

# EMEA petrochemical outlook H2 2018

Petrochemicals special report

July 2018

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## FOREWORD

New global supply will continue to set the tone for European petrochemicals in the second half of the year while economic fences being built across the globe bring trade flow uncertainty.

The long-awaited cracker and methanol capacities in other corners of the world are finally starting up and are already sending ripples to Europe.

The impact translates far and wide: from delays to counter-intuitive run rate decisions to further scrutiny of contract price mechanisms, massive inter-regional price gaps and deterioration of producer margins.

Amid the turbulence however opportunities are emerging. Ineos' announcement that it plans to build a propane dehydrogenation plant and the first new cracker in Europe for two decades shows that the company is looking to catch the wave of cheap feedstock gas.

Trade flows will continue to shift as major economies pursue ever more protectionist policies. 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, with the US-China trade war showing no sign of abating.

Styrene looks to be first in line for trade flow upheaval on the European horizon. New trade routes will establish in the second half of the year as a result of China's anti-dumping duties on styrene imports from South Korea, Taiwan and the US. Higher EU exports to China and a surge in EU imports of US and South Korean volumes are expected, notwithstanding significant logistical challenges.

The European paraxylene market is also set for fluctuating trade flows amid a regional demand hike downstream. Some see potential for Europe to flip from net exporter to net importer of PX following the restart of Indorama's Sines PTA plant in Portugal.

It is unclear for now whether the plant's feedstock needs can be met by local production alone, but there's no doubt that the region's PX supply surplus will subside.

Longer term, burgeoning environmental consciousness is contributing to fundamental change in European plastics. The first six months of 2018 witnessed a torrent of company commitments to reduce the use of single-use plastics and increase recyclability of and recycled content in packaging. Although it is unlikely that any major switches will happen in the second half of this year, the pressure is mounting.

—Anna Crowley, Bao Ying Ng and Maria Tsay

## OLEFINS AND FEEDSTOCKS

### Will light cracking help European petchems retain margins, despite US imports?

- **Crackers to continue maxing light cracking amid gas/liquid divergence**
- **Co-products tightness to outweigh ethylene length in run rate decisions**
- **Butadiene may change course as Asian maintenances end**

European olefins and polymers will be driven by US shale in the second half of 2018. And, the impact will be two-pronged.

Firstly, long-anticipated supplies of polymers, manufactured from shale gas in the US, are expected to finally hit the European shores over the next few months. Such imports have been awaited by the European petrochemicals industry for more than a year and are likely to dent into profits of companies on this side of the Atlantic.

Secondly, as European petrochemical producers face stiffer competition from overseas they are likely to choose cheaper feedstocks in an attempt to preserve their margins, especially if the oil prices continue to be firm. Hence, light cracking will continue to shape European olefins markets over the next six months.

Together these two trends will probably mean that there will be too much ethylene available in Europe, while the supplies of its co-products, such as propylene and butadiene, will be chronically tight.

Despite maximizing the use of cheaper feedstocks, steam crackers in Europe will continue to operate on significantly narrower margins compared to the past few years. The snug supplies of co-products however are likely to prevent crackers from reducing run rates in an attempt to manage swelling ethylene stocks, and other regions, Asia in particular, will serve as an exhaust valve for the European C2 surplus.

With little to suggest a change in the region's olefins pricing mechanisms, it is possible that spot and monthly contract prices will continue to diverge, as the former closely tracks the markets' fundamentals and the latter is used as a hedge against the feedstock price fluctuations.

#### Cheaper means lighter

Crude oil prices have seen a considerable increase earlier this year, with Brent futures breaching the psychologically important \$80/b mark in May and approaching it since. More expensive crude pushed oil products, including naphtha, higher.

While also rising, like naphtha, the LPG market has been suffering from a limited heating demand in winter followed by a low interest from blenders in summer – all against the background of increasing global supplies.

Naphtha and LPG prices started diverging at the end of last year, and LPG has been trading at around a 14-20% discount to naphtha, though the spread has been coming off lately.

The shift to lighter cracking in Europe comes with a rider. One factor that will continue to restrict the overall impact of swings away from the traditional feedstocks is flexibility issues at crackers. Gas cracking flexibility in Europe limits the share of gaseous feedstocks in Europe's cracking feed slate, and at the current intake there is little room left for buyers to increase their buying substantially.

There are over 40 crackers in Europe and six of them run exclusively on gas. Eight more are flexible and can use gas as a feedstock alongside heavier raw materials. The number of crackers using gas as a feedstock has been slowly growing and over the past few years companies like Ineos, Borealis and Sabic have made investments to change the feedstock slates from liquids to ethane.

Rising gas production in the US has made it more economical for producers in Europe to ship gas feedstocks, like ethane and liquefied petroleum gases, to Europe. This change, which has emerged over the past few years, is set to disrupt the long-entrenched position of naphtha as the prime feedstock for petrochemicals production in Europe.

Cracking light feedstocks yields more ethylene and less propylene, butadiene and pygas. Cracking 1 mt of ethane produces 0.8 mt of ethylene and 0.03 mt of propylene. On the other hand, cracking 1 mt of propane produces 0.4 mt of ethylene and 0.18 mt of propylene. This compares with just 0.3 mt of ethylene and 0.52 mt of propylene from cracking 1 mt of full-range naphtha. However, even naphtha cracking can become lighter, limiting the output of co-products in the coming months.

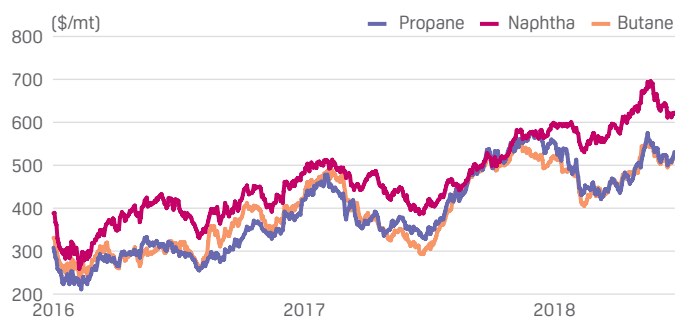
Amid a reduced pull from the West Africa and a wider RBOB-WTI spread there is less incentive for US players now to import gasoline cargoes from Europe. This, in turn, means that lighter, more paraffinic blending grades of naphtha will likely move into the petrochemical cracking pool.

### US PE wave to finally hit Europe

Exports of US-manufactured polymers into Europe will have an even bigger impact on European producers.

European polyethylene converters have been delaying purchases over the past few months anticipating the arrival of the new product from America and a resulting drop in prices. According to the latest Eurostat data, imports from the US are yet to hit European markets. In fact, in the

### LIGHT CRACKING IN EUROPE SET TO CONTINUE AMID CHEAPER BUTANE, PROPANE



Source: S&P Global Platts

first four months of the year the EU imported only around 54,000 mt of polyethylene from the US, down 43% year on year. Expectations alone, however, were sufficient to cap European PE prices throughout spring, despite the rising feedstock ethylene contract prices.

Nevertheless, imports are set to intensify. "We have been wondering where all that product, being produced in the US, is going. Perhaps, it will come into Europe in H2," one of the largest traders in Europe said.

"We understand that most of the US polymers have headed to South America so far. They could come to Europe later this year," another trader said.

By 2019 the US and Canada together are expected to add 11 million mt/year of new and expanded ethylene capacity, compared with 2016. Around 52% of this capacity should be already online. Due to high gas freight costs and limited export infrastructure, much of that additional capacity is targeting polyethylene production, with around 6.8 million mt of polyethylene capacity slated for launch at the same time.

As a result, polyethylene players in Europe are expecting to see a surge in availability with more supplies coming from the overseas, and this has directly affected ethylene demand in Europe and triggered a steep diversion of contract and spot ethylene prices.

Contract prices of ethylene had been rising since March, passing through naphtha increase, with the July settlement being the first, small, drop in months. Simultaneously, spot ethylene has come under pressure reflecting product overhang and traded as low as Eur970/mt (about \$1,130/mt) on May 8, a level not seen since December, Platts data showed. In Europe, spot ethylene typically trades at a discount to the industry-settled contract price, and the discount soared up to 20% earlier this year as the contract prices failed to reflect the fast-changing dynamics.

### Run rates to stay high, despite margins on C3 concerns

Steam cracker margins are likely to come under increasing pressure and will become more volatile in coming months

## NORTH AMERICAN PE BUILD CONTINUES

Company	Location	Product	Capacity ('000 mt/year)	Start-up	Status
<b>Operational</b>					
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	Commissioning
<b>Construction</b>					
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

as the market adjusts to new realities and heightened geopolitical risks affecting the direction of the energy complex.

Spot steam cracker margins in Europe dipped in May to the lowest level since late 2016, however they have rebounded since then, on the back of cheaper naphtha.

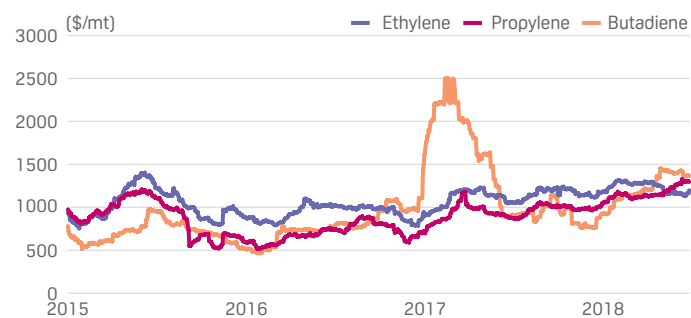
Despite question marks over margins, European players are unlikely to resort to reducing operating rates in order to manage ethylene stocks, lest they further reduce output of co-products.

In early May, propylene spot prices already flipped to a premium to ethylene, a phenomenon that was last witnessed at the beginning of 2015. In sharp contrast, exactly a year ago, the product was trading at a discount of \$200, Platts data shows.

“The propylene spot market is going nuts. Lighter cracking has turned the product very tight,” a propylene consumer said. “There is no material around,” another source said. “We are only receiving inquiries and we have nothing to offer.” And the tightness is unlikely to ease any time soon.

In addition to the reduced output at crackers, fluid catalytic crackers have been running at reduced rates due to weather, spitting out less propylene too. Downstream demand for propylene, already quite healthy, is expected to pick up in the coming months.

### BUTADIENE BECOMES MORE EXPENSIVE IN 2018, PROPYLENE AT A PREMIUM TO ETHYLENE



Source: S&P Global Platts

In other applications, demand will also stay solid, with Poland's Zak bringing back its oxo-alcohols plant in Kedzierzyn-Kozle, Poland, by the end of July, and Swedish 2-ethyl-hexanol maker Perstorp going into regular maintenance only in mid-September.

### Butadiene's Asian wild card

Similarly, butadiene has turned tighter in Europe in the first half too, although the end of the spring maintenances in Asia has raised the prospect of a change in direction.

Butadiene is net long in Europe and its price movements tend to depend on the Asian cracker outages, which trigger exports out of Europe to meet regional demand. Asian butadiene extraction units maintenance schedule for 2018 seems largely over with few maintenances scheduled in September.

“The heavy cracker maintenance season in Asia has come to an end and this will lower butadiene demand for exports,” a trader said. Two other traders confirmed that there are currently no butadiene cargoes headed out of Europe to Asia. Butadiene spot prices suffered their first drop since the start of the year on June 15 when they took a \$45 dip to be assessed at \$1,495/mt FOB Rotterdam. They have registered multiple falls ever since.

Every year, butadiene prices in Europe tend to change course mid-year, triggered by the opening or closing of an arbitrage between Europe and Asia.

In 2017, a near-consistent drop in prices that began at the end of February was stalled on June 9 after which they began to rise. They rose by as much as \$350 till the end of September to a value of \$1,200/mt FOB Rotterdam. In 2016, prices began rising from early June and had more than doubled by the time the year came to an end. Butadiene was assessed at \$1,614/mt FOB Rotterdam December 30, that year a surge of 136% from \$685/mt on June 1. By contrast, 2015 saw a steep fall between July and December.

—Lara Berton, Shashank Shekhar and Philip Reeder

## Long US supply to shift global methanol trade flows, Asia remains tight

- **US production capacity set to grow 30%**
- **Europe to remain driven by imports**
- **China MTO start-ups look to skip 2018**

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 start-ups in Iran and continued firm demand from China's methanol-to-olefin plants, according to industry sources.

Europe is meanwhile entering the third quarter of the year with its supply-demand balance tipping from tight to balanced and 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, displacing Americas 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, said June 25 that 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 said the material could begin showing up in the market as early as July, with indications that Natgasoline has already booked some cargoes for China.

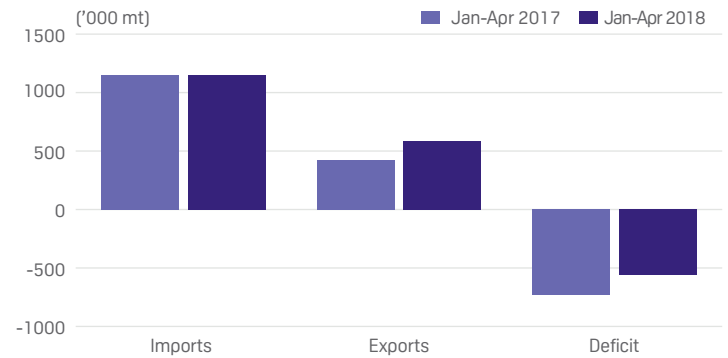
The additional capacity extends the rise in domestic production that is transforming the US into a net exporter from a heavy importer amid global demand growth. US methanol capacity has more than tripled in recent years, from 2.25 million mt/year in 2015 to 7.5 million mt/year mid-2018 with Natgasoline's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

US exports are increasingly competing with material from Trinidad & 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 sought to further develop supply agreements in Asia and producers in Trinidad & 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,

## US METHANOL EXPORTS SOAR YEAR ON YEAR



Source: US ITC

## METHANOL SPOT PRICES RALLY AHEAD OF Q3 CP SETTLEMENT



Source: S&P Global Platts

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, Iran uncertainty remains

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 was imported into Europe in the first quarter of 2018, of which around 353,282 mt, or 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, with Netherlands-based BioMCN in the process of refurbishing a second line at its Delfzijl 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 start-up 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.

#### Asia supply gap widens, China MTO demand remains firm

Iran's start-ups 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 & Tobago and Venezuela – won't be displaced to Asia until the end of this year or early 2019.

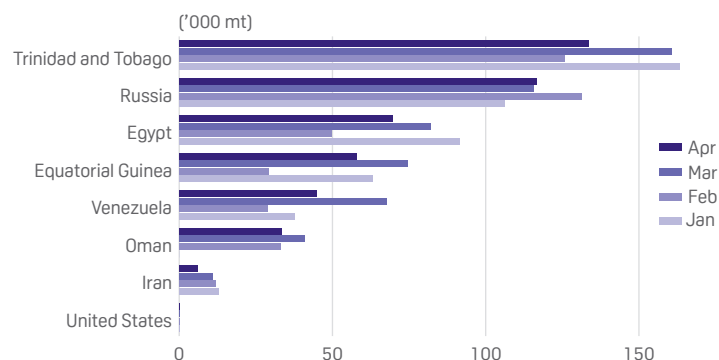
Asia demand in the second half of the year will meanwhile come largely from existing methanol-to-olefins plants, underpinned by their downstream profitability, as MTO start-ups look to skip 2018 altogether, sources said.

#### NEXT CHINA MTO START-UPS EXPECTED 2019

Region	Province	Company	Start year	Methanol consumption ('000 mt/y)	Olefin capacity ('000 mt/y)	Methanol source
<b>Operational</b>						
East (Coast)	Zhejiang	Fund Energy, Ningbo	2013	1,800	600	Merchant market
East (Coast)	Zhejiang	Zhejiang New Energy (Xingxing)	2015	1,800	600	Merchant market
East (Coast)	Jiangsu	Fund Energy, Changzhou	2016	900	300	Merchant market
East (Coast)	Jiangsu	Shenghong (Sailboat), Lianyungang	2016	2,400	800	Merchant market
Northwest	Xinjiang	Shenhua Xinjiang, Wulumuqi	2016	1,800	600	Self-supplied
North	Inner Mongolia	Zhongtian Hechuang 1, Erdos	2016	1,800	600	Self-supplied
West	Qinghai	Qinghaiyanhu	2017	1,000	300	Nearby plants, merchant market
North	Inner Mongolia	Zhongtian Hechuang 2, Erdos	2017	1,800	600	Self-supplied
<b>Construction</b>						
Northeast	Jilin	Connell Chemical	2019E-Q1	1,000	300	Nearby plants, merchant market
North	Inner Mongolia	Jiutai Energy	2019E-Q1	1,800	600	Self-supplied (CTO), downstream no longer PE
Northwest	Gansu	Huating, Gansu	2019E	600	200	MTO
East (Inland)	Anhui	Zhong An United Coal Chemical	2019E	1,800	600	Self-supplied
East (Inland)	Anhui	Anhui Haoyuan	2019E	1,800	600	Self-supplied (1,400 kt/year), merchant market

Source: Industry

#### RUSSIA ACCOUNTS FOR 19% OF EUROPE'S METHANOL IMPORTS



Source: Eurostat

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 start-up, 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 maintain MTO operating rates

With start-ups 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.

The sensitivity of traditional MTOs to downstream price swings was on full display mid-May, when margins – assuming a downstream of both PP and MEG – dipped into negative territory.

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.

—[Daria Campbell](#), [Luke Milner](#),  
[Lara Berton](#) and [Yi-Jeng Huang](#)

#### CHINESE MTO MARGINS RETURN TO NEGATIVE TERRITORY IN Q2 (PP/MEG DOWNSTREAM)



Source: S&P Global Platts

## AROMATICS AND BLENDING COMPONENTS

### Anti-dumping duties, EC investigations to drive European styrene

- **New trade routes to emerge as ADDs revised**
- **Shake up of styrene contract process amid EC raid**
- **Import challenge intensifies in PS industry**

The European styrene market will be driven primarily by the anti-dumping duties (ADDs) imposed on Chinese styrene imports from selected countries in the second half of this year. New trade routes are likely to emerge, such as higher EU exports to China, as well as a surge in EU imports of US and South Korean volumes. However, significant logistical difficulties will pose challenges for traders, while a two-tier pricing structure may emerge to accommodate for increased availability of non-EU origin styrene.

Meanwhile, European Commission investigations into styrene purchasing companies in Europe will likely change the styrene monthly contract settlement process. This will have implications in the downstream styrenics market as increased uncertainty in styrene pricing will add to existing challenges, such as import competition and substitution.

European traders have been mulling new trade routes for the global styrene market following the announcement in June 2017 of possible ADDs on Chinese styrene imports from Taiwan, South Korea and the US. Initial duties were announced in February 2018, while final duties were announced on June 22. Traders have said that new trade routes will now become a firm reality in H2.

The European Union may become a large trading hub for styrene, with an increase in both exports and imports, sources said. The lack of imports from the US in China due

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

Company	Initial level	Final level
Hanwha Total Petrochemical Company	7.8	6.2
Yeocheon 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

to the duties led to a shortage in China and a surge in Asian prices in Q2. This opened the export arbitrage from the EU to China and European traders were heard fixing volumes to Asia in Q2. More exports are likely in H2 2018 despite several logistical challenges.

While European producers remained open to exporting, a change in infrastructure and logistics will be necessary, sources said. For example, exports to China will require the use of large vessels and deep sea cargoes, instead of smaller barges and rail tank cars when delivering to an EU-based customer. “There needs to be more investment in infrastructure,” one source said.

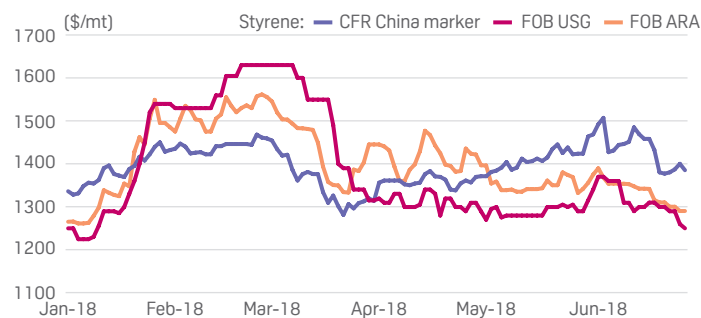
Producer inventory management will also be affected as sales to Asia will shift product in large chunks, rather than in smaller parcels. The long lead time of eight weeks to deliver product from Europe to China will mean that trades will likely be concluded on a floating price basis to China, a trader said. “This is risky,” the source said.

Apart from exports, imports are expected to increase, adding to logistical pressures in Europe. There will be more volumes from the US and South Korea, who may see excess supply as China reduces imports from these countries, sources said. In H1, South Korea shipped styrene to the Mediterranean region, and more could be expected in H2 2018.

**Two-tier pricing structure could emerge**

This could lead to a two-tier pricing structure for the European styrene spot market, sources said. European styrene consumers – or downstream styrenics producers – have specific requirements in terms of origin of product. A European consumer source said that he had long-term supply contracts with his polystyrene customers that specified the amount of EU-origin styrene that was used to produce PS. This meant that it was difficult to completely substitute EU-origin styrene with non-EU origin material. A second consumer source also added that there were significant challenges to mixing EU and non-EU origin styrene in his production of downstream products.

**ASIA BECOMES THE HIGHEST PRICED REGION, SUPPORTING EU-ASIA EXPORTS**



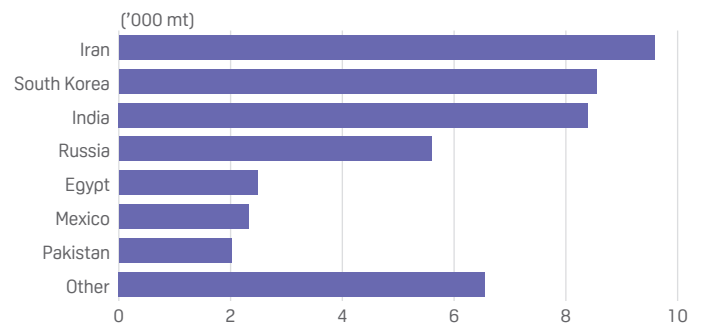
Source: S&P Global Platts

**EU IMPORTS 290% MORE STYRENE FROM US IN 2018**

('000 mt)	Jan-Apr 2017	Jan-Apr 2018	Y-o-Y chg
Total imports	112,332.6	179,002.5	59%
from the US	28,469.5	110,959.0	290%
from Russia	36,914.1	38,156.3	3%
from Saudi Arabia	35,407.6	29,271.4	-17%

Note: Not all countries have been included  
Source: Eurostat

**IRAN EMERGES AS THE LARGEST SUPPLIER OF PS TO THE EU IN JAN-APR 2018**



Source: Eurostat, S&P Global Platts

As a result, there may be increased bids and offers differentiating EU- and non-EU-origin product. There has already been a rise in origin-specific styrene bids and offers this year and this could continue in H2, sources said.

**Shake-up of European CP process**

Furthermore, the European styrene contract price process is expected to change in H2 2018 as a result of inspections by European Commission authorities on styrene purchasing companies, sources said. The EC confirmed in early June that it had carried out unannounced inspections at the premises of companies active in styrene purchasing. Several participants in the European contract price settlement process said that there will likely be a change in how the monthly negotiations are conducted going forward. This builds on existing calls for change by buyers earlier in the year. The change in the styrene contract price settlement process will have repercussions in the downstream styrenics industry which typically reference the monthly contract settlement in their pricing negotiations.

Increased uncertainty on pricing will weigh on an already strained industry, following recent years of intense volatility in styrene prices. “Converters are increasingly using polyethylene terephthalate or polypropylene [due to many uncertainties related to PS],” a polystyrene trader source said. High styrene prices had hurt PS demand last year and a repeat was seen in January-April as PS demand slowed. Polystyrene producers struggled with reducing inventories, which meant difficulties in passing through the full change in feedstock prices.

In addition, PS producers will see increased competition from imports, despite a temporary relief in May-June amid



a weak euro exchange rate. South Korea has historically been the major supplier of PS to the EU, supported by the free trade agreement between the EU and South Korea. In 2017, volumes from South Korea were 18% of the EU's total imported volumes. However, there have been aggressive moves by other sellers into the market, such as India and Egypt.

E-styrenics in Egypt restarted its unit last year and has been targeting its sales in Europe. In addition, volumes from Iran have surged over the past year. In 2017, Iran was the second largest supplier of PS to the EU after South Korea. It became the largest supplier of PS to the EU between January–April 2018, overtaking South Korea. “The major threat I see is from Iranian products,” the PS trader source said.

Elsewhere, US tariffs on EU steel and aluminium could have implications in the plastics industry as they would affect trading of finished goods, such as automotives and white goods. Acrylonitrile butadiene styrene, for example, is used for components in these sectors and may be affected, an ABS source said.

In conclusion, factors both external and internal to the EU will shape the styrene and downstream markets in H2 2018. The duties in Asia will change global trade flows, while the EC investigations could instigate changes in pricing within the European styrene industry.

—*Yuriko Kato*

## Europe addresses the paraxylene question

- **PX surplus to subside in wake of Sines restart**
- **Export front remains active, but for how long?**
- **Imports from Red Sea region challenging**

All eyes in the xylenes markets in Europe will be on paraxylene in the second half this year, which is experiencing new demand from the restart of an idled downstream purified terephthalic acid plant.

Indorama restarted its 700,000 mt/year PTA plant in Sines, Portugal in Q2. While it is near certain that the PX surplus in the region will largely subside as a result, the question remains whether the balance in Europe will shift to a net importer position.

“I don't think there is enough PX in Europe, they [Indorama] would certainly have to go to the Middle East,” a European aromatics trader said.

To meet the requirements of the Sines plant, Indorama would need around 50 10,000 mt clips of feedstock PX annually, a second aromatics trader said.

Already, Indorama was heard to have procured around 34,000 mt of PX from various sources, ahead of the planned restart of the PTA plant. Of this, around 15,000 mt was reportedly sourced from the Middle East.

However, not all market participants were convinced that imports would continue to flow. Some market participants were of the opinion that the increased requirement of PX in Europe could be covered by production facilities within the region.

### The European PX story

Over the past years, PX supply in Europe has consistently been in surplus, with the region being a net exporter throughout.

In 2017, Europe's net exports were 330,582 mt, while the figure for January–April this year stood at 68,250 mt, the latest Eurostat data showed. This was as the Sines PTA plant had been idled, which had kept PX structurally long in Europe, leading PX producers to export surplus volumes to the US, Mexico and Turkey.

The European export front has remained active subsequently in May and June, with multiple parcels of 5,000 mt heard exported, in spite of the restart of Sines.

According to S&P Global Platts data, the total PX production nameplate capacity in Europe is around 2.4 million mt/year.

Meanwhile, the European total PTA nameplate capacity stands at around 3.6 million mt/year, now that Indorama has restarted Sines. With 0.66 mt of feedstock PX required to produce 1 mt of PTA, the active nameplate capacities of the two products now seem to be closely matched on paper.

“[PX producers] will gradually shift their focus from exports to supplying Indorama,” a second European aromatics trader said. “I think PX producers still have room to run their plants harder, I do not anticipate Europe becoming a net importer in the near future.”

A third European aromatics trader was also of the view that Europe will be able to largely cater PX internally for its increased PTA operations, and added that “Europe will still carry on exporting [PX].”

“When Artlant were running the [Sines PTA] plant, material [PX] was still getting exported,” he explained.

However, Indorama since had doubled the capacity of its Rotterdam PTA plant to 700,000 mt/year, from 350,000 mt/year.

### The PX road ahead

Besides the European players, the primary beneficiaries of the increased PTA capacity in the region are likely to be Saudi, Turkish and Israeli PX producers.

With 150,000 mt/year of PX capacity in Haifa, Israel, and 119,000 mt/year in Aliaga, Turkey, the two Mediterranean plants are the best positioned among non-European producers to supply the Sines plant in Portugal.

Saudi Arabia-based Yasref has a 706,000 mt/year PX plant on the Red Sea coast city of Yanbu, which is also well positioned for supplying Indorama.

Furthermore, Saudi's Petrorabigh commenced exports to Asia around end-March, from its 1.34 million mt/year new PX plant in Rabigh, also located on the Red Sea coast.

But attracting imports from the Red Sea region will prove challenging, given that European PX spot and net contract prices have historically remained below those in Asia.

"They [Saudi PX producers] won't sell it below netback to Asia, which is going to put quite some pressure on the European contract prices," the first trader said.

Whether the bulk of the marginal PX demand would be met internally within Europe would be dependent on run rates of European PX plants, together with how existing export arrangements are reshuffled. Similarly, the operation rates of the PTA plants would be instrumental in determining the extent of the PX demand increase.

—*Sam Hashmi*

## Supply length and marginal exports point to weak H2 for European MTBE

- **Long supplies of MTBE, reformates and mixed aromatics deeply embedded**
- **Summer driving gasoline demand weaker than expected**
- **Diesel negatives show potential long-term upside for ethers**

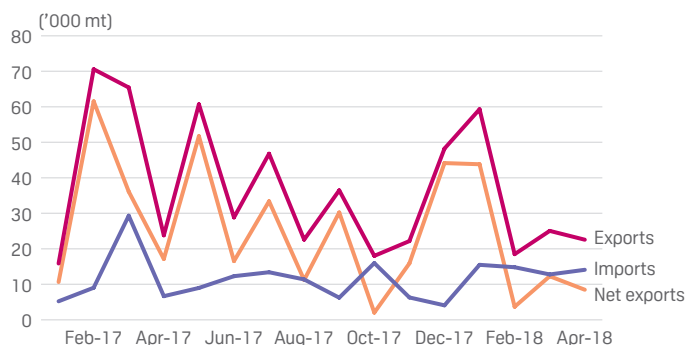
MTBE faces a bleak second half in 2018 with supply woes seen earlier in the year expected to persist, especially with a lack of export sales opportunities pointing to the backlog clearing slowly.

### High octane blend components in competitive environment

MTBE's superiority as a blend choice has been under pressure from the sheer weight of alternative components available in the European market and the issue shows little sign of being resolved in the near term. Reformate supplies have been long and have proven to be a strong competitor against MTBE as a primary choice for blendstock.

Mixed aromatics have also felt their presence known, due to curtailed exports of material to China. A consumption tax for mixed aromatics was introduced at the end of 2017 of 23 cents/liter, with European exports trickling to a halt

## WILL SINES RESTART SEE EUROPE FLIP TO NET PX IMPORTER?



Source: Eurostat

as buyers fell silent. There were hopes in some circles that the Chinese gasoline industry would struggle without these imports, forcing the situation to be reconsidered. So far, this hope seems misplaced.

The lack of MTBE export opportunities has proven to be a serious issue in 2018 and there are few possible trigger points that could spell improvement for European producers. Trading activity has improved slightly during driving season, but overall supply length remains a high wall to climb. MTBE exports have fallen off sharply from the levels seen in 2017, especially the highs of the first quarter.

Q2 exports have been even more of a struggle according to market sources, though data is yet to be made available on total volumes pushed out. Key consumer countries have shown little interest in importing MTBE.

West Africa, a major export destination for MTBE and MTBE-blended gasoline, is long on gasoline and has shied away from the market. Supply has been heard to be long to the extent of Nigeria attempting to return gasoline vessels queued at port – a far cry from the shortage crisis declared in March.

Over in the US Gulf producers are running at 100% and Latin American demand has been covered by this output, cutting off another market that gave an extra outlet to EU sellers in the first quarter of the year.

Weak economic performance from Venezuela and other countries will keep EU exporters out of the market as long as USG material is available. This pressure from the export market means there is little opportunity for the European MTBE factor to gasoline to improve, with market estimations seeing value around 1.10 for the remainder of the year.

### Low gasoline demand keeps MTBE under pressure

The low call for gasoline has spelled the most trouble for MTBE as this has seen blending activity plummet. This can be seen as more of an issue than the long supply situation

for octane booster through the naphtha to gasoline price spread, currently just over \$70/mt – generally a positive environment for MTBE demand.

This usually means greater amounts of naphtha are used in gasoline production, requiring a higher value octane booster as a result. The primary market for EU gasoline has been the US and this is likely to remain the case. MTBE-blended gasoline cannot be legally used within the United States.

On the front of the near-term, the market looked to the July OPEC meeting to decide on production ramp-ups. Some predictions from US analysts have seen crude rising to \$100/b if extra material is not introduced to the market to balance against the US-Iran trade sanctions. This has led OPEC to describe the second half of the year as holding “pronounced uncertainty.”

**Positive market for ethers long term**

Despite the gloom over the MTBE market entering the second half of the year, the longer term outlook for ethers has been positive. In Europe, a move away from diesel fuels is expected to continue after the emissions scandal raised serious environmental concerns and heightened consumer awareness.

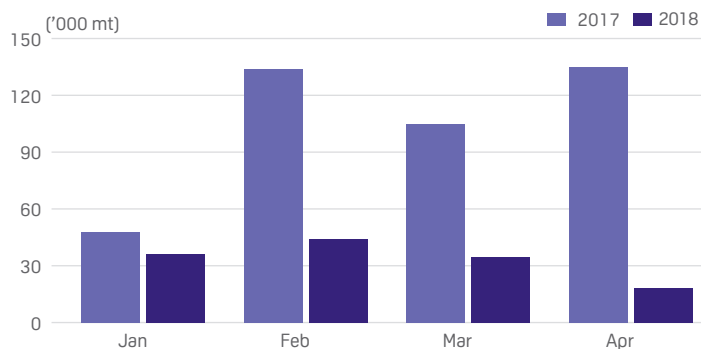
“We won’t see a serious uptick this year, but it will come,” said an MTBE producer.

Russia will present an example of this, as gasoline producers are looking at producing greater quantities of RON 100 rated gasoline – a value that requires higher value octane boosters such as MTBE, ETBE or TAME.

A producer said they expected to see demand for MTBE increase next year within the Russian market. Oil and gas companies have also anticipated this, building vertical integration to lessen their reliance on purchasing blending components externally.

—Simon Price

**EUROPEAN MTBE EXPORTS PLUNGE ON LONG GASOLINE SUPPLIES**



Source: Eurostat

**POLYMERS**

**European PET crunch extends to Q4 as PTA challenges persist**

- Short PET supply continues into demand peak
- Feedstock PTA under pressure in Europe, Asia
- R-PET to decouple from virgin price trends

Polyethylene terephthalate is expected to remain tight within Europe in the coming months, say market sources, as we enter the second half of the year.

The lack of supply that characterized the second quarter of 2018 looks set to persist past the high season and on into Q4, with additional maintenance planned for early autumn and as issues with feedstock purified terephthalic acid continue.

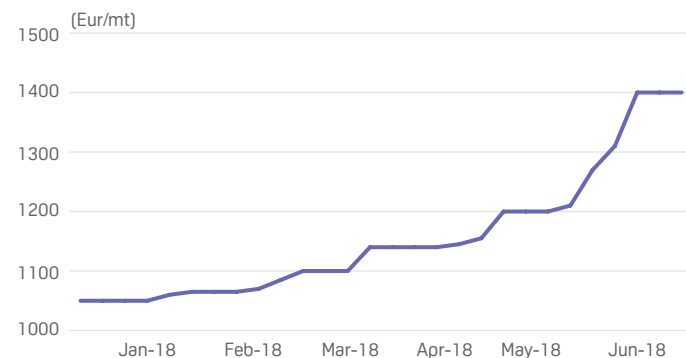
PTA shortness has been the major driver of European PET in recent months, aligning with the beginning of the high PET demand period in Europe. Peak demand and heavily stunted supply saw prices for spot material rocket in Q2 to six-year highs of Eur1,400/mt (about \$1,640/mt).

While high prices are expected to endure for as long as the supply tightness continues, some relief may be seen as the high season ends and buying moves to inventory replenishing and demand becomes less urgent.

Bringing new material into the European market, Neo group started its new line at its facility in Klaipeda, Lithuania, in mid-June. The new line provides an additional 160,000 mt/year of capacity in Northeastern Europe and will offset the supply lost to planned maintenance at the same site in Q4 – Neo group has scheduled a turnaround lasting six weeks at another of its 160,000 mt/year lines in October, according to a company source.

Spanish Novapet is also scheduled to undergo maintenance at its 260,000 mt/year Barbastro plant. The maintenance,

**PET SPOT PRICES SURGE ON EUROPEAN PTA TIGHTNESS**



Source: S&P Global Platts

which starts in September and is expected to last 45-50 days, will not impact contract volumes as the company expects to have secured material to cover these, a company source said.

In other plant news, Indorama in June agreed to purchase half of Dhunseri Petrochem Ltd.'s EIPET 540,000 mt/year facility at Ain Sokhna, Egypt. Market sources expect that PET not consumed locally may be exported to Europe given the favorable location of the plant on the Suez Gulf.

### PTA to remain tight on limited domestic production, resupply

A turbulent second quarter left the European PTA market critically short and the supply tightness is expected to continue at least throughout Q3. Depleted PTA stocks in Europe and the remaining force majeure on supplies from BP's plant in Geel, Belgium, mean resupply from other regions is needed to re-balance the market.

However, multiple Asian producers have recently been, or are currently, undergoing maintenance works or experiencing issues, which suggests that PTA imports to Europe could be limited in the coming months.

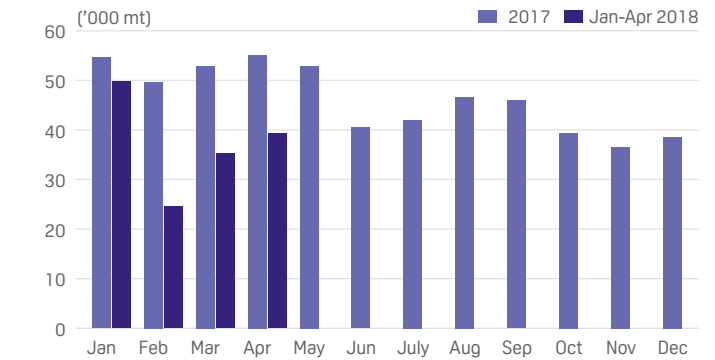
Chinese PTA maker Ningbo Liwan shut its 700,000 mt/year plant for 20 days of standard maintenance on June 6. Hanwha General Chemical in South Korea declared force majeure on May 21, and the 700,000 mt/year Daesan plant was yet to restart. RP Chemicals in Malaysia also had technical issues in late May at its 610,000 mt/year plant in Pahang.

Asia is the main supplier of PTA into Europe, with South Korea alone providing 83% of material. But with additional volumes from Asia unlikely to materialize in the near future, the replenishing of stocks will have to rely primarily on the normalization of domestic European production.

Most PTA units in Europe are running well at the moment, however supplies from Geel, which accounts for one-third of total PTA production in the EU, are still curtailed. Following declaration of a force majeure on April 4, after a reported explosion at the 1.3 million mt/year plant's powerhouse, BP is currently delivering only 70% of contracted volumes, according to market sources up from 20% in late May. There is no clear timeline for when the company will lift the force majeure and start delivering full volumes.

While PKN Orlen's PTA production is now back to normal after a force majeure in April, the 600,000 mt/year Wloclawek plant is scheduled to undergo maintenance works for five weeks from late September, the company said June 22. A five-week outage would likely keep the European

### EUROPE DEPENDS ON ASIAN PTA IMPORTS



Source: Eurostat

PTA balance tight, as was demonstrated during the plant's force majeure in April, December and November.

Additional supplies are expected from Portugal in the coming months, as Indorama has re-started its 700,000 mt/year Sines plant. However, the company is expected to use the bulk of its produce captively, feeding its recent venture in Egypt (see The Paraxylene Question feature starting on [page 9](#) for more details).

### Recycled PET to find new demand base

The high price of virgin PET has seen European recyclers enjoying a bumper year so far, pushing recycled prices to their highest levels since 2012.

The Q2 tightness and cost of virgin material saw some consumers turn to R-PET to fill their requirements. The pressure created by virgin prices helped recyclers to recover their margins following recent price hikes for feedstock baled bottles. However there is growing expectation among recyclers that pricing is set to diverge as recycled material gains market share.

Public concern about plastic disposal and interest in sustainable use has rocketed recently. In response PET consuming companies are increasingly making commitments to recycled material. Coca-Cola has committed to 50% recycled material in its plastic bottles by 2030 and Evian has committed to 100% recycled plastics by 2025, with many others instigating similar initiatives.

These company commitments are expected to provide a consistent demand base for recycled material going forward. These new demand drivers will mean that R-PET is no longer considered solely an alternative to or substitute for virgin PET.

—Emmanuel Latham

## Post-election polymers market stability could prove illusory for Turkey

- **Economic uncertainty to underlie Turkish polymer demand**
- **Additional global PE to keep the country well-supplied**
- **New duties could affect PVC and PS imports**

The prospect of political stability post-presidential elections in Turkey may be no more than a temporary respite for the chemicals markets, as economic uncertainty and flaccid demand look likely to define the second half of 2018.

As with the first six months of the year, monetary policy will be a major factor determining the direction for polymers, however rising global supplies will start being felt in the country more acutely too.

The re-election of President Recep Tayyip Erdogan at the end of June led to the Turkish lira jumping 2.2% on the following morning, providing some relief to a country plagued recently with devaluation worries. However it may not be enough to boost a market still reeling from an extraordinarily low lira. During May, the lira hit an all-time low of 4.9221 against the US dollar, largely attributed to Erdogan's objections to increasing interest rates as a means to curb inflation.

Though the prospect of political stability appears to have lifted the currency, the economic uncertainty concerning Erdogan's policies is not expected to disappear in the second half of the year with him likely to exert more control over monetary policy after winning a new five-year term.

### Turkey to feel new global PE supplies

The Turkish market is likely to be inundated with polymer offers from the Middle East as capacity expansions continue. Iran will remain the focal point of polyethylene production capacity rise over the coming years. S&P Global Platts expects the region's surplus to hold at around 12.4 million mt in 2018 and move to 18.6 million mt by 2028.

### TURKISH LIRA DEPRECIATES AGAINST US DOLLAR



Source: S&P Global Platts

### TURKISH HDPE SPOT MOVES TO PREMIUM TO LDPE



Source: S&P Global Platts

However, the story does not end with the Middle East. Turkey's location as a swing consumer means it can expect to receive offers from all over the world, and the North American shale-based polyethylene investments have strengthened that region's role as a net exporter.

North America is set to have an annual average surplus of 11.1 million mt over the next decade if all the firm projects materialize as planned. Capacity growth in North America could potentially be 40% between 2017 through to 2028, according to S&P Global Platts Analytics.

In the near term, however, it is unclear how big an effect US PE will have. Sources said that US PE has been going to China and Latin America, and is unlikely to hit the Turkish market for at least a couple of months.

Despite China's drive towards self-sufficiency, the Asian region will see its net import position grow from 12.6 million mt in 2018 to around 26.2 million mt by 2028, according to Platts Analytics. Capacity during this period is set to grow by 38% but still will not be enough to lessen the regional deficit as demand growth is set to remain healthy.

However, US exports to Latin America could cause a domino effect, displacing material from elsewhere and making it look for a new home in other regions, including Turkey.

### High stocks, weak lira to cap polyolefins demand

Added to that, the demand outlook does not look too bright. Polyethylene inventories in particular have been high which in tandem with a weak lira will be limiting traders' and converters' appetites.

Overall polymer demand in Turkey has been poor during the first half of the year – though the polypropylene market has emerged as more resilient to the bearish economic backdrop than polyethylene and other polymers.

Low-density and linear low-density polyethylene are likely to remain the weakest polymer markets in the second half of the year amid new global supply. At the same time high

density PE demand is likely to continue outperforming other grades against the backdrop of tightening HDPE markets in other regions.

“PE stocks are currently very high in Turkey, and PP demand is weak now. Stocks are lower in PP so demand might go up. But the classical supply/demand situation is not that important in Turkey – politics and devaluation of lira are still the main factors,” one trader said.

### **Fencing off PVC and PS imports**

The situation with other polymers will remain unclear with Turkey seemingly shooting itself in the foot by introducing, or looking to introduce, additional duties on supplies of PVC and polystyrene.

At the end of June Turkey started applying retaliatory duties against the US which imposed extra tariffs on steel and aluminum. The list of products which will incur additional duties includes some chemical compounds, including polyvinyl chloride. PVC will incur an additional duty of 25%, revised down from the originally proposed 32%, and this will be imposed on top of the 6.5% normal and 18.81% anti-dumping duties.

The measure will either mean lower imports and hence higher prices or – more likely – a shift in trade flows, with

the US PVC supplies being replaced with PVC originating elsewhere.

Separately, Turkey’s Ministry of Economy has launched an anti-dumping investigation into Iranian polystyrene in the spring, and if successful, it could lead to tighter supplies which would have a bullish impact on the market.

Turkey is a net importer of both polymers, and limiting their supplies should not be in its interest. In the first five months of the year Turkey imported 348,155 mt of PVC and 97,033 mt of PS, according to data from Turkstat. Last year total imports of PVC amounted to 806,000 mt and of PS to 250,000 mt.

Turkish imports of PVC from the US totaled 106,121 mt last year, accounting for 13% of total imports. Iranian polystyrene totaled 41,591 mt, and accounted for 17% of total Turkish PS imports.

While duties may have a bullish impact on Turkish polystyrene and PVC, persistent political doubts and devaluation worries will continue to drive the bearish polyethylene and polypropylene sentiment expected over the next few months.

*—Luke Milner and Lara Berton*

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