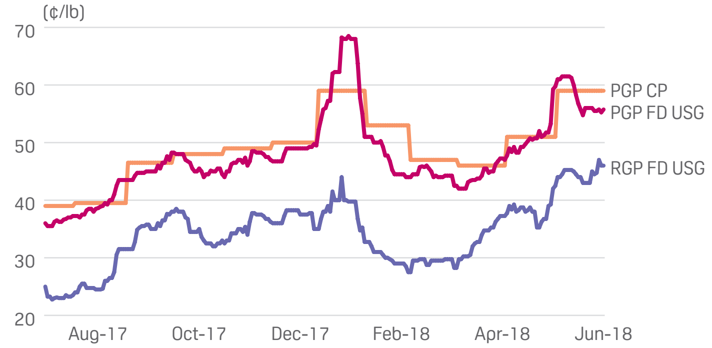
## US propylene market awaits supply relief, looks to demand

The US propylene industry stands to see relief from tight supply for the rest of 2018 as the market recovers from production issues that sent spot prices surging during the first half of the year and threatened to stifle downstream demand in the second.

Spot polymer-grade propylene closed H1 2018 just above the 55 cent/lb mark, averaging 51.13 cents/lb ($1,127.21/mt), the highest for the period since 2014 (68.16 cents/lb) and up more than 15% from the same period in 2017, according to S&P Global Platts data.

Spot refinery-grade propylene, which can be processed into higher-purity grades such as chemical grade and PGP, jumped to three-and-a-half-year highs in late June on what market participants described as tight availability stemming from fluid catalytic cracker shutdowns at major refineries in the Houston area.

**REFINERY SIDE LIFTS PROPYLENE**




Source: S&P Global Platts

A strong energy complex — crude pricing closed the first half of the year at levels not seen since November 2014, while spot propane posted its highest H1 average since 2014 — also helped prop up propylene prices.

### Strong propylene slows PP market

Propylene's strength to end the first semester was expected to complicate the panorama for downstream markets, particularly polypropylene, whose pricing is closely correlated to the monomer, into the second half of the year.

"Right now, spot propylene is pricing for demand destruction," a veteran of the propylene and polypropylene markets said this week. "Prices have the power to either kill demand or [encourage it], and right now they are doing the former."

Domestic polypropylene prices, which move in tandem with polymer-grade propylene contracts, were last assessed for June at their highest levels in three-and-a-half years, based on Platts data. US PP remained unworkable for exports beyond Mexico given its premium compared with regions such as Asia, trader sources said.

Outages on the refinery and chemical plant sides, as well as a delay in the startup of Enterprise Product Partners' PDH unit in Mont Belvieu, Texas, played key roles in driving pricing higher during the first six months of the year.

The 750,000 mt/year unit, which turns propane into high-purity propylene, endured multiple delays, including from extensive flooding from Hurricane Harvey last August. The startup was pushed back to April, leaving the market tight for the whole of the first quarter amid strong demand and limited supply.

Spot PGP pricing climbed to a 38-month high of 68.50 cents/lb in late January on news of Dow Chemical's shutdown of its 750,000 mt/yr PDH unit at Freeport, Texas. The unit went down in mid-December and came online in March.

Prices fell in March and April as Dow's PDH ramped up production, only to climb back in May on tight supply.

A third PDH operator, Flint Hills Resources, underwent maintenance work in June, when Enterprise also took down a splitter at its Mont Belvieu complex, the latter expected back online by early August.

On the refinery side, market participants were entering the second half of the year complaining of limited availability on the back of FCC outages, most notably one at ExxonMobil's 560,000 b/d refinery in Baytown, Texas, that began May 21 and expected to last 40-45 days, sources said.

US propylene stocks for non-fuel use were at 72.263 million barrels in the first half of 2018, down 3.8% from the same period in 2017, according to US Energy Information Administration data.

### Exports rise 26.7% year on year

Spot RGP closed June at 46 cents/lb and averaged 35.83 cents/lb for the first six months of the year, up more than 14% from the same period in 2017.

Exports were also contributing to the tightness, and these were expected to continue during the second half of the year.

Exports through April, for which the latest data was available, totaled 181,691 mt, up 26.7% from the same period in 2017 and 44.7% from 2016, according to the US International Trade Commission.

Demand remained the bigger question for the second half, as the pull from downstream markets including PP and acrylonitrile markets, could lessen.

US acrylonitrile pricing reached the highest level in more than six years in June, riding tightness in the global market, particularly Asia. Pricing could fall in the coming months, but as numerous European plants are slated for restart and cater to strong Asian demand.

CGP is used in the production of acrylonitrile, but producers can choose to tap into the higher-purity PGP market in times of high demand, sources have said.

High domestic PP pricing swung the doors open for imports from Asia and other regions, with some expected onshore as early as July, sources said.

A long PP market, resulting from a surge in imports, could depress propylene pricing if domestic producers cut back resin production to balance the market.

"The issue of how supply will look into the coming months is going to be majorly dependent on what demand will look like," the market participant said.

"That will determine if we stay tight or balanced."

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## US butadiene market closely watching firmer global prices

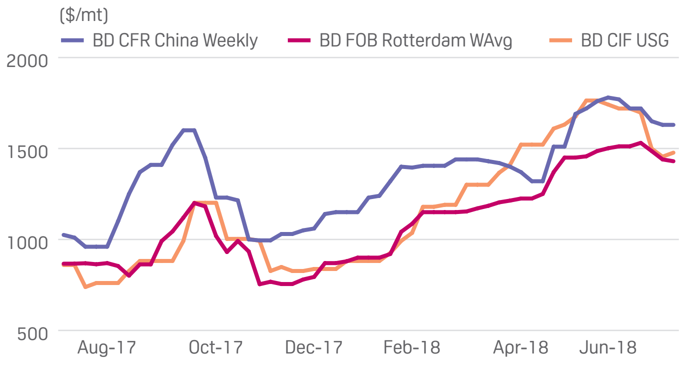
Butadiene market players in the US enter 2018's second half with an eye on supply after watching global pricing rise in late Q2 as unplanned outages limited availability, sources said recently.

The US is net short butadiene, a key feedstock in the production of synthetic rubbers and resins such as the polymer ABS, and it routinely sources products and derivatives from Europe and other regions.

Europe, however, spent much of the second quarter dealing

**US BUTADIENE LIFTED BY NWE**




Source: S&P Global Platts

with limited volumes due to an unplanned production outage at Sines, Portugal, sources said.

The affected unit was brought back online in late June, and North American buyers are eyeing a late-July return on-spec production and normal trade flow, a Mexican buyer source said.

US butadiene prices on an import basis closed the first half of the year on downward trend, at 66.50 cents/lb ($1,466/mt) after hitting 13-month highs of 80.50 cents/lb in mid- to late-May, per S&P Global Platts data.

CIF pricing averaged 62.94 cents/lb for the period after opening the year priced just above the 40-cent/lb mark. Despite the climb through late Q2, average pricing was down nearly 25% from the same period in 2017, when it averaged 83.71 cents/lb, per Platts data.

In a more general sense, the North American butadiene market stands to see additional supply with the startup of new steam crackers along the US Gulf Coast, sources have said.

While these new crackers will aim to maximize ethylene output by consuming ethane, a light feedstock that yields little in the form of butadiene and other co-products, their combined production stands to be significant.

"When we think of this wave of ethylene crackers, 18 million metric tons [of additional capacity], even at 3% of that as butadiene, it's a lot of butadiene," TPC Group CEO Ed Dineen told S&P Global Platts on the sidelines of the American Fuel and Petrochemical Manufacturers' conference. "We think it's going to fundamentally change the global market."

TPC Group, which already processes around 30% of North America's crude C4, is among those looking to take advantage, earlier this year announcing plans to expand its crude C4 processing capacity, with the aim of growing its butadiene volumes by more than 8% per year through 2022.

The scope of TPC Group's expansions, estimated to cost around $40 million, includes debottlenecking work and logistics enhancements. The company previously restarted a processing line that had been idle at its Houston-area complex.

"We see the US going [from short] to balanced to long at the end of this five-year time frame," Dineen said. "Regions like Europe may reverse from being long to being short as crackers there go lighter, and perhaps [also] because of seeing a crunch on operating rates because so much ethylene capacity is coming online in the US."

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# POLYMERS

## Domestic, export markets still trying to feel out new landscape

The US polyethylene buyer can come into the market armed with myriad facts about why domestic prices are simply too high.

New capacity means production sits at levels never before seen, and with that, producer stocks are mounting — particularly for linear low-density grades. Spot prices for feedstock ethylene have hit record lows in recent months, with contracts touching settlements not seen since the low point of the downturn in oil prices. Margins covering the ethane-to-polyethylene chain are massive. And an industry that is more reliant on exports than ever suddenly sees one of its largest outlets — China — talking about tariffs as part of an escalating trade war.

Of course, US polyethylene sellers can combat that with some facts of their own.

Total sales are stronger than ever. While some of that is attributed to the exports of new resin, domestic sales are well ahead of last year's pace. Stronger energy prices have helped lift global pricing, a welcome turn of events as producers begin to pay off the new assets that are part of the multi-billion-dollar investment in the US Gulf Coast region.

Production issues have tightened certain grades, most notably high-density polyethylene. Ethane prices recently hit four-year highs and cracker margins sank to record lows to end H1.

And don't forget hurricane season, which is nearing its peak in the Atlantic with not-too-distant memories of Harvey still fresh. Many will contest that the market did not fully recover from the August 2017 storm until well into the second quarter of this year.

 

### NORTH AMERICAN PE BUILD CONTINUES

| Company | Location | Product | Capacity ('000 mt/year) | Start-up | Status |
|---|---|---|---|---|---|
| **Operational** | | | | | |
| Braskem-Idesa | Coatzacoalos, Mexico | HDPE/LDPE | 750/300 | H1 2016 | Operational |
| Nova Chemical | Joffre, Alberta | LLDPE | 430 | Dec-16 | Operational |
| Dow Chemical | Freeport, Texas | LLDPE | 400 | Sep-17 | Operational |
| Chevron Phillips | Sweeny, Texas | HDPE/LLDPE | 500/500 | Sep-17 | Operational |
| Exxon Mobil Chemical | Mont Belvieu, Texas | LLDPE/HDPE | 650/650 | Oct-17 | Operational |
| Ineos/Sasol | La Porte, Texas | HDPE | 460 | Nov-17 | Operational |
| Dow Chemical | Plaquemine, Louisiana | LPDE | 350 | Q1 2018 | Operational |
| **Construction** | | | | | |
| Formosa Plastics | Point Comfort, Texas | HDPE/LDPE/LLDPE | 225/300/225 | 2018 | Construction |
| Sasol | Lake Charles, Louisiana | LLDPE/LDPE | 450/450 | H2 2018/H1 2019 | Construction |
| LyondellBasell | La Porte, Texas | HDPE | 549 | 2019 | Construction |
| Exxon Mobil Chemical | Beaumont, Texas | LLDPE | 650 | 2019 | Construction |
| Nova Chemical | Sarnia, Ontario | LLDPE/HDPE | 450 | Late 2021 | Construction |
| Shell Chemical | Monaca, Pennsylvania | HDPE/LLDPE/LLDPE | 550/550/500 | 2021/2022 | Construction |

Source: Industry

So with all of that, the US market sits in an interesting predicament entering the second half of 2018, wherein producers are pushing for increases as buyers simultaneously dig in their heels for price reductions.

And here's the thing: both sides are correct.

### Expansions bring about new dynamics

Welcome to the new reality for US polyethylene, one that produces abundant, feedstock-advantaged resin for consumption not just within North America, but also for the world. It's a landscape where new rules are being written even as people on both sides point to the way it's always been.

In the past, all the factors cited by buyers would have likely resulted in decreases. And the strong domestic demand and firming global prices probably would have made a clear case for increases. US polyethylene market participants now live in a world where both can occur at the same time.

Producers entered July with a renewed push to implement 3 cents/lb ($66/mt) price increases initially announced for March. Since those initial announcements, the market has seen three monthly rollovers, a marketwide decrease for LLDPE grades and enough one-off deals for other grades to warrant a reduction in contract price assessments for both high-density and low-density grades.

At the close of June, S&P Global Platts assessed US contacts for HDPE grades at 66.50-67.50 cents/lb ($1,466-$1,488/mt) delivered rail-car basis for blowmolding, 66.50-67.50 cents/lb ($1,466-$1,488/mt) for injection, and 69.50-70.50 cents/lb ($1,532-$1,554/mt) for film. LLDPE butene contracts were assessed at 64.50-65.50 ($1,422-$1,444/mt), with LDPE contracts at 78.50-79.50 ($1,730-$1,753/mt) for general purpose.

But will those prices move in July?

"I give the producers a 30% chance of getting the 3 cents in July," one distributor source said. "Many of them gave away that three cents in [a one-off decrease] and they want it back."

The summer months are traditionally a slower buying period in the US before things heat up later in the third quarter. Because Hurricane Harvey wreaked havoc on the market, there is some belief buyers would take on additional inventory in June and July 2018 as low stocks late last summer helped facilitate significant price increases following lost production.

The export side of the business has been just as uncertain, particularly for traders.

### Traders see limited availability

The overwhelming belief in recent years was that with roughly 3.5 million mt/year of new capacity coming online in the Gulf Coast region during the second half of 2017, an abundance of available export resin — likely at a lower price — was a foregone conclusion.

While exports have risen, trader sources have noted much of the new resin does not appear to be making its way into the secondary market, with multiple sources saying exports by producers through their own global distribution channels appear to be increasing.

This strategy could prove particularly important should tariffs on some grades such as LDPE be implemented in China.

In recent months, strong buying in China has helped support US export pricing, sources said, with an arbitrage window open for several HDPE and LLDPE grades.

In April, China announced plans to impose 25% tariffs on 106 US products — including LDPE — in response to President Donald Trump's proposed import taxes on some Chinese goods. As a final decision nears, uncertainty in the market has lowered demand for all grades of resin, sources said.

"The pending trade war with China has totally paralyzed the market there," a US-based trader said of the appetite for US resin in the Far East.

Because of the strong ethane-to-polyethylene margins being enjoyed, direct sales could allow producers to move resin at workable levels below those in the more-transparent trader market, sources have said. That also could potentially make things more murky for domestic buyers, some caution.

"You can cut prices for export if you have to because you're still making money there," a buyer source said.

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## Polyvinyl chloride chain faces export uncertainties

Brewing trade tensions could shift or constrain some outflows of US polyvinyl chloride to key global markets through the second half of 2018, according to producers and traders who are closely watching such developments.

"This trade war is going to impact us all in a way," a market source said.

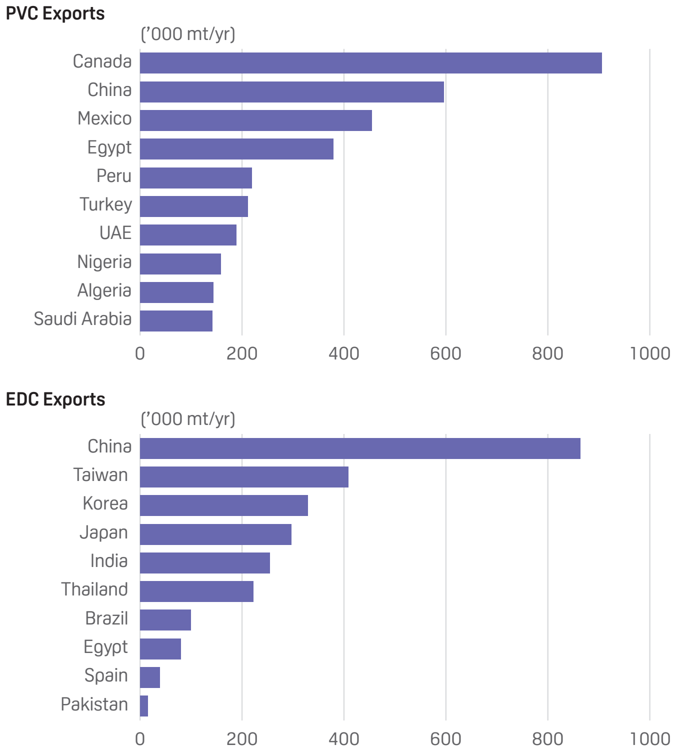
The US exports about 30% of its PVC output, a resin heavily used in construction for pipes, window frames, vinyl siding and other staples. PVC and ethylene dichloride, one of its precursors, are among US products facing entry barriers in China in response to the Trump administration's imposition of tariffs on $50 billion in Chinese goods as of July 6 on top of steel and aluminum tariffs imposed in March.

China's $34 billion first round of new tariffs, also slated to go into effect July 6, targets US agricultural crops and vehicles, while the $16 billion second round to be imposed later includes PVC, EDC, crude oil and gasoline.

US-origin PVC already faces anti-dumping duties in China, so those imports are already re-exported. In 2017 China was the number two export market for US PVC, having received 11% of all US PVC shipped out, according to data from the US International Trade Commission.

But PVC faces headwinds from Turkey, the number five market for US PVC last year. Turkey plans to impose anti-dumping duties on US PVC July 10 and, unlike China, disallow re-exporting US material upon arrival. Last year Turkey received 4.5% of all US PVC exports, according to ITC data. Some US market sources are concerned that escalating trade tensions could prompt China to issue a similar crackdown.

### CHINA SIGNIFICANT OUTLET FOR US PVC, EDC




Source: USITC

"That's what kills the export of US resin to Turkey," a market source said. "China has not said that yet."

But China's inclusion of PVC precursor EDC on its list of looming additional tariffs on US products likely will reverberate through US markets. China is the top market for US export EDC, having received more than 27% of all US EDC shipped out in 2017 — nearly double that of Taiwan, the number two market for US EDC.

Market sources said that while some US-origin cargoes went to India and Thailand in April when China first revealed EDC as one of its potential retaliatory tariff targets, other markets likely cannot absorb all of China's current share.

"Where does it all go?" a source asked, adding "the price is going to have to come down."

### Caustic uncertainty

Another wrinkle in the PVC chain is potential fallout for caustic soda, a byproduct of chlorine production and a key feedstock for alumina and pulp and paper industries.

In February, environmental regulators in Brazil ordered Norsk Hydro to cut by half production at its Alunorte alumina refinery, the world's largest, to investigate possible contamination from its bauxite residue deposits during heavy rainfall. Production remains at 50%, with US caustic soda receipts cut in half to 25,000 mt/month and no time line on when Norsk Hydro may resume full rates.

In addition, Russian aluminum producer United Company Rusal has until October 23 to wind down its US business — about 300,000 mt/year of US caustic purchases — unless the company severs ties with its former president Oleg Deripaska, who is among the Russian oligarchs the US has sanctioned.

A lingering Alunorte cutback and end to Rusal's business would reduce export demand for US product by 600,000 mt/year, potentially weakening prices that have been strong since early 2016.

But John Fischer, CEO of Olin — the world's largest chlor-alkali producer — was unconcerned.

"The total volume there isn't big enough to upset an 80 million ton market," he said during the company's quarterly earnings call in May. "It will adjust some trade flows — I think Rusal will — and there will be more supply from Europe and then Europe will import more. At the end of the day, it'll all wash out."

### US domestic demand strong

But a bright spot in PVC markets, producers say, is robust US demand. A strong US economy and the lowest unemployment rate in at least two decades bodes well for domestic construction spending, which in turn bodes well for PVC.

Construction management consultancy FMI's US outlook, published in the second quarter, sees a 6% rise in engineering and construction spending in 2018, up from a 4% increase in 2017. The top segments expected to see that spending growth include transportation, residential improvements, and office construction.

That means the five US PVC producers envision strong domestic demand, particularly seasonal demand during the warmer summer months. This year, the US Northeast and the Midwest got a late start as severe winter weather stretched into spring and are playing catchup. Throw in ethylene prices near all-time lows and PVC producers are enjoying fat margins, cheap feedstocks and eager buyers.

"The pent-up demand for residential units, when it comes back to more normal, there will be even further demand for PVC and construction materials," Westlake Chemical CEO Albert Chao said during the company's quarterly earnings call in May.

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## US PP buyers face uphill battle after feedstock push, supply issues

Even the most experienced mountain climbers might find the peaks and valleys seen in the US polypropylene market so far in 2018 treacherous. And moving into the second half of the year, there seems to be little consensus about the safest and most clear path to the summit.

"I think people are baffled," a US distributor source said. "They don't know what's going to happen."

The market was beset by significant price increases and limited availability in the second quarter, with some sources suggesting relief may not arrive until early in the final three months of the year.

Market participants entered 2018 expecting prices to move lower, with production issues related to Hurricane Harvey in the rear view and a long-awaited on-purpose propylene unit coming online.

And early in the year, that proved to be the case. US polypropylene contracts shed roughly 16% between January and March, according to S&P Global Platts data.

### Propylene provides support

Since then, however, prices have taken a distinct upturn, with production issues, strong domestic demand and — most notably — stronger propylene prices providing support.

After April homopolymer contracts rolled over at 61.5-62.5 cents/lb delivered rail car basis, May and June rose a combined 15 cents/lb — a total hike of 24% — through a combination of polymer-grade propylene contract increases and margin expansions by US producers.

Much of the hike came as propylene shot higher. Prompt-month spot PGP prices were assessed at 42 cents/lb ($926/mt) on April 5, Platts data show, and began a steady climb that saw assessments peak at 61.5 cents/lb between June 5 and June 8, before retreating some in the second half of the month.

The 46.4% climb in spot prices was reflected in contracts, which rose 5 cents/lb in April and by an additional 8 cents/lb in May, with PGP last settling at 59 cents/lb.

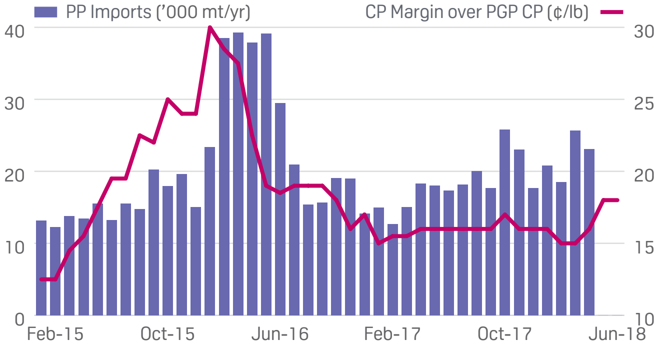
Those increases have caused buyers and producers to pause briefly as a significant portion of PP contracts in North America remain on monomer-plus formulas.

Processors and distributors see little incentive to add high-priced resin that could lead to regrets should monomer prices move lower, sources say, with producers in a similar situation, prompting some to run near levels required to solely meet contractual obligations.

Through the first five months of 2018, American Chemistry Council data show domestic production was 3.1% lower than in the same period in 2017.

"Propylene is high," one US distributor said. "When will it

**IMPORTS IMPACT US PP MARKET**




Source: USITC, S&P Global Platts

come down? I don't know. But if it does, you don't want to have resin that was bought at peak prices."

### High pricing limits exports

As buyers hold off, there is some concern the created pent-up demand will eventually cause additional issues should purchasers be more comfortable with prices and return to the market all at once later this year.

While domestic sales are up 2.1% through the first five months of 2018, ACC data show exports are off by 14.6% compared with the year-ago period.

The export issue is two-fold, and there is little to suggest the situation will change soon, sources say. For one, there are very few rail cars available to traders looking to secure product, and secondly, resin that is available carries a price tag that cannot compete in global markets.

S&P Global Platts assessed US export homopolymer at $1,653/mt (75 cents/lb) FAS Houston on July 2. On the same day, injection material was assessed in Asia at $1,230/mt CFR FE Asia. And during the previous week, South America's West Coast — one of the few regions typically able to absorb US resin when exports are in play — saw import assessments at $1,410-$1,420/mt CFR West Coast South America as buyers in the region looked to Asia and the Middle East for supply unmet by local producers.

"There are no changes in the short-term on the horizon," a trader source said.

The discrepancy in global prices also has opened the door to potential imports, which could play an important role in how the second half of 2018 plays out for US buyers.

Through May, American polypropylene imports were up 44.4% compared with the first five months of 2017, according to the US International Trade Commission data. And there are expectations those numbers will continue to grow, particularly given the increases in propylene and polypropylene prices over the past two months.

Some sources have suggested imports could begin making some impact as soon as late July for those who moved early, while others said they would not be surprised if imports begin to to arrive in greater volume later in the summer.

But what does that mean for domestic buyers?

As one buyer summed it up, "your guess is good as mine."

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## South American PE markets waiting for supply, currency relief

South American polyethylene markets entered 2018 expecting lower prices, with importers forecasting a wave of availability from the US while distributors eyed the pressure said imports would exert on regional producers.

Now, entering the back half of the year, those same PE markets are still waiting on the tsunami of supply and its impact on prices, particularly in Brazil — Latin America's leading economy.

And, as has been the case in recent years, outside factors such as an election and currency exchange are expected to keep muddying the trade waters in the third and fourth quarters of 2018.

Hurricane Harvey delayed the startup of some US-based PE projects and shipments from others in the third quarter of 2017, with that impact carrying over into this year.

As US exporters and producers played catchup, South America was left with low stocks and looked to the Middle East and Asia for its needs.

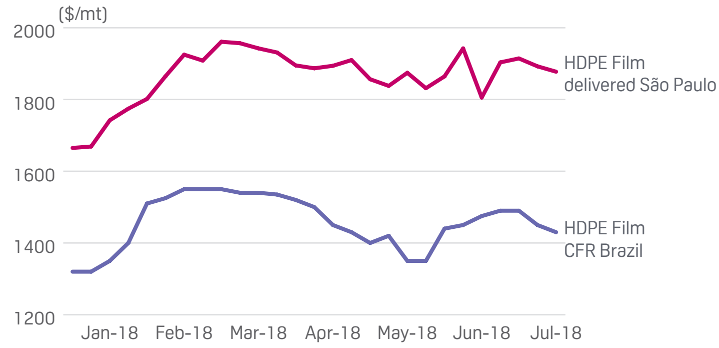
Those regions' exports, however, come with longer transit times. And some importers turned to local producers for hold-over supplies at higher prices.

Low-density PE import pricing in 2017 averaged $1,304/mt CFR in Brazil and $1,316/mt CFR along South America's west coast, where Brazilian export pricing is also relevant. So far in 2018, average pricing is up to $1,366/mt CFR Brazil and $1,374/mt CFR WCSA, according to S&P Global Platts.

Brazilian export and domestic pricing have found support from rising import prices and a weaker local currency. Brazilian export LDPE pricing to Mercosur has averaged $1,363/mt FOT, up $35/mt compared with 2017. Domestic Brazilian LDPE pricing has averaged Real 6,418/mt (around $1,689/mt) delivered Sao Paulo, up Real 708/mt (around

**BRAZIL IMPORT vs DOMESTIC PRICING**




Source: S&P Global Platts

$186/mt) from 2017.

### Real devaluation weighs heavily

While the jump in domestic Brazilian pricing is partially due to more expensive imports from the US and Asia, a sharp devaluation of the Brazilian Real has also factored in.

"Exchange rate devaluation and stable-to-firm international prices are the main reasons behind the increases," a source with Brazilian producer Braskem said. "Prices are holding strong, mainly because of supply tightness, especially in the US for PE."

The Brazilian Real started 2018 on a positive note, strengthening against the dollar from a January 1 value of 3.2619 to a 2018 low of 3.1441 on January 26, according to Platts data. Since then, the exchange rate has weakened to 3.9065 as of Monday, a decline of 0.7624 or 24.3%.

Import pricing on linear-low-density PE averaged $1,288/mt CFR WCSA and $1,272/mt CFR Brazil this year, up $51-$56/mt from 2017. Average Brazilian export LLDPE export pricing has risen $27/mt, while average domestic pricing is up Real 541/mt (around $142/mt) at Real 5,885/mt (around $1,549/mt).

The availability-driven import price hikes and currency instability have led to changes in buying patterns, with many distributors and converters opting for hold-over quantities rather than large inventories.

"Everyone is scared to take on volumes, so bigger buyers go local for quicker deliveries or smaller deals with import traders," a Brazilian distributor said. "Everyone waits for the US resins they prefer and are used to the short transit. Nobody wants to restock and risk missing US volumes and lower prices. It's complicated. Local [producers] are there to take advantage."

HDPE film import pricing averaged $1,458/mt CFR Brazil and $1,470/mt CFR WCSA so far in 2018, up around $230/mt from 2017. Brazilian export pricing has averaged $1,431/mt FOT, up $208/mt. Brazilian domestic pricing has averaged Real 6,389/mt (around $1,681/mt), up Real 1,113/mt (around $293/mt) compared with 2017, as Braskem has adjusted its prices accordingly, sources say.

### Brazil eyes election, Braskem sale

Now, as South America's PE markets look to the second half, there are new and old issues on the horizon.

In Brazil, October's presidential election has market players eyeing currency stability and potential industry-friendly economic policies as routes to recovery.

Additionally, there is the matter of a potential Braskem sale in the wake of recent reports that European petrochemical giant LyondellBasell is in talks with Brazilian conglomerate Odebrecht Group.

Braskem, which bills itself as "the Americas' largest thermoplastic resin producer," is majority owned by Odebrecht and state-owned Petrobras, which has long said it wants to unload its Braskem shares.

Should a sale of Odebrecht's controlling 38.3% interest — valued by The Wall Street Journal at $10-$12 billion in October — go through, some believe a more reliable and price-stable petrochemical environment could emerge in South America.

"It would bring change to the region since LyondellBasell shareholders are a totally different factor," a regional distributor said. "Some Braskem strategies do not align with market conditions some times. Braskem has to answer to a different [type] of shareholder, and has to generate cash in a different way. LyondellBasell takes a more traditional approach, and that could bring stability to a market that does not always understand Braskem's style in South America."

While players are divided about the potential timing of a Braskem sale, many in the region are looking at it as a "when, not if" situation, with a growing belief that the framework for a deal could be announced by the companies by year's end.

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# LOGISTICS

## Trucker shortage, driving limits hiking logistics costs

A severe truck driver shortage and newly implemented regulatory limits on drive time are making critical links in US logistics supply chains more costly, prompting companies to raise product prices just to keep up.

BASF, Celanese, Eastman Chemical, Formosa Plastics and Oxea are among petrochemical manufacturers implementing price increases on products ranging from dry bulk and packaged products, such as plastic resins, solvents and hazardous liquids as freight costs rise, according to announcements. Too few truckers, a strong US economy, high demand for moving freight and the lowest unemployment rate in nearly two decades has turned trucks for hire into one of the hottest commodities around.

The increases have ranged from 2 cents/lb to 7 cents/lb, or $44/mt to $154/mt. "It's really just a very tight market with a lot more freight than capacity," said Avery Wise, vice president of trucking research at FTR Transportation Intelligence, during a recent webinar.

The truck driver shortage is not new. The number of drivers fell to a 15-year low of 1.23 million in March 2010 in the aftermath of the global financial crisis, according to the Bureau of Labor Statistics. By mid-2015, the number of truckers rose to 1.46 million and has hovered there ever since,

BLS statistics show, while the unemployment rate fell and demand for freight capacity grew. The average trucker age is 55, indicating a wave of retirements is looming with too few replacements getting behind the wheel.

"Our fleet went from 50 to 70 in the past six months and we are always looking for more drivers," said Carlos Garza, operations manager for Tri-Coast Carriers, a national trucking company based in Houston. "Business is booming."

The additional wrinkle is a federal regulation that went into effect in December requiring trucks to have electronic logging devices, or ELDs, to track drive time. Intended as a safety measure, the devices ensure truckers adhere to an 11-hour drive time limit each day. They can work 14 hours, with the remaining three hours allowing for fueling trucks and other duties.

Before ELDs, truckers could keep paper logs. ELDs keep a separate record that drivers cannot alter. "The log regulations have gotten more strict so you don't have the ability to run past your hours," Garza noted.

Companies were given several months to adjust, and enforcement began in April.

### Short-haul trucking feels the pain

Combined with the trucker shortage, the limits on drive time have squeezed short-haul trucking as well as those commonly seen on cross-country interstates. Drayage companies that move products between warehouses and docks at ports do fewer back-and-forth trips per day. Unless locked down by contracts, companies have to pay higher prices for fewer trucks and work harder to line up enough to make on-time deliveries - and face fuel surcharges as well as gasoline and diesel prices are seasonally higher. Even Cincinnati-based grocer Kroger advertised competitive pay and benefits for new drivers over a public address system recently at one of its Houston stores usually used for in-store announcements and music.

**US TRUCK TRANSPORTATION HIRING ON THE RISE**

Source: US Bureau of Labor Statistics

A US petrochemical producer had to raise prices for a grade of domestic polyvinyl chloride used to make flooring by 5 cents/lb in May just to break even with higher logistics prices. Customers were unhappy because the hike came as US spot ethylene, a feedstock for PVC, hit an all-time low of 12 cents/lb FD USG amid oversupply on May 10-11, and they thought they'd get a break on price as the summer construction season ramped up. A 5-cent hike equates to another $110/mt.

"To create a sustainable business, this is necessary," a company source said. The company secures 25 trucks per day on contracts to move the product to customers on time, but some often do not show up because they got a higher-paying offer, the source said. That prompts a scramble on the pricey spot market for trucks that work for the highest bidder.

"We really saw this become a big issue in November and December last year," the source said, leading up to the implementation of the new ELD regulation. "It's significantly impacting my business. Ethylene may be cheap, and that helps, but it's not making up for this."

US spot ethylene prices rose more than 31% to 15.75 cents/lb FD USG by June 6, but has since retreated.

A market source in plasticizers, or additives that make plastics like PVC flexible, said the race for trucks hits both big and small. The source needs a single truck per week, and tried in vain to pay ahead for a year to have priority when calling for a truck to handle one weekly load.

"We tried everything. We tried contracting. Everyone turned me down," the source said.

### Oilfields also battling driver shortage

Some drayage and other short-haul trucking companies in the Houston area and Louisiana say they have lost drivers who can get higher pay in West Texas oilfields, where Permian Basin production is hot again after the downturn that sent crude prices under $30/bbl in early 2016. Enterprise Products Partners, which has a trucking division as well as its offerings in pipelines, liquids storage, exports and gas processing, sees the pinch as well.

"It has absolutely impacted us," said Casey Teague, senior director of trucking at Enterprise, during a recent interview. "We have absolutely seen some challenges attracting drivers and retaining drivers."

Truckers that move hazardous materials and liquids have more specialized training and requirements than those who move dry bulk in containers. Bill Hall, vice president of trucking and marine for Enterprise, said in the same interview that drivers with those specialized skills are routinely in short supply, and "it's getting worse as we speak."

Turnover rates at some large dry bulk carriers, particularly those that do long-haul trips, can be as high as 95%, Hall and Teague said. Enterprise's trucking division, which has a cushion from the overall company to offer strong salaries and benefits that pure-play trucking companies may find tough to match, has a turnover rate of about 20%. Starting salaries that used to range from $45,000 to $60,000 now range from $75,000 to $80,000 - and Enterprise is among a growing number of companies that offer signing bonuses of about $5,000 to be paid in the first six months of employment. The company also offers $3,000 referral bonuses to current employees whose recommended hires sign on.

However, the company has some idle trucks among its fleet of 650 in some areas in the vast Permian Basin in West Texas and southeast New Mexico because not only do some places lack pipeline and storage infrastructure, they lack basic housing. About 90% of Enterprise's jobs allow truckers to go home at night - though they need a place to call home. Man camps, or barracks-like housing developments for oilfield workers, have opened in some Permian locations, like Carlsbad, New Mexico — much like those common in North Dakota's Bakken Shale oilfields — when regular housing has not kept up with demand.

Enterprise opened a satellite location in Carlsbad to benefit from those housing options, and has considered finding spots at recreational vehicle parks - but available spots are pretty much unavailable, Teague said.

"I can put more trucks on the road if I had more drivers," he said.

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# TRADE

## New US sanctions on China would include many petrochemicals

The Trump administration's latest round of proposed tariffs on Chinese goods includes a long string of petrochemicals, both raw materials and items made from plastic resins.

The list of $200 billion in Chinese goods disclosed July 10 would be subject to a 10% tariff if implemented amid growing trade tensions between the US and China. On July 6, the US implemented $34 billion in tariffs on Chinese goods, and China retaliated with the same value of taxes on US imports, largely agricultural crops and automobiles.

The US was slated to impose another $16 billion in tariffs on Chinese goods, and China has said it will retaliate in kind — a second list of the same value that includes crude oil and gasoline as well as two plastic resins, polyvinyl chloride and low-density polyethylene, used to make items like vinyl flooring and plastic tubs, respectively.

The Trump administration released the list of $200 billion in more tariffs in response to China's retaliation for the first rounds of tariffs in addition to taxes on steel and aluminum that were imposed in March.

The latest list is subject to a two-month review process before they could go into effect.

In a statement, US Trade Representative Robert Lighthizer called the new list an appropriate response to "obtain the elimination of China's harmful industrial policies," such as China's handling of US intellectual property.

### Key chemicals, resins in the mix

However, the American Chemistry Council called the threat a "stunning and unfortunate development for US manufacturers and consumers."

The trade group for the US chemical industry noted in a statement the list includes a significant amount of chemicals, and more tariffs are "very unlikely" to change China's practices.

"As an industry that touches 96 percent of all manufactured goods and which has much to gain from a productive, respectful trading relationship with China," the ACC said, urging the administration to "create a strong, multilateral coalition to bring an end to this unnecessary trade war."

The $200 billion list includes ethylene, propylene, butadiene, chlorine and caustic soda, benzene, xylene, toluene and ethylene glycol. Chlorine and caustic soda, or chlor-alkali, are the first step in the chain to make polyvinyl chloride, a resin used heavily in construction for pipes, vinyl siding, flooring and window frames. Chlorine mixed with ethylene makes ethylene dichloride, or EDC — a precursor to PVC — while caustic soda, a by-product of chlorine production, is a key feedstock in alumina and pulp and paper industries.

Ethylene and propylene are raw materials for PVC as well as polyethylene and polypropylene, resins used to make everything from plastic bags and food packaging to vehicle dashboards and carpet. The US natural gas shale boom has produced a huge bounty of cheap ethane that will feed eight new crackers to produce ethylene that will feed 13 new polyethylene plants starting up from 2017 through 2019, with more to come thereafter. Most if not all of that new polyethylene output will be exported, with the vast majority targeting Asia — and largely China.

Aromatics like benzene, toluene and xylene produced via refining, are used as gasoline blendstocks or as feedstocks to make plastic bottles or styrene used to make plastic containers, electronics and automobile parts.

Ethylene glycol is used for antifreeze and coolants, while butadiene is used to make synthetic rubber and ABS, a resin commonly used in automotive and household applications.

**Retaliation By China feared**

The US does not import significant volumes of those materials, though of 872,049 mt of caustic soda imported in 2017, 17% came from China, second only to Taiwan, according to US International Trade Commission data. That caustic soda largely arrives on the US West Coast, where imports have long replaced volumes that used to be moved via rail within the US. China also must import aromatics and butadiene.

A market source said the new tariffs could benefit those in the US who process those materials into end products.

“Local processors can raise their prices,” the source said.

However, another market source noted that China can retaliate further, and the list also contains items made in China with PVC, PE and PP and then imported to the US — the sorts of products that line shelves at big-box retailers and entice online shoppers as well. Those include plastic crates, rainwear, latex, paper, fabrics , flooring, tiles and mirrors.

“The finished goods are made by China and exported to the US. The Walmarts and every store is full of that,” the source said.

If escalating trade tensions with China as well as Canada, Mexico and the European Union boost prices and soften demand, “economies everywhere are going to be hurt,” the source added.

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