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# The Chemical Reaction





## Introduction

Welcome to The Chemical Reaction, where our team of experts keeps you up to date with all things Chemicals. Find highlights on current events, key trends and much more in the content below. Interested in learning more on a certain subject? Navigate to a report through the links included or reach out to one of our qualified analysts for more information.

### Recent Insights and Informs:

- [Linde and Shell collaborate to commercialise lower carbon ethylene technology](#)
- [China's Lianyungang Petrochemical receives the first ethane cargo from the US](#)
- [LyondellBasell to buy 50% of Sasol Assets in Lake Charles for US\\$2 Billion in newly formed Joint Venture](#)
- [Chemical solutions: can bioplastics improve the sustainability of the chemicals value chain?](#)

## Q4 2020



## How Lake Charles facilities restart will impact polyolefins markets

**TJ Spagnoli, 30 October 2020**

### Issue

- In late August, several polyolefin facilities in Lake Charles began shutting down in preparation for Hurricane Laura, a Category 4 hurricane that landed along the Louisiana-Texas border.
- When polyolefin producers began to restart their facilities around late September, Hurricane Delta came through the US Gulf cCoast in early October. The second hurricane resulted in heavy rainfall in the Lake Charles area, forcing producers to once again shut down operations.
- This almost two-month loss of production in Lake Charles has coincided with recovering polyolefin demand in Q3 2020.

### Implications

- Lake Charles is the home to around 8% of polypropylene, 9% of LLDPE, and 11% of LDPE capacities in the US. For the context, the volume is as big as UK's total polypropylene capacity and France's total LLDPE and LDPE capacities.



- While this capacity has been offline since late August, domestic contract prices and spot export prices have seen significant increases from August to October, coupled with recovering US polyolefins demand in the late Q3 / early Q4 2020.
- In the last three months, both LLDPE and LDPE domestic contract prices increased 10 cents per pound, or around \$221/ton. LLDPE and LDPE spot export prices saw similar increases of \$180/ton and \$175/ton respectively over the same period.
- Polypropylene domestic contract prices increased by 6.5 cents per pound, or around \$144/ton, from August to October. Similarly, the spot export prices also saw an increase of \$300/ton over the same period.
- Along with outages on the existing capacity, the storms also forced Sasol to delay the start of their new 420 ktpa LDPE unit in Lake Charles. This is the same unit that started up in Q1 2020 but was halted and postponed due to fire incident.

### Outlook

- Lake Charles facilities are currently restarting their activities, including the commissioning of Sasol's new LDPE unit, and are expected to be fully online by the end of October.
- Rising coronavirus cases will result in stockpiling for essential resources, leading to a rise in LLDPE and LDPE films demand. Resumed production will support these increased demand levels, which is expected through the end of 2020, and will stop prices from increasing in November
- A downside risk to this outlook is that another storm, Hurricane Zeta, made impact on the Louisiana coast this week. Some facilities are located close to the hurricane path, including Pinnacle's 470 ktpa polypropylene facility in Garyville, Louisiana and Dow's 760 ktpa HDPE and 265 ktpa LLDPE facilities in Taft, Louisiana. Any possible outages from these facilities could introduce further volatility to the market.

## Impact of the upcoming EU non-recyclable plastic packaging tax on flexible packaging

**Mariana Moreira, 30 October 2020**

### Issue

- In July 2020, the European Council agreed to apply an €0.80/kg tax on non-recyclable plastic packaging waste from 1 January 2021. The tax is, however, pending for law development and approval from the European Parliament and Council.
- The tax will be calculated based on the weight of non-recycled plastic packaging waste, regardless of whether it is recyclable or not.
- This falls under the Multiannual Financial Framework and the EU Recovery Deal to support member countries during the pandemic, with its proceeds going to the EU budget. The tax is primarily a financial measure rather than a focused sustainability initiative.

### Implications

- Member states will have the flexibility to implement measures for collecting the tax. But they must pay the amount calculated by the Commission, whether they set up a national tax-collection system or not. In practice, this could mean different plastic tax collection schemes per country.



- The tax could directly impact multiple industries if countries decide to collect their contribution from taxpayers, rather than the national budget. One of the likely targets is the flexible packaging industry, as the European Council clearly mentions plastic packaging waste in its approved proposal. However, it is currently unclear where, if at all, in the packaging supply chain this levy will be collected.
- It also remains unclear how packaging companies operating in multiple EU countries will be held financially accountable.

### Outlook

- Regardless of how the tax will be collected, we expect an increase in plastics' cost. For flexible packaging, this could mean the sector loses its relative cost advantage.
- We could see more companies shifting to other non-recyclable substrates (paper, aluminium foil laminates) or non-plastic rigid packaging alternatives, simply to avoid plastics' additional cost and to divert negative consumer perceptions towards plastic. Moving towards other packaging formats could result in bigger environmental footprints compared to plastic-based flexible packaging.
- To benefit the circular plastics economy, the collected tax should be invested into plastics supply chain, including the recycling system development.
- The EU Green Deal increases recycling targets and fosters continued effort towards circular economy, causing the tax to eventually lose applicability when these targets are met.
- Will this tax stop with plastic? Or should other materials be concerned with a looming EU tax bill?

## The ecommerce revolution: friend or foe to sustainability?

**Gareth Lamb, 27 October 2020**

### Issue

- Covid-19 has catalysed a revolution towards online shopping, accelerating growth in ecommerce and direct-to-consumer channels. According to Nielsen, ecommerce represents 11% of total consumer packaged goods in the US and is currently growing at 30% annually.
- Ecommerce typically uses more packaging, although consumers increasingly expect online retailers and brands to use sustainable packaging options. Future packaging is redesigning with a focus on sustainability goals, whilst some consumer channels are looking to ditch plastics entirely.
- A major challenge for brands is how to market and adapt to the e-basket rather than vying for the traditional prized position in the physical stores.

### Implications

The term revolution may seem overdramatic, but the coronavirus pandemic has indeed accelerated the adoption of ecommerce at an overwhelming rate.

#### Reduced physical retail and packaging redesign

- With the recent economic fallout and growing interest in online shopping, retailers are aiming to reduce costs by re-evaluating physical shelving requirements and marketing spend.



- Ecommerce presents a simpler marketing opportunity with less focus on eye-catching packaging design, and a greater onus on the brand messaging. As such, future packaging design may transition towards a simpler approach focused on sustainability goals, such as less environmental impact, waste reduction, and minimum carbon footprint.
- In August 2020, Evian introduced a label-free 100% RPET bottle, replacing the label with embossed text. This reduces plastic waste and makes the packaging easier to recycle, but it is not designed to visually appeal to the passing consumer in traditional physical retail premises.

### Direct-to-consumer platforms

- Some global brands are trying to cut out the middleman entirely and sell directly to consumers. For instance, PepsiCo has launched two new websites allowing consumers to buy both bundle packs of PepsiCo products, or snacks individually. This may help drive product sales and boost overall packaging demand.
- Not all direct-to-consumer channels are packaging-friendly. With increased at-home consumption set to remain for some time, brands are looking to market other solutions. Following its acquisition of SodaStream in 2018, PepsiCo is positioned to cut out the need for plastic bottles, allowing consumers to purchase concentrates that can be used on devices, at a marginally cheaper price than pre-bottled products. SodaStream may form part of PepsiCo's future direct-to-consumer offerings in combination with a focus on strengthening its ecommerce business.

### Threat to sustainability targets?

- Many online retailers, such as Amazon, have sought for years to reduce packaging waste and move towards sustainable options, particularly for the secondary postal packaging.
- The challenge for newcomers, especially grocery stores, is to balance a stated desire to reduce plastic packaging, whilst requiring safe and low-cost solutions for delivering fresh produce, fish and meats to customers' door.
- Outside of grocery, online retail distributors are challenged by the lack of transparency and accountability from product manufacturers. For example, packaging for electronic goods rarely comes under the same level of scrutiny as water bottles. Overall, we expect an increase in plastic packaging consumptions as ecommerce sales continue to rise.
- Companies could still reach sustainability goals and wider ambition to reduce overall carbon footprint while shifting to ecommerce. Early days' analysis shows that carbon footprint from ecommerce can be up to 50% less than traditional retail thanks to greater order consolidation and network optimization.

## Outlook

- A shift to ecommerce should not be viewed as a setback for sustainability goals, but an opportunity to advance nascent initiatives, particularly around collection. For example, a larger ecommerce market could become an ideal platform to integrate collection and recycling initiatives, such as Terracycle's Loop project.
- Consumers are likely to prefer a traditional one-stop-shop approach to grocery and retail shopping despite recent innovations within the direct-to-consumer space.
- Future beverage packaging design is likely to become simpler, label-less, colourless, and more easily recyclable. However, niche bottle-less solutions are likely to remain a novelty rather than pervasive.

More information can be found in our [PET Short-Term and Long-Term Services](#)



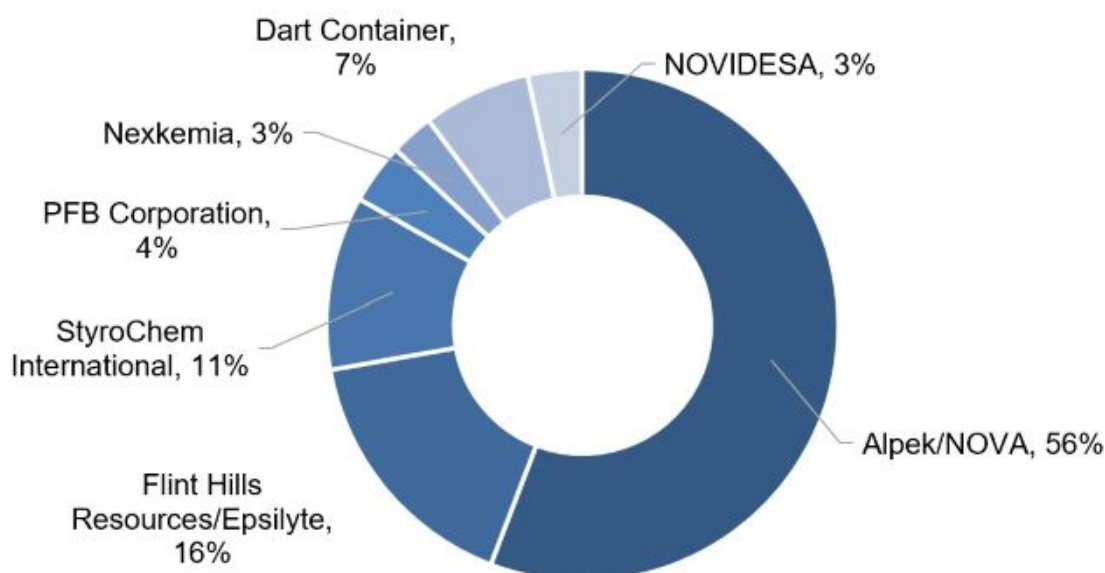
## Nova Chemicals sells expandable polystyrene (EPS) business to Alpek

Shruthi Vangipuram, 22 October 2020

### Issue

- NOVA Chemicals, a wholly-owned subsidiary of Abu Dhabi investment firm Mubadala, sold its expandable polystyrene (EPS) assets to Alpek at an undisclosed price on 19 October. The acquisition is expected to close in Q4 2020. NOVA Chemicals had begun collecting bids for its EPS business in April.
- The deal includes the 123 ktpa EPS complex and advanced foam resin business in Monaca, Pennsylvania, as well as the 45 ktpa EPS unit in Painesville, Ohio – all of them are located in the US.

### North American EPS market share by producer



Source: Wood Mackenzie Chemicals

### Implications

- Alpek, under the name Styropek, further consolidates its position as the largest EPS producer in the Americas. Styropek currently operates in Mexico, Brazil, Argentina and Chile. Alpek is also a leader in purified terephthalic acid (PTA) and polyethylene terephthalate (PET) production.
- Alpek considers that this acquisition will help move further into specialty application markets. It expects to achieve significant synergies from those US assets, particularly around logistical costs, to serve existing and new customers.
- The acquisition is also in line with Alpek's long-term strategy to focus on the Construction and Reusable Packaging sectors, which will require greater EPS capacity. It also provides collaboration opportunities to develop sustainable products, like biodegradable EPS.
- This EPS sale completes NOVA's divestiture of its Styrenics business. In 2011, NOVA Chemicals completed the sale of its 50% interest in the INEOS-NOVA JV to INEOS (now INEOS Styrolution).



- The sale of its styrenics business is in line with the 'NOVA 2020' strategy, which is to form a diverse portfolio of new feedstock sources and expand the ethylene/polyethylene footprint. This divestiture will also help with immediate cash generation for NOVA'S SCLAIRTECH technology facility (~450 ktpa of Polyethylene), currently under construction in Ontario, Canada. NOVA Chemicals is also in the process of expanding its Corunna steam cracker, for which Wood Mackenzie expects completion in H1 2022.
- Other large EPS producers in the Americas include Epsilyte and Styrochem International. Flint Hills Resources' EPS unit (now operates as Epsilyte) was acquired through a management buyout by a subsidiary of Balmoral Funds in September 2020. The deal is expected to close before the end of the year.

### Outlook

- The North America EPS market has been the least-affected styrene derivative market during the ongoing coronavirus pandemic. However, it is a mature market with a limited long-term growth.
- Our global EPS supply demand outlook indicates that EPS industry growth has slowed globally since 2016, with growth rates averaging merely above 1% y-o-y over the past three years.
- The global styrene industry is entering a downcycle, expected to last through the mid-2020s as China continues to add multiple styrene monomer and derivatives mega-capacities within the next couple of years. Hence, global EPS capacity is expected to peak in 2021, signalling a period of consolidation and rationalization in the industry. Based on our global EPS supply demand outlook, around 1.5 million tonnes of EPS capacity is expected to be taken offline by 2025. This rationalisation will primarily focus on Asia, specifically China.

## Saudi Aramco's subsidiary exits Canadian olefin markets, Mitsubishi to take over

Olivia Loa, 20 October 2020

### Issue

- Arlanxeo, a wholly-owned Saudi Aramco subsidiary, has agreed to sell its Canadian butadiene and raffinate plants to Mitsubishi Corporation on 16 October 2020. The deal is expected to close by Q1 2021.
- Arlanxeo will still own and operate a 150 ktpa butyl rubber plant, which is located on the same complex as the butadiene plant in Sarnia, Ontario.

### Implications

- The butadiene plant supplies Arlanxeo's synthetic rubber production for the automotive sector. Declining synthetic rubber demand in Canada caused Arlanxeo to export most of its butadiene production to the global market, mainly to the US.
- The US has been increasing butadiene imports following the steam cracker's shift to lighter feed slates and the recent TPC plant shutdown. In our latest [global butadiene long-term outlook](#), we expect this trend to continue in the near term, until US demand starts to plateau due to maturing automotive demand.
- Since its full acquisition by Saudi Aramco in 2018, Arlanxeo has shifted away from the automotive sector in supporting Saudi Aramco's Middle East petrochemical expansion. In addition to this sale, Arlanxeo also permanently closed its butadiene rubber plant in Singapore earlier this year. Pairing Saudi Aramco's increasing crude C4 production with Arlanxeo's butadiene technologies, we expect Saudi Aramco to develop butadiene capacities in the Middle East within the next decade.



- Meanwhile, this deal enables Mitsubishi to increase presence in North America and to further diversify its portfolio. Currently, Mitsubishi holds gas and NGL upstream assets in Western Canada, as well as chemical and automotive plants in the US and Mexico

### Outlook

- Automotive market outlook continues to put downward pressure on the global butadiene demand while global supply continues to rise. We expect butadiene supply glut to remain in the next few years, placing Mitsubishi on a difficult position to reap significant margins in the long term.
- The butadiene plant historically accessed crude C4 feedstock from NOVA Chemical's Corunna steam cracker. However, the [Ethylene Asset Cost Tool](#) captures significant reduction in Corunna's crude C4 production, as naphtha got displaced by ethane following the shale revolution in 2015. This limits feedstock availability for the butadiene plant moving forward. While it is a major issue for Arlanxeo, Mitsubishi might be able to leverage its Western Canada upstream position to bring substantial crude C4 supply into the plant and optimise margins along the value chain.
- If the oil price downfall and sustained oil demand remain, Saudi Aramco might put other assets for sale to maximize capital allocation into the Middle East world-scale chemical facilities.

## In Focus: Linde and Shell collaborate to commercialise lower carbon ethylene technology

**Patrick Kirby, 15 October 2020**

Linde GmbH and Shell today announced an exclusive collaboration agreement on ethane-oxidative dehydrogenation (E-ODH) technology for ethylene production. The catalytic process is an alternative route to ethane-based steam cracking. According to the announcement, it is seen to bring the potential of economic advantages, yields acetic acid co-production and a significantly lower overall carbon footprint through electrification of power input.

The announcement marks an interesting technology development that we will be watching carefully. Whilst the latest announcement is geared more towards ethane as a feedstock, the earlier announcement on electrification of steam cracker furnaces would have applications across a range of ethylene feedstocks. Combined they both reflect the continued trend of decarbonisation.

Please click through to access the full insight on our new [centralised landing page](#) for In Focus content. To see Wood Mackenzie's view of the feedstock position for every ethylene plant globally and new projects that we expect to come into the market, navigate to the [Ethylene Asset Cost Tool](#).

## In Focus: China's Lianyungang Petrochemical receives the first ethane cargo from the US

**Kelly Cui, 12 October 2020**

On 12 October, Lianyungang Petrochemical, which is located in Lianyungang, Jiangsu province, received the first ethane ship from its partner Sunoco Partners in the US. The ethane will be used for the preparation work of the 1.25 Mtpa ethane cracker start-up in Lianyungang Petrochemical plant, which is the first 100% ethane cracker in China that utilizes US-imported ethane as feedstock. The ethane arrival is a milestone for Zhejiang Satellite, which is the entity that invests in Lianyungang Petrochemical.

Please click through to access the full insight on our new [centralised landing page](#) for In Focus content. We encourage you to bookmark the landing page to always have access to the latest content. To see Wood Mackenzie's view of the feedstock position for every ethylene plant globally and new projects that we expect to come into the market, navigate to the [Ethylene Asset Cost Tool](#).





## Ethylene Oxide (EO) Derivatives: PCC and Petronas join forces on Surfactants and Polyols

Andrew Day and Jason Anderson Raj, 12 October 2020

### Issue

- In September, PCC and PETRONAS Chemicals Group (PCG) announced plans to establish joint production of specialty chemicals in Malaysia.
- PCC will sell 50% of its project company PCC Oxyalkylates Malaysia (PCC-OM) to PCG with the primary objective of accessing markets for oxyalkylates in Southeast Asia (SEA) and Asia-Pacific.
- This development allows PCC to expand its core business in this growth region and for Petronas, which will provide the necessary Ethylene Oxide (EO) feed, to diversify into a new range of valuable derivatives.

### Implications

- Oxyalkylates are a group of chemicals comprising non-ionic surfactants (ethoxylates) and polyether polyols produced primarily from EO. These chemicals are used for the manufacture of a wide range of end-products. Ethoxylates serve as feedstocks in the production of laundry, home care and personal care products, while polyether polyols are, among others, used for cold-cure foam mattresses and upholstery applications.
- Demand for these two chemicals during 2020 has been a story of two halves. Because of the virus outbreak, the demand for ethoxylates has bloomed due to increased cleaning and personal hygiene protocols and activities, while at the same time that same virus outbreak has somewhat decimated polyol demand, particularly into automotive polyurethane where polyols are key feedstocks.
- PCG and PCC plan to build an oxyalkylates facility within PCG's Kerteh (Kertih) Integrated Petrochemical Complex, Terengganu (Malaysia), to produce ethoxylates and polyether polyols. Construction is targeted to start in 2021, with production scheduled to commence in 2023. The partners also intend to establish a joint research and development centre at PCC-OM. Details on the capacity of the facility have not been made available at this stage.
- We expect Pure EO (PEO) being diverted away from low-margin, existing EO Derivatives production to run the new facility, with no debottlenecking or expansion of the current PEO capacity in Kerteh in plan. Flexibility will be key in prioritising where EO is consumed, while maintaining some form of stability of supply into the market and customers. While EO will be supplied by Petronas, any necessary PO will have to be imported from neighbouring countries for the production of polyols.
- This strategic partnership leverages on the strengths of both companies; PCG as one of the leading integrated chemical players in SEA, and PCC with extensive expertise in the production of oxyalkylates, including in particular chemical specialties serving a wide range of industrial applications. The partnership will enable PCC-OM to deliver high value innovative solutions to customers in the oxyalkylates market in the region.
- Wood Mackenzie Chemicals estimates the total market size for ethoxylates in South East Asia at around 330 kt in 2020, and this is expected to grow to nearly 350 kt by year 2024. Demand in neighbouring region in North East Asia (excluding China) is expected to grow to around 770 kt by 2024, while China will be the biggest consumer of ethoxylates in the world by 2024, requiring 1,550 kt of ethoxylates by then.
- Elsewhere PCC Group-owned PCC Exol manufactures ethoxylates in a portfolio that covers over 200 different surfactants while PCC Rokita is the leading producer of polyols in Eastern Europe. Back in January 2020, PCC also announced plans to construct a 180 kt PEO facility in Germany, including a range of EO derivative assets that included polyols, PEGs (liquids and solids), surfactants, cellulose ether and ethylene carbonate. Some of these assets would be third-party assets. In July, PCC announced a 18-month delay to the project, which pushes expected start-up to 2026.



### Outlook

- They say marriages are made in heaven. The hook-up of PCC and Petronas seems a great match, each bringing individual strength to their announced JV. Another plus, the planned togetherness does not involve any new MEG capacity, something to cheer given the massive overcapacity on that particular EO derivative across the decade.
- The planned products will yield some of the highest EO-based margins, especially across the surfactant range where brand strength and performance in action are so important. For the polyol products, probably a more difficult path ahead there and one that really depends on society's success at minimising the virus impact which will then lead to a strong pent-up demand bounce back.

## Barking up the right tree...? UPM announced construction start of their wood-based BioMEG facility in Germany

**Andrew Day, 8 October 2020**

### Issue

- On 7 October 2020, UPM official started the construction of its biochemicals facility in Leuna, Germany.
- The facility is based from a 100% wood feedstock.
- UPM invests about US\$650 million (€550 million) on this facility, which will produce a range of biochemical products and is expected to start up by the end of 2022.

### Implications

- This 220 kt refinery will produce BioMEG, lignin, BioMPG (Propylene Glycol) and industrial sugars made from sustainably harvested beechwood sourced in Germany. Of this capacity, Wood Mackenzie estimates the BioMEG annual output of around 150 kt.
- Conversion technology from wood-derived sugars to bio-based glycols has been under research for quite some time. But this is the first time that it has progressed to a multi-million dollar investment, a brave move.
- Traditional MEG is derived from naphtha, ethane, and coal feedstock. With the push to monetise ethane over the past years, a vast surplus of EO-based MEG production capacity has appeared across the globe, often integrated into polyethylene and/or other EO derivatives plants. At the same time, the Chinese-driven coal-based MEG technology has continued to build. Depending where we count from and stop counting to, the excess MEG capacity is of a size 10+ Mt!
- While BioMEG will likely need to realise significant price premiums to reach 14% of targeted ROI, MEG prices have declined and will, relative to feedstock costs, likely to be pressured for the entire decade due to overcapacity.
- The BioMEG requires the exacting quality standards of the MEG Fibre Grade specification to be successful into PET applications, MEG's largest demand sector. With the spotlight more and more on the PET recycling, how interested will the PET industry be in a new BioMEG? Is the compass shifting to the PET recycling rather than 'greening up' via a BioMEG product? What about bio-degradable plastics?
- A BioPET made from BioMEG feedstock (which is only around 35% of the polymer content) will still need to be a part of the PET recycle chain. Time will tell. There's a niche likely for this product but it may have to work hard to find its way in if the industry attention is more focussed on developing and investing in the end polymer recycle activities.



## European MEG and ethylene contract prices looking across the past decade

Year	MEG European Contract Price €/t	Ethylene European Contract Price €/t	MEG / Ethylene Ratio	Ethylene - MEG Spread €/t
2009	565	737	0.77	172
2010	840	953	0.88	112
2011	1,062	1,140	0.93	78
2012	1,018	1,239	0.82	221
2013	1,004	1,230	0.82	226
2014	907	1,159	0.78	252
2015	909	961	0.94	53
2016	755	908	0.83	154
2017	931	1,017	0.92	86
2018	975	1,100	0.89	126
2019	694	1,007	0.69	313
2020 (YTD)	548	799	0.69	251

## Outlook

- Looking across the forthcoming years, the MEG space will be a tough one, and PET growth isn't what it used to be, projected forward.
- The surplus of MEG capacity seems ever larger and can overwhelm any demand curve we put in front of it. Across the decade we see a global average for MEG utilisation rates around 63% – shocking.
- The PET industry hasn't seen any significant development of Bio-based raw materials (neither BioMEG nor BioPTA) until now; such a novel BioMEG process may remain a lonely place.
- Will this move catch on and can the petrochemical-driven MEG industry begin to see the wood for the trees and think twice about continuing the staggering capacity overbuild? It's a wait-and-see moment.

## In Focus: LyondellBasell to buy 50% of Sasol assets In Lake Charles for US\$2 Billion in newly formed Joint Venture

**Enrique Galindo, 5 October 2020**

On 2 October 2020, LyondellBasell and Sasol formed a joint venture (JV) through which LyondellBasell will obtain 50 percent of Sasol's 1,500 ktpa ethane cracker, 420 ktpa low density polyethylene, 470 ktpa linear low density polyethylene, and associated infrastructure at the Sasol Lake Charles Chemical Project (LCCP) site for a total cost of US\$2 billion in cash. This newly formed JV will operate under the name Louisiana Integrated Polyethylene JV LLC. The deal is expected to close by the end of 2020.

The newly-formed JV is a win-win for both parties. LyondellBasell is a large player with deep experience in the operations and markets of the acquired assets. This alongside the recent arrival of new ethylene capacity in China grows market share. Sasol is in need of cash to reduce their debts after a series of project execution difficulties which led to the departure of their then joint



CEOs in October 2019. The deal is underpinned by LyondellBasell's confidence in growing demand for polyethylene and the USGC's continuing cost advantage.

To read more about this deal, please refer to our [In Focus report](#), which is available to all clients of the [Ethylene Asset Cost Tool](#)

## China's polyester chain faces challenges during golden season this year

**Patricia Pan, 1 October 2020**

### Issue

- September and October are usually the boom production months for downstream textile sectors. However, weak demand and lacklustre offtakes cause high stockpiles, pressuring polyester prices to stagnate at low levels compared to the same period in previous years.
- Overall polyester run rates have been kept around 90% despite poor or even negative margins for some suppliers.
- Prices for major polyester feedstocks, including PTA, MEG, and PX, are equally low compared to the same period in the last few years.

### Implications

- Downstream polyester business will play a major role in determining overall margins along the polyester chain, including PX, PTA, and MEG.
- Some small and outdated PX plants may be forced to cut back production or even shut down, as plant margins deteriorate further. This is exacerbated by increasing competition from new facilities.
- PTA social inventories in China have been high and will remain so in the long term. PTA total capacity is expected to grow by 22% in 2020 while downstream consumption slows down. Despite an increase in PTA margins between Q1 and Q2 2020, these are much less than last year at the same period, owing to weak downstream demand.
- Total MEG tank inventories at major ports in East China have recently decreased from the highest point of 1.5 million tonnes to less than 1.4 million tonnes. But the recent MEG price uptick is capped in the near term, as Chinese plants increase run rates and other plants gradually resume production after being closed for maintenance or unplanned outages.

### Outlook

- We expect the entire polyester industry to undergo some restructuring, ranging from consolidation / integration to plant closures. Competitiveness, through economies of scale or technology differentiators, will be a key driver.
- To help you navigate these uncertain times, Wood Mackenzie has developed [PX Asset Cost Tool](#) and [PTA Asset Benchmarking Tool](#), allowing customers to assess plant competitiveness on a country, regional and global basis.



## Wood Mackenzie Chemicals

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