



CHINA CHEMICALS OUTLOOK 2019



Key markets covered:

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ALCOHOLS

METHANOL

CHINA METHANOL SUPPLY AND DEMAND TO INCREASE IN 2019

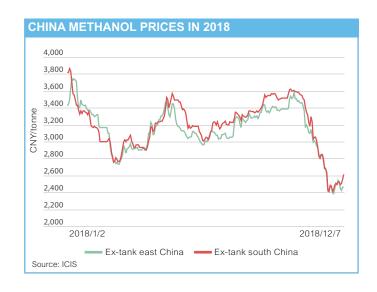
BY SAM LIANG JANUARY 2019

China's methanol market may face uncertainties in 2019 after a volatile 2018, with supply and demand both expected to rise.

Domestic methanol prices hovered at high levels in the first three quarters of 2018. According to ICIS assessments, prices in east China averaged yuan (CNY) 2,750-3,750/tonne in the first half of the year and bottomed at CNY2,400/tonne towards the year-end, due to plummeted crude oil values, continued drops in olefins prices and the US-China trade war.

Supply was overall limited in the first three quarters of 2018 but slightly outweighed demand in the last quarter of the year.

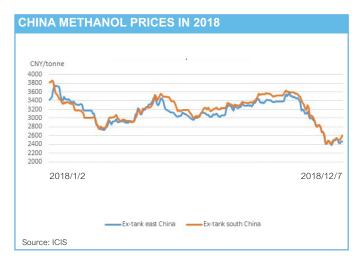
Domestic methanol supply increased slightly in 2018. New plants, with capacities totalling 6.10m tonnes/year were estimated to start up in 2018, of which, 4.50m tonnes were

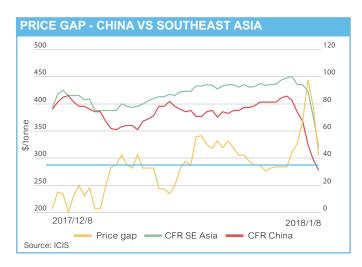


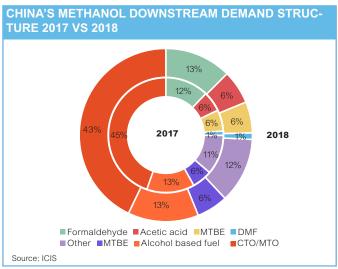
equipped with or planned to have downstream plants. Domestic methanol output may reach 55-56m tonnes in 2018, according to ICIS, up by only 6% year on year.

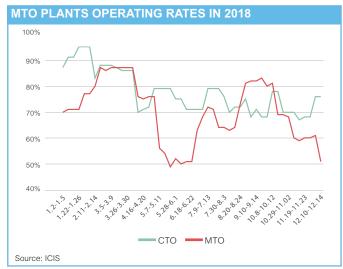
| Region | Company | Capacity ('000 tonnes/year) | Downstream projects plan | Expected start-up time |
|----------------|---------------------------------|--------------------------------|--|---------------------------|
| Shandong | Shandong Xinneng Fenghuang | 200 | | Q1 2018 |
| Inner Mongolia | Inner Mongolia ENN | 600 | | Q3 2018 |
| Anhui | Anhui Haoyuan | 800 | Construction at MTO plant not yet begun | Q2 2018 |
| Shandong | Shandong Jinneng | 200 | | Q2 2018 |
| Shanxi | Shanxi JAMG Huayu Coal Chemical | 600 | Methanol for clean fuel | Q3 2018 |
| Shaanxi | Yan'an Energy & Chem | 1,800 | СТО | End Sept 2018 |
| Shandong | Shandong Luxi | 800 | СТО | End 2018 |
| Dalian | Hengli Petrochemical | 500 | Acetic acid, MTBE | End 2018 |
| Heilongjiang | Baotailong | 600 | | End 2018 |
| 2018 | | 6,100 | | |
| Shanxi | Shanxi JAMG Huayu Coal Chemical | 300 | Methanol for clean fuel | |
| Anhui | Zhong'an Lianhe Coal Chemical | 1,800 | СТО | 2019 |
| Shandong | Shandong Ruixing | 500 | | 2019 |
| Inner Mongolia | Inner Mongolia Jinchengtai | 600 | MEG | 2019 |
| Inner Mongolia | Inner Mongolia Rongxin | 1,000 | | 2019 |
| Shaanxi | Yankuang Yulin Coal Chemical | 700 | | 2019 |
| Shaanxi | Shenhua Yulin | 1,800 | The existing MTO plant outsources methanol in the market | 2019 |
| 2019 | | 6,700 | | |











Another 6.70m tonnes/year of methanol capacities are expected to come on stream in 2019, of which, nearly half are equipped with downstream plants.

Methanol imports into China were dropping. In the first three quarters of 2018, given tight supply due to maintenance shutdowns at major overseas plants, spot cargoes were mostly diverted to southeast Asia, where downstream biodiesel demand was healthy.

In late September, the start-up at Marjan's 1.65m tonne/ year methanol plant in Iran slightly boosted China's methanol import volumes. Customs data showed that methanol imports into China averaged 679,000 tonnes/ month in 2017 and are expected to fall to around 620,000 tonnes/month in 2018. China's total methanol import volume may be less than 7.50m tonnes in 2018.

Two major overseas methanol plants are planned to launch production in 2019.

The start-up time of Kaveh's 2.30m tonne/year methanol plant in Iran remains unknown, due to some technical issues. But it is certain that its products will still target China as its major destination.

The other new 1m tonne/year methanol plant in Trinidad will start up in mid-2019. However, China's methanol imports may only increase slightly in 2019.

China's methanol exports are expected to reach 250,000 tonnes in 2018, almost double the 2017 level, mainly because of the lingering price gap with surrounding markets.

As shown in the chart below, re-export trade between China and southeast Asia was active in the second and third quarter of 2018, when the arbitrage window was opened.



| SHUTDOWN AT MAJOR CTO/MTO PLANTS | | |
|---------------------------------------|-----------------------------|--|
| Company | Capacity ('000 tonnes/year) | Shutdown time |
| Fund Energy (Ningbo) | 600 | 7 May-1Jul 2018 |
| Zhejiang Xingxing | 690 | 2 Jan-13 Feb 2018; 25 May-24 Jun 2018; from 15 Oct, not restarted by press time |
| Jiangsu Sailboat | 830 | 20 Jul-23 Aug 2018 |
| Nanjing Chengzhi Clean Energy | 295 | 23 May-1 Jun 2018 |
| Qinghai Yanhu | 300 | From Feb 2018, not restarted by press time |
| Zhongyuan Petrochemical | 200 | 2 May-Jul 2018; 5 Nov 2018-Feb 2019 |
| Shandong Yangmei Hengtong | 300 | 2-22 May 2018 |
| Shenhua (Baotou) | 600 | 1-30 Sept 2018 |
| Datang Duolun | 460 | From 15 Apr 2018, not restarted by press time |
| Ningxia Baofeng Energy | 600 | 11 Jun-7 Jul 2018 |
| Shaanxi Pucheng Clean Energy Chemical | 600 | 21 Nov-14 Dec 2018 |

| START-UP PLAN OF | TART-UP PLAN OF MAJOR CTO/MTO PLANTS IN 2018-2019 | | | | | |
|------------------|---|-----------------------------|------------------------|--|--|--|
| Region | Company | Capacity ('000 tonnes/year) | Expected start-up time | | | |
| Shaanxi | Yan'an Energy & Chem | 600 | 2018 | | | |
| 2018 | | 600 | | | | |
| Heilongjiang | Jilin Connell Chemical | 300 | 2019 | | | |
| Shandong | Shandong Luxi | 290 | H1 2019 | | | |
| Ningxia | Ningxia Baofeng Energy Phase II | 600 | H1 2019 | | | |
| Anhui | Zhong'an Lianhe Chemical | 600 | 2019 | | | |
| Inner Mongolia | Jiutai Energy | 600 | H1 2019 | | | |
| Jiangsu | Nanjing Chengzhi Clean Energy | 600 | H1 2019 | | | |
| 2019 | | 2,990 | | | | |

China's methanol exports are mostly to cover the overseas supply gap. Hence, if the regional price gap narrows in 2019, demand for China's methanol exports may shrink.

In the domestic market, methanol demand is forecasted at 63.31m tonnes in 2018, up by 5% from 2017. The growth in demand posted a dramatic slowdown as compared to 2017. Meanwhile, demand from the methanol-to-olefins (MTO) industry, which registered rapid growths in the past years took up a lower share of 43% in total domestic methanol demand in 2018.

High methanol prices, on the back of supply shortages, but low oil prices have been weakening the competitive edge of MTO plants, which are enduring squeezed margins. Olefin producers were not eager to maintain production as a result.

CTO plants' operating rates are more stable than MTO plants', which are very much impacted by margins. In

2018, poor margins weighed down MTO plants' operating rates to troughs in the second and fourth quarter. Some MTO producers in east China suspended production or purchased ethylene in the market in order to balance costs and downstream margins.

New MTO plants in China will start up in 2019. However, market players express their concerns over limited margins of the MTO process as compared to naphtha cracking and propane dehydrogenation process, against the backdrop of low oil prices. The operation status of MTO plants remains the major indicator to dictate methanol price directions in recent years.

China's methanol price structure will unlikely change sharply in 2019. The high end of methanol prices is determined by MTO producers' affordability for feedstock methanol, while the low end is methanol producers' costs. The supply-demand balance will impact the short-term price trend of methanol.



AROMATICS & DERIVATIVES

BENZENE

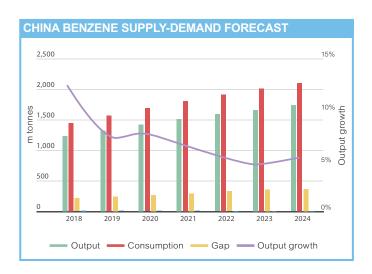
CHINA BENZENE REBOUND TO BE CAPPED BY UNCERTAINTIES

BY RAN CHENG JANUARY 2019

China's benzene prices are expected to rebound this year as demand will outpace output growth, but gains will be likely capped by uncertainties in the upstream crude market amid weakening macroeconomic fundamentals.

Demand in the first quarter will be boosted as downstream styrene monomer (SM) plants are expected to restart in January, which will boost benzene consumption by at least 5,000 tonnes per month.

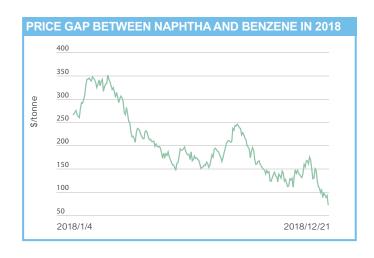
Container port in Qingdao, Shandong Province, east China (Photo by Yu Fangping/Pacific Press Via Zuma Wire/REX/Shutterstock)



Imports are expected to remain strong during the period, thus keep inventories at Chinese ports high and cap gains in benzene prices throughout the year even with the projected strength in demand in the second guarter.

Benzene and derivatives prices have slumped in fourth quarter of 2018, largely tracking movements in upstream crude markets amid uncertainties generated by the US-China trade war.

Consequently, the price gap between benzene and



feedstock naphtha in Asia had stayed below the breakeven level of \$150/tonne for a long time.

For the whole of 2019, demand growth is expected to outpace the projected increase in output even though capacity expansion is predicted to peak this year at 15.1%, according to ICIS data.

Consumption is expected to log an 8.5% increase to 15.7m tonnes, against the forecast 7.4% rise in output to 13.2m tonnes.

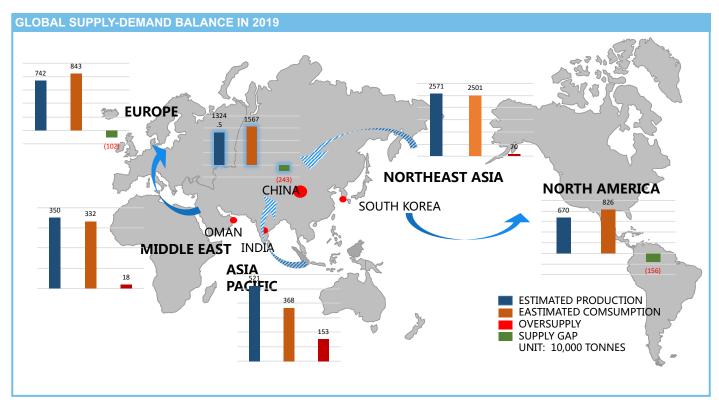
China's benzene capacity, on the other hand, is projected to expand by 2.67m tonnes to 20.4m tonnes, but this will not necessarily translate to an immediate increase in available supply, the data showed.

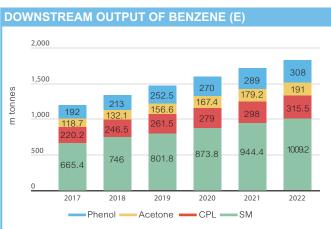
Demand for benzene is due to strengthen amid capacity expansions in the downstream SM, phenol, acetone and caprolactam (CPL) sectors.

SM, which accounts for 38% of total benzene consumption in China, will have an additional capacity of 1.43m tonnes this year.

Based on the projected consumption and output, the country will need to import 2,425 tonnes of benzene in 2019.







In the first 11 months of 2018, China's imports of the material stood at 2.24m tonnes, down 3.8% from the previous corresponding period, according to official data.

Meanwhile, southeast Asia and Saudi Arabia are expected to add a combined 1.59m tonnes/year of new benzene capacity this year, with no corresponding substantial downstream expansion, based on ICIS data.

Kumho Mitsui Chemicals Inc's (KMCI) planned expansion at a downstream methyl di-p-phenylene isocyanate (MDI) plant in Yeosu, South Korea, is not expected to come on stream until late 2019. The plant's capacity will be increased by 60,000 tonnes via a debottlenecking process to 410,000 tonnes/year by 2020.

This meant that the Asian benzene market will remain oversupplied this year.

China is the world's largest consumer of benzene, with a 30% share of the global market.

But the world's second biggest economy has been showing signs of slowing down since the fourth quarter and this would weigh down on the general sentiment in the benzene market.



AROMATICS & DERIVATIVES

STYRENE

CHINA SM TO FIND H1 SUPPORT FROM HEAVY ASIA TURNAROUNDS

BY TINA ZHANG AND JOANNE WANG

China's styrene monomer (SM) domestic prices are expected to be supported in the first half of 2019, as supply is likely to be tight amid a heavy plant turnaround schedule in Asia.

Some downward pressure may hit the market in the second half as new capacities come on stream.

The scheduled shutdowns at regional plants could cause inventories in China's key Jiangsu market to ease and provide impetus for domestic SM prices to gain.

In June 2018, spot prices in Jiangsu surged to all-time highs as inventories in east China, which are mostly from imports, plunged to record lows. (Please see chart below)



Any expected price gains, however, could be wiped out in the second half as China is due to start up three plants with a combined capacity of 1.43m tonnes/year.

The new plants will boost the country's overall annual SM production capacity to 10.7m tonnes.

| ASIAN SM PL | ANTS' TURNAR | OUND SCHED | ULE IN H1 2019 |
|-----------------------------------|-------------------------|-----------------------------|--------------------------|
| Producer | Location | Capacity ('000 tonnes/year) | Turnaround schedule |
| LG Daesan Chemical | Daesan, South Korea | 180 | 8 - 30 Mar |
| (Lotte) Honam | Daesan, South Korea | 580 | 8 - 30 Mar |
| LG Petro- chemical | Yeochon, South Korea | 200 | 13 Mar - 3 Apr |
| LG Petro- chemical | Yeochon, South Korea | 300 | 20 Mar - 10 Apr |
| Hanwha Total Petrochemical | Daesan, South Korea | 400 | 25 Mar - 9 May |
| Hanwha Total Petrochemical | Deasan, South Korea | 650 | 25 Mar - 9 May |
| YNCC | Ulsan, South Korea | 365 | Apr - May |
| Asahi Kasei | Mizushima, Japan | 390 | May - Jun |
| ldemitsu Ko- san Co | Chiba, Japan | 210 | Mar - Apr |
| Nippon Steel Chemical | Ohita, Japan | 190 | Feb - Mar |
| Formosa Chemical Fibre Corp | Mailiao, Taiwan | 720 | 30-40 days from April |
| Grand Pacific Petrochemical | Ta She, Taiwan | 130 | End-Feb to early Mar |
| Taiwan Sty- rene Monomer | Lin Yuan, Taiwan | 180 | One month from Feb |
| Equate | Kuwait | 450 | 2-3 weeks from Jan |
| ldemitsu Sty- rene | Malaysia | 240 | 45 days from July |

The expected additional capacity in 2019 will be higher than the 795,000 tonnes/year installed in January-November 2018, according to ICIS data.

Higher domestic supply will mean China will need to import less volumes of the material, especially with the

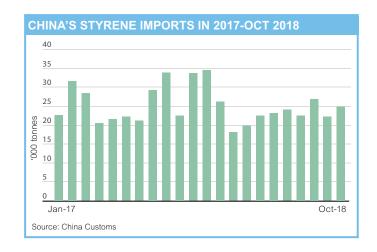


| CHINA SM S | TART-UP SCHEDULE (2019 | 9-2020) | | |
|------------|------------------------|--|---------------------------|-------------------|
| Region | Location | Producers | Capacity (tonnes/year) | Start-up schedule |
| Central | Wuhan, Hubei | Sinopec-SK (Wuhan) Petrochemical | 27,000 | Jan 2019 |
| East | Dongying, Shandong | CITIC Guoan | 200,000 | H1 2019 |
| East | Zhoushan, Zhejiang | Zhejiang Petrochemical | 1.2m | H2 2019 |
| Northeast | Dalian, Liaoning | Hengli Petrochemical | 720,000 | H1 2020 |
| South | Huizhou, Guangdong | CNOOC and Shell Petrochemicals Co (CSPC) | 700,000 | H1 2020 |
| East | Taixing, Jiangsu | Abel Chemical | 500,000 | 2020 |
| South | Quanzhou, Fujian | Sinochem Quanzhou | 450,000 | End-2020 |
| | | | | |

antidumping duties (ADDS) currently in place for material from three origins.

China imposed ADDs in February 2018 on SM imports from major suppliers - South Korea, Taiwan and the US, with the final rates of between 3.8% and 55.7% set in June.

In January-October 2018, China imported around 2.30m tonnes of SM, down by around 9.2% year on year, according China Customs data.



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AROMATICS & DERIVATIVES

MIXED AROMATICS

UNCERTAIN CRUDE, POLICIES TO CURB CHINA'S MIXED AROMATICS IMPORT MARKET

BY SYLVIA CAI

China's mixed aromatics import market is likely to come under pressure in 2019 from uncertainties in the crude futures, stricter invoice supervision and environmental measures as well as the boom in domestic reformer start-ups.

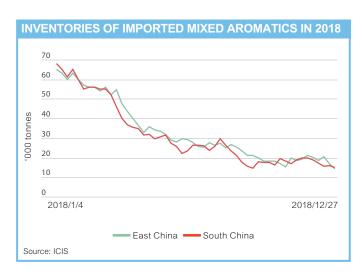
In 2019, demand for import mixed aromatics is likely to drop at a faster pace than supply.

In 2018, the selling prices of imported material largely hovered at a low level, in both east and south China, despite a spike during September-October bolstered by higher international crude prices and the week-long National Day holiday (1-7 October), ICIS data showed.



China saw intensive import arrivals in January-February 2018 before the strict invoice management policy was due for trial implementation in March.

Then imports plunged since May following the official implementation of the policy.



China's imports of other aromatic mixtures (most are mixed aromatics) dropped by 53% to about 4.57m tonnes in the first 11 months, according to China Customs data.

China's inventories of imported mixed aromatics have reached a record low of about 329,000 tonnes in late December 2018, much lower than the 1.22m-tonne level seen a year before, ICIS data showed.

Many importers have retreated to the sidelines or left the market because of capital issues and policy pressure, which resulted in muted trading activities.

Such bearish sentiment is likely to persist in 2019.

Several large fluctuations in international crude price, which is a key driver of mixed aromatics prices, have dampened market confidence in the past year.

In 2019, there are many uncertainties in the international crude oil market, including the production cuts by OPEC and Russia; changes in US production and inventories; as well as the US attitude towards Saudi Arabia regarding the Kingdom's oil output reduction plan.





If a bearish crude continues in 2019, it will suppress the selling prices of imported mixed aromatics and further dampen the market sentiment.

Import demand will be still predominantly driven by policies.

Tighter management of consumption tax levied on refined oil and environmental inspections, if continues in 2019, may add further burden to the trade of blended gasoline and thus curb downstream demand for mixed aromatics.

These two policies have direct impact on blenders' margins.

Stricter invoice supervision, coming into force in May 2018, has increased the difficulties of invoice conversion and widened the price difference of blended gasoline with invoices and without invoices.

More illicit blenders may be eliminated if they cannot seek customers who do not need invoices such as privately owned petrol stations and some end-users.

Environmental protection measures also frustrate the gasoline blending market.

The State Council of China released a three-year action plan for a blue sky on 3 July 2018, planning to ban the selling of blending components in the name of chemical feedstock and the use of chemical feedstock in oil blending.

Although the impact of the policy remains to be seen because the contents of the action plan is complicated and no detailed regulations are available for banning blend oil, central government's firm stance in environmental protection has depressed the gasoline blending market.

In addition, ethanol gasoline will of course swallow the market share of traditional blended gasoline as China is striving for national promotion of ethanol gasoline by 2020 and gradually increasing pilot areas of such biofuel.

Domestic refined oil market has been supersaturated. The growth in export quotas of refined oil remains unknown. Domestic gasoline blending demand will likely stay lackluster if there is a lack of open export windows.

If major refiners reduce their buying prices of gasoline from the merchant market, it will add further pressure to the mixed aromatic import market of high costs.

On the supply side, limited import arrivals are expected in 2019 for a lack of major positive news, of which the Europe-origins may account for a smaller share.

Import costs, downstream demand and competitive products are the key drivers of China's mixed aromatics imports.

Import costs have limited downward room on the back of high exchange rate and premiums.

The premium is unlikely to change a lot as domestic importers have low bargaining power with overseas suppliers on the back of shrinking imports and tight supply in Europe.





Import costs remain higher than domestic buying ideas in the coming year, which will undermine import interest.

In the future, for letter of credit default risk-aversion, importers may opt to choose smaller vessels or share a vessel with others to reduce import volumes and costs.

Southeast Asia-origin mixed aromatics with a high benzene content enjoy a stronger price advantage and flexibility, compared with Europe-origin material with a low benzene content.

The high-benzene one has a higher octane value and better explosion resistance.

Therefore, market players said they are less dependent on Europe-origin low-benzene mixed aromatics.

Finally, the boom in domestic reformer unit start-ups will slash the mixed aromatics import market.

It is reported that stellar new reforming production capacities are under construction or planning at Shandong independent refiners in 2019, indicating a fast growth in reformed aromatics production expected in the year.

With rapid technology development, the quality and supply stability of domestically-produced reformed aromatics are also enhancing.

Such product, if competitively priced, will erode the market share of imported mixed aromatics.

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AROMATICS & DERIVATIVES

MIXED XYLENE

CHINA MIXED XYLENE PRICES BULLISH IN H2 AFTER BEARISHNESS IN H1

BY VERONICA ZHANG

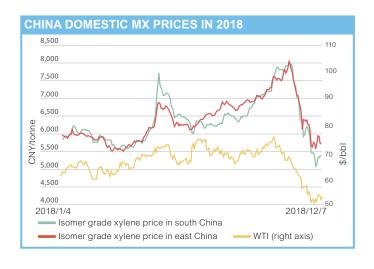
China's mixed xylene (MX) prices will remain bearish in the first half of 2019 given rising supply and stagnant downstream demand.

However, the market will face a sea change, for demand is expected to recover in the second half of the year.

The market follows closely on global crude valuations that tend to impact the MX prices. Domestic MX prices soared to an all-time peak in April 2018, the highest since 2015, owing to robust crude-led gasoline prices.

In September, the spot MX prices rose to a record-high, again on soaring crude futures over US sanctions on Iran, to yuan (CNY) 8,035/tonne DEL east China and CNY7,950/tonne DEL south China. However, MX later tumbled along with other commodity prices in response to plummeting crude values amid US-China trade war. The assessments are ex-tank prices.

Beside the influence of crude oil, the mixed xylene prices will be bearish on the factor of sufficient supply.



CNOOC Huizhou Refinery Phase I will conduct a twomonth overhaul in January 2019 which includes an aromatics reformer, a paraxylene (PX) unit and an ethylene cracker. Therefore, the company will not purchase its regular 12,000 tonnes/month of spot xylene to sustain its PX production. That means there will be additional spot supply in the market.

Meanwhile, the company will upgrade its ethylene cracker while undergoing maintenance, to increase the purity of crude xylene to yield isomer-grade xylene. CNOOC Huizhou Refinery will be able to increase MX supply to the market by 10,000-20,000 tonnes after a completion of its maintenance, which will mount up supply in south China further.

Moreover, Hengli Petrochemical has decided to start up its reformer before the second quarter of 2019, which was originally scheduled in the fourth quarter of 2018. The reformer will produce 3.8m tonnes/year of xylene and is able to supply about 300,000 tonnes of xylene to the market per month from April, flooding the already oversupplied market.

However, there is no commissioning at downstream PX plants in the first half of 2019, which means no improvement in demand for xylene and thus sets a downward trajectory for spot xylene prices.

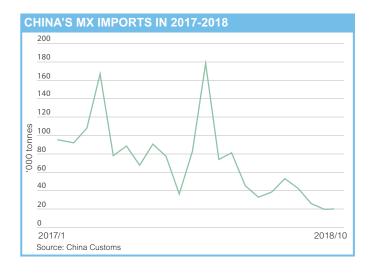
As for the latter part of 2019, MX prices will show strong upward moves in response to start-ups at downstream PX plants.

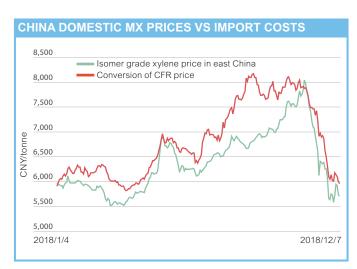
Hengli Petrochemical will commission its 4.5m tonne/year PX plant in the third quarter of 2019, which will consume all xylene products from its reformer and accordingly relieve supply pressure.

| TABLE 1: PHASE-ONE CAPACITY AT CNOOC HUIZHOU REFINERY | | | Unit: '000 tonnes/year |
|---|--------------------|----------|------------------------|
| | Aromatics reformer | PX plant | Ethylene cracker |
| Product | MX | PX | Crude xylene |
| Capacity | 900 | 850 | 125 |



| TABLE 2: CAPACITY EXPANS | Unit: '000 tonnes/year | | |
|--------------------------|------------------------|----------|-------------------|
| | MX | PX | |
| Start-up | Designed capacity | Start-up | Designed capacity |
| Hengli Petrochemical | Q2 2019 | 3,800 | Q3 2019 |
| Hainan Refinery Phase II | Sept 2019 | 240 | Sept 2019 |





Furthermore, Hainan Refinery Phase II will purchase about 1m tonnes/year of xylene from the spot market once it starts up its PX plant. The company will prioritize spot volumes in south China in consideration of geographical location, and this will help resolve supply overhang in south China.

In addition, the imports may not increase significantly in 2019 if import costs remain high.

The import volumes decreased sharply in 2018 as a result of hefty output increases from domestic factories as well as hugely appreciated US dollars against Chinese yuan, which widened the gap between import and domestic prices and pushed up the import costs.

To sum up, domestic spot MX supply will remain tight in the second half of 2019 against a backdrop of significant improvement in downstream demand, limited increases in domestic capacity and import arrivals. The prices will be supported as such.



BASE OILS

BASE OILS

CHINA'S BASE OILS DEMAND TO REMAIN WEAK; IMPORTS TO FALL FURTHER

BY WHITNEY SHI

China's demand for base oils is expected to decline further in 2019 after falling in 2018 because of a slowing economy while the imports are also likely to fall this year, largely because of start-ups of new domestic capacities.

The China-US trade war in 2018 has dampened the export environment and end-user consumption in China.

According to International Monetary Fund (IMF) forecast, growth in China's gross domestic product (GDP) is estimated at about 6.6% in 2018, lower than that in 2017.

Some institutions expect the growth may fall further to 6.3% in 2019 amid continual economic slowdown.

The demand for industrial lubricant may decline further amid bearish expectations in 2019, sources from major industrial lubricant producers said.

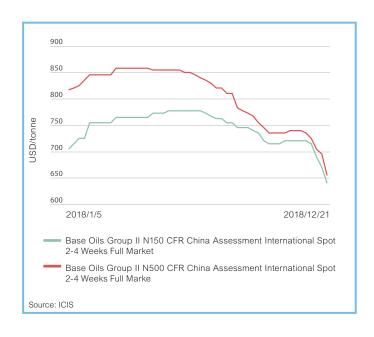
China's increasingly intensified inspections on environmental protection have heavily hit most non-compliant and small-scale steel & iron, oil and petrochemical enterprises.

Their units are shut and idle, so consumption of industrial lubricant continues to shrink.

The China-US trade war also casts a gloomy spell on exports, which will decrease significantly, acting as a significant drag on demand for industrial lubricants.

Besides, the vehicle-use lubricant market has been dampened by declining vehicle production and sales in 2018, sources from major automotive lubricant producers said.

According to data from the China Association of Automobile Manufacturers (CAAM), China's vehicle production and sales were 25.3 million units and 25.4m units in January-



November 2018 respectively, a fall of 2.59% and 1.65% over a year ago.

Industry participants expect that the vehicle production and sales in 2019 will further decrease from 2018, leading to dwindling consumption of vehicle lubricant.

Moreover, the service cycle of vehicle lubricant has been longer along with quality upgrade, which also indirectly reduces the apparent consumption.

To sum up, demand for base oils is expected to drop in 2019 as a result of declines in requirements from the industrial lubricant and automotive lubricant sectors.

To further add to the bleak situation new Group II and III base oils units will come on stream in 2019, according to ICIS.

Dalian Hengli Petrochemical's 540,000 tonne/year unit and Shandong Qingyuan Group's 800,000 tonne/year unit will be brought online in the first quarter of 2019.



Hainan Handi Sunshine Petrochemical's 700,000 tonne/ year unit and Hebei Feitian Petrochemical Group's 350,000 tonne/year unit will also be put into operation in the first half of 2019.

In addition to these, some other units of independent refiners will start up in the year, but the exact time for those has not yet been determined.

Against a backdrop of increasing supply and decreasing demand, China's imports of base oils are expected to keep falling in 2019.

Data from the China Customs showed that China imported about 2.4m tonnes of base oils in the first 11 months of 2018, down by 7.7% from a year ago.

The import volume in 2018 - when the final figures come out - is expected to remain on a downward trend, similar to 2017, but the fall may be below 5%.

The decreasing imports in 2018 was mainly because a number of major Asian Group II & III base oils producers shut their units and reduced exports to China.

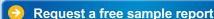
Despite fewer turnarounds planned for 2019 in Asia compared with 2018, Chinese buyers' dependence on imports may continue to fall due to a touch-and-go price war along with the commissioning of many new units in China.

Most participants expect that 2019 will remain challenging for the base oils market, with decreasing imports and a price war likely to occur amid an oversupply.

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FIBRE CHAIN

MONOETHYLENE GLYCOL (MEG)

CHINA MEG MARKET TO FACE PRESSURE ON MORE SUPPLY

BY IVY RUAN

Supply pressure may build up in China's monoethylene glycol (MEG) market in 2019 due to a sharp increase in domestic supply and the start-up at a number of major overseas plants.

The increase in domestic output mostly comes from the new MEG plants, which became operational in the second half of 2018 and may achieve stable operation in 2019.

Meanwhile, fewer domestic plants will undergo maintenance in 2019, which will also lead to a rise in domestic supply.

Around 5.30m tonnes/year of new MEG capacity is scheduled to start up in China in 2019, according to ICIS, but only 2.40m tonnes/year may actually be put into operation as planned.

Some companies said they may start up their plants in 2019, but delays are still expected.

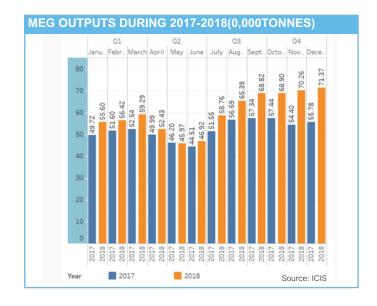
In addition, their start-up time will be mostly in the second half of 2019.

Hence, the increase in actual output will be limited for the whole year of 2019, at an estimated below 400,000 tonnes.

Overseas supply is a linchpin for the domestic MEG market, as China has a 60% reliance rate of MEG imports.

Three new MEG plants, with capacities totalling 1.7m tonnes/year are planned to start up in the US.

A new MEG plant with 750,000 tonne/year capacity is



also expected to become operational in the middle of 2019 in Malaysia.

China still has some MEG imports from the US, although it has levied a 25% additional tariff against the product following trade frictions between the two countries.

Customs data showed that China imported 148,000 tonnes of MEG from the US during January-November 2018, with the average monthly import volume at only 12,000 tonnes.

In 2015, 2016 and 2017, the US' net import volume of MEG stood at around 350,000 tonnes.

The country may turn to be an exporter of MEG, following the start-up of 1.70m-tonne new capacities listed in the table below.

| NEW AND EXPANSION MEG PROJECTS IN OVERSEAS MARKETS IN 2019 | | | | | |
|--|----------|-----------------------------|---------------------------------------|--|--|
| Country | Company | Capacity ('000 tonnes/year) | Expected start-up time | | |
| Malaysia | Petronas | 750 | On-spec products expected in Jun 2019 | | |
| US | Sasol | 250 | Early 2019 | | |
| US | Meglobal | 750 | H2 2019 | | |
| US | Lotte | 700 | 2019 | | |



The fresh products may target Asia as major outlets.

It is noteworthy that the MEG plants in the US are very cost-competitive and their products may win a share in China's MEG market.

US uses ethane as the raw material, which is much cheaper than crude oil.

Downstream polyester plants are expected to lower their operating rates to below the average 2018 level, given poor end-user demand in China and overseas markets.

China will have 4m-4.5m tonnes of new polyester capacities in 2019, most of which will start up in the second half of that year.

It is estimated that these capacity additions will lead to an increase of around 1m tonnes in MEG demand.

Downstream buyers have reduced the proportion of US dollardenominated import contracts and purchased more domestically made Chinese yuan-denominated contract volumes. Many buyers, however, are taking the gamble to purchase spot cargoes amid the expectations about supply growth.

Only a few polyester producers said they have increased buying import contract cargoes to meet the demand of their new plants planned to start up in 2019.

Some buyers, however, took a gamble to buy spot amid the growth expectation in supply side.

Domestic MEG prices were lower than import prices for a majority of 2018, except in the March-May period.

In 2019, the start-up of new MEG plants in the overseas markets, coupled with fewer contract purchases by downstream producers may narrow the gap between domestic and import prices.

This means overseas exporters may have higher chances to sell their cargoes to China, which will likely keep MEG inventories at China's domestic ports high.

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FIBRE CHAIN

DIETHYLENE GLYCOL (DEG)

CHINA DEG PRICES TO REMAIN BEARISH ON RISING SUPPLY

BY CINDY QIU

China's diethylene glycol (DEG) prices are likely to remain bearish in 2019 in the face of rising supply, but the downtrend may be limited as it is approaching three-year lows.

The supply in China will increase in the following year in response to outflows from the Middle East because of capacity debottlenecking there.

New products from the US after plant start-ups will also flow into China as the local market will be unable to consume all of the volumes.

On the domestic front, monoethylene glycol (MEG) plants of Hengli Petrochemical, Zhejiang Petrochemical and Sino-Kuwait Guangdong Integrated Refining and Chemical project are scheduled to come on stream in 2019-2020, which will also ramp up the supply of coproduct DEG.

However, the demand from the major downstream unsaturated polyester resin (UPR) industry will be slow, while that from the other downstream polyester market will be limited due to low application of DEG as feedstock despite the releases of new capacities.

The demand growth for DEG will be lower than its supply.

Furthermore, domestic and import supply will both flood in the China DEG market in 2019, with competition between the two expected.

However, the competition will not be very intense in the year because domestic plants will not come on stream until the second half of 2019.

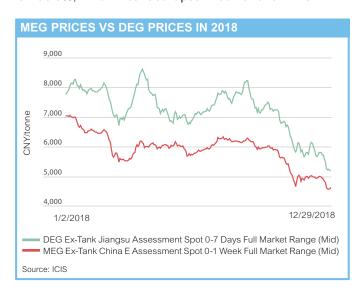
Looking ahead, the DEG market will likely track the trends in the MEG market which underwent rapid growth in supply and demand.



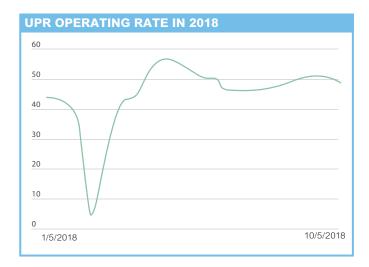
Domestic DEG prices have fluctuated on a downward trend in 2018, mostly tracking the co-product MEG market.

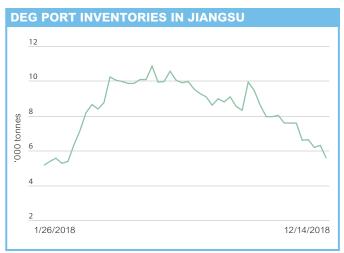
By 28 December, the prices were at yuan (CNY) 4,540-4,600/tonne ex-tank Jiangsu, down by 35.1% compared with the start of the year.

Inventories piled up in the domestic DEG market in the first quarter of 2018, mainly due to sharply falling operating rates at its downstream UPR plants, from around 45% to as low as 5%, which meant collapse in demand for DEG.









The supply-demand imbalance continued to aggravate in the quarter, which pushed inventories in Jiangsu from about 50,000 tonnes to exceed 100,000 tonnes.

In response, spot DEG prices dropped from near CNY7,000/tonne ex-tank Jiangsu to around CNY5,500/tonne ex-tank Jiangsu in late March.

The prices moved up in April in response to soaring MEG values as short squeezes limited the liquidity.

However, it failed to rise further after approaching CNY6,200/tonne because of high port inventories in Jiangsu which hit around 100,000 tonnes.

The prices did not plummet along with MEG but moved sideways because it merely posted small increases previously. By late June, spot DEG prices dropped to near CNY5,700/tonne.

However, the prices went up further in July underpinned by firmer MEG prices amid better-than-expected performance in its downstream polyester market which sped up the destocking pace.

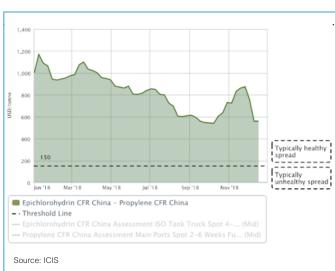
The prices rebounded to about CNY6,300/tonne in early August, and then hovered around CNY6,100-6,300/tonne.

However, in September, the prices tracked the downtrend in the MEG market again amid stock accumulation.

The prices slumped in the fourth quarter of 2018 amid bearish market outlook.

This was mainly attributed to increasing concerns about global economic slowdown amid escalating US-China trade frictions and uncertain economic conditions in the globe such as debt crisis in Italy and Brexit.







Meanwhile, softer commodity prices amid weaker Brent and WTI futures caused by oversupply in expectation also fuelled the bearishness. By mid-November, the prices dipped to below CNY5,000/tonne.

Nevertheless, the prices have slowed down declines in December 2018 on the back of decreasing inventories and tighter availability in the spot market amid delayed arrivals of shipments caused by inclement weather.

A lot of shipments are expected to arrive in the future, and whether the DEG market could de-stock still remains to be seen.

Meanwhile, downstream UPR producers are likely to curtail their operating rates in the face of fewer orders, especially approaching the Chinese Lunar New Year in early February, which might lead to weaker demand.

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OLEFINS

PROPYLENE

CHINA'S Q1 PROPYLENE PRICES TO FIRM ON PDH MAINTENANCE FEVER

BY DORIS HE

China's domestic propylene markets are expected to see firmer prices, as the supply pool tightens owing to a peak turnaround season for propane dehydrogenation (PDH) in the first quarter of 2019.

The PDH units are salient to the domestic Chinese market, as they proffer a major stream of propylene supply in the spot market.

The maintenance season of these units will tighten spot liquidity and in turn buoy the propylene market.

For instance, Tianjin Bohai Chemical's 600,000 tonne/year PDH unit is scheduled to be shut in early January for 20 days of turnaround.

Ningbo Haiyue plans to shut its 600,000 tonne/year PDH unit in March for 20 days to change catalyst.

Zhangjiagang-based Oriental Energy also shut its 600,000 tonne/year PDH unit on 26 December. The duration of the turnaround is 25-30 days.

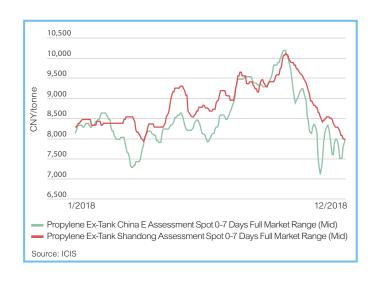
In response, related downstream producers will prepare feedstock in advance, driving up demand.

They will stock up inventory levels to counter a supply shortfall.

However, new projects that are due to come onstream, will cap any significant price gains.

Satellite Petrochemical plans to put its phase-II 450,000 tonne/year PDH unit into operation in the first quarter of 2019, followed by the start-ups of its downstream polypropylene (PP) and acrylic acid units.

The acrylic acid unit is likely to come onstream in the fourth quarter of 2019, and that would mean an increase in propylene supply from the producer.



In addition, many participants said that prices of PP, the largest derivative of propylene, experienced sharp declines after the Lunar New Year in both 2017 and 2018, largely due to PP producers' intentions to reduce inventories and late downstream production recovery.

As such, some participants expect the same situation to take place in 2019, because the imposition of additional tariffs caused by the China-US trade war have digested demand in the first quarter of 2019 in advance.

Amid the economic downturn, the demand prospects are somewhat diminished.

Looking ahead, China has about 5.43 million tonnes of new propylene capacities to come onstream in 2019, as shown in the table below, with capacities equipped with PDH, coal-to-olefin (CTO) and methanol-to-olefin (MTO) processes taking the lion's share.

In addition, the commissioning plans of Hengli Petrochemical and Zhejiang Petrochemical's refiningchemical projects mean that capacities with the traditional steam cracking process will see a new round of concentrated start-ups following a lull for many years.



| NEW/EXPA | NDED PRO | PYLENE CAPACITIES IN CHINA IN 2019 | | | |
|--------------|-----------|--|--------------------------------|----------|--------------------------------|
| Province | City | Company | Process | Start-up | Capacity ('000 tonnes/year) |
| Zhejiang | Pinghu | Zhejiang Satellite Petrochemical | PDH | Q1 2019 | 450 |
| Shandong | Liaocheng | Liaocheng Meiwu New Materials Technology | MTO | Q1 2019 | 170 |
| Guangdong | Dongguan | Shenzhen Junengyuan | PDH | Q2 2019 | 600 |
| Jiangsu | Nanjing | Nanjing Chengzhi Clean Energy | MTO | H1 2019 | 360 |
| Ningxia | Yinchuan | Ningxia Baofeng Energy Group | СТО | H1 2019 | 300 |
| Jiangsu | Taixing | SP Chemicals | Steam cracking | Q3 2019 | 125 |
| Zhejiang | Zhoushan | Zhejiang Petrochemical | FCC | 2019 | 150 |
| Zhejiang | Zhoushan | Zhejiang Petrochemical | PDH | 2019 | 600 |
| Zhejiang | Zhoushan | Zhejiang Petrochemical | Steam cracking | 2019 | 700 |
| Liaoning | Dalian | Hengli Petrochemical | Mixed paraffin dehydrogenation | 2019 | 300 |
| Anhui | Huainan | Zhong'an United Coal Chemical | СТО | 2019 | 350 |
| Jilin | Jilin | Connell Chemical Industrial | MTO | 2019 | 165 |
| Fujian | Fuqing | Fujian Meide Petrochemical | PDH | Q4 2019 | 660 |
| Liaoning | Panjin | Liaoning Bora Petrochemical | Steam cracking | Q4 2019 | 500 |
| Total | | | | | 5,430 |
| Source: ICIS | | | | | |

In 2018, the price range of China's propylene narrowed from a year ago.

Amid basically-balanced supply and demand, the net import volume is expected to remain at regular levels of 2.8m-2.9m tonnes.

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PLASTICS & POLYMERS

POLYETHYLENE (PE)

CHINA PE MARKET EXPECTED TO STAY AT A HIGH LEVEL IN H1

BY ANGIE LI

China polyethylene (PE) prices were expected to stand at a comparatively high level in the first half of 2019 due to slowed capacity expansion.

According to ICIS data, the PE total supply in China is expected to be 9% in 2019, while the growth rate in 2018 is 11%.



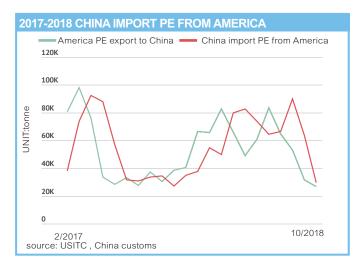
The China domestic supply growth rate is expected to be around 8% in 2019, while most expansions were scheduled in the second half of the year. Therefore, some market players expect PE prices to go up.

In 2019, the Chinese new PE expansion capacity is estimated to increase by 1.95m tonnes/year compared with 2018.

The actual domestic PE output will increase by around 1.4m tonnes/year in 2019.

China's import growth is expected to remain at around 10% in 2019, taking into account the continued release of new US capacity. US high density PE (HDPE) and linear low density PE (LLDPE) exports to China incur an extra 25% tariff due to the US-China trade war, which has escalated from June 2018.

Although negotiations between China and the United States at the G20 summit in end November seemed to show signs of easing the trade war, PE exported from the United States to China will still be greatly restricted until the additional tariff is truly cancelled.

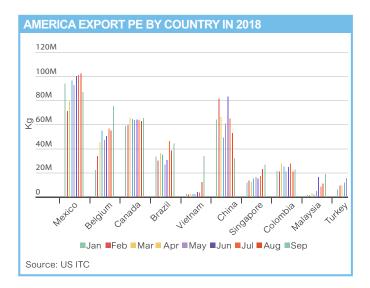


| Dania | Duning | Duadasan | Capacity (1,000 tonnes/year) | | | Upstream | Actual/expected |
|-----------------|----------------|-------------------------------|------------------------------|------|------|--------------------------|------------------|
| Region | Province | Producer | LLDPE | HDPE | LDPE | | time to start-up |
| South China | Guangdong | CNOOC Huizhou | 300 | 400 | | Naphtha ethylene cracker | May-18 |
| Northwest China | Shaanxi | Yan'an Energy and Chemical | | 450 | | СТО | Sep-18 |
| North China | Inner Mongolia | Jiutai Energy | 25 |) | | СТО | Jul-19 |
| East China | Anhui | Zhong'an Lianhe Coal Chemical | 35 |) | | СТО | H2 2019 |
| Northwest China | Qinghai | Qinghai Damei | 30 |) | | СТО | Q3 2019 |
| East China | Zhejiang | Zhejiang Petrochemical | 300 HD/LLD | 450 | | Naphtha ethylene cracker | Q3 2019 |
| Northwest China | Ningxia | Baofeng Energy | 30 |) | | СТО | H2 2019 |



| OVERSEAS PE E | OVERSEAS PE EXPANSION IN 2019 | | | | | | |
|------------------|-------------------------------|--------------------------|-------|-------------------------|-------------------------------|--|--|
| Company | LDPE | HDPE | LLDPE | Location | Start-Up | | |
| Formosa Plastics | 400 | 400 | | Point Comfort, Texas | H1 2019 | | |
| Sasol | 420 | | 470 | Lake Charles, Louisiana | Dec 2018 (LLDPE), 2019 (LDPE) | | |
| LyondellBasell | | 500 | | La Porte, Texas | Q4-2019 | | |
| Petronas | | 400 | 350 | Johor, Malaysia | Q4-2019 | | |
| Sibur | | HD/LLD:400*2, HDPE:350*2 | | Russia | Q4-2019 | | |
| Source: ICIS | | | | | | | |

According to US International Trade Commission (ITC) data, the US exported to China 26,569 tonnes of PE in October, 68.1% lower than in June.



US PE has flowed instead to North and South America, and southeast Asia since July, according to the US ITC data.

Although the new US capacity will not impact the China market directly, the expansion of new US PE units will squeeze other cargoes to increase exports into China, impacting the global supply and demand balance.



According to China customs data, China imported 1.3m tonnes of PE in January-November 2018, up by 20.2% compared with 2017.

PE import cargoes from Saudi Arabia and India increased most rapidly, mainly due to the impact of the local new capacity release.

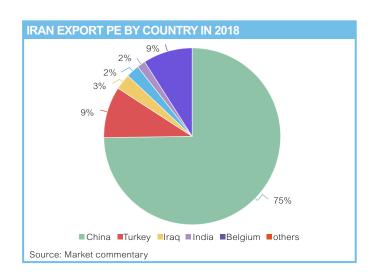
Market players said imports from those two places will continue to increase in 2019 due to the restriction on US PE exports.

Iranian PE imports shipments have been delayed since November mainly due to the new round of economic sanctions imposed by the United States on Iran on 4 November.

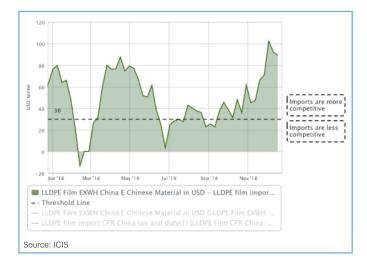
Although China's payment for Iranian cargoes has not encountered many problems, Iranian shipping companies have been diminished, which resulted in the shipment delay.

Local distributors thought the shipment delay may not improve in 2019.

According to market sources, China accounts for 75% of Iranian PE total exports.







Some market players said spot PE prices being pinned at current high levels also contributed to the delayed arrival of Iranian cargoes.

But they also were concerned the market may experience downward pressure if those Iranian cargoes arrived before the Chinese Lunar New Year holiday.

China's demand was expected to weaken from mid-January, as most distributor and downstream converters gradually retreat from the market due to the holiday, which begins on 2 February. Some distributors pre-sold their imported cargoes which will arrive in the local market before the Lunar New Year in February, amid better margins than currently.

Local RMB prices for January arrival cargoes are much lower than spot import prices, and the gap of some grades reached CNY300-400/tonne.

Some industry sources said the market may not be as bad as expected before the spring festival, considering the inventories had been consumed in advance.

However, several domestic suppliers had different views of the market trend.

Although most January and February arrival import cargoes had already been consumed, local downstream consumers have already replenished feedstocks, which is not conducive to spot sales from domestic sources.

A source from Sinopec also indicated domestic supply in January would undoubtedly increase as Shanghai Secco and Fujian Refining and Petrochemical resumed production in end December.

Domestic petrochemical suppliers still may cut offers, in order to destock their inventories in January 2019.



PLASTICS & POLYMERS

POLYPROPYLENE (PP)

CHINA PP MARKET TO REBOUND ON CHINA-US TRUCE, BUT SEE PRESSURE IN Q1

BY DORA XUE

The outlook for China polypropylene (PP) prices is somewhat pessimistic, with expectations of oversupply but weak demand in early 2019.

On 1 December, the US and China agreed to halt additional tariffs during the G20 meeting in Argentina. In response, both commodity and stock markets were supported markedly and PP futures prices climbed for three consecutive days, 3-5 December.

However, most market players held a pessimistic attitude for the first quarter of 2019.

The auto industry is one of PP's largest downstream industries. It faces its first annual sales decline in 28 years. Data released by the China association of automobile manufacturers (CAAM) on 11 December showed that 2.55m vehicles were sold nationwide in November 2018, down by 13.9 percent year on year. Auto sales fell for the fifth straight month from the previous year. From January to November 2018, China sold 25.42m vehicles, down 1.7% from a year earlier.

In addition, if China and the US fail to reach an agreement within 90 days in terms of technology transfer, protection of intellectual property, non-tariff barriers, alleged cyber intrusions, alleged cyber theft, services, agriculture and other issues, the import tariff rate will be raised from 10% to 25%.

Under such huge uncertainty, downstream export-Americaoriented orders are difficult to accept.

The north China market is the most pessimistic. Affected by the air pollution, small downstream factories shut down frequently, resulting in weaker demand.

Meanwhile, demand will decrease along in early 2019 ahead of the Lunar New Year holiday (4-10 February).

"At the end of the year, most companies need to realise capital recovery. I think there's little chance of restocking," a trader in south China said.

"As spring festival is approaching, everyone needs funds; there won't be too much stock," another trader in north China said.

"Overall microeconomic downturn weighs down on the commodities market," a trader in east China said.

"We are not a hurry to purchase, as we also restocked some in the week ended in December; we are waiting for lower prices," one downstream buyer said.

There will not be too much pressure for domestic supply before spring festival.

First, there is no new capacity coming on line in China in the first guarter.

Second, the only new capacities in 2018 were CNOOC & Shell Petrochemicals' (CSPC) 400,000 tonne/year PP plant and Yanchang Yan'an Energy's 250,000 tonne/year PP plant. This resulted in a growth rate of PP capacity of less than 3%, much lower than in previous years.

According to ICIS, state-owned petrochemical giants Sinopec and PetroChina have recorded a combined PE and PP inventories of 600,000 tonnes, lower than the comfortable level, since 7 December.

But domestic supply pressure may come after spring festival. Most downstream factories in China typically shut down for the duration of the holiday, with some extending the downtime even longer. In contrast, PP plants will continue running, resulting in higher inventory that will eventually weigh on prices.



Import supply may stay high and keep increasing.

China's PP imports in September and October posted growths of 6.5% and 20% year on year, and have stayed above 420,000 tonnes/month since S-Oil's 400,000 tonne/ year unit in South Korea started up in September, Borouge in UAE increased PP output in the late second half of 2018 and India exported much more volume of PP amid weak Indian domestic demand in end 2018.

Two new more plants are expected to come on stream in the first quarter of 2019. Indian Oil Corp (IOC) will start up its new PP plant with capacity of 680,000 tonnes/year in Paradeep, India, and Petronas's new 900,000 tonne/year unit will also operate in Johor, Malaysia.

Therefore, most market participants are afraid the supply will exceed demand after spring festival.

One trader said spot prices were under pressure for December shipment cargoes, as international suppliers sought to clear cargoes before the year draws to a close. And China's downstream buyers were not willing to purchase the forward cargoes, as cargoes from Middle East and India can arrive only in January and February or perhaps even later.

Amid ample import supply, some cargoes for December arrival have been sold or are set to be sold in Chinese yuan due to tight supply of domestic cargoes.

Therefore, import prices follow domestic prices quite closely.

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SOLVENTS

ACETONE

CHINA ACETONE SUPPLY GLUT TO EASE IN 2019 ON DEMAND GROWTH

BY YOYO LIU

The oversupply in China's acetone market is expected to mitigate in 2019 as the start-ups of some downstream expansion projects may significantly bolster demand.

2018 is a tough year for the acetone market, with prices riding a general downtrend in the year.

The ex-tank east China price arrived at yuan (CNY) 3,800/ tonne around 5 December, hitting the lowest level since 2016, according to ICIS data.

The steep drop was mainly caused by oversupply.

Acetone supply has been rising as a producers wanted to produce more co-product phenol which has been high demand over the last one to two years.

The phenol/acetone production process involves one tonne of benzene to make one tonne of phenol and 0.6-0.62 tonnes of acetone.

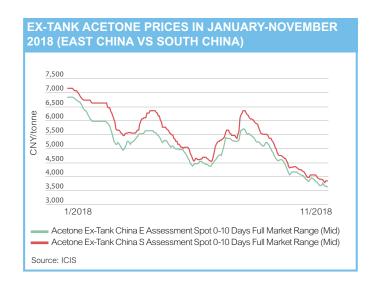
Hence, if the phenol strength persists into 2019, it may still take a long time for China to digest excessive acetone supply, according to many market participants. However, the long supply may improve slightly as downstream demand will grow with many expansion projects expected to come on stream.

Zhejiang Petrochemical's 250,000 tonne/year acetone unit is scheduled for start-up in Q2 2019.

It is also equipped with two downstream units - 230,000 tonnes/year bisphenol A (BPA) unit and 90,000 tonnes/year methyl methacrylate (MMA) unit.

Upon their operation, about 120,000 tonnes/year of acetone output will be used by the refiner, and the rest 130,000 tonnes/year will be released to the market.

Chang Chun (Changshu) plans to expand the capacity of



its acetone plant by 60,000 tonnes/year to 240,000 tonnes/ year and that of downstream BPA units to 405,000 tonnes/ year by the end of 2019.

As such, around 100,000-110,000 tonnes/year of acetone output will be consumed internally by downstream units and the remaining 130,000-140,000 tonnes/year will be supplied to the market.

In addition, Formosa Chemicals Industries (Ningbo) had acetone expansion plan but it did not disclose the time duration.

Market participants expect the construction of the expansion project to start in 2019-2020.

On the import side, China's total imports totalled about 622,000 tonnes in January-November 2018, up by about 37% from 454,000 tonnes recorded in January-November 2017, according to customs data.

The overall capacity utilisation rate in the global phenol/ acetone plants is rising on the back of stronger phenol demand than acetone, market sources said. Global acetone inventories have increased.

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Despite high anti-dumping duties in China, Asia suppliers are still exporting acetone to China in an effort to balance domestic supply and demand.

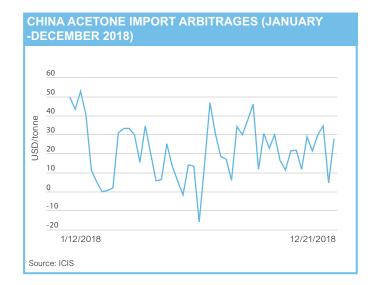
Domestic traders will not rule out importing overseas cargoes if there is arbitrage opportunities.

As a result, market participants expect Chinese acetone imports to be flat or slightly higher in 2019 compared with 2018.

On the demand from downstream restarts and start-up plans of MMA and iso-propranol plants are also on the cards, while BPA expansion projects are also expected.

Jiangsu Sailboat Petrochemical is set to bring its 85,000 tonne/year acetone cyanohydrin (ACH)-based MMA plant in the third quarter of 2019, which will consume around 4,500 tonnes of acetone per month.

Heilongjiang Longxin plans to expand the capacity of its existing 50,000 tonne/year MMA plant by 25,000 tonnes/



year in 2019, therefore its acetone consumption may grow by 1,400 tonnes/month.

Shandong Dadi Supu Chemical is likely to resume production at its 100,000 tonne/year iso-propranol unit in early 2019 and may digest 8,000 tonnes of acetone each month, according to market sources.

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SELECTED PLANNED CAPACITY EXPANSION PROJECTS OF CHINA ACETONE AND DOWNSTREAM PRODUCERS IN2019-2020 ('000 TONNES/YEAR)RegionProducerAcetoneBPAMMAIso-propanolStart-upZhejiangZhejiang Petrochemical250230902019-2020JiangsuChang Chun (Changshu)60135Q2 2019ZhejiangFormosa Chemicals Industries (Ningbo)602019-2020

| Zilejialig | Zilejiang i etrochemical | 200 | 250 | 30 | | 2013-2020 |
|-----------------|---------------------------------------|-----|-----|-----|---|-----------------------|
| Jiangsu | Chang Chun (Changshu) | 60 | 135 | | | Q2 2019 |
| Zhejiang | Formosa Chemicals Industries (Ningbo) | 60 | | | | 2019-2020 |
| Shanghai | Covestro | | 200 | | | 2019-2020 |
| Shandong | Lihuayi Weiyuan | | 120 | | | End-2019 |
| Tianjin | Sinopec SABIC Tianjin Petrochemical | | 240 | | | 2020 |
| Jiangsu | Sailboat Petrochemical | | | 85 | | Q3 2019 |
| Northeast China | Heilongjiang Longxin | | | 25 | | Q1 2019 |
| Shandong | Dadi Supu Chemical | | | 10 | 0 | Restart in early 2019 |
| Shandong | Shandong Hongxu Chemical | | | 50 | | 2020 |
| Chongqing | Chongqing Yixiang | | | 225 | | 2020 |
| Huizhou | CNOOC Oriental Petrochemical | | | 100 | | 2020 |

The unit was shut in 2018 due to environmental inspections.

Meanwhile, Shandong Hongxu Chemical's 50,000 tonne/ year, Chongqing Yixiang's 225,000 tonnes/year and CNOOC Oriental Petrochemical's 100,000 tonne/year ACH-based MMA units are under construction, with start-up scheduled from 2020 onwards.

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SOLVENTS

PHENOL

PHENOL SUPPLY TO REMAIN TIGHT ON STRONG DEMAND, ADD DUTIES

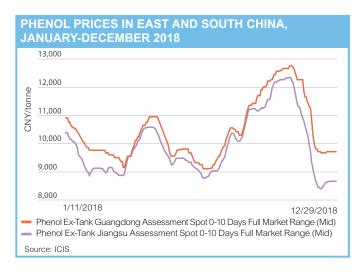
BY YOYO LIU

China's phenol supply is expected to remain tight in 2019 on downstream capacity expansions along with the release of preliminary and final results of the country's anti-dumping duty (ADD) investigations.

Domestic phenol prices experienced a conspicuously higher trend in 2018 on the back of supply shortage.

In particular, prices in east China rose to a near-four-year high of yuan (CNY) 12,300/tonne ex-tank in November following a sharp decline in domestic supply.

The prices suffered a steep fall later due to plunging prices of crude oil, feedstock and downstream bisphenol A (BPA), as well as gradual production recovery.



There will be only two new/expanded phenol units in 2019.

Zhejiang Petrochemical's 400,000 tonne/year new unit and Changshu Chang Chun's expanded unit are expected to come on stream in 2019.

Formosa Chemicals Industries (Ningbo) is understood to have a 100,000 tonne/year expanded unit, but the exact start-up time is not known.

Participants expect the unit to come on stream during 2019-2020.

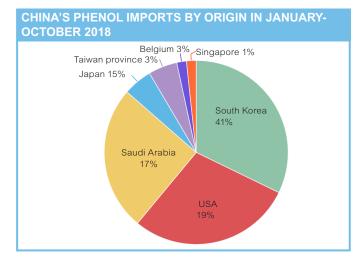
Zhejiang Petrochemical has a new 230,000 tonne/year BPA unit in addition to the phenol plant, which will consume 190,000-200,000 tonnes of phenol every year, meaning that the producer will have nearly 16,000 tonnes of phenol available for market per month, according to ICIS.

Changshu Chang Chun's expanded capacity will be mainly used to satisfy demand from its 135,000 tonne/year BPA unit.

After expansion, the producer will have a capacity of 400,000 tonnes/year for phenol and 405,000 tonnes/year for BPA.

According to data from the China Customs, China's phenol imports totalled 342,000 tonnes in the first ten months of 2018, with South Korea, the US, Saudi Arabia and Thailand as major origins.

Volumes from South Korea, the US, Saudi Arabia and Thailand were 135,000 tonnes, 74,000 tonnes, 59,000 tonnes and 44,000 tonnes, respectively, accounting for 40%, 22%, 17% and 13% of China's total phenol imports.





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China has launched an anti-dumping investigation against phenol originating from the US, the European Union, Japan, South Korea and Thailand, the Ministry of Commerce said in a statement on 26 March 2018.

The investigation should end by 26 March 2019 and could be extended to 26 September 2019 under special circumstances.

Anti-dumping duties will be imposed on cargoes from South Korea, the US and Thailand if the investigation results rule that their cargoes have constituted dumping.

Volumes from the three origins accounted for 74% of China's total imports during January-October 2018, according to data from the China Customs.

In this case, participants expect a significant drop in 2019 imports.

Downstream demand growth is likely to remain high next year, mainly driven by the cyclohexanone, BPA and phenolic resins industries.

Jiangsu Weiming originally planned to put its 150,000 tonne/year cyclohexanone unit into production in the last quarter of 2018.

But participants expect the start-up to be delayed to the first or second quarter of 2019 due to construction delays of communal facilities in the Yangkou Port Economic Development Zone where the unit is located.

By then, phenol demand will increase by 150,000 tonnes/ year, equivalent to 12,500 tonnes/month.

Covestro Shanghai's 200,000 tonne/year BPA unit (batchwise debottlenecking and expansions in 2019-2022) and Shandong Lihuayi's 120,000 tonne/year BPA unit will also come on stream in 2019-2020 after expansions, in addition to those of Changshu Chang Chun and Zhejiang Petrochemical. The former two will add phenol consumption by 260,000 tonnes/year after start-ups, equivalent to 22,000 tonnes/month.



| SOME PHENOL AND DOWNSTREAM EXPANSION PLANS IN 2019-2020 | | | | | UNIT: '000 TONNES/YEAR | |
|---|---|-----------------|--------------|------------------------|-------------------------|------------|
| Location | Producer | Phenol capacity | BPA capacity | Cyclohexanone capacity | phenolic resin capacity | Start-up |
| Zhejiang | Zhejiang Petro- chemical | 400 | 230 | | | 2019-2020 |
| Jiangsu | Changshu Chang Chun | 100 | 135 | | | Q2 2019 |
| Zhejiang | Formosa Chemicals Industries (Ningbo) | 100 | | | | 2019-2020 |
| Shanghai | Covestro | | 200 | | | 2019-2020 |
| Shandong | Lihuayi Weiyuan Chemical | | 120 | | | Late 2019 |
| Tianjin | Sinopec SABIC Tianjin Petrochem- ical | | 240 | | | 2020 |
| Jiangsu | Jiangsu Weiming Petrochemical | | | 150 | | Q1-Q2 2019 |
| Guangdong | Jinan Shengquan (south China) | | | | 50 | Q1-Q2 2019 |

Jinan Shengquan has delayed commissioning of its 50,000 tonne/year phenolic resins plant in south China from the original schedule of late 2018 to the first or second quarter of 2019, according to company sources.

The unit will consume 3,000 tonnes of phenol per month if it starts next year as scheduled.

To sum up, despite growing capacities, phenol supply is expected to remain tight in 2019 as imports are likely to decrease caused by the potential anti-dumping duties and high downstream demand growth.

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SOLVENTS

METHYL TERTIARY BUTYL ETHER (MTBE)

CHINA MTBE TO BE CLOUDED BY OVERSUPPLY WOES, BIOFUEL PROMOTION

BY WINNIE HUANG

Severe supply overhang following two new unit start-ups, and the nationwide promotion of ethanol gasoline may dampen the 2019 outlook of China's methyl tertiary butyl ether (MTBE) market.

Hengli Petrochemical is expected to start up domestic largest MTBE unit with a production capacity of 820,000 tonne/year at Dalian in March 2019, while Sino-Kuwait petrochemical complex is likely to bring its 200,000 tonne/year MTBE unit in Guangdong also in 2019.

These will boost China's overall MTBE production capacity to 18.99m tonnes/year in 2019, ICIS data showed.

China's MTBE plant run rates may stay at 50-60% in 2019, due to continued feedstock LPG supply shortage.

With more integrated and large units coming on stream and improved industry chain, some small or stand-alone units may permanently shut down in the future.

China's MTBE imports are poised to shrink further in 2019, due to low arbitrage opportunities amid an increasing oversupplied domestic market.

Moreover, domestically produced MTBE quality has improved significantly, largely meeting the requirements of GB-V or above.

In addition, domestic producers enjoy strong competitiveness compared with overseas suppliers regarding payment and transportation.

China's MTBE exports are likely to grow steadily in 2019 with producers continuing to seek outlets overseas in response to domestic long spot supply.

The gasoline blending sector, which digests over 90% of MTBE output, will remain the key consumer.

As an octane booster, demand for MTBE from the gasoline blending sector, gains traction as the country has already started to implement GB (national standard)-VI specifications in gasoline in most regions.

The fuel quality upgrade has driven 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.

With the deadline looming, MTBE producers are extremely concerned.

This actual extend of replacement remains to be seen because of logistical issues as well as fuel ethanol supply shortages may slow the process of change.

PRICE FLUCTUATE WIDELY IN 2018

In 2018, MTBE prices went through large fluctuations in line with international crude values, which made it hard for producers, trader and blenders to make profits.

Short-lived shortage and incurred higher prices attracted imports, but lower CFR (cost & freight) China prices later weighed on import interest again.

As shown in the graph, despite broad volatility, the overall MTBE prices were obviously higher than those in 2017.



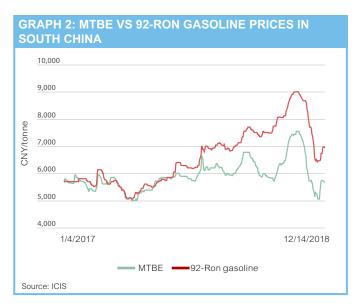
As of 14 December, MTBE prices in south China averaged yuan (CNY) 6265.69/tonne, up by 11.56% from the corresponding period of 2017, according to ICIS data.



MTBE prices basically move in tandem with 92-Ron gasoline values. Their prices were largely the same in 2017, but showed an increasing difference in 2018.

When the MTBE price is divided by the gasoline price, we can also obtain a ratio, which was at 0.92-1.04 in 2017 versus 0.73-0.95 in 2018.

The decline in the ratio meant that MTBE was falling in proportion to gasoline blending costs, and blenders are trying very hard to minimize material costs in a bid to offset overall higher costs resulting from strict invoice inspection.



In January 2018, the State Administration of Taxation (SAT) announced tighter consumption tax supervision on refined oil from March 2018, a move to close the long-standing loophole of invoice conversion.

This heavily affected refined oil trade market, as refiners and gasoline blenders cannot make use of exciseevading invoice conversion to prevent from paying high consumption tax.

Gasoline prices rapidly surged, with the wholesale prices of 92-Ron gasoline prices breaching the CNY7,000/tonne mark in January 2018.

MTBE prices moved up in the beginning of 2018 but then stayed soft for four months as refiners and blenders started to control feedstock costs following strict invoice management.

In May, MTBE prices rebounded as overall supply tightened and seasonal demand strengthened amid rising temperatures.

Some refiners reduced operation to ease losses amid bearish MTBE prices, with an increasing number of refiners shut down their units in March-April. Refiners near Qingdao were required to cut or halt production in April-May ahead of the Shanghai Cooperation Organization Summit held in Qingdao in early June.

Wanhua Chemical reduced supply to the spot market one-totwo months before starting unit maintenance in end June.

MTBE prices retreated in June, undermined by lower international crude prices and the downward adjustment in fuel retail ceiling prices.

The downturn reversed in late August and hit a year high at CNY7,550/tonne on 27 September.

This was boosted by stronger international crude prices and improved demand amid fuel quality upgrade.

Coming into October, spot MTBE prices plunged on seasonal demand lull and because major refiners reduced gasoline outsourcing.

In addition, domestic MTBE plants' run rates stood at a high level, increasing domestic supply. MTBE demand



from refiners stayed solid, but most were for contractual commitments.

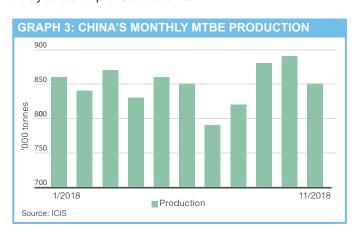
2018 PRODUCTION, CAPACITY GROW SLOWLY

By the end of 2018, China's total MTBE production capacity reached 17.97m tonnes, up by 1.6% year on year, on the back of start-up of new units, according to ICIS data.

Checked by insufficient feedstock supply and big price volatility, the capacity utilisation rate remained low at 50-70%.

The annual MTBE production is expected to rise by 3.5% to 10.19m tonnes in 2018, lower than the growth of 11.2% seen in 2017.

The slower growth was a result of oversupply owes caused by ethanol gasoline promotion, feedstock shortages and delayed start-up of several units.



Meanwhile, China's MTBE imports dropped while exports picked up. The country's MTBE imports totalled 106,300 tonnes in January-October 2018, compared with 204,600 tonnes in 2017.

Its exports stood at 87,400 tonnes in January-October 2018, against 56,800 tonnes in 2017, according to China Customs data.

The imports were mainly contractual cargoes, with few arbitrage materials, as the arbitrage opportunity was low on increased domestic supply and slower demand growth.

More market players tried the export business and the major export destinations were still South Korea, Taiwan and Singapore.





SOLVENTS

BPA

CHINA BPA SEEN BALANCED UNTIL NEW PLANT CAPACITIES CREEP IN

BY JADY MA

China's bisphenol (A) market is likely to be balanced to soft in 2019, following a roller-coaster 2018, as the first half of the new year may face a supply shortfall until new plants start up in the latter half.

All eyes will be on the start-up of the new downstream polycarbonate (PC) plants in the Chinese BPA market. Some 170,000 tonnes of new PC capacities intended for 2018, are being pushed back to 2019 instead because of a volatile market this year.

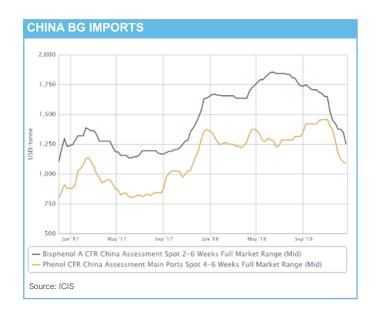
Those new plants will bring the total new PC capacities in China to 300,000 tonnes in 2019, including new plants originally scheduled for launch next year.

However, any potential downside owing to a supply glut is unlikely because new downstream plants will come onstream in the second half of the year. Hence domestic Chinese BPA prices would be supported in the first six months of 2019.

The tide will change in the latter part of 2019, with supply exceeding demand. By then, the capacity additions will push up domestic BPA supply by 25,000 tonnes/month, while BPA consumption is expected to rise to 24,000 tonnes/month. BPA imports cover a third of Chinese demand.

With domestic supply on the rise, China will reduce PC imports and this would lead to output cuts among producers outside China.

The products from Taiwan, where the market is relatively saturated, will target China as a major outlet. Taiwan's Prosperity Chemical restarted its 50,000 tonne/year BPA plant in November 2018 and may restart another 50,000 tonne/year plant in 2019.



However, China may seek some relief from the likelihood of lower imports from Thailand, the largest BPA supplier to the world's second-top economy after the US.

Owing to a local PC plant debottlenecking in 2019, Thai producers may prefer to keep supply for domestic use, and may shun much exports to China where anti-dumping duties on Thai-origin imports are high.

Hence China may face a fall in BPA contractual volumes next year.

Market players also eye on the results from China's review of anti-dumping sanctions against BPA imports from South Korea, Taiwan and Singapore, due for release in the third quarter of 2019.

The prices of BPA rallied from March to July this year on the back of China's decision to impose anti-dumping duties against Thai BPA imports; a series of plant maintenance works that led to a supply shortfall.



| NEW AND EXPANSION BPA PROJECTS IN 2019-2020 | | | | | | | |
|---|----------|-----------------------------|---|--|--|--|--|
| Company | Location | Capacity ('000 tonnes/year) | Expected start-up time | | | | |
| Chang Chun Chemical | Jiangsu | 135 | Jun-Jul 2019 | | | | |
| Shandong Lihuayi Weiyuan | Shandong | 120 | Q4 2019 | | | | |
| Covestro | Shanghai | 50 | Q4 2019 (The 100,000 tonne/year plant will see its capacity rising to 150,000 tonnes/year after debottlenecking. The other three similar-sized plants, will be expanded to 150,000 tonnes/year each, in phases from 2020 to 2022) | | | | |
| Zhejiang Petrochemical | Zhejiang | 230 | 2019-2020 | | | | |
| Sinopec SABIC Tianjin | Tianjin | 240 | 2020 | | | | |

| Company | Plant | Location | Capacity ('000 tonnes/year) | Expected start-up time |
|-------------------------|--------------|----------|-----------------------------|--|
| Jiangsu Sanmu | Epoxy resins | Henan | 80 | Q1 2019 |
| Sichuan Lutianhua | PC | Sichuan | 100 | Jan 2019 |
| Hubei Ganning | PC | Hubei | 70 | Mar-Apr 2019 |
| Puyang Shengyuan | PC | Henan | 130 | End 2019 |
| Wanhua Chemical | PC | Shandong | 130 | Q1 2020 |
| Zhejiang Petrochemical | PC | Zhejiang | 260 | 2020 |
| Sinopec SABIC (Tianjin) | PC | Tianjin | 260 | 2020 |
| Covestro | PC | Shanghai | 50 | (The 100,000 tonne/ year plant will boost its nameplate capacity to 150,000 tonnes/year after debottlenecking. The other two similar-sized plants, will also be expanded to 150,000 tonnes/year each, |

The start-up at Shandong Lihuayi Weiyuan's polycarbonate plant pushed up domestic BPA prices to yuan (CNY) 15,735/tonne -- the highest level since October 2014.

The BPA prices then took a turn and decreased in October, as market fundamentals became bearish. The trend of weak prices is likely to sustain going forward.

Meanwhile, the upstream phenol market outlook is seen relatively optimistic next year.

Should China impose anti-dumping duties on phenol imports, the latter will be reduced.

This will shore up phenol demand because of new downstream BPA and cyclohexanone plants.

However, acetone prices might lack growth momentum due to surplus supply.

The upstream phenol/acetone and downstream epoxy resins and PC industries tend to play a key role in determining the BPA market movements.

On the other hand, end-user demand may not be brisk given the uncertain outlook on the downstream epoxy resins and PC markets.

As for solid epoxy resins, production has partly been affected by the replacement of water-based resins and environmental protection restrictions. Hence, their demand for feedstock BPA may be volatile.

from 2021 to 2022



Demand for liquid epoxy resins is largely stable, except that the US-China trade frictions had dampened copper clad exports, which may subsequently weaken BPA demand.

Demand from the auto sector will remain relatively weak, because of declining auto sales globally and shrinking exports of new energy vehicles amid the US-China trade row.

Demand from the electronics industry will continue to increase, but the pace may slow down given the volatile macro-economic environment.

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