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Petrochemical Viewpoints - A Look Ahead

VIEWPOINT: NEW PE UNITS TO DRIVE US ETHYLENE DEMAND

Houston, 28 December (Argus) — Derivatives units expected to come online in 2017 ahead of delays in new cracker capacity are boosting spot ethylene prices into the first half of the year.

As cracker turnarounds and expansions wrapped up beginning in November, spot ethylene prices fell to 21.375¢/lb on 10 November, the lowest price since February, because of reduced demand. Ethylene rebounded late in 2016, trading above 26¢/lb on 8-13 December, with first quarter prices seen at a premium to December and an even larger contango shown for the second quarter.

Construction problems and delays in finding skilled staff to operate the new plants are pushing ethylene capacity expansions back by between six and nine months, which should create a short-term demand pull on ethylene for 2017. Producers are bringing new polyethylene units online mid-year, ahead of new monomer capacity, and are expected to whittle away existing ethylene inventories until new capacity to feed the derivatives units is online.

ExxonMobil Chemical, Chevron Phillips Chemical and Dow are all scheduled to bring new Gulf coast ethylene and polyethylene production online during 2017. ExxonMobil's 1.3mn t/yr polyethylene expansion in Mont Belvieu, Texas, Dow's new 1.05mn t/yr polyethylene facility in Freeport, Texas, and CP Chem's two 500,000 t/yr PE units in Old Ocean, Texas,are expected to come on line around mid-year. Dow's 1.5mn t/yr cracker in Freeport is also expected to start up around that time, ExxonMobil's 1.5mn t/yr cracker in Baytown, Texas, and CP Chem's 1.5mn t/yr cracker at its Cedar Bayou site in Texas are expected to come online either late next year or early in 2018.

Additional cracker turnarounds expected in February, March and April and could lend further support to ethylene prices, but price support from past spring turnarounds was mixed. In the second quarter of 2015, ethylene prices at Mont Belvieu, Texas, averaged 29.91¢/lb, up 15pc from the rest of the year, while second quarter 2016 pricing averaged 9pc under the overall 2016 average of 26.99¢/lb.

VIEWPOINT: US TOLUENE PRICES SET TO GET OCTANE BOOST

Houston, 29 December (Argus) — Toluene and mixed xylenes are poised to see stronger consumption from gasoline blending next year after lackluster demand in 2016.

Prices are likely to rise ahead of second-quarter gasoline-blending demand. In December, traders and producers kept inventories in check ahead of ad valorem taxes. That ran counter to trends seen in December 2015, when producers stockpiled blending components following abnormally strong octane demand in the previous summer driving season.

In July 2015, toluene reached a high of 312.5¢/USG, a spread of 112¢/USG over Rbob.

This year, toluene and MX saw less demand from blenders, as cheaper reformate in the second quarter of 2016 limited demand for higher-priced toluene and MX.

Once the RVP change for summer blending occurs in 2017, octane demand is expected to return, but well below the high levels seen in 2015. Inventories are expected to start the year lower than in 2016, contributing to a tighter market.

Limited spot availability for toluene and mixed xylenes, coupled with firm demand is poised to lift prices going forward. A heavy schedule of refinery turnarounds during the first quarter 2017 will support prices as well.

Octane demand is poised to surge in the 2017 US driving season following new 10ppm sulfur regulations for gasoline. Meeting this requirement could lead to some octane destruction, possibly bolstering demand for reformate or toluene and MX. But the first quarter impact of the rule remains unclear, as some refineries are already likely to use sulfur credits to ease into the transition and meet the lower sulfur requirements later in the year.

As 2016 drew to a close, at least two major MX buyers remained in the market seeking December product. Several toluene buyers remained in the market in mid-December, pushing toluene to a premium over MX.

Toluene reached a 2016 high of 237.5¢/USG on 8 December, well above prices seen during the earlier summer gasoline driving season. Mixed xylenes reached a 2016 high of 238.5¢/USG on 18 October as extraction was limited.

VIEWPOINT: STYRENE DEMAND TO OUTPACE SUPPLY IN 2017

Houston, 27 December (Argus) — US styrene demand is set to rise in early 2017 and remain strong through the year as scheduled turnarounds in the US and Asia, coupled with steady global demand growth, tighten supplies.

Styrene prices rose at the end of 2016 following two unplanned outages in November and a delayed unit restart in December. Two producers stepped into the spot market to buy additional volumes ahead of planned January maintenance, leaving spot supply constrained. As a result, December saw little styrene available for export to China, where planned turnarounds are also scheduled for 1Q 2017 and January pricing was discussed at a $5-10/t premium to December. Since the start of November, prompt US styrene prices rose from 46.99¢/lb to a high of 55.99¢/lb on 12 December.

Global styrene demand is expected to grow about 1pc in 2017, but no additional styrene capacity is expected to come online over the year. Since 2014, this steady demand growth bolstered producer margins, and this is likely to continue until new capacity in Asia comes online in 2018-2019.

Styrene costs are also expected to rise in early 2017, as US benzene's forward curve stands in contango through 1Q. Benzene supplies in the US tightened in December as rising demand in China diverted cargoes from South Korea to that country rather than the US. In early December strong prices in China briefly opened up a US arbitrage, with an estimated 30,000t fixed from the US to China, further tightening supplies in the US market and pushing spot benzene prices as high as 280¢/USG on a December ddp Houston/Texas City basis 7 December. An estimated 47,000t of benzene will arrive in the US in December, well below the 100,000t average seen in the last two years.

VIEWPOINT: CHINA DRIVES BENZENE DEMAND

Singapore, 29 December (Argus) — Trading dynamics in the Asia-Pacific benzene market are likely to be driven by continued growth in Chinese demand in 2017, drawing supplies away from the US.

Another 1.23mn t/yr of new styrene monomer (SM), phenol and caprolactam capacity is scheduled to come on stream in China in 2017. The planned start-ups translate to around 1mn t of incremental benzene demand. And there are minimal expansions of benzene production capacity due next year, leaving China even more dependent on imports.

Chinese imports are likely to hit around 1.8mn-2mn t in 2017, a key east China-based trader and importer forecasts.

Imports "should be much higher than this year due to better downstream demand," an official at a major Japanese trading firm says.

Chinese benzene imports are on course to rise by nearly 20pc in 2016 compared with record volumes a year earlier. Imports doubled in 2015. Estimates put Chinese imports in 2016 at 1.4mn-1.5mn t. This means the top end of the 2017 import prediction of 2mn t — if achieved — would represent growth of at least 33pc compared with 2016.

But benzene supply from China's coal-based units in particular is expected to remain limited, increasing the stress on import demand. Coal-based benzene supply makes up nearly 18pc of China's total 12mn t/yr capacity.

Restrictions on the use of coal imposed by the Chinese government this year have resulted in a drop in production from these units. The output curbs may continue into 2017, limiting production further.

Regional sellers are focusing on China rather than the US market in 2017, resulting in a major shift in trade dynamics. The arbitrage window from Asia to the US has been closed on paper in 2016, with the average inter-regional price spread at $20/t through mid-December. Freight rates to ship 6,000t of benzene from South Korea to the US have been at around the $40/t level.

But the average fob south Korea-cfr China spread has been at around $19/t in 2016, on par with freight rates of $18-20/t for loading 3,000t of benzene.

The US has historically been the largest global importer of benzene. But the surge in Chinese demand since 2015 could see China take over this leading position in the coming years.

VIEWPOINT: OCTANE DEMAND TO SUPPORT EUROPEAN TOLUENE

London, 29 December (Argus) — European toluene will be supported in 2017 by demand for low sulphur octane from China and the US, owing to stricter gasoline specifications in the two regions.

Toluene prices are likely to be supported early in the year by the export of mixed aromatics to China and then be buoyed over the summer as the US looks for octane for its peak summer driving period.

China's inland provinces will reduce their gasoline sulphur content to 10ppm from 50ppm at the start of 2017, and will need to import low sulphur octane such as mixed aromatics to meet these new specifications. After the gasoline sulphur content was reduced to 10ppm in coastal provinces at the start of 2016, China saw a large increase in mixed aromatics imports, especially from Europe. Over 4.3mn t of mixed aromatics was exported from western Europe (EU-15) to east Asia, primarily to China, in the first 10 months of 2016, compared with 1.17mn t over the same period in 2015. China is likely to import a total of around 9mn t of mixed aromatics from all regions during 2016 compared with 6.5mn t in 2015.

Exports from Europe will be firm in the first quarter of 2017, but are likely to be slightly lower than the volumes exported over the same period a year earlier because of the recovery in crude prices. Ice Brent crude fell below $30/bl in January 2016, which encouraged Chinese refiners to import octane components because of the effect of local price floors based on $40/bl crude.

Octane demand from the US is likely to push European toluene pricing higher in the second quarter ahead of the US summer driving season, in contrast to the previous year. Demand for toluene and mixed xylenes for gasoline blending was relatively weak over the summer of 2016 as blenders had built up large inventories following unexpectedly strong gasoline and octane demand in 2015. Blenders will aim for better management of inventories this coming year.

Demand in 2017 will also be supported by a change in US gasoline specifications at the start of the year, when the sulphur content will reduce to 10ppm from 30ppm and increase US need for low sulphur octane. The US has access to alkylate as well as ethanol, but demand for aromatic octane is still likely to be firm. As well as having a low sulphur content and high octane rating, aromatic octanes have a low reid vapor pressure (RVP) thatmakes them attractive to blenders, especially over the peak summer driving season.

Recent increases in crude prices could support increased shale oil production in the US, which will lead to increased volumes of low octane light naphtha. This will raise demand for high octane components such as toluene and mixed xylenes from blenders, providing further support over the summer. Toluene pricing could gain support from export interest to India if European cargoes remain competitively priced to Asia-Pacific values. Exports to India were close to 40,000t in the first nine months of 2016, and are likely to continue at that level in 2017, although the majority of these are opportunistic flows rather than structural.

Downstream, European toluene diisocyanate (TDI) production will

improve early in 2017, boosting demand for TDI-grade toluene. German chemical firm BASF's 300,000 t/yr TDI plant at Ludwigshafen is scheduled to ramp up to full capacity in the first quarter of 2017. The plant has been plagued by technical problems since it was inaugurated at the end of 2015 and was most recently shut at the end of November following a technical default.

German speciality chemical and polymer producer Covestro's 300,000 t/yr TDI plant in Dormagen, Germany, has been running at reduced rates since the start of October following production issues at its feedstock nitric acid supplier. It started to ramp up production and build stock levels from mid-December 2016, further improving TDI-grade toluene demand in the first quarter.

But Europe will remain long on toluene following the increase in extraction capacity at Total in Antwerp and debottlenecking at BP in Gelsenkirchen and at Shell over the past few years. This will continue to keep toluene at a discount to US and Asia-Pacific pricing, allowing for exports out of the region.

VIEWPOINT: EUROPE BENZENE GETS IMPETUS FROM ASIA, US

London, 5 January (Argus) — The European benzene market will get off to a strong start in 2017, drawing impetus from Asia-Pacific, which should stay firm ahead of the Chinese New Year in late January. Seasonal stock rebuilding ahead of a heavy cracker turnaround season in Europe and styrene maintenance shutdowns in Asia-Pacific and the US will further support benzene demand in the first half of 2017.

Europe was driven by a robust and tight Asia-Pacific market, particularly China, in most of the fourth quarter of 2016. An open arbitrage led to the export of European cargoes, which helped reduce the supply length in the region triggered by downstream production issues.

Spot prices for benzene rose to $830/t cif ARA on 8 December, a 16-month high, and stayed above $700/t since, levels that were last maintained between March and August 2015. The renewed strength in upstream crude and naphtha markets also helped propel benzene, a trend that is to persist in 2017.

Benzene spot prices recovered from a five-month low of $627.50/t in November when supply started to build up following production disruptions at German speciality chemical and polymer producer Covestro's methylene diphenyl diisocyanate (MDI) units in Europe in October because of feedstock supply issues. The unexpected shutdown of the Maasvlakte propylene oxide-styrene monomer (POSM) unit in the Netherlands, jointly owned by LyondellBasell and Covestro, in November because of a power outage exacerbated the excess benzene supply.

Benzene has left Europe since November, with cargoes carrying at least 20,000-30,000t fixed in the first half of December alone for Asia-Pacific. Freight costs for a recent 10,000t cargo were fixed at around $90/t. The rally in Asia-Pacific, which brought FOB South Korea prices to a near two-month high of $915/t on 9 December, was propelled by increased demand in China on the usual inventory rebuilding ahead of the long Chinese New Year. The start-up of new derivatives units and reduced supply from coal-based plants should underpin benzene demand in China in 2017.

Covestro's feedstock supply problems have been resolved, allowing it to start rebuilding depleted inventories. The Maasvlakte POSM unit, which has a styrene capacity of 640,000 t/yr, is undergoing a slow and steady restart process. The return of these production units, alongside restocking down the chain ahead of the cracker and styrene turnarounds and the seasonal demand upturn in the spring-summer period, will sustain benzene's upward momentum in the first half of 2017.

Styrene plants in Europe ran hard in the fourth quarter, when production traditionally slows ahead of the year-end demand lull. This year an open arbitrage to China — where demand has stayed robust because of a heavy styrene turnaround programme in Asia-Pacific and in the US in the first half of 2017 — has countered that seasonality.

Strong margins encouraged high styrene production run rates from November that are likely to continue through January. Spot styrene's premium to feedstock benzene was above $400/t between November and mid-December, reaching a near six-month high of $478.50/t on 29 November after hovering below $300/t during the third quarter.

US benzene prices are likely to be firm in the second and third quarters, driven by strong demand and firm toluene prices through the peak gasoline season. European downstream demand will be strong, with no major styrene turnarounds in the first half of the year. An estimated 120,000t of benzene production will be lost as a result of scheduled cracker shutdowns in Europe between March and June.

Part of the lost supply will be compensated for by benzene output from reformate as refineries will be running hard in the first half of 2017 on seasonal strength in the gasoline market and buoyant octane demand in China.

A firm upstream market will provide strength and relative stability in benzene in Europe after a generally volatile 2016. For 2017, Argus DeWitt is forecasting North Sea Dated crude to steady within the $50-55/bl range, and naphtha to hover close to $450/t. The benzene-naphtha spread is forecast to average a little over $300/t in 2017. Between January and 19 December 2016, crude, naphtha and the benzene-naphtha spread averaged at $43/bl, $383/t and $280/t, respectively, Argus data showed.