



Chemical Advisory Service

Translating the world of chemicals into investment returns

Data and analysis for chemical investors is often difficult to translate into key investment decisions. The Chemical Advisory Service seeks to arm investors with data, analysis and tools across the full range of petrochemical value chains to allow them to make critical investment decisions for enhanced portfolio returns.

Investors exposed to the chemicals industry have to navigate a broad range of products and complex relationships between different value chains such as olefins, plastics, aromatics, inorganics, fibers and specialties. Whether investments are focused towards equities, bonds, or strategic decision making in the world of M&A and private equity, this service provides broad yet detailed insight into key developments that impact profitability, both near and long term, for the key product chains that drive corporate earnings.

The Chemical Advisory Service is designed specifically to address key workflow gaps for financial stakeholders: First, by providing timely updates of key developments across key chemical value chains, investors have the ability to identify key opportunities and transact in an informed and timely manner. Second, the service has been designed with flexibility in mind, allowing investors the opportunity to delve deeper into specific sub-segments of the industry by providing access to industry leading consultant base and supporting data by IHS Markit.

KEY STATS

270+
chemicals experts

Covers 300+
chemicals

**Trusted by
chemicals industry
across functions**

Business management

Engineering
and R&D

Financial analysis

Purchasing

Sales & marketing

Strategic planning

CUSTOMERS

Asset managers

Portfolio managers

Hedge fund
managers

Fixed income
investors

Private equity

Sovereign
wealth funds

High level
IBD managers

- **Timely and informed snapshots of key developments** across chemical chains
- **Data and analysis presented in an easy-to-digest format**, extracting key messages for investors
- **Outlooks for different investment timeframes** Near-term, mid-term and long-term
- **Content flexibility** option to dive deeper into focus areas by accessing detailed data sets
- **Accessibility to experts** who are from the industry and drive the service's data and analysis
- **Proprietary, independent analysis, data, forecasts and conclusions** developed bottom-up, by IHS Markit experts
- **Enhanced assumptions due to broad intelligence coverage by IHS Markit** including Energy, Technology, Automotive, Maritime/ Shipping, Economics and Financial Services; for a consistent and comprehensive view on impacts for chemicals

Chemicals Advisory Service subscription includes:

- Monthly reports of Chemicals developments
- Regular webinars focusing on key issues, both near and mid-long-term
- Content flexibility and expert access via token system
- Flexibility for upgrade to buy more tokens if required

Monthly report example

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Major Product Chain Developments-summary

Feedstocks

- Crude oil has swung into sharp reverse over the last month, as fear of oversupply and slowing energy demand continues to dim the crude oil market, with international benchmarks Brent and WTI ending the week at \$56.62 and \$56.58/bbl respectively
- Naphtha prices have followed crude lower, and fundamentals remain weak with lower petrochemical margins and a muted gasoline market in the West capping naphtha demand for both cracking and gasoline blending
- US Ethane prices have stabilized at lower levels than recent weeks, in the \$1.33 cts per gallon range, with the volatility in pricing continuing to encourage heavier feedstocks into the crackers. IHS Market expects that ethane prices will return to an elevated level, as demand resulting from the start-up of new crackers in 2019 is expected to outpace the incremental supply from new fractionators, keeping the purity ethane supply tight.

Ethylene

- US spot ethylene prices have seen November deals ranged from 19.75 cents per pound (cpl) to 22 cpl, while a deal for December delivery was completed at 22.5 cpl, vs the 45-day weighted average price is 20.51cpl
- Right now coproduct integrated light naphtha remained the most advantaged feed for the week. Ethane cash costs regained their advantage over butane to secure second-place advantage.
- In Europe, cracker margins improved as the decline of feedstock costs more than compensated for the small decrease in the ethylene contract price (C115) and the reduction in co-product prices in November.
- In Asia, ethylene prices have been steady, but in China, buying ideas decreased to \$850-900 metric ton CFR China amid weak energy prices and bearish downstream markets, but sellers were unwilling to lower their offers and stepped back from the market.

Polyethylene

- In the US, volatility in upstream feedstock pricing is causing PE buyers to limit purchases, with the demand outlook into export markets also more uncertain
- Asian markets continue to move lower reflecting a weaker outlook for the China market in particular
- Europe is moving lower, reflecting lower demand and improved availability, though sellers are hoping volumes improve as customers come back to meeting annual volume offtake agreements

Ethylene Oxide/Glycol

- Declining ethylene prices has added some negative sentiment to the EO/EG markets and in China, increased coal-to-EG capacity is adding additional pressure.

Propylene

- In the US, Propylene prices continue to fall with the November contract settling down 10cts/lb at 50cts/lb for Polymer grade, with current spot prices at 45-46cts/lb, reflecting declining crude/ethane and increased use of heavier feedstocks
- In Europe, some rain brought a bit of relief to propylene producers and consumers along the Rhine river, but the situation is still far from normal, and supply remains constrained. November contract price settled at €1060/mt
- In Asia, sentiment was stable in Northeast Asia. The gap between buying and selling ideas remained wide. Buyers were cautious as crude oil prices continued to decrease, while sellers were wary about selling at lower prices.

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IHS Market Focus Research

US Ethane/Ethylene market dynamics-ethane advantage delayed until 2020

Introduction

The last few months have seen unexpected developments in the US ethane and ethylene markets, with ethane prices more than doubling at one point in the last 3 months peaking above \$2/cu gal, currently trading c. 33 cents per gallon (cpl). This has in large part been due to ethane infrastructure constraints, fractionation in particular, at the same time as additional US ethane-based ethylene capacity has come on line.

As a consequence ethane forecast prices have been raised to remain elevated through 2019 owing to infrastructure constraints, fractionation in particular. While the supply of y-grade fractionator feedstock grew by over 950,000 b/d—more than enough to produce the additional ethane. However, fractionation has not kept pace with demand. Only 200,000 b/d of additional fractionation capacity has been installed at the Gulf Coast tank of Mont Belvieu, Texas, while pipelines capable of delivering ethane into the region from elsewhere in the United States are already at or close to capacity. Supply of purity ethane will increase with new fractionators, however the demand from new crackers might outpace the incremental supply, keeping supply tight. Between August 2018 and December of 2019 IHS Market expects an additional 140,000 b/d of fractionation capacity to be added in the US Gulf Coast, and ethane demand is expected to increase by another 350,000 b/d in the same time period.

Cracker capability to consume ethane outstrips fractionator capability

Periods of ethane tightness may occur between 2018 through 2020

US Ethane Consumption vs Cracker Capacity

Periods of ethane tightness may occur between 2018 through 2020

Ethane is expected to remain volatile as new demand continues to come online. The longer term ethane forecast continues to show generally increasing spreads over gas when, as volumes are economically pulled away from rejection being left in the NGL gas stream) into growing demand with new crackers coming online as well as expanding export opportunities, as new export capacity become available towards the end of 2019.

In terms of the US ethylene market outlook, US ethylene prices are riding the tide of ethane prices against volatile ethane cash costs. Ethane prices have been volatile, ranging between 32 and 61 cpl. The ethylene price is forecast to maintain a

Quarterly webinars presentation examples

Chemical EBIT surges with stable demand growth and dearth of capacity additions, for a period of time that hasn't been seen in 30 years....and new capacity lead times 3-5 years min

Surplus capacity, demand growth and weighted average earnings

Capacity and demand growth

EBIT (\$/ton)

Source: IHS Market

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Key mid-term issues for the global chemicals industry

- Crude Oil to Chemicals (COTC)**
 - Configuring refineries to produce maximum chemicals
 - Can be up to 2-4x per bbl of oil vs traditional naphtha to petchem plant
 - And size is huge, eg. Hengli in China configured to process 20 mtpa crude oil, to produce 4.3mt para xylene plus benzene and other chemicals
 - A drive in China for PET/Polyester feedstock self sufficiency driving the investments. China currently imports 11mt PX (of its 23mt demand requirement), with the first wave of COTC's adding 11.6mt, effectively closing the supply gap by 2020.
 - The Middle East is also investing Aramco/Sabir looking to invest in capacity to be completed 2025, converting 20mt crude oil, and producing 9mt of petrochemicals, with plans to further improve output to 14-16mt with technology improvements
 - To put into context, a COTC project based on Aramco's optimized technology would produce more chemicals than all eight first-wave ethane-based steam crackers in the United States, which have a combined production capacity of 11 million tons of ethylene per year.

Figure 1. Configuration of Hengli Refinery-PX Complex

Crude oil 20 Mtpa

Microsecond flows (million tons per year)

Key technologies supplied by Avantium

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