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CHINA LOCAL ACETIC ACID MARKET SEEN BALANCED-TO-TIGHT
By Anna Xiang

China’s domestic acetic acid market fundamentals in 2018 are expected to be balanced-to-tight, which would support prices, with the expected increase in supply just sufficient to meet current demand.

Production capacity in the country is expected to inch up around 1% this year, with the scheduled start-up of Tianjin Bohai Chemical Industry Group’s 100,000-tonne/year plant.

The plant is expected to begin production in the late second quarter or the third quarter of 2018, a company source said.

In April, Sinopec Great Wall Energy and Chemical plans to shut its 300,000 tonne/year acetic acid unit in Ningxiang for around a month of turnaround, but this is not expected to affect domestic supply as most of the plant’s output are for captive consumption.

Meanwhile, China’s acetic acid production, particularly from plants in the northern region, could be hit by the government’s measures to control the typical spike in air pollution in the “2+26” cities during the first quarter of 2018.

The “2+26” cities refer to Beijing and Tianjin municipalities, eight cities in Hebei province, four cities in Shanxi province, seven in Shandong and seven in He’nan.

Acetic acid consumption, on the other hand, is forecast to grow at a faster pace of around 5%, with a slew of downstream purified terephthalic acid (PTA) units coming on stream in 2018.

The PTA projects, if running at full capacity, will increase acetic acid consumption by around 250,000 tonnes per year.

Apart from new downstream start-ups, Xianglu Petrochemical resumed operation at two long-idled PTA production lines at...
Xiamen, Fujian province in early November. The lines have a total capacity of 3m tonnes/year. Meanwhile, Reignwood Petrochemicals restarted two PTA lines in Zhejiang province, each with a capacity of 700,000 tonnes/year during October-November. These PTA plants have an estimated monthly acetic acid consumption of 10,000 tonnes, when running at full tilt.

Around 21% of acetic acid consumption in China are used in PTA production.

Meanwhile, demand for acetic acid used in ethanol production looks set to rise next year following the country’s announcement in mid-September to roll out the use of ethanol gasoline nationally by 2020.

Some producers are planning to restart their acetic acid-based ethanol units early next year as feedstock cost is likely to stay low.

Domestic prices of acetic acid in China may be weighed down by tepid demand during the first quarter, a traditional lull demand season for the industry.

Moreover, increasing volumes of acetic acid are expected to be shipped overseas this year.

In the first three months of 2018, China could remain a major source of supply to India and Europe to cover the shortfall of US cargoes into these markets.

Eastman Chemical’s and BP’s acetic acid force majeure, which was declared in the aftermath of Hurricane Harvey in September 2017, will remain in place until around January 2018.

In the meantime, nearly 1m tonne/year of acetic acid capacity in India, Saudi Arabia, and Japan, will be taken off line for maintenance during the first half of 2018, causing an estimated production loss of about 60,000 tonnes.

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China’s acrylic acid (AA) margins may decrease in 2018 in response to rising supply following releases of new capacities and plant restarts at German-based BASF in mid-August 2017.

About 640,000 tonnes of new capacities will be in place in 2018, according to ICIS data, which might push up the domestic output by 330,000 tonnes if fully starting up as scheduled.

Furthermore, Japan-based Nippon Shokubai plans to start up its 100,000 tonne/year plant in Belgium in May, which will mount up the supply overseas.

On the demand side, the butyl acrylate export market was bullish in 2017 due to force majeure declared by German’s BASF at its acrylic acid and ester plants. This encouraged domestic acrylic ester producers to operate at high run rates.

The production of acrylic ester rose by 11% year on year to about 1.91m tonnes, according to ICIS data, with butyl acrylate occupying the largest share of about 1.53m tonnes, up by 12% from last year.

Glacial acrylic acid (GAA) is another major downstream product of AA, which is the feedstock of superabsorbent polymer (SAP) and UV curing paint.

SAP demand grew rapidly in recent years, consuming near 70% of GAA, and the annual demand increase all exceeded 10% on the back of increasing aging population, implementation of the two-child policy and environmental protection issue.

In 2017, domestic SAP capacity expansion was 108,000 tonnes, pushing the total capacity to around 1.3m tonnes. This, together with improved capacity utilisation amid upgraded consumption, meant stronger demand for GAA. The AA output rose by 12% year on year to about 2.03m tonnes in 2017, while GAA output increased by 15% year on year to around 550,000 tonnes.

In remains unclear how downstream demand will perform in 2018 in terms of changes in supply and policies domestically and globally. German’s BASF has restarted its acrylic acid and ester plants in mid-August 2017, and domestic butyl acrylate exports decreased in the latter part of 2017 as a result. Hence, the butyl acrylate export volumes will move down in 2018. Domestic butyl acrylate capacity will increase by 400,000 tonnes in 2018, and the output is expected to add about 100,000 tonnes as most plants will not start up until the second half of the year.

<table>
<thead>
<tr>
<th>Region</th>
<th>Province</th>
<th>Producer</th>
<th>Capacity 2017</th>
<th>Expansion 2018</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>Shandong</td>
<td>Wanhua Chemical</td>
<td>200,000</td>
<td>100,000</td>
<td>To start up in 2018</td>
</tr>
<tr>
<td>North</td>
<td>Shandong</td>
<td>Shandong Nuoer</td>
<td>0</td>
<td>80,000</td>
<td>To start up in May 2018</td>
</tr>
<tr>
<td>North</td>
<td>Shandong</td>
<td>Shandong Hongxin</td>
<td>0</td>
<td>80,000</td>
<td>Restarted on 28 Dec 2017</td>
</tr>
<tr>
<td>North</td>
<td>Shandong</td>
<td>Shandong Meihua</td>
<td>0</td>
<td>60,000</td>
<td>To start up in 2018</td>
</tr>
<tr>
<td>East</td>
<td>Jiangsu</td>
<td>Shengke Chemical</td>
<td>320,000</td>
<td>160,000</td>
<td>Planning to start up</td>
</tr>
<tr>
<td>East</td>
<td>Jiangsu</td>
<td>Jiangsu Sanmu</td>
<td>140,000</td>
<td>160,000</td>
<td>To start up in Apr 2018</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>64</td>
<td></td>
</tr>
</tbody>
</table>
The SAP industry will face new opportunities and challenges in 2018. The import duty will drop to zero in some regions, while major origin, South Korea, also continues to cut its tariff. On one side, this shows a relatively developed market in China. On the other side, it remains uncertain how the industry could be impacted.

To sum up, even a growth of about 10% in the downstream markets in 2018 could not completely consume the new output of 330,000 tonnes. The market will be more and more oversupplied if not considering weather and breakdown issues, which might trigger price fights and squeeze the current high margins.

China’s domestic AA prices fluctuated frequently and hugely in 2017 after continuous drops in 2014-2015 and persistent rises in 2016, but the margins were substantial on the back of periodic rebounds in domestic economy. The annual average margin for general AA was at about yuan (CNY) 1,475/tonne in 2017, according to ICIS data, while the margin for glacial acrylic acid (GAA) was at CNY1,732/tonne, with peaks both surpassing CNY4,000/tonne.

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CHINA METHANOL PRICES MAY FALL IN Q1 2018

By Sam Liang

China’s domestic methanol prices are expected to generally hover at high levels in the first quarter of 2018, with a possibility of a downturn.

The domestic methanol market experienced a roller-coaster ride in the first quarter of 2017 before reaching its peak in the last quarter.

The continued growth in methanol prices during 2017 is mainly contributed to the start-up and stable operation of the newly built methanol-to-olefins (MTO) plants, unstable operation of overseas methanol plants and decreased methanol supply due to lack of natural gas at the year-end.

Domestic methanol prices will generally stay high in the first quarter of 2018, but there is still a chance for a moderate downturn.

The average run rate of domestic methanol plants in the first quarter will unlikely to increase and be largely stable at current levels.

Natural gas supply for the industrial sector has been reduced or even suspended from November 2017 as feedstock natural gas supply is extremely tight because priority is given to residential use during the cold winter season.

This has been weighing down production of gas-based methanol plants.

Major methanol plants being affected by limited natural gas are listed in the table below:

<table>
<thead>
<tr>
<th>Region</th>
<th>Company</th>
<th>Capacity (10,000 tonnes/year)</th>
<th>Planned/unplanned maintenance</th>
<th>Shutdown time</th>
<th>Feedstock</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chang Chun Petrochem</td>
<td>Changshu, China</td>
<td>300</td>
<td>185</td>
<td>Feb to March 2018</td>
<td>Coke oven gas</td>
</tr>
<tr>
<td>Hebei</td>
<td>Tangshan Zhongrun No 1</td>
<td>10</td>
<td>Planned</td>
<td>25 Sep, with the restart time unknown</td>
<td></td>
</tr>
<tr>
<td>Qinghai</td>
<td>Qinghai Zhonghao</td>
<td>60</td>
<td>Unplanned</td>
<td>23 Nov, with the restart time unknown</td>
<td>Natural gas</td>
</tr>
<tr>
<td>Southwest China</td>
<td>Chongqing Kabei</td>
<td>85</td>
<td>Unplanned</td>
<td>Shut on 12 Dec, with the restart time unknown</td>
<td>Natural gas</td>
</tr>
<tr>
<td>Southwest China</td>
<td>Sichuan Jiuyuan</td>
<td>50</td>
<td>Unplanned</td>
<td>Shut in mid-Dec, with the restart time unknown</td>
<td>Natural gas</td>
</tr>
<tr>
<td>Southwest China</td>
<td>Sichuan Vinylon</td>
<td>83</td>
<td>Unplanned</td>
<td>Shut for one month from 25 Dec</td>
<td>Natural gas</td>
</tr>
<tr>
<td>Inner Mongolia</td>
<td>Inner Mongolia Boyuan No 1</td>
<td>40</td>
<td>Unplanned</td>
<td>Shut on 26 Dec, with the restart time unknown</td>
<td>Natural gas</td>
</tr>
<tr>
<td>Shanxi</td>
<td>Tongmei Guangfa</td>
<td>60</td>
<td>Unplanned</td>
<td>Shut for 12 days from 16 Jan</td>
<td>Coal</td>
</tr>
</tbody>
</table>

Source: ICIS
In addition, as the start-up of the 5-6m tonnes/year of new capacities will be mostly in the last three quarters of 2018, domestic methanol supply will only increase slightly in the first quarter of next year.

Import supply will be stable or increase slightly in the first quarter of 2018.

Production in the major producing regions, the Middle East and southeast Asia will resume slightly as compared to the heavy turnaround season in the last quarter of 2017.

But there were unconfirmed reports about several plants’ shutdowns in South and North America in late December and January. In addition, the delayed start-up at new plants in Iran and the US will have little impact on the methanol market in the first quarter.

On the demand side, methanol demand from the traditional downstream industries might falter in the first quarter of 2018.

There is always a lull in demand immediately ahead of China’s Lunar New Year holidays, which will fall between 15-21 February.

There might be a notable drop in the run rate of domestic formaldehyde plants during the holiday period, and such impacts might last for half to one month. Demand from the downstream acetic acid and MTBE industries will be largely stable.

MTO producers generally maintained stable operation. Some plants in China’s coastal regions may have turnaround plans in late March or early April, but there are no confirmed reports yet.

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The n-butanol (NBA) market in China is heading to further uncertainties in 2018 because of new dynamics at play including government back environmental inspections and somewhat variable downstream demand.

The NBA market in China experienced quite some turbulence in 2017 owing to supply-side reform, a combined initiative of the government and the industry to improve the quality and quantity of economic growth.

In the first half of 2017 NBA prices were at yuan (CNY) 500/tonne but climbed up to CNY2,000/tonne in the second half of the year because of tight supply.

Some market participants believe that the fluctuation in 2017 were not normal but others say that the environmental inspections and supply-side reform will become the new normal and continue in 2018.

China NBA market in 2018 will see a growth in capacity whereas downstream demand will depend on how many of such plants eventually get build in the year.

CNOOC Shell plans to start up its 106,000 tonne/year unit in March 2018 and Jiangsu Huachang plans to start up its 80,000 tonne/year unit in May 2018.

As a result, NBA supply will increase by 17,000 tonnes every month if the two units run smoothly.

On the demand side, Shandong Hongxin plans to restart its 80,000 tonne/year butyl acrylate unit in December 2017. The unit has been off line for more than two years.

Wanhua Chemical plans to start up its 120,000 tonne/year butyl acrylate unit at the end of 2017 or in early 2018.
The two units will consume around 10,000 tonnes of NBA every month, according to ICIS.

Therefore, the market may see tightness in the first half of 2018, but experience oversupply in the second half of the year.

What complicates the supply-demand balance is whether a major downstream unit will be completed in 2018, or not.

Taixing Jinjiang’s under construction 450,000 tonne/year acetate and 100,000 tonne/year butyl acrylate unit is waiting for environmental approvals.

Sources at Jiangmen Handsome - Taixing Jinjiang’s wholly-owned subsidiary - told ICIS that 150,000-200,000 tonnes/year of capacity at the 450,000 tonne/year acetate unit would produce butyl acetate and the producer would try to start up the unit in 2018.

Taixing Jinjiang now has a 100,000 tonne/year butyl acetate unit which consumes around 5,400 tonnes of NBA. The consumption will increase by around 15,000 tonnes if the new project comes on stream.

In addition, Jiangmen Handsome has to relocate its acetate and butyl acrylate unit in Jiangmen, Guangdong because of the environmental requirements.

The producer can produce 80,000 tonnes/year of butyl acrylate and 180,000 tonnes/year of butyl acetate, with total NBA consumption at 13,000 tonnes/month.

The relocation of Jiangmen Handsome’s units and the start-up of Taixing Jinjiang’s new projects will not only lead to an increase in NBA consumption, but also a different market structure.

This, combined with the start-up of CNOOC Shell’s new capacity in Huizhou, Guangdong in 2018, brings uncertainties to domestic NBA supply.

The start-up of the first NBA unit in south China and the relocation of the largest downstream plant in the same region bring a big challenge to the NBA market and will change pricing and trade flow.

NBA prices mainly increased in 2017 because of a significant decrease in supply. Taking the east China market as an example, there is a negative correlation between the operating rate and average price.

NBA prices in east China hit the lowest level of the year in mid-April 2017 at CNY9,925/tonne ex-tank, with operating rate at around 75%.

Prices hit the highest level of the year in late August 2017 at CNY8,175/tonne, with operating rate below 50%.

PetroChina Jilin Petrochemical, Sinopec Qili Petrochemical and Lihuayi Weiyuan shut down their units for maintenance in May, with Jilin Petrochemical and Qili Petrochemical postponing their restart dates. Anqing Shuguang and Jiangsu Huachang carried out maintenance in July-August.

The NBA production losses caused by maintenance totalled around 50,000 tonnes in May-August.

Meanwhile, Shandong Luxi Chemical cut its operating rate to the lowest level because of the syngas supply issue, which caused around 30,000 tonnes of production losses.

In the overseas market, PETRONAS shut down its 125,000 tonne/year NBA unit on 16 July for two months of maintenance, which caused around 23,000 tonnes of production losses. Malaysia is one of China’s major overseas spot NBA suppliers.

In addition, producers in Europe and the US also cut their output more or less.

According to the statistics from the customs, monthly NBA import volumes in China have been below 20,000 tonnes since April, with a historical low seen in July, only at 9,800 tonnes.

### Domestic NBA prices and operating rates, 2017

- **Source:** ICIS

### Maintenance at domestic NBA units in May-August 2017

<table>
<thead>
<tr>
<th>Producer</th>
<th>Capacity (10,000 tonnes/year)</th>
<th>Type</th>
<th>Time</th>
<th>Production losses</th>
</tr>
</thead>
<tbody>
<tr>
<td>PetroChina Jilin Petrochemical</td>
<td>24</td>
<td>Scheduled</td>
<td>2017/5 /3-2017/7/19</td>
<td>25,000 tonnes</td>
</tr>
<tr>
<td>Lihuayi Weiyuan</td>
<td>8.5</td>
<td>Scheduled</td>
<td>2017/5 /4-2017/5/16</td>
<td>3,250 tonnes</td>
</tr>
<tr>
<td>Sinopec Qili Petrochemical</td>
<td>8.5</td>
<td>Scheduled</td>
<td>2017/5 /15-2017/6/28</td>
<td>6,750 tonnes</td>
</tr>
<tr>
<td>Anqing Shuguang</td>
<td>15</td>
<td>Scheduled</td>
<td>2017/7 /10-2017/8/4</td>
<td>5,460 tonnes</td>
</tr>
<tr>
<td>Jiangsu Huachang</td>
<td>10</td>
<td>Scheduled</td>
<td>2017/8 /7-2017/9/2</td>
<td>8,400 tonnes</td>
</tr>
</tbody>
</table>

*Source: ICIS*
Total import volumes in January-October decreased by 10% year on year.

The significant decrease in domestic and overseas supply was the biggest uncertainty in 2017, which led to higher prices and margins.

However, in 2018, the uncertainty is the changing supply and demand in the domestic NBA market, which will bring both challenges and opportunities to the market.

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Toluene prices in the domestic market gradually softened in the most time of 2017 as the China government vigorously pursued the environmental protection policies. However, the prices rebounded significantly at the end of the year on the back of soaring crude values. In 2017, the average price in south China was basically higher than that in east China, but the situation was likely to change in the future along with commissioning or approaching start-ups of some new aromatic units.

Compared with east China, the average daily price in south China was traditionally yuan (CNY) 200/tonne higher in 2017. This was due to the fact that supply in east China was ample and there were many surplus cargoes after meeting local demand. However, major suppliers in Guangdong, the key market in south China, are only Guangzhou Petrochemical and Maoming Petrochemical, with cargoes from neighbouring Qinzhou Petrochemical and Quanzhou Petrochemical as supplementary. In response to the transportation cost of spot cargoes from Qinzhou Petrochemical and Quanzhou Petrochemical to Guangdong and the shipping cost of around CNY200/tonne for cargoes from east China, prices in south China are usually slightly higher than those in east China.

According to statistics by ICIS, there are four aromatic units having been commissioned or to be commissioned during the second half of 2017–the first half of 2018, and this will launch around 0.9m-1.0m tonnes of toluene (Table 1) to the China market annually. Among them, PetroChina Yunnan Petrochemical directly uses toluene for oil blending. Located in south China, new units of CNOOC Huizhou Refinery (Phase II project) and Maoming Petrochemical will significantly increase local supply.

After commissioning in October 2017, CNOOC Huizhou Refinery (Phase-II project)’s aromatic unit only ran at 70% of capacity by early March 2018, i.e. 21,000 tonnes per month, as a result of limited downstream consumption. Currently, the unit is running stably. This, together with completion of the loading device, means that the producer is about to stably provide toluene to the south China market by truck transportation. The producer will consider when to raise the run rate in line with the market situation, said relevant sources. Located at Huizhou in Guangdong province, the producer will give priority to sales in south China in consideration of transportation costs.

Maoming Petrochemical plans to commission its new aromatic reforming unit during March-April 2018. The unit will provide 25,000 tonnes of toluene per month to south China after achieving stable production, said sources from the producer.

Jinling Petrochemical’s new aromatic unit is running stably after being put into production in late November 2017, producing around 26,000 tonnes of toluene per month. However, the cargoes are mainly for captive use, with a small amount available for sales, said relevant sources.

Along with commissioning of the four units, spot supply in south China will increase significantly. However, downstream demand is expected to decrease in 2018. Toluene is mainly used in oil blending, chemical synthesis and production of adhesive, cleaning agent, printing ink, solvent, etc.

Demand from the chemical synthesis sector is expected to be largely stable as no new downstream units have been heard to be started in 2018.

Besides, demand from the adhesive, cleaning agent, printing ink and solvent industries will decrease as the China government’s stricter implementation of environmental protection policies adversely affects production in these industries.

Against the backdrop of increasing supply and softening demand, the south China toluene market will become self-sufficient and then oversupplied in 2018, from the origin pattern of purchases from east China to meet local demand. In this context, spot costs in south China will decrease. This, together with the price war among producers to compete, will drag down local spot prices and in turn wipe out the price gap between south China and east China previously caused by transportation fee.

New aromatic units in China, 2017-2018

<table>
<thead>
<tr>
<th>Region</th>
<th>Producer</th>
<th>Start-up</th>
<th>Capacity (10,000 tonnes/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>South China</td>
<td>PetroChina Yunnan Petrochemical</td>
<td>August 2017</td>
<td>-</td>
</tr>
<tr>
<td>South China</td>
<td>CNOOC Huizhou Refinery (Phase II project)</td>
<td>October 2017</td>
<td>36</td>
</tr>
<tr>
<td>East China</td>
<td>Sinopec Jinling Petrochemical</td>
<td>November 2017</td>
<td>31</td>
</tr>
<tr>
<td>South China</td>
<td>Maoming Petrochemical</td>
<td>March 2018</td>
<td>30</td>
</tr>
</tbody>
</table>

Source: ICIS
As CNOOC Huizhou Refinery (Phase II project) has started to provide cargoes from its aromatic unit since late 2017, spot price gap of toluene between east and south China are narrowing (Chart 2). On 18 December 2017, spot prices in south China closed at CNY5,750-5,800/tonne, while those in east China were higher at CNY5,810-5,830/tonne, which was different from the previous time. Participants expect the situation to continue in 2018, especially that there is a possibility of cargo influx to east China from south China after Maoming Petrochemical starts its new unit.

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CHINA DOMESTIC MX TO FACE OVERSUPPLY, SOFT DEMAND
By Veronica Zhang

China’s domestic mixed xylene (MX) prices are expected to be weighed by the slew of new units coming on line amid weakening demand in the new year.

Chinese MX spot prices slipped on the back of environmental protection issues earlier this year before bouncing back on the back of higher crude oil prices (please see chart).

Four MX plants are expected to start up during the second half of 2017 and the first half of next year. This will increase domestic supply by 1.25-1.5m tonnes per year. Most of new supply will go into the south China market.

The refiner is scheduled to ramp up to full production by March 2018, delivering around 38,000 tonnes of MX each month. mainly to south China.

Sinopec Jinling Petrochemical plans to reserve most MX output for its own paraxylene (PX) production, with a few for spot sales. Its new unit will be undergoing trial runs until the end of 2017.

Before the start-up, Jinling Petrochemical has to purchase MX from the east China market to feed its PX plant. There will be more MX sold in east market after the start-up.

Sinopec Maoming Petrochemical, meanwhile, will be supplying 33,000 tonnes of MX each month to south China after its new aromatics unit achieves on-spec output.

On the demand side, MX consumption by PX producers is likely to remain largely stable next year with no new PX units heard to come on line in China next year.

MX can be used as a gasoline component in fuels to boost octane, or as a chemical feedstock for PX production or as a solvent.

Its use as a solvent may gradually decline in response to the Chinese government’s...
continued efforts in addressing environmental issues including its control of volatile organic compounds (VOC) emissions.

VOCs are found in a wide variety of products such as solvent-based paints, printing inks, many consumer products, organic solvents and petroleum products.

Industry participants expected the use of MX as an octane component in fuels to shrink in 2018 as the country calls for nationwide use of GB (national standard)-VI gasoline.

Aromatics contained in gasoline should be reduced from 40% in GB-V specifications to 35% in GB-VI standards, while benzene content will be cut from 1% to 0.8% upon the fuel quality upgrade.

As an octane booster in gasoline, MX has obtained no cost advantages over its alternatives – mixed aromatics and methyl tertiary butyl ether (MTBE) throughout 2017.

Despite supply-side pressures and expected tepid demand, market players are unlikely to seek overseas outlets citing high export tariffs and poor margins.

With additional supply meeting softer-to-stable demands, Chinese MX market may face an oversupply of the material and prices may fall, especially in the south China market.

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CHINESE SM IMPORTS MAY FALL IF ADD IS IMPOSED IN 2018
By Joanne Wang and Zhang Yan

Chinese importers will likely reduce purchasing volumes in 2018 if the government decides to impose anti-dumping duties on styrene monomer (SM) imports from Korea, Taiwan and the US.

The Ministry of Commerce (MOC) announced to launch a year-long anti-dumping probe into SM imported from South Korea, Taiwan and the US on 23 June 2017, and is likely to take preliminary measures in February 2018.

Out of the approximate 3.5m tonnes of SM imported by China in 2016, around 2.11m tonnes, or 60% alone was from the US, South Korea and Taiwan, according to the data from China Customs.

China’s 2016 domestic SM output was around 6.24m tonnes in 2016, accounting for 64.1% of the total supply, according to ICIS data.

Therefore, some market participants believe that it would have a large impact on domestic SM market once the Chinese authorities confirm the dumping duty.

However, some market players believe the impact on the market would weaken gradually because the import volumes had already begun to decline as a result of China’s own capacity increase.

The data obtained from China Customs shows that the upward momentum of China’s SM import volumes slowed down in 2016 after the year-on-year rises before 2015.

The import volumes in the first 10 months of 2017 fell by 14% year on year to around 2.53m tonnes.

The import volumes might first decline in 2017, and the downward trend will extend into the coming years.

Moreover, some market players believe the decline would accelerate further if the investigators confirm the three origins are indeed dumping SM into China.

Some domestic importers are considering increasing contract volumes of domestic cargoes in 2018.

Domestic SM production has been increasing in recent years. The production during January-September 2017 increased by around 600,000 tonnes (14%) year on year to 4.94m tonnes, according to ICIS data.

Domestic producers plan to increase SM capacity by 765,000 tonnes in 2017. Of those, 230,000 tonnes of capacity has been put into commercial production.

The margins of domestic integrated SM plants averaged yuan (CNY) 720/tonne in the first three quarters of 2017, up by CNY110/tonne (18%) year on year, according to ICIS data.

Therefore, the average operating rate of domestic SM sector during the period increased to around 77.9% from nearly 70.5% in the same period of the previous year.

High margins stimulated market participants’ investment. ICIS expects there will be a total of 2.18m tonnes of new capacity in 2018.

In addition, downstream demand is also expected to support high operating rates of SM producers in 2018.

ICIS data shows that the margins of acrylonitrile butadiene styrene (ABS), expanded polystyrene (EPS) and polystyrene (PS) - the three largest downstream products of SM - in the first three quarters of 2017 increased significantly from the same period of 2016.

The gross margins of domestic ABS producers averaged as high as CNY2,559/tonne during the period, which increased by nearly 27 times year on year.
ICIS expects domestic producers will start up around 280,000 tonne/year ABS plants before end 2017 and 450,000 tonne/year in 2018.

There will not be a severe oversupply in domestic SM market due to increasing downstream demand and decreasing import volumes, which will lay a foundation for high run rates of domestic SM plants in 2018 to some extent.

<table>
<thead>
<tr>
<th>Company</th>
<th>Capacity (10,000 tonnes/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anhui Haoyuan PC</td>
<td>26</td>
</tr>
<tr>
<td>Dalian Hengli PC</td>
<td>72</td>
</tr>
<tr>
<td>Rongsheng Refinery</td>
<td>120</td>
</tr>
</tbody>
</table>

Source: ICIS

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China’s benzene imports in 2018 could exceed 3m tonnes, which represent a more moderate growth compared with the projected increase of over 50% in 2017, market players said.

The country is a key import market for benzene in Asia.

China’s benzene imports for 2017 are projected to hit 2.5m tonnes compared with around 1.6m tonnes in 2016, largely due to start-ups of several new downstream plants.

Growth in downstream capacity is expected to continue in 2018, although at a slower pace.

Contract settlements for 2018 so far seemed to point largely to a roll-over with discounts/premium showing only small changes to 2017’s level. Buyers’ desire to secure significantly larger discounts appeared to have been met with limited success.

The anti-dumping (ADD) investigations on key downstream styrene monomer (SM) sector continued to be closely watched by benzene players.

With China’s overall demand of nearly 10m tonnes of SM per year and importing more than 3m tonnes annually, any ADD levied on key suppliers of SM to China might affect the current trade flow of SM in the region, which in turn might impact the balance of benzene across the region.

South Korea remained the largest supplier of SM to China, with more than 1m tonnes shipped each year.

However, increasing demand for benzene in China will be little affected as the country is slated to add SM capacities through to 2021.

Meanwhile, the Asian benzene market closed 2017 on an upbeat note, with spot prices hovering at around the mid-to-high $800/tonne FOB (free on board) Korea levels at year end, up from the low-$700/tonne FOB Korea levels in the middle of the year.

However, a significant part of the run-up in the fourth quarter could be attributed to strong performance in the US market post-Hurricane Harvey due to supply issues. Since Asian countries such as South Korea and Japan ship regular quantities to the US gulf, higher prices in the US market lifted Asian numbers.
The opening of the east-west arbitrage in the fourth quarter helped to alleviate the supply overhang in the region.

Inventories along eastern China rose to around 150,000 tonnes in the second half of September and hovered around this level in the fourth quarter.

Some market participants previously expected the stock level in eastern China to climb since buying impetus for import cargoes was soft. However, the emergence of the opportunity to ship to the US has helped to cap the growth in shore tank inventories in China.

However, with run rates at refineries over in the US getting back to normality, elevated prices in the US Gulf could ease in the weeks ahead in early 2018. Delays of shipments from Europe also caused prices to increase in the fourth quarter.

This is not to suggest that demand for benzene in China was weak, which it was not. Decent performance in the downstream sectors like styrene, phenol, adipic acid, caprolactam etc. kept consumption of benzene strong. However, users of benzene often chose to purchase locally as domestic cargoes were priced cheaper than imports.

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CHINA Q1 BASE OILS TO GAIN TRACTION ON LESSER REGIONAL SUPPLY
By Cao Hang

China’s domestic base oils market is likely to gain upward momentum during the first quarter of 2018 from reduced imports amid a slew of unit turnarounds in Asia.

A quite a few number of plant maintenance in Asian countries is expected during March-April this year, which may result in lower cargo availability into China, where imports make up around 36% of total base oils supply.

The maintenance plan at FPCC during July-August, which is a traditional demand lull season for low-viscosity base oils, is likely to exert limited impact on the domestic market.

FPCC’s base oils supply accounts for 14-15% of China’s total imports.

Downstream lubricant producers may show higher restocking interest in early March following a week-long holiday in China, further tightening domestic supply during the first quarter.

China will celebrate its Lunar New Year during 15-21 February 2018.

A new Group II base oils unit in Shandong, north China is scheduled to start trial runs in the first quarter next year, but it may take some while before the plant reaches stable output.

China will focus on expanding Group II/III base oil capacities in the next few years, mostly by independent refiners because of higher demand for better quality base oils.

Generally end-users prefer Group II/III base oil, replacing Group I in the lubricant blending formula. At the same time, the profit margin to produce base oil is better than producing gasoil normally.

However, state-owned giants PetroChina, Sinopec and China National Offshore Oil

### Unit turnaround schedule in Asia (2018)

<table>
<thead>
<tr>
<th>Location</th>
<th>Refiner</th>
<th>Capacity (tonnes/year)</th>
<th>Products</th>
<th>Turnaround period</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Korea</td>
<td>SK</td>
<td>2.2m</td>
<td>Group II/III base oils</td>
<td>10 Mar-10 Apr</td>
</tr>
<tr>
<td>South Korea</td>
<td>S-oil</td>
<td>880,000</td>
<td>Group III base oils</td>
<td>Mar-Apr</td>
</tr>
<tr>
<td>Malaysia</td>
<td>Petronas</td>
<td>330,000</td>
<td>Group III base oils</td>
<td>Late Mar-late Apr</td>
</tr>
<tr>
<td>China</td>
<td>Sinopec Shanghai Gaoqiao Petrochemical</td>
<td>700,000</td>
<td>Group II base oils</td>
<td>Mar-May</td>
</tr>
<tr>
<td>Taiwan, China</td>
<td>Formosa Petrochemical Corporation (FPCC)</td>
<td>600,000</td>
<td>Group II base oils</td>
<td>Jul-Aug</td>
</tr>
<tr>
<td>China</td>
<td>CNOOC Huizhou</td>
<td>400,000</td>
<td>Group II base oils</td>
<td>Early Sep-late Oct</td>
</tr>
</tbody>
</table>

Source: ICIS

### China’s base oils capacity expansions

<table>
<thead>
<tr>
<th>Location</th>
<th>Refiner</th>
<th>Capacity (tonnes/year)</th>
<th>Products</th>
<th>Expected start-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>North China</td>
<td>Qingyuan Petrochemical base oils</td>
<td>800,000</td>
<td>Group II/III</td>
<td>Q1 2018</td>
</tr>
<tr>
<td>Northeast China</td>
<td>Hengli Petrochemical</td>
<td>540,000</td>
<td>Group II base oils</td>
<td>End 2018/early 2019</td>
</tr>
</tbody>
</table>

Source: ICIS

### China’s proportion of base oils supply by spec

<table>
<thead>
<tr>
<th>Spec</th>
<th>2017</th>
<th>2018 (E)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group I base oils</td>
<td>22%</td>
<td>21%</td>
</tr>
<tr>
<td>Group II base oils</td>
<td>43%</td>
<td>45%</td>
</tr>
<tr>
<td>Group III base oils</td>
<td>11%</td>
<td>12%</td>
</tr>
<tr>
<td>Naphthenic base oils</td>
<td>12%</td>
<td>12%</td>
</tr>
<tr>
<td>Off-spec base oils</td>
<td>11%</td>
<td>11%</td>
</tr>
</tbody>
</table>

Source: ICIS

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Corp (CNOOC) have yet to announce any new unit start-up plans.

Meanwhile, the proportion of Group I base oils supply will gradually decline in China, as more refiners opt to produce Group II/III volumes of higher performance.

As compared to 2016 when base oils got a boost, domestic base oils market in China has gone through a largely flat year during 2017, with overall prices stable-to-lower.

During October 2015 to December 2016 China’s base oils consumption had been boosted by the country’s policy incentive to halve the purchase tax on cars with small engines to 5%.

However from 1 January 2017 the government raised the purchase tax to 7.5% on low-emissions autos and those with engines that are less than 1.6 litres in size, dampering buying interest in such vehicles and thus impacting the base oils consumption in China.

Demand from vehicle lubricant producers, however, may remain relatively robust in the coming year in response to the country’s steady growth, albeit slowing down, in passenger cars consumption.

China’s passenger car sales volume increased by 1.91% year on year to around 22.09 million in the first eleven months of 2017, according to data published by China Association of Automobile Manufacturers.

Industrial lubricants consumption, meanwhile, may continue to be dampened by the Chinese government’s move to tackle environmental problems that may affect further downstream mining, iron and steel production.

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CHINA ACN TO REMAIN STRONG IN ‘18 ON PLANNED MAINTENANCES
By Ivy Ruan

China acrylonitrile (ACN) market rebounded in 2017 because of shrinking supply caused by environmental issues and it is likely to remain strong next year due to a large number of scheduled shutdowns.

According to ICIS estimates based on the announced shutdown schedules for 2018, ACN market will see production losses exceed 200,000 tonnes, and downstream industry will need to resort to imports from the US, Europe and other regions.

Producers including Shanghai SECCO and Anqing Petrochemical all have overhaul schedules for 2018.

The maintenance at Shanghai SECCO alone will cause nearly 100,000 tonnes of production losses.

Jilin Petrochemical, the second largest ACN producer in China, will also carry out triennial overhaul, with expected production losses at 50,000-60,000 tonnes.

It is noteworthy that Qilu Petrochemical has not planned to restart its unit in 2018, which was shut down this year because of environmental issues.

Sailboat Petrochemical had planned to carry out the first overhaul at its unit in the fourth quarter of 2017.

However, the schedule has been postponed several times because of considerable margin and the maintenance is expected to start in 2018.

All the units in China will undergo planned maintenance in 2018, except Fushun Petrochemical who had completed it in 2017.

The total production losses for the whole year are expected to exceed 200,000 tonnes, which in turn will support ACN prices as the market is mainly affected by supply-demand fundamentals rather than crude futures movement.

ACN prices are mainly affected by the supply-demand fundamentals rather than prices of crude oil or other commodities.

For the whole of this year too, prices were closely related to supply and demand landscape.

The first peak appeared in March-April when Shanghai SECCO and Jilin Petrochemical were carrying out maintenance, while acrylic fibre inventories were low and operating rate in the acrylonitrile butadiene styrene (ABS) industry was high at around 85%.

The unexpected maintenance at Qilu Petrochemical in the third quarter marked the beginning of four months of increase.

ICIS data showed that, ACN spot prices were at Chinese yuan (CNY)16,900-17,100/tonne Ex-tank East China in October, which were up by CNY6,350/tonne or 60% from July.

Prices even hit CNY17,500/tonne in Shandong DEL, the highest level in five years, because of hurricanes in the US, which largely decreased import volumes in the following months.

Market participants believe that prices in 2018 will peak during concentrated

Maintenance plans for ACN units in China, 2018

<table>
<thead>
<tr>
<th>Region</th>
<th>City</th>
<th>Producer</th>
<th>Capacity (MT)</th>
<th>Maintenance in 2018</th>
<th>Production losses (MT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>East China</td>
<td>Shanghai</td>
<td>Shanghai SECCO</td>
<td>52</td>
<td>End of September-End of November</td>
<td>9.8</td>
</tr>
<tr>
<td>East China</td>
<td>Anqing</td>
<td>Anqing Petrochemical</td>
<td>21</td>
<td>15 days of alternate maintenance at No.1 and No.2 in April-May</td>
<td>1</td>
</tr>
<tr>
<td>East China</td>
<td>Dongying</td>
<td>Keluer Chemical</td>
<td>13</td>
<td>20-25 days in September</td>
<td>1.05</td>
</tr>
<tr>
<td>East China</td>
<td>Zibo</td>
<td>Qilu Petrochemical</td>
<td>8</td>
<td>May be moved to Keluer’s plant, with capacity at 60,000 tonnes/year after 2018, to be determined</td>
<td>0</td>
</tr>
<tr>
<td>Northeast China</td>
<td>Jilin</td>
<td>Jilin Petrochemical</td>
<td>45.2</td>
<td>40-45 days of triennial overhaul in April-May</td>
<td>5.6</td>
</tr>
<tr>
<td>Northeast China</td>
<td>Fushun</td>
<td>Fushun Petrochemical</td>
<td>9.2</td>
<td>No overhaul</td>
<td>0</td>
</tr>
<tr>
<td>East China</td>
<td>Jiangsu</td>
<td>Sailboat</td>
<td>26</td>
<td>Maybe April</td>
<td>2.3</td>
</tr>
<tr>
<td>Northeast China</td>
<td>Daqing</td>
<td>Daqing Petrochemical</td>
<td>8</td>
<td>One month maintenance during July to September</td>
<td>0.65</td>
</tr>
</tbody>
</table>

Source: ICIS
maintenance period, which will happen in the second quarter and in September-November.

Anqing Petrochemical, Jilin Petrochemical and Jiangsu Sailboat plan to carry out plant maintenance in the second quarter.

The maintenance time of the former two suppliers is relatively fixed, while the latter one has not confirmed a specific time.

It is not suitable for producers to shut their plants for planned maintenance in the first quarter on the Chinese Lunar New Year holiday (15-21 February) and the relatively cold weather.

Therefore, the producers are expected to carry out turnarounds after March, according to some market players.

The total production loss of the above three producers will be around 90,000 tonnes.

Shandong Haili Chemical might start up its 130,000 tonne/year new plant in late 2017/early 2018, but the additional capacity could not offset the production loss because of the volumes supplied to its own downstream ABS plant.

Downstream ABS producers are expected to continue to run their plants at relatively high rates amid sufficient cash flows.

Downstream acrylic fiber producers are expected to keep relatively low run rates and inventory levels in the first quarter in view of the traditional full season and the Chinese Lunar New Year holiday.

However, the production and sales volumes are likely to rise in the second quarter as a result of the peak sales season, which is expected to support the feedstock acrylonitrile market further.

Shanghai SECCO and Shandong-based Keluer plan to shut their plants for maintenance during September-November, with the combined production loss of around 110,000 tonnes.

During the period, downstream acrylic fiber producers will enjoy the traditional peak sales season in domestic market.

In addition, ABS end-user white house appliance manufacturers - including air conditioner and refrigerator makers - will be in the peak sales season.

However, a few downstream producers believed that despite domestic supply would decline sharply, a year-on-year increase in import volumes would partially offset the domestic production loss.

The output in Europe and the US in 2018 will rebound following the major maintenance of most plants in 2017 and the production loss caused by hurricanes in the US.

Additionally, it could not be ruled out that major downstream producers will increase their purchasing volumes for contract imports to fill domestic gap in 2018 in view of the early announcement of domestic turnaround plans.

According to ICIS data, the number of overseas plants to be shut for planned maintenance in 2018 will be limited, particularly in the US.

Domestic buyers will show much stronger interest in imports in 2018, with an increase trend in import contract volumes, according to domestic downstream buyers and some traders.

According to ICIS data, the number of overseas plants to be shut for planned maintenance in 2018 will be limited, particularly in the US. Domestic buyers show much stronger interest in imports in 2018, with an increase trend in import contract volumes, according to domestic downstream buyers and some traders.

### Maintenance plans of acrylonitrile plants in Europe, the US and Asia (excluding China)

<table>
<thead>
<tr>
<th>Region</th>
<th>City</th>
<th>Company</th>
<th>Capacity (MT)</th>
<th>Maintenance schedule in 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>East China</td>
<td>Shanghai</td>
<td>Shanghai SECCO</td>
<td>52</td>
<td>End of September-End of November</td>
</tr>
<tr>
<td>Thailand</td>
<td>Map Ta Phut</td>
<td>PTT</td>
<td>20</td>
<td>Undecided</td>
</tr>
<tr>
<td>Japan</td>
<td>Mizushima</td>
<td>ASAHI KASEI</td>
<td>20</td>
<td>No overhaul</td>
</tr>
<tr>
<td>Korea</td>
<td>Ulsan</td>
<td>Taekwang</td>
<td>29</td>
<td>5-26 March</td>
</tr>
<tr>
<td>Korea</td>
<td>Ulsan</td>
<td>Tongsuh Petrochemical No.3</td>
<td>24.5</td>
<td>Maintenance in October for one month</td>
</tr>
<tr>
<td>Korea</td>
<td>Ulsan</td>
<td>Tongsuh Petrochemical No.4</td>
<td>24.5</td>
<td>Maintenance in May for one month</td>
</tr>
<tr>
<td>Japan</td>
<td>Niihama, Ehime Pref</td>
<td>Sumitomo Chemical</td>
<td>7</td>
<td>Maintenance in September for one month</td>
</tr>
<tr>
<td>Taiwan</td>
<td>Kaohsiung</td>
<td>Formosa</td>
<td>28</td>
<td>Stopped on 15-17 January for a three-week or one month maintenance</td>
</tr>
<tr>
<td>Taiwan</td>
<td>Kaohsiung</td>
<td>CPDC</td>
<td>24</td>
<td>One week maintenance in March; two weeks in Nov.</td>
</tr>
<tr>
<td>UK</td>
<td>Seal Sands</td>
<td>Ineos</td>
<td>28</td>
<td>Maintenance in April for one month</td>
</tr>
<tr>
<td>Russia</td>
<td>Saratov</td>
<td>Lukoil</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>US</td>
<td>Green Lake</td>
<td>Ineos</td>
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<tr>
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<td>Cornerstone</td>
<td>24</td>
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<tr>
<td>US</td>
<td>Texas</td>
<td>Ascend</td>
<td>59</td>
<td>No.2 and No.3 maintenance in April and Sep.</td>
</tr>
<tr>
<td>Germany</td>
<td>Cologne</td>
<td>Ineos</td>
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Source: ICIS

**Maintenance plans of acrylonitrile plants in Europe, the US and Asia (excluding China)**

<table>
<thead>
<tr>
<th>Region</th>
<th>City</th>
<th>Company</th>
<th>Capacity (MT)</th>
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<td>Shanghai SECCO</td>
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<td>End of September-End of November</td>
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<td>Map Ta Phut</td>
<td>PTT</td>
<td>20</td>
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<tr>
<td>Japan</td>
<td>Mizushima</td>
<td>ASAHI KASEI</td>
<td>20</td>
<td>No overhauling</td>
</tr>
<tr>
<td>Korea</td>
<td>Ulsan</td>
<td>Taekwang</td>
<td>29</td>
<td>5-26 March</td>
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<tr>
<td>Germany</td>
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<td>32</td>
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Source: ICIS

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FIBRE INTERMEDIATES
ETHYLENE GLYCOL

China MEG seen firm in Q1 on strong demand, low inventory
By Ivy Ruan

China’s monoethylene glycol (MEG) is expected to be firm on low inventories and strong demand from polyester sector in the first quarter of 2018.

MEG inventories have been declining year after year.

Port inventory in the fourth quarter was close to 450,000, much lower than the average level of 500,000 tonnes in 2017, and lower still from the 550,000 tonnes average level in 2016.

MEG inventories in Zhangjiagang port declined to around 250,000 tonnes in December 2017, lower than the usual level of around 300,000 tonnes.

Zhangjiagang port, which is located in Jiangsu province, is the biggest MEG storage port in China.

The size of the volumes in Zhangjiagang largely influences spot and forward prices.

“Such low MEG inventories in Zhangjiagang, as well as in the other main ports in east China, may result in the supply shortage in the near-term,” a market participant said.

MEG supply shortage may be further exacerbated due to plant turnarounds of quite a few MEG plants in the first half of 2018.

According to ICIS estimates this would result in a production loss of about 240,000 tonnes during the period. (Please see table below)

There are plans to add about 2.55m tonnes of new MEG capacity in 2018, out of which about 2m tonnes of the new capacity is due to launched in the first half of this year, according to ICIS data.

However, because most of the new capacity comes from coal-based technology, market participants expect the stability of the operations may be lower.

There is also a robust downstream demand, especially from polyester sector, which is a major MEG derivative, a MEG producer said.

<table>
<thead>
<tr>
<th>Company</th>
<th>Capacity tonnes/year</th>
<th>T/A In 2018</th>
<th>Production loss tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNOOC and Shell</td>
<td>400,000</td>
<td>T/A in 18 Jan-4 Feb,a 400,000 tonnes/year new capacity plans to put into production in June</td>
<td>19,400</td>
</tr>
<tr>
<td>SINOPEC SABIC TianJin</td>
<td>380,000</td>
<td>20-day maintenance in April due to replacement of catalyst</td>
<td>21,000</td>
</tr>
<tr>
<td>PetroChina Sichuan</td>
<td>360,000</td>
<td>50-day maintenance in March</td>
<td>42,000</td>
</tr>
<tr>
<td>Sinopec ZRCC</td>
<td>650,000</td>
<td>End April -End June</td>
<td>74,000</td>
</tr>
<tr>
<td>Shanxi Yangmei Shouyang</td>
<td>220,000</td>
<td>Plans to have maintenance in May</td>
<td>15,000</td>
</tr>
<tr>
<td>Ningbo Fude</td>
<td>500,000</td>
<td>Maintenance in May due to replacement of catalyst</td>
<td>40,000</td>
</tr>
<tr>
<td>Sanjiang Chemical</td>
<td>380,000</td>
<td>Replacement of catalyst after the Lunar New Year</td>
<td>30,000</td>
</tr>
<tr>
<td>Fujian Refinery</td>
<td>400,000</td>
<td>Annual maintenance in Nov-Dec 2018</td>
<td>70,000</td>
</tr>
<tr>
<td>Liaoning North Petrochemical</td>
<td>200,000</td>
<td>Annual maintenance, but undecided the details</td>
<td>8,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>319,400</td>
</tr>
</tbody>
</table>

Source: ICIS
<table>
<thead>
<tr>
<th>Company</th>
<th>Capacity tonnes/year</th>
<th>Technical</th>
<th>Production time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xinji Chemical</td>
<td>60,000</td>
<td>Coal-based</td>
<td>March-April 2018</td>
</tr>
<tr>
<td>Shanxi Yangmei Pingding</td>
<td>200,000</td>
<td>Coal-based</td>
<td>started in Nov 2017, running at 30%</td>
</tr>
<tr>
<td>Yongjin Luoyang</td>
<td>200,000</td>
<td>Coal-based</td>
<td>started in Dec 2017</td>
</tr>
<tr>
<td>Yongjin Xinxiang</td>
<td>200,000</td>
<td>Coal-based</td>
<td>start in End Jan-early Feb 2018</td>
</tr>
<tr>
<td>Lihuayi Group</td>
<td>200,000</td>
<td>Coal-based</td>
<td>started in Dec 2017, put on production in Jan</td>
</tr>
<tr>
<td>Xinjiang Tianye</td>
<td>100,000</td>
<td>Coal-based</td>
<td>start in Feb 2018</td>
</tr>
<tr>
<td>Tianying Petrochem</td>
<td>150,000</td>
<td>Coal-based</td>
<td>start in March-April 2018</td>
</tr>
<tr>
<td>Xinhang Energy</td>
<td>200,000</td>
<td>Coal-based</td>
<td>start in June 2018</td>
</tr>
<tr>
<td>CNOOC and Shell</td>
<td>400,000</td>
<td>Ethylene-based</td>
<td>start in June 2018</td>
</tr>
<tr>
<td>Qianxi Coal Chemical</td>
<td>300,000</td>
<td>Coal-based</td>
<td>start in May-June 2018</td>
</tr>
<tr>
<td>Anhui Hongsifang</td>
<td>300,000</td>
<td>Coal-based</td>
<td>start in June-Sep 2018</td>
</tr>
<tr>
<td>Inner Mongolia Yigao Chemical</td>
<td>240,000</td>
<td>Coal-based</td>
<td>start in Oct 2018</td>
</tr>
</tbody>
</table>

Source: ICIS

"You know, both China MEG production and imports increased notably in comparison with 2016, while MEG inventories in 2017 decreased significantly, which indicates that demand was buoyant," one producer said.

China MEG production was around 6.15m tonnes in 2017, risen by 21% compared with the volumes in 2016, and most of the contribution came from coal-based production, which was up by 57% year on year.

Besides, ethylene-based production was up by 12% year on year, according to ICIS data.

Most China MEG plants ran smoothly in 2017, enjoying considerable margins.

China MEG import volumes were 7.98m tonnes during January to November 2017, according to data from China Customs.

The total import number may reach to 8.7m-8.75m tonnes, according to ICIS, which will represent a 15% year-on-year increase.

Chinese polyester producers ran at high levels in 2017 given the regained margins since the second half of 2016, resulting in over 10% of increase in its production.

There is around 4-5.9m tonnes of new polyester capacity expected to come into production in 2018, a more than 10% rise on a year-to-year basis.
As a result this will require additional 1.3m-1.7m tonnes of MEG in 2018.

Market sentiment has been bullish since the middle of December 2017 and the prices seem to be extending gains so far, a trend likely to continue.

Spot prices rose above Chinese yuan (CNY) 8,000/tonne ex-tank east China on 8 January, which only happened twice in the past four years.

Prices rose above CNY8,000 once in April 2015 and the second time in the early 2017, according to ICIS data.

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- A quarterly Supply and Demand Outlook
CHINA DEG UNDER PRESSURE FROM TEPID DEMAND IN Q1
By Cindy Qiu

China’s domestic diethylene glycol (DEG) prices are likely to come under pressure during the first quarter of 2018 as a result of weak downstream demand.

Demand from the unsaturated polyester resins (UPRs) industry, which consumes over 50% of DEG in China, had been soft throughout 2017 due to stringent government-led environmental inspections.

Average operating rates at domestic UPR makers stood at 45-50%, with most small producers in Shandong and north China having suspended their operations.

The weakness may well extend into 2018 in view of the state government’s determination to tackle environmental problems, market sources said.

Most UPRs producers usually opt to shut their plants around the Chinese New Year holiday in February, which will add more pressure on the demand side.

DEG consumption by downstream unsaturated polyester resins (UPRs) production will also be dependent on how well the economy performs, as most UPRs eventually go into the housing industry.

Industry participants said it Chinese housing sector may come under pressure following Goldman Sachs’ expectation of four hikes in interest rates by the Federal Reserve this year, as opposed to two times in 2017.

Moreover, bearish sentiment in the Chinese monoethylene glycol (MEG) market also weighed on its by-product DEG.

Demand for MEG has weakened since November, as the downstream polyester sector is at a seasonal lull.

Domestic DEG capacity, on the other hand, is expected to increase by around 138,000 tonnes/year or 26% in 2018.

Meanwhile, supply of import cargoes may remain largely stable in this year unless unplanned unit shutdowns in the overseas markets.

The import number in 2016 was around 590,000 tonnes less than normal due to force majeure of a major DEG plant.

China is expected to take in around 620,000 tonnes of DEG in 2017, according to ICIS data.

<table>
<thead>
<tr>
<th>Location</th>
<th>Producer</th>
<th>Capacity ('000 tonnes/year)</th>
<th>Start-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shanghai, east China</td>
<td>Sinopec Shanghai Petrochemical</td>
<td>40</td>
<td>2018</td>
</tr>
<tr>
<td>Guangdong, south China</td>
<td>CNOOC and Shell Petrochemicals</td>
<td>48</td>
<td>2018</td>
</tr>
<tr>
<td>Fujian, east China</td>
<td>Fujian Refining &amp; Petrochemical</td>
<td>50</td>
<td>2018</td>
</tr>
</tbody>
</table>

Source: ICIS

<table>
<thead>
<tr>
<th>Location</th>
<th>Producer</th>
<th>Affected Capacity ('000 tonnes/year)</th>
<th>Turnaround schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guangdong, south China</td>
<td>CNOOC and Shell Petrochemicals</td>
<td>40</td>
<td>Shut on 18 January for around 18 days of maintenance</td>
</tr>
<tr>
<td>Zhejiang, east China</td>
<td>China Sanjiang Fine Chemicals Co.</td>
<td>38</td>
<td>Shut in late February 2018 for 35 days of maintenance</td>
</tr>
<tr>
<td>Sichuan, southwest China</td>
<td>PetroChina Sichuan Petrochemical</td>
<td>36</td>
<td>Shut in March 2018 for around 50 days of maintenance</td>
</tr>
<tr>
<td>Tianjin, north China</td>
<td>SINOPEC SABIC Tianjin Petrochemical</td>
<td>38</td>
<td>Shut in April 2018 for around 20 days of maintenance</td>
</tr>
<tr>
<td>Zhejiang, east China</td>
<td>Sinopec Zhenhai Refining &amp; Chemical Company</td>
<td>65</td>
<td>Shut during April-June 2018</td>
</tr>
<tr>
<td>Fujian, east China</td>
<td>Sinopec Fujian Petrochemical</td>
<td>40</td>
<td>Q2 2018</td>
</tr>
<tr>
<td>Zhejiang, east China</td>
<td>China Sanjiang Fine Chemicals Co.</td>
<td>38</td>
<td>Shut in late February 2018 for 35 days of maintenance</td>
</tr>
</tbody>
</table>

Source: ICIS
ICIS price forecast reports provide a clear view of prices and supply and demand trends for the next 12 months. Packed with vital information, the report includes everything you need to assess where the market is heading and the impact or opportunity that presents for your business.

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  Use ICIS price forecast reports to understand where the market is heading and identify the risks and the opportunities for your business. What are the major demand developments for your product?

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- **Budgeting and planning**
  Whether you are planning how much you will be spending in the short-to medium, or even long term, use the price forecast reports to help assess future prices for your product. What will the price of your product be in six months’ time?

<table>
<thead>
<tr>
<th>Price forecast reports currently available</th>
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<th>US</th>
<th>Global</th>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Polyethylene</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Benzene</td>
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<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Styrene/Polyethylene</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Methanol</td>
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<table>
<thead>
<tr>
<th>Available as price forecast windows only</th>
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<th>Europe</th>
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<th>Global</th>
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<tr>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Propylene</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Styrene</td>
<td>✓</td>
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<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Price Forecast Window

ICIS price forecasts are now available on the Dashboard channel using the Price Forecast Window which will enable users to:

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<table>
<thead>
<tr>
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<th>Europe, Africa and Middle East</th>
<th>The Americas</th>
</tr>
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<tbody>
<tr>
<td>Tel: +65 6789 8828</td>
<td>Tel: +44 20 8652 3335</td>
<td>Tel: +1 713 525 2600 or Toll free: +1 888 525 3255 (US and Canada only)</td>
</tr>
</tbody>
</table>

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FIBRE INTERMEDIATES
PURIFIED TEREPHTHALIC ACID (PTA)

CHINA PTA SEEN ROBUST ON DOWNSTREAM DEMAND, FEEDSTOCK
By Wang Yeqing

China’s purified terephthalic acid (PTA) market in 2018 is expected to continue the vigorous momentum seen in late 2017, driven by healthy downstream polyester demand and feedstock support, ICIS research showed.

Domestic PTA prices had moved upwards since July 2017 due to higher-than-expected run rates at downstream polyester plants and shutdowns at some PTA units, following a downtrend in the first half of the year on soft feedstock prices.

Low inventories kept prices firm at the end of 2017.

Higher integration along the industry chain

Around 10.9m tonne/year of feedstock paraxylene(PX) capacity is expected to come on-stream in China in 2018, bringing the country’s total PX capacities higher to 24.46m tonnes/year, according to ICIS data.

Some of these newly-built plants are integrated.

The start-up of the new capacities are likely to significantly increase China’s PX self-sufficiency and further domestic PTA producers’ feedstock bargaining power.

About 60% of China’s PX consumption was satisfied by imports in 2017, when it imported 14.4m tonnes of PX, according to official data.

With more producers equipped with feedstock PX plants, integrated PTA producers could gain stronger cost advantages, therefore higher margins, market sources said.

Planned new PX capacities in 2018-2019

<table>
<thead>
<tr>
<th>Company</th>
<th>Capacity (‘000 tonnes/year)</th>
<th>Location</th>
<th>Start-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zhejiang Petrochemical (Phase I)</td>
<td>4,000</td>
<td>Zhoushan, Zhejiang</td>
<td>2018</td>
</tr>
<tr>
<td>Hengli Petrochemical</td>
<td>4,500</td>
<td>Dalian, Liaoning</td>
<td>2018</td>
</tr>
<tr>
<td>Sinochem Quanzhou Petrochemical</td>
<td>800</td>
<td>Quanzhou, Fujian</td>
<td>2018</td>
</tr>
<tr>
<td>CNOOC Huizhou (Phase II)</td>
<td>1,000</td>
<td>Huizhou, Guangdong</td>
<td>2018</td>
</tr>
<tr>
<td>Hainan Refining &amp; Chemical (Phase II)</td>
<td>600</td>
<td>Hainan</td>
<td>2018</td>
</tr>
<tr>
<td>Shenghong</td>
<td>2,800</td>
<td>Liaoyangang, Jiangsu</td>
<td>2019</td>
</tr>
</tbody>
</table>

Source: ICIS

New PTA capacities to come on-stream in Q4 2017-2018

<table>
<thead>
<tr>
<th>Company</th>
<th>Capacity (‘000 tonnes/year)</th>
<th>Location</th>
<th>Start-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jiaxing Petrochemical</td>
<td>2,200</td>
<td>Jiaxing, Zhejiang</td>
<td>Dec 2017</td>
</tr>
<tr>
<td>Sichuan Shenda</td>
<td>1,000</td>
<td>Nanchong, Sichuan</td>
<td>2018</td>
</tr>
<tr>
<td>Ningxia Baota</td>
<td>1,200</td>
<td>Ningxia</td>
<td>Late 2018</td>
</tr>
<tr>
<td>Fujian Jialong</td>
<td>2,200</td>
<td>Shishi, Fujian</td>
<td>2018</td>
</tr>
<tr>
<td>Xinengming</td>
<td>2,200</td>
<td>Jiaxing, Zhejiang</td>
<td>2018</td>
</tr>
</tbody>
</table>

Source: ICIS

Polyester capacities further rise, boosting demand for PTA

China is likely to add 3.1m tonne/year of polyester capacities in 2018, including new start-ups and restarts of idled units, according to ICIS data.

This could help to further support the demand for raw material up the supply chain for PTA, although increased capacities may reduce overall run rates at the polyester industry this year and the upward momentum may not be as strong as that in 2017.

In the meantime, China’s ban on imports of recycled plastics effective from 2018 will be a great boost to the PTA industry chain.

Only industrial recycled polyester will be allowed to be imported into China, according to an announcement released in August 2017.

China Customs data show that about 1.9m tonnes of recycled polyester was imported in 2017 and this gap is likely to be largely filled by virgin polyester following the recycling ban.
On the supply side, China’s PTA capacity is set to rise by 6.6m tonnes/year to 57.46m tonnes/year in 2018, stimulated by improved production margins in 2017 and on start-up of some integrated projects, ICIS data showed.

Some idled PTA plants are planned to be restarted in 2018, including Xianglu Petrochemical’s 4.5m tonne/year and Huabin’s 1.4m tonne/year facilities.

The restart of the two units may bring Sinope’s total PTA production capacity to 7.69m tonne/year, against Yisheng’s 13.7m tonne/year and Hengli Petrochemical’s 6.6m tonne/year.

The domestic top three PTA producers will own 48% of China’s total PTA production capacities, ICIS data showed.

Moving into 2018, sufficient supply stemming from expected unit restarts and new start-ups is likely to aggravate the competition among producers.

Non-integrated producers could hence have weaker cost advantage on the back of increased producers equipped with upstream PX plants.

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CHINA PROPYLENE MARKET TO BE BALANCED ON STEADY SUPPLY/DEMAND GROWTH
By He Xiao Yang

China’s propylene market may continue to be largely balanced in the year 2018, with domestic supply growing hand in hand with downstream demand.

The domestic spot market is expecting a total 380,000 tonnes/year of new propylene capacity in the first quarter of 2018.

Other capacity additions during the year will have limited impact on the spot market, as they are part of the producers’ integrated projects and mainly reserved for their captive consumption.

A Tianjin-based propane dehydrogenation (PDH) unit, with a propylene capacity of 600,000 tonnes/year, is expected to be taken off line in end-January 2018 for around 30 days of turnaround, which may to some extent offset the increase in spot cargoes during the first quarter.

Meanwhile, two downstream plants are scheduled to come on stream in the first quarter of 2018.

Propylene consumption by the two new units scheduled for first quarter start-up is estimated at 40,000 tonnes per month.

Despite a largely equal supply and demand growth, interregional discrepancies may provide short-lived momentum for price increases in east China. While most new propylene capacities will come from north and northeast China, a large chunk of downstream units are based in east China.

For the propylene market in China, 2017 has been a largely calm year, with spot prices fluctuating in narrow ranges. Prices have been mainly affected by the product’s own supply/demand fundamentals, as well as downstream polypropylene (PP) futures market during the year.

Propylene prices in Shandong hit their bottom at yuan (CNY) 6,250/tonne in late April 2017, after a slew of units resumed operation following planned/unplanned shutdowns and slumped PP futures.

Prices peaked at CNY8,385/tonne ex-tank Shandong in end-September, driven by reduced domestic spot availability amid unit turnarounds and strong crude and PP futures markets.

In the first ten months of 2017, China’s imports of propylene stood at around 2.45m tonnes, an increase of 8% from the same period last year, according to China Customs.

Capacity expansion of propylene in China, 2018

<table>
<thead>
<tr>
<th>Location</th>
<th>Producer</th>
<th>Processing technique</th>
<th>Capacity (‘000 tonnes/year)</th>
<th>Start-up schedule</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>North China</td>
<td>Shandong Chambroad Petrochemicals</td>
<td>fluid catalytic</td>
<td>100</td>
<td>Q1 2018</td>
<td>All output for spot sales</td>
</tr>
<tr>
<td>Northeast China</td>
<td>Connell Chemical</td>
<td>methanol-to-olefins (MTO)</td>
<td>180</td>
<td>Q1 2018</td>
<td>All output for spot sales</td>
</tr>
<tr>
<td>North China</td>
<td>Shandong Wantong Petrochemicals</td>
<td>mixed paraffin dehydrogenation</td>
<td>100</td>
<td>Q1 2018</td>
<td>All output for spot sales</td>
</tr>
<tr>
<td>South China</td>
<td>CNOOC and Shell Petrochemicals</td>
<td>Naphtha steam cracking</td>
<td>730</td>
<td>Q1 2018</td>
<td>Output reserved for downstream propylene oxide (PO), polypropylene (PP), oxo-alcohol and acetone production</td>
</tr>
<tr>
<td>North China</td>
<td>Lushi Chemical Group</td>
<td>MTO</td>
<td>150</td>
<td>H1 2018</td>
<td>Output reserved for oxo-alcohol production</td>
</tr>
<tr>
<td>Northwest China</td>
<td>Shaanxi Yanchang Petroleum Yan’an Energy and Chemical</td>
<td>Coal-to-olefins (CTO)</td>
<td>400</td>
<td>2018</td>
<td>Output reserved for PP and oxo-alcohol production</td>
</tr>
<tr>
<td>Northwest China</td>
<td>Huating Zhongxu Coal Chemical</td>
<td>Coal-to-propylene (CTP)</td>
<td>160</td>
<td>2018</td>
<td>Output reserved for PP production</td>
</tr>
</tbody>
</table>

Source: ICIS
Capacity expansion in downstream markets in China, 2018

<table>
<thead>
<tr>
<th>Location</th>
<th>Producer</th>
<th>Product</th>
<th>Capacity ('000 tonnes/year)</th>
<th>Start-up schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>North China</td>
<td>Shandong Haili Chemical Industry</td>
<td>acrylonitrile</td>
<td>140</td>
<td>Q1 2018</td>
</tr>
<tr>
<td>East China</td>
<td>China Sanjiang Fine Chemicals</td>
<td>PP powder</td>
<td>300</td>
<td>Q1 2018</td>
</tr>
<tr>
<td>East China</td>
<td>Jiangsu Huachang Chemical</td>
<td>2-ethyl hexanol</td>
<td>80</td>
<td>Mid-2018</td>
</tr>
<tr>
<td>East China</td>
<td>Nanjing Jinling plastic &amp; Petrochemical</td>
<td>PP powder</td>
<td>150</td>
<td>Mid-2018</td>
</tr>
<tr>
<td>East China</td>
<td>Jiangsu Bluestar Green Technology</td>
<td>PO</td>
<td>400</td>
<td>End-2018</td>
</tr>
<tr>
<td>East China</td>
<td>Nanjing HBL International</td>
<td>PO</td>
<td>120</td>
<td>End-2018</td>
</tr>
</tbody>
</table>

Source: ICIS

In early 2018, propylene prices may gain some support from fewer supplies in the domestic market, as some MTO units have cut or suspended operation since November last year in view of continuingly high feedstock costs.

Meanwhile, a new round of long-term contract negotiations for 2018 is well underway. Contract prices may be settled at a higher premium level than usual, supported by a concentration of planned unit turnarounds in Japan during the year.

Around 91% of propylene supply in China comes from the domestic output, with about 9% relying on imports, according to ICIS data.

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China's butadiene (BD) prices are likely to experience less volatile fluctuations in the coming year as growing domestic supply brings stability to the market.

The domestic BD market in China had been balanced-to-tight from 2014 till the second quarter of 2017 with no effective capacity addition. Hence, short-lived supply crunch and concentration of import arrivals still resulted in widely fluctuating prices throughout this year.

However, according to ICIS, three new BD units which came online in the fourth quarter of 2017, and one unit due to come on stream in the first quarter of 2018 may provide stable supply to net-BD importer China.

By the end of 1H 2017, domestic capacity of BD totalled around 3.6m tonnes/year, remaining unchanged from 2014. These new additions will increase the nameplate capacity by 395,000 tonnes/year.

Although capacity is 3.6m tonnes, actual output is about 2.7m-2.8m tonnes, as some of the BD units run at low operating rates and hence local supply still cannot cover domestic demand. Apparent demand for BD in China is about 3m tonnes.

In 2017, BD local prices in east China peaked at yuan (CNY) 26,500-26,700/tonne DEL (delivered) in mid-February, 3.5 times as much as the bottom level of CNY7,500-7,600/tonne DEL in early June, while in the import market it peaked at $3,000-3,200/tonne and fell down to $920-950/tonne CFR China, according to ICIS data.

Subsequently though BD prices have been range bound since the fourth quarter and the trend is expected to continue into the first quarter of 2018 as demand growth will be limited and less than the growth of BD supply.

China imported 288,595 tonnes of BD cargoes, exceeding the total volume of 273,274 tonnes in 2016, according to China Customs.

The country shipped out a 2,000-tonne cargo to South Korea in April. Around 2-3 shipments were heard to be exported during the fourth quarter, each carrying 1,500-2,000 tonnes of BD cargoes.

The proportion of deep-sea cargoes from Europe and America increased notably, driven by opened inter-regional arbitrage window and robust domestic demand in 2017.

Demand from downstream acrylonitrile-butadiene-styrene (ABS), styrene-butadiene-styrene (SBS) and acrylonitrile-butadiene rubber (NBR) industries had
been strong in 2017, even during the traditional demand lull over summer, but this may not be the case in 2018.

Market participants expressed concern about downstream demand in 2018 citing stringent environmental inspections, which may force more units to cut or suspend operations.

Major downstream units, including Sinopec Beijing Yanshan Company’s 150,000 tonne/year BR unit and Sinopec Qilu Petrochemical’s 250,000 tonne/year SBR plant, were taken down for a certain period of time due to environmental issues during 2017.

Demand for BD from the ABS and SBS producers, meanwhile, is expected to be largely stable in the coming year, with some pending capacity addition.

But the major downstream butadiene rubber (BR) and styrene butadiene rubber (SBR) remained weak, which could not bear high cost of the feedstock.

ABS resins are used for appliances, consumer electronics, toys, and have applications in the automotive and construction sectors. SBS is used in the production of shoe soles and for road construction. NBR finds uses in the agricultural, automotive and industrial sectors.

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CHINA'S PE IMPORT PRICES TO WEAKEN IN Q1

By Angie Li

China’s import prices for polyethylene (PE) are expected to turn soft in the first quarter of 2018 as a result of increased supply, industry sources said.

PE imports increased sharply from August and are expected to continue at a high level through the first quarter of 2018 due to firm prices in China from July, 2017.

China imported 9.63m tonnes from January to October in 2017, up by 20.6% compared with last year, according to China customs.

For the week ending 1 December, imported high density polyethylene (HDPE) film grade was assessed at $1,250-1,330/tonne CFR China, hitting the highest level from August 2015, according to ICIS data.

The arbitrage window was opened between China and other overseas market from July, 2017, and it was expected to remain open in the Q1 2018. Despite the tight HDPE supply from Iran, other overseas suppliers had increased their exports volumes to China due to the higher profits.

### PLASTICS & POLYOLEFINS

#### POLYETHYLENE

**CHINA'S PE IMPORT PRICES TO WEAKEN IN Q1**

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<table>
<thead>
<tr>
<th>Producer</th>
<th>Region</th>
<th>New expansion (tonne) HDPE</th>
<th>New expansion (tonne) LLDPE</th>
<th>New expansion (tonne) LDPE</th>
<th>Status</th>
<th>Restart time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ineos Sasol</td>
<td>La porte, TX</td>
<td>470</td>
<td></td>
<td></td>
<td>Under construction</td>
<td>Early 2018</td>
</tr>
<tr>
<td>Braskem IDESA</td>
<td>Nachital, Mexico</td>
<td>750</td>
<td>300</td>
<td></td>
<td>Completed; production started</td>
<td>Q2 2016</td>
</tr>
<tr>
<td>Nova</td>
<td>Joffre, Canada</td>
<td></td>
<td>454</td>
<td></td>
<td>Completed; production started</td>
<td>Dec 2016/shipping Jan 2017</td>
</tr>
<tr>
<td>Lyondell Basell</td>
<td>La porte, TX</td>
<td>500</td>
<td></td>
<td></td>
<td>Under construction</td>
<td>Mid 2019</td>
</tr>
<tr>
<td>Dow</td>
<td>Freeport, TX</td>
<td></td>
<td>400 (ELLTE PE)</td>
<td>350</td>
<td>ELLTE run full rates in Q4, LD mechanical completion and on track for start up in Q1, 2018</td>
<td>Q3 2017 (cracker has started up)</td>
</tr>
<tr>
<td>ExxonMobil</td>
<td>Mont Belvieu, TX</td>
<td>650</td>
<td>650</td>
<td></td>
<td>One line trial run in End 2017</td>
<td>End 2017 (cracker in mid-2018)</td>
</tr>
<tr>
<td>Formosa</td>
<td>Point Comfort, TX</td>
<td>400</td>
<td>400</td>
<td></td>
<td>Under construction</td>
<td>H2 2018</td>
</tr>
<tr>
<td>Chevron Phillips</td>
<td>Old Ocean, TX</td>
<td>500</td>
<td>500</td>
<td></td>
<td>Completed; production started</td>
<td>Q3 2017 (cracker in Q1 2018)</td>
</tr>
<tr>
<td>Sasol</td>
<td>Lake Charles, LA</td>
<td></td>
<td>470</td>
<td>420</td>
<td>Under construction</td>
<td>LD early 2019, HD H2 2018</td>
</tr>
<tr>
<td>Dow</td>
<td>Seadrift, Texas; St Charles, Louisiana</td>
<td>125</td>
<td></td>
<td></td>
<td>Under construction</td>
<td>2018</td>
</tr>
<tr>
<td>Shell</td>
<td>Monaca, Pennsylvania</td>
<td>1050</td>
<td>550</td>
<td></td>
<td>Under construction</td>
<td>Early 2020s</td>
</tr>
</tbody>
</table>

Source: ICIS
Meanwhile, the re-export cargoes rose, according to domestic distributors.

European, the UAE and Vietnam had become major re-exporting countries to China.

Besides HDPE film grade, HDPE blow moulding (BM) grade is also the main import for re-exporting, said an east China-based trader.

Moreover, the January to October imported PE supply from India surged manifold to 225,000 tonnes to China, compared with just 35,600 tonnes in 2016, according to China custom. The main imports were HDPE and LLDPE grades.

Several Indian new plants' capacities were released from 2016 resulting in increased exports from the country.

ONGC Petro-Additions Ltd (OPaL) put into operation early 2017 a 340,000 tonne/year high density polyethylene (HDPE) unit, and two swing HDPE/linear low density PE (LLDPE) lines with a combined capacity of 720,000 tonnes/year, according to market sources.

Indian’s Gail also started up its 400,000 tonne/year HDPE/LLDPE swing unit on Mar 2016, and its operating rate increased obviously in 2017.

Reliance Industries Ltd (RIL) has established on-spec production at its newly started-up 400,000 tonne/year low density PE (LDPE) unit and a 550,000 tonne/year linear low density PE (LLDPE)/high density PE (HDPE) swing in Jamnagar in October.

Except the increased supply from India, the new capacity from the US also became a major exporters to China.

Several plants like Chevron Philips, Dow chemical and Exxon Mobil had started up their PE plants in the second half of this year.

Some industry source believed the imports from America will have a great impact in 2018, especially in the second half of next year after crackers of EXXON and Chevron Phillips in Texas come into operations.

Some import traders reflected although the qualified products from new American plants cannot quickly arrive in Chinese market in large quantities, the off grade products for January 2018 shipment had been received, which also will affect the Chinese market sentiment.

Meanwhile, the offers of American cargoes for December/January shipment were increased obviously recently.

According to the survey, most operations of US plants had been back online by October after the storm hit in August in Texas.

For China domestic supply, Shenhua Ningxia phrase II started up a 450,000 tonne/year HDPE /LLDPE swing unit in Ningxia in end November.

CNOOC and Shell petrochemical plan to start up a 400,000 tonne/year HDPE and 300,000 tonne/year LLDPE unit in Guangdong province in Mar 2018.

Market players believe the heavy imports will weigh on the Chinese market import prices from December 2017.

The stronger resistance from end users is be a major factor which will contribute to the bearish market.

Some downstream factories making plastic and garbage bags said the gains of HDPE film prices were higher to the prices of their products, thus eroding margins, and they could not source cheaper Iranian material either because of its short supply.

Although the import supply was heavy in Q1 2018, market participants still believed that the market is volatile due to the restriction of coal-based suppliers.

The provincial government of Shaanxi announced its coal-based and naphtha-based chemical plants, along with other industries, will have to cut production by about half from 1 November 2017 to 31 March 2018 to curb pollution in the autumn and winter seasons.

Although there is no definite information on much production has been reduced due to stricter environmental landscape the detailed plan is expected to be implemented in Q1 2018.

Shaanxi is an important hub for coal-based chemical production in China, with an aggregate PE and PP capacity of 3.1m tonnes/year.

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CHINA PP MARKETS SEEN STABLE TO SOFT IN Q1
By Dora Xue

Spot polypropylene (PP) prices in China’s import and domestic markets are likely to be largely stable in the first quarter, with a possibility of softening after the country’s week-long Lunar New Year holiday in February.

China will be on holiday on 15-21 February for the Lunar New Year and Spring Festival. The Lunar New Year, which is on 16 February 2018, is celebrated on most parts of northeast and southeast Asia.

Most downstream factories in China typically shut down for the duration of the holiday, with some extending the down time for a longer period. In contrast, PP plants will continue running, resulting in higher inventory that would eventually weigh on prices.

Pre-holiday, PP prices would be supported at current highs by restocking activities, even as the recent spike in PP prices has significantly shrunk the production margins of downstream factories.

China’s ban on imports of plastic wastes will have taken effect at the start of the year, and could translate to some improvement in demand for virgin PP.

Post-holiday, demand is expected to taper off amid a build-up of inventories and fresh supply from CNOOC & Shell Petrochemicals’ (CSPC) new 400,000 tonnes/year plant PP plant, which is expected to start up in end-February 2018. This will likely drag down PP prices.

Outside of China, no new capacity is expected to come on stream in the first quarter of 2017, with prices in other regions higher compared with the Chinese import market.

The country is striving toward being self-sufficient in its petrochemical requirements and reduce heavy dependence on imports.

China’s PP imports had substantially declined in April from the first quarter of the year, with volume intake in the succeeding months roughly the same if not lower than levels in 2016.

Meanwhile, China has added 1.6m tonnes/year of PP capacity this year – 350,000 tonnes/year from Zhongjiang Petrochemical; 350,000 tonnes/year from Zhongtian Hechuang; 300,000 tonnes/year from CSPC and 300,000 tonnes/year from Huajian.
year from Changzhou Fude; and 600,000 tonnes/year from Ningmei Second Period.

Real domestic monthly PP output in the first 11 months of this year increased by an average of about 14% compared with 2016 levels.

Two more plants are expected to start up by the end of the year, with a combined capacity of 750,000 tonnes/year.

Improvement in economic data coming out of China are also buoying up expectation among players in the PP market that demand will improve in 2018.

Production margins for naphtha-based PP and for PP derived via the coal-to-chemical/methanol-to-olefins (CTO/MTO) route in the country are expected to stay high, which would encourage producers to boost output.

Strong prices of crude oil, propylene and methanol are expected to support PP prices, but this is hurting the downstream factories, which could not pass on the high feedstock prices to customers.

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SOLVENTS
PHENOL/ACETONE

CHINA PHENOL/ACETONE PRICES TO STAY HIGH ON STRONG DEMAND
By Yoyo Liu

China’s phenol and acetone prices in the domestic market are expected to stay high in 2018 on the back of strong demand from some the downstream industries, offsetting a planned increase in supply.

Phenol prices in the domestic market largely rebounded in the last quarter of 2017, along with commissioning of the first phenol-based cyclohexanone unit in China.

Acetone prices also move up on the back of strong downstream demand.

This, together with planned start-ups of some new downstream plants and the anti-dumping duties imposed on some imported derivatives, makes markets participants optimistic about the 2018 outlook.

Domestic suppliers are expanding production capacities to meet growing demand while running their plants at higher operating rate.

Given no changes in the attractive profits, domestic suppliers are likely to remain at high rates in the near term.

CNOOC and Shell Petrochemical Company (CSPC) plans to commission its 350,000 tonne/year phenol/acetone unit in the first quarter of 2018, and this will increase domestic supply.

According to statistics by ICIS, the unit will produce 18,000 tonnes of phenol and 10,000 tonnes of acetone per month, given normal operation.

US-based Shell Chemical is reported to shut its 384,000 tonne/year phenol/acetone unit in Texas in mid-January 2018, and this will reduce supply.

While impact on local phenol supply will be limited, the shutdown will severely affect US’ phenol exports.

Meanwhile, the shutdown will reduce local acetone supply and in turn increase imports due to under production of acetone in the US as a co-product of phenol.

Taiwan-based China Petrochemical Development Corporation (CPDC) will start its 150,000 tonne/year phenol-feed cyclohexanone unit at Nantong in Jiangsu Province, east China in the first quarter of 2018.

This will consume around 12,500 tonnes of phenol per month given normal operation of the unit.

For bisphenol A (BPA), another derivative of phenol, the Ministry of Commerce of China ruled that cargoes originating from Thailand constituted dumping, according to the news release at its official website on 9 November 2017.

This, together with short supply, pushes up BPA prices in the domestic market and in turn encourage domestic suppliers to hike their operating rates.
According to ICIS, the overall run rate has risen to around 85% at present, and most participants expect the situation to continue in 2018, which may increase demand for feedstock phenol and acetone.

Based on data from the China Customs, China’s monthly phenol imports average at 30,000 tonnes in 2017 with 26% from the US.

However, volumes from the US will be replenished from Asia or domestic suppliers along with the shutdown of US Shell’s unit in 2018.

Meanwhile acetone demand continues to increase on the back of substantial profits in downstream BPA, methyl methacrylate (MMA) and methyl isobutyl ketone (MIBK) industries, but the level is not as strong as phenol.

The Ministry of Commerce of China ruled in November 2017 that BPA and MIBK originating from some countries constituted dumping.

This will lead to high anti-dumping duties and in turn prevent many import cargoes from flowing into the domestic market. Supply will tighten as a result, pushing up prices.

Thereby, domestic BPA and MIBK producers may raise their run rates propelled by generous profits, increasing demand for acetone.

Shandong Haili Chemical Industry’s 130,000 tonne/year acrylonitrile (ACN) unit will come on stream in early 2018, and the unit is heard equipped with a 50,000 tonne/year MMA unit.

Before completion of the MMA unit, the producer plans to purchase acetone cyanohydrin, and the cargoes will be provided to MMA producers, with a purpose to get profits in MMA businesses and consume co-product hydrocyanic acid from its ACN unit.

This will also increase demand for acetone.

The China acetone market has been subject to supply shortage for a long time.

Data show that imports accounted for 45% of total supply in the domestic market in 2016, indicating China’s strong demand for acetone imports.

However, the demand for imports may gradually decrease in the future along with start-ups of new units and rising run rates of existing units in China.

Besides, there is an expectation that acetone supply in the US may tighten after the announcement that US-based Shell Chemical will idle its older line in the US in mid-January 2018, needing volumes from other countries.

China-based suppliers may take the opportunity, actively exporting cargoes to balance domestic supply and demand.
SOLVENTS
BISPHENOL A

CHINA BPA TO GAIN SUPPORT FROM TIGHT SUPPLY, STRONG DEMAND
By Jady Ma

China’s bisphenol A (BPA) prices are likely to gain upward momentum in the coming year from strong downstream demand and tight availability of spot supply in the domestic market.

In 2017, domestic BPA prices moved upwards in the first two months driven by increased restocking activities prior to the Chinese Lunar New Year and higher feedstock costs.

During March-September prices were range-bound at yuan (CNY) 9,000-10,000/tonne before taking a spike in the fourth quarter following the anti-dumping measure on Thailand-origin imports.

Looking into 2018, most market participants were bullish about the industry, citing capacity expansion in downstream polycarbonates (PC) units and expectedly lower imports from Thailand.

Thailand’s PTT Phenol has cut notably cargo deliveries from its 150,000 tonne/year BPA plant in Map Ta Phut into China following the imposition of a 10.1% temporary deposit on Thailand-origin BPA cargoes on 9 November, based on initial findings of an ongoing antidumping probe on imports.

The investigation was launched in March and will continue for a year.

As of October 2017, Thailand-origin cargoes accounted for about 38% of China overall BPA import volumes, according to China Customs data.

Additionally, the expectation of high feedstock phenol costs will also provide some support for the BPA market in China as tighter domestic supply is likely to send phenol prices higher next year.

In terms of imports China is expected to receive fewer cargoes from the US where Shell plans to idle its 240,000 tonne/year Phenol 3 unit at its Deer Park facility in Texas, in mid-January 2018.

Meanwhile, demand for BPA will get a boost from the rapidly growing PC production capacity in China because of tight domestic supply and lucrative margins.

Around 400,000 tonnes/year of new PC capacity will come on stream by end-2017 and next year, which is expected to increase BPA consumption by about 30,000 tonnes per month.

However, some market players are concerned that BPA demand would be dampened by the other major downstream product – epoxy resins.

Operation at domestic epoxy resins plants has been unstable this year due to environmental inspection.

Epoxy resins producers will be put under great cost pressure as the Chinese government plans to start imposing environmental protection duties on them from 2018, while prices of another feedstock epichlorohydrin (ECH) are likely to stay high amid tight spot availability.

That said, with healthy demand for epoxy resins from the electronics and coating industries, the rising feedstock costs can be passed onto the downstream markets.

<table>
<thead>
<tr>
<th>Polycarbonate unit start-up schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Producer</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>Wanhua Chemical</td>
</tr>
<tr>
<td>Luxi Group</td>
</tr>
<tr>
<td>Lihuayi Group</td>
</tr>
<tr>
<td>Sichuan Lutianhua</td>
</tr>
</tbody>
</table>

Source: ICIS
Coating output in China is expected to increase by around 7% to over 20m tonnes in 2017, according to forecast made by China National Coatings Industry Association.

Meanwhile, the added value of China’s electronics and information manufacturing industry grew 12% in the first eleven months of 2017, 3.7 percentage points higher than the country’s industry average, according to statistics released by China Electronic Information Industry Association.

BPA is predominantly used in the production of epoxy resins, which represent almost 55% of BPA consumption. Epoxy resins are widely used in electronics, adhesives and coatings.

Polycarbonates are the other main downstream market for BPA, accounting for around 43% of BPA use, with a wide range of applications in packaging, medical and healthcare applications, electronics and uses in the construction and automotive sectors.

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CHINA MIXED AROMATICS IMPORTS MAY WANE AMID HIGH COSTS
By Anna Xiang

China’s imports of mixed aromatics may wane due to high costs and amid calls for a nationwide use of ethanol gasoline.

Import costs are expected to stay high this year, largely in line with gains in international crude prices.

A number of importers are keen to source cargoes this year from nearby countries like Thailand and keep their purchases in small batches, in a bid to reduce price risks.

Chinese buyers favour Thailand-origin mixed aromatics with a high benzene content due to their low price. Thailand accounted for around 10% of China’s mixed aromatics imports in January-November 2017, according to China Customs data.

Southeast Asia is a major source of mixed aromatics imports for China.

For the most of 2017, importers’ margins for the material had been thin and at times flipped to the negative. Inventories were high due to poor sales in the fourth quarter.

Concerns over the imposition of a consumption tax on imports had deterred purchases and consequently weighed on the traded prices of mixed aromatics last year.

China’s tighter supervision on oil products consumption tax effective from March 2018 may close the loopholes that allowed for tax evasion, which will impose financial burden to some gasoline blenders.

Some small gasoline blenders who have evaded such tax through invoice conversion may have to be forced out of the market.

Thus, demand for mixed aromatics may be affected to some extent.

Mixed aromatics are considered a major blendstock for gasoline in China, demand for which depends on the country’s gasoline export quotas, which are being set on a quarterly basis.

China’s supply glut of oil products may worsen if the gasoline export quotas were maintained at 2017 levels since new refining units came on stream in the second half of last year.

Meanwhile, demand for mixed aromatics may take a hit as China moves towards using more environmentally friendly fuels.

China is targeting a nationwide use of ethanol gasoline by 2020, with the Shandong province, as well as the cities of Beijing and Tianjin, expected to stop supplying conventional gasoline in the first quarter of 2018.

China will require a 10% ethanol component for gasoline, thus squeezing the ratios of other components like mixed aromatics.

An expected shift to the national standard (GB) VI gasoline this year will likewise dampen demand for mixed aromatics.

Mixed aromatics, especially those with high content of benzene, will have to make up a less than the usual 35% of GB VI gasoline.

China has also started producing reformulated gasoline—another gasoline blendstock, the technical characteristics

Europe-origin mixed aromatics VS reformulated gasoline

<table>
<thead>
<tr>
<th>Products</th>
<th>Density (g/cm3)</th>
<th>Octane number</th>
<th>Sulphur content(ppm)</th>
<th>Benzene content (%)</th>
<th>Aromatics content (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe-origin mixed aromatics</td>
<td>0.80-0.83</td>
<td>97-99</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>65-75</td>
</tr>
<tr>
<td>Reformulated gasoline</td>
<td>0.84</td>
<td>100-103</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>80</td>
</tr>
</tbody>
</table>

Source: ICIS
of which are almost the same as premium mixed aromatics originating in Europe.

Some refiners have turned to using reformulated gasoline to replace imported mixed aromatics in gasoline blending. This is more apparent in Shandong, where some independent refiners have brought on stream a number of reformed units after getting approval to refine imported crude.

In 2017, the share of Shandong independent refiners to China’s total mixed aromatics imports has declined to 5% from 10% in the previous year, according to ICIS data.

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CHINA BIOFUEL PROMOTION MAY HIT DOMESTIC MTBE MARKET
By Winnie Huang

China’s methyl tertiary butyl ether (MTBE) market may come pressure by increasing domestic supply this year, as well as softened demand amid the Chinese government’s call for nationwide use of ethanol fuel.

Domestic MTBE prices went through large fluctuations during 2017. Prices in Shandong hit their bottom on 23 June, at yuan (CNY) 4,600/tonne, as demand for gasoline blending had remained tepid since May when state-owned refiners suspended gasoline purchase from the spot market to shed inventories.

The highest level in the year was recorded at CNY5,850/tonne in Shandong on 8 November, as market sentiment was boosted by rising upstream crude values.

In 2018, domestic MTBE capacity is expected to grow at a reduced rate of 2% to around 18m tonnes/year.

These new units will be part of the respective companies’ integrated projects, with most MTBE output reserved for their captive consumption.

Still, a notable increase will be seen in China’s MTBE output due to a slew of unit start-ups during the latter half of 2017.

Meanwhile, the country’s imports may continue to shrink in the coming year in response to ampler domestic spot availability.

China took in 170,600 tonnes of MTBE in the first ten months of 2017, down by 53.7% year on year, according to China Customs.

As an octane booster, demand for MTBE from the gasoline blending sector may rise further as the country plans to implement GB (national standard)-VI specifications in gasoline nationwide by the end of 2018.

The fuel quality upgrade is likely to drive up the proportion of MTBE in gasoline blending, as the content of other octane boosters including aromatics and olefins will be reduced.

However, state authorities also proposed to promote the use of ethanol gasoline in China by the end of 2020, which is likely to slow domestic MTBE consumption in traditional gasoline blending.

In such case, ethanol will be increasingly used as an additive in gasoline, replacing MTBE.

Some refiners have started to direct more MTBE output to the production of chemicals including methyl methacrylate (MMA), isobutene and butyl rubber.

At present, over 90% of MTBE goes to the gasoline blending sector, while less than 10% is used in chemical production in China.

Some refiners, meanwhile, consider modifying their units for other production.

Heyun Group, for example, has refitted one of its 200,000 tonne/year MTBE unit in northeast China into an alkylation plant, but the economic efficiency remains to be seen.

Many others are seeking outlets overseas, although the arbitrage window from China into Singapore remained closed for most time of 2017.

China’s MTBE exports rose by 10.6% year on year to 41,600 tonnes during January-October 2017, all of which were made by Wanhua Chemical. Cargoes were mainly delivered to South Korea, Taiwan and Singapore.

Meanwhile most refiners are reluctant to scale up their output of ethanol gasoline at present, citing poor public reception among downstream users largely borne out of concerns over the lower energy content of ethanol than traditional gasoline.

Logistical issues are another hurdle with ethanol, as it dissolves with water and thus difficult to be transported via pipelines. It is best transported by barge or railcar, which tends to be more costly and less efficient than pipeline.
CHINA PO PRICES TO GET SUPPORT FROM PLANNED TURNAROUNDS IN Q1
By ???????

China’s propylene oxide (PO) prices are expected to find support in the first half of next year due to an expected reduction in output from a spate of plant turnarounds planned during this period.

In China, key producer Ningbo Zhenhai Lyondell Chemical (NZLC) has a scheduled turnaround for its 285,000 tonne/year PO plant in Ningbo for 55 days in the second quarter although the exact shutdown dates have yet to be confirmed, industry sources said.

Meanwhile, Japan’s Sumitomo Chemical will conduct a major turnaround at its 200,000 tonne/year PO plant from May to June for two months, and Japan’s Asahi Glass Co (AGC) will take its 110,000 tonne/year plant off line at around the same time for one month.

As a consequence of the Japanese turnarounds, a portion of Saudi-origin material will be headed for Japan during this period, which means that the volume allocation to China will be cut.

The main source of China imports in recent years is Saudi Arabia and then followed by southeast Asia and the US.

Elsewhere in Asia, a major southeast Asia-based producer will be conducting a turnaround at its integrated PO and polyols units in February/March next year for slightly over a month, according to market sources.

Characteristic wild swings in China domestic PO prices carried on in 2017, with the average year-peak recorded on 25 August at yuan (CNY) 13,350/tonne ($2,020/tonne) DEL (delivered) China and the year-trough was set on 12 May at CNY9,050/tonne DEL China, according to ICIS data.

Prices were relatively firm in Q4 and had gained a cumulative 20% from late September to hit CNY12,300/tonne DEL China in early November before retreating, ICIS data showed.

Prices then rallied again by 7.5% in two consecutive weeks to hit CNY12,225/tonne DEL China in mid-December amid improved buying interest from the downstream polyols sector.

This was because buyers were more actively restocking cargoes following news of a southern Chinese producer bringing forward its polyols plant turnaround to January from April next year, although this could not be verified with the producer.

Other polyols producers are expected to ramp up their production to fill up the supply shortfall and hence boosting demand for PO in the process, the players said.

Relatively tighter PO supply from on-and-off plant output disruptions throughout the year as a result of more stringent environmental inspections in the country had supported prices in general.

In the spot import market, average PO prices increased by $95/tonne week on week to $1,500/tonne CFR (cost & freight) China on 15 December, ICIS data showed.

Demand wise, the expected influx of Sadara Chemical’s downstream flexible slabstock grade of polyols into Asia will indirectly suppress the need for PO in the region as less PO will be required for polyols production.

The Saudi Arabia-based producer’s 400,000 tonne/year polyether polyols unit started up in mid-July this year and its 390,000 tonne/year PO unit came on stream slightly before that in end-June, although its PO is thought to be entirely for its own captive use and is not for commercial sales.

However, this has resulted in less demand for PO for the production of polyols.

Regular flexible slabstock quantities of a few thousand tonnes a month have been arriving in China since September and the volume is set to increase next year.

Polyols prices have been tracking feedstock PO prices very closely and it is unlikely for the gap to widen going forward as polyols producers’ margins are expected to remain tightly squeezed.
Looking further ahead to the second half of 2018, PO prices will likely come under downward pressure after most of the plants have recovered from their turnarounds.

New PO capacities scheduled to come on stream next year will also drag on prices as PO capacity expansion will outpace polyols expansions, whereby polyols is already in a severely overcapacity situation.

Firm PO start-ups in 2018 include South Korea’s S-Oil’s 300,000 tonne/year unit in Ulsan in late-Q2 or Q3.

Less confirmed PO start-ups next year consist of China’s Nanjing Hong Bao Li’s 120,000 tonne/year unit in Nanjing, Jinling Chemical’s 200,000 tonne/year unit in Jiangsu and Blue Planet Eco New Materials’ 400,000 tonne/year unit in Jiangsu.

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CHINA VAM TO FACE PRESSURE FROM HIGHER FEEDSTOCK, TEPID DEMAND

By Wang Yeqing and Guo Xinying

China’s vinyl acetate monomer (VAM) market will likely to be faced with higher feedstock costs this year, with downstream demand to be weighed by the country’s measures to tackle environmental issues.

2017 has been a rather volatile year for the domestic VAM market. VAM prices hit their yearly low in late May at yuan (CNY) 5,650/tonne in east China, due to increased spot availability as a slew of units wrapped up maintenance; Prices in east China peaked at CNY7,750/tonne in late September when more volumes were sent overseas to cover the supply shortfall in the US in the aftermath of hurricane Harvey.

The overall VAM supply in China is expected to be stable-to-higher in 2018. Whereas no new capacities are expected to come on stream this year, fewer unit turnarounds will be scheduled given a concentration of maintenance in 2017.

Most VAM producers shut their units for maintenance every two years.

VAM imports may remain largely stable at around 15,000-30,000 tonnes per month in 2018 unless affected by unforeseeable events.

Feedstock costs for VAM producers, meanwhile, are likely to trend higher amid tighter supply of natural gas and calcium carbide.

Major natural gas-based VAM producer Sinopec Sichuan Vinylon Works has been operating its 500,000 tonne/year unit in Sichuan at around 60% capacity since end-January 2018 due to limited feedstock supply.

The tightness in natural gas may sustain during the first quarter of 2018 as the country prioritized its gas output for residential heating over winter while cutting supplies to industrial and chemical sectors.

China’s VAM unit turnarounds

<table>
<thead>
<tr>
<th>Location</th>
<th>Producer</th>
<th>Capacity ('000 tonnes/year)</th>
<th>Turnaround schedules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northwest China</td>
<td>Sinopec Great Wall Energy and Chemical (Ningxia)</td>
<td>450</td>
<td>Around 35 days of maintenance during March-April 2018</td>
</tr>
<tr>
<td>Southwest China</td>
<td>Sinopec Sichuan Vinylon Works</td>
<td>500</td>
<td>End-Dec 2017-late Jan 2018</td>
</tr>
<tr>
<td>East China</td>
<td>Wanwei Group</td>
<td>170</td>
<td>July 2017</td>
</tr>
<tr>
<td>North China</td>
<td>Shuangxin Group</td>
<td>270</td>
<td>April 2017</td>
</tr>
<tr>
<td>East China</td>
<td>Sinopec Shanghai Petrochemical</td>
<td>90</td>
<td>March 2017</td>
</tr>
<tr>
<td>North China</td>
<td>Shanxi Sanwei Group</td>
<td>70</td>
<td>May 2017</td>
</tr>
<tr>
<td>Northwest China</td>
<td>Ningxia Dadi Circular Development</td>
<td>260</td>
<td>April 2017</td>
</tr>
</tbody>
</table>

Source: ICIS

Calcium carbide-based VAM makers have been under great cost pressure since June 2017 when calcium carbide prices in northwest China took an uptrend on tightened supply.

Calcium carbide manufacturers in many regions had to cut output amid the government’s safety checks on chemical production.

Around 62% of VAM capacity in China is based on calcium carbide, 16% natural gas-based and 22% ethylene-based.

Moreover, increasingly stringent

EVA capacity expansions in China

<table>
<thead>
<tr>
<th>Location</th>
<th>Producer</th>
<th>Capacity ('000 tonnes/year)</th>
<th>Start-up schedules</th>
</tr>
</thead>
<tbody>
<tr>
<td>East China</td>
<td>Sinopec Shanghai Petrochemical</td>
<td>100</td>
<td>2019</td>
</tr>
<tr>
<td>East China</td>
<td>Sinopec Yangzi Petrochemical</td>
<td>100</td>
<td>2019</td>
</tr>
<tr>
<td>Southeast China</td>
<td>Sinochem Quanzhou Petrochemical</td>
<td>100</td>
<td>2019</td>
</tr>
<tr>
<td>Northwest China</td>
<td>Shaanxi Yanchang Coal Yulin Energy and Chemical</td>
<td>300</td>
<td>2019</td>
</tr>
<tr>
<td>East China</td>
<td>Formosa Plastics Ningbo (Phase II)</td>
<td>120</td>
<td>N/A</td>
</tr>
<tr>
<td>Northeast China</td>
<td>Jin’gang Petrochemical</td>
<td>300</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Source: ICIS
environmental inspections this year may dampen demand from downstream vinyl acetate ethylene (VAE) emulsions and polyvinyl alcohol (PVA) sectors to various extent.

Many small downstream producers were forced to shut down during the fourth quarter of 2017, while some medium-sized makers said their production was restricted to 3-4 days per week due to environmental checks. Industrial giants, meanwhile, opted to upgrade their facilities to meet higher environmental standards.

Looking on the bright side, demand for ethylene-based VAM is likely to be boosted by fast growing ethylene vinyl acetate (EVA) in China within the next three years.

By 2020, the country’s EVA capacity is forecast to reach 1.8m tonnes/year, representing a surge of 85% from the 2017 level.

Up to 2017, nearly 85% of VAM goes to the PVA sector; less than 10% is used to produce VAE emulsions; and around 6% is used for EVA production in China.

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CHINA MMA TO COME UNDER PRESSURE IN 2018 AS SUPPLY SURGES

By Yoyo Liu

SINGAPORE (ICIS)—China’s methyl methacrylate (MMA) market uptrend this year on short supply will likely reverse with prices coming under pressure as domestic production capacity will post a 37.3% year-on-year growth to hit about 1.105m tonnes/year in 2018.

The expected start-up of two 50,000 tonnes/year MMA units in Shandong by the first quarter of 2018 is likely to increase domestic supply by around 8,000 tonnes per month. The two plants are now undergoing trial runs.

Meanwhile, operating rates at domestic MMA units may also increase, supported by expected higher supply of feedstock acetone cyanohydrin (ACH).

Shandong Haili Chemical Industry is scheduled to put into operation a 50,000 tonne/year ACH unit in the coming year.

Domestic MMA supply in China has been tight for most of 2017 as more volumes were exported to cover the supply gap in the European and US markets caused by a slew of force majeures (FMs), resulting in rising product prices in the country.

According to ICIS data, MMA prices in Europe have been higher by an average of 17% than that in China’s since March 2017 and the trend continues to date.

MMA prices in east China hit their highest level so far this year at yuan (CNY) 21,650/tonne ex-tank in late October, representing a rise of around 40% from early January and around 55.4% from 2016, according to ICIS data.

Chinese traders, on the other hand, were keen to ship their cargoes overseas in view of lucrative export margins.

By the end of October, the country’s export volumes surged 123% from the same period last year to 57,644 tonnes, while net imports shed 56% year on year to 48,829 tonnes, according to China Customs.

However, with some units in the US and Europe back into operation and new capacities in the Middle East, the long-lasting supply crunch globally is likely to ease next year.

One addition is the recent start-up of Saudi Methacrylates (SAMAC)’s 250,000 tonne/year MMA plant, expected to bring on stream a 10,000 tonnes to China per month by the first quarter of 2018. It is a joint venture between Mitsubishi Rayon and SABIC.

Saudi Arabia’s Rabigh Refining and Petrochemical Company (Petro Rabigh), a joint venture of Saudi Aramco and Japan’s Sumitomo Chemical, is planning to bring on stream a 90,000 tonne/year MMA unit by the first quarter of 2018.

However, the ample supply that looks set to put pressure on prices in 2018, may be slightly offset by additional demand for the material that will arise from the start of two downstream polymethyl methacrylate (PMMA) units in China.

The units are expected to begin operation in the second and third quarter of 2018.

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**China’s MMA unit start-up schedule for 2018**

<table>
<thead>
<tr>
<th>Producer</th>
<th>Capacity (’000 tonnes/year)</th>
<th>Start-up schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dongming Huayi Yuhuang New Material</td>
<td>50,000</td>
<td>Q1 2018</td>
</tr>
<tr>
<td>Yidali Chemical</td>
<td>50,000</td>
<td>Q1 2018</td>
</tr>
<tr>
<td>Wanhua Chemical</td>
<td>50,000</td>
<td>Q3 2018</td>
</tr>
<tr>
<td>Taizhou Ruibai Chemical</td>
<td>150,000</td>
<td>Q4 2018-Q1 2019</td>
</tr>
</tbody>
</table>

Source: ICIS

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**propylene oxide DEL China assessment spot week-ahead full market range (mid)**

© 2017 ICIS
### China’s PMMA unit start-up schedule for 2018

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<th>Producer</th>
<th>Capacity ('000 tonnes/year)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Wanhua Chemical</td>
<td>70,000</td>
<td>Q2 2018</td>
</tr>
<tr>
<td>Suzhou Double Elephant Optical Materials</td>
<td>80,000</td>
<td>Q3 2018</td>
</tr>
</tbody>
</table>

Source: ICIS

Moreover, downstream users are set to be increasingly reliant on domestically-produced MMA from next year onwards, as imports of recycled MMA will be banned.

China announced an import ban on waste plastics in July, with the measure scheduled to take effect on 1 January 2018.

Before the ban, the country imported around 70,000 tonnes of recycled MMA each year.

According to the source, it is expected to result in an increase in MMA demand by 20%-30% to approximately 14,000 tonnes in 2018, due to expensive MMA price. The rest of the gap will be fulfilled by domestic recycled MMA.

MMA is used in the manufacture of polymethyl methacrylate acrylic plastics (PMMA), acrylic sheet, surface coatings, emulsion polymers and adhesives (ACR, MBS).

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Developments in China’s petrochemicals industry continue to affect the global marketplace. It is therefore vital for domestic and international market players to keep track of changes within the country, to know where opportunities lie.

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- Data on inventory levels and price margins
- Plant and production news

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Styrene</td>
<td>MEG</td>
</tr>
<tr>
<td>BTX</td>
<td>Methanol</td>
</tr>
<tr>
<td>BPA</td>
<td>PE</td>
</tr>
<tr>
<td>Phenol</td>
<td>PP</td>
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<tr>
<td>Acetone</td>
<td>Oxo-Alcohol</td>
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<tr>
<td></td>
<td>Propylene</td>
</tr>
<tr>
<td></td>
<td>Base Oil</td>
</tr>
<tr>
<td></td>
<td>MTBE</td>
</tr>
<tr>
<td></td>
<td>Mixed Aromatics</td>
</tr>
</tbody>
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CHINA BG MAY COME UNDER PRESSURE ON INCREASED SUPPLY
By Lili Chng

Butyl glycol (BG) spot prices in Q4 2017 in China hit levels not seen in more than two years on tight supply, but that may change when supply to Asia from the new Sadara Chemical Company BG plant stabilises in early 2018.

Saudi Arabia’s Sadara announced on 8 June the official commercial start-up of its 200,000 tonne/year capacity BG plant in Jubail.

The first cargo to Asia arrived in end-July but subsequent cargoes were met with some delays and uncertainties, according to feedback from market players.

Sadara is a joint venture (JV) between Saudi Aramco and Dow Chemical. Dow is responsible for the marketing of Sadara’s BG cargoes into Asia.

So far, market players were relieved with how Dow handled the sales of Sadara’s cargoes into Asia with the market not panicking and prices have not dropped.

Market players expect supply to stabilise and shipment to be regular from early next year.

Another market player expected some rebalancing of supply but expected the market to be able to absorb the new supply.

“Not all of Sadara’s volumes will be bound for Asia; Partial volumes will remain in the Middle East and some will go to Europe, so the market should be able to absorb the volumes,” said a market player, who expected demand for BG market to grow in 2018.

Others, however, believe that competition would intensify.

“When new supply comes in, it is expected that some existing suppliers will lose market share,” said another Chinese importer.

Volumes from Taiwan’s Oriental Union Chemical Corp (OUCC) are also expected to come on stream next year.

OUCC’s plant, with a combined annual capacity of 30,000-40,000 tonnes of BG/butyl di-glycol (BdG), was originally slated to start operation in mid-2017 but was delayed due to shortage of feedstock ethylene and ethylene oxide.

The plant completed trial runs in July but did not start to produce commercially due to ethylene shortage.
Meanwhile, the anti-dumping duties that China currently has in place for BG and BDG imported from the US and EU will expire at the end of January 2018.

The five-year anti-dumping duties had been in place since Jan 28, 2013.

A midterm review of the dumping and dumping margin of the imports of BG and BDG from the US and EU has been conducted since April 2017, but the outcome is still uncertain.

In the event if the ADD is extended and the dumping margin is increased, volumes from deep sea suppliers into China could be further curtailed.

Currently, importers in China already tend to favour cargoes with shorter delivery windows that present lesser risk.

Domestic prices in China has already started to drop due to a slow down in demand during winter.

On the demand front, the Lunar New Year will start in mid-February, and business would likely slow down near to the festival.

Market players expect demand to grow in line with China’s GDP growth next year with no other significant new consumption capacity heard.

Demand for by-product butyl di-glycol is expected to be firmer due to the growth in demand from the electronics sector.

China is a major importer of BG in Asia and imported about 153,797 tonnes of BG in 2016. (please see interactive below)

BG, derived from ethylene oxide (EO) and n-butanol (NBA), is also known as ethylene glycol ethers (EGE).

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