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The new petrochemical market: Adapting to demand

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A bit of advice for players in the petrochemical market: Hold on to your hats! Like many other energy sectors, petrochemical global market demand is increasing rapidly due to the need for everyday products, such as plastics and petrochemical derived fibers. As a result, the International Energy Agency's (IEA) "The future of petrochemicals" report projects that petrochemicals will account for "more than a third of the growth in world oil demand to 2030."

Surprised? If so, you are not the only one. "Our economies are heavily dependent on petrochemicals, but the sector receives far less attention than it deserves," said IEA Executive Director Dr. Faith Birol. "Petrochemicals are one of the key blind spots in the global energy debate, especially given the influence they will exert on future energy trends. In fact, our analysis shows they will have a greater influence on the future of oil demand than cars, trucks and aviation."

In this impulsively fluctuating market, are you prepared to adapt and respond?

The natural forces affecting supply.

The dynamics of supply and demand in the global energy market are changing due to several factors, including:

- The increased industrialization in third-world countries
- The rapidly growing middle class in countries like China and India
- The continually expanding demand for liquefied natural gas (LNG).

Although natural gas is abundant and cheap, as the trend continues to convert more and more of it into LNG, a diminishing supply over time will increase petrochemical production costs. Petrochemical production plants are often natural gas-based, and their feedstock managers must become more sophisticated buyers as they compete with LNG buyers for natural gas. This shift will also challenge the oil industry, as many of the petrochemicals will be produced using gas, cutting out refineries.

"Ethane, liquefied petroleum gases and naphtha pose a bigger threat to refiners' market share than electric vehicles and gas-powered transportation combined," the IEA said, estimating that refiners would see just 4.8 MMbpd of the demand growth to 2023.

Added to these market forces is the unpredictability of Mother Nature, as demonstrated recently by the impact of Hurricane Harvey on Houston's petrochemical industry. More than half of US production capacity for ethylene—a vital plastics building block—was knocked out. For months, American chemical producers were unable to fulfill orders for basic materials like PVC and polyethylene, and prices for plastic materials skyrocketed as a result. It is also important to remember that because plastic is a key component in countless other products, a similar polyethylene supply interruption could lead to shutdowns throughout the production chain.

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To combat these unpredictable factors, petrochemical companies must have a game plan ready, one that includes gauging the amount of feedstocks to keep on hand, how to find alternate suppliers, and even alternative products that can be used in the interim if and when disaster strikes. Equally important is that market participants must have proper hedging and trading strategies in place to help them mitigate financial losses as outages or supply/demand imbalances prevent them from meeting contractual commitments.

The ultimate target: Corporate margins.

Without question, the world's energy markets will always be volatile. The forces affecting supply, however, have an impact beyond the industry's ability to meet the ever-increasing global demand. Unpredictable levels of base products and feedstocks can also lead to erratic margins and operating costs at the company level.

These realities have exposed a fatal weakness in the petrochemical industry: too many companies do not have the capabilities to manage their portfolios in real time or respond quickly when the market changes. The bottom line is that companies must proactively manage what is in their power to control, as well as develop a strategy to cope with fluctuations in price and product availability.

The stable price environment that preceded the 2014 drop in oil prices lulled many chemical company leaders into a false sense of security, and many still use dated, manual risk-management systems. However, the problem is fixable. A petrochemical company with the right tools in place can expand margins in an environment of falling oil prices by identifying sourcing savings ahead of declines in product pricing. When oil and/or shale gas prices go back up, margins can still be protected. The key is to have visibility of risks and changing market conditions, as well as the ability to react to those changes to stay steps ahead of the market and the competition.

Handling rapid market changes effectively requires robust and flexible commodity trading and risk-management (CTRM) software with advanced analytics.[a] This type of software provides petrochemical businesses with a flexible platform that enables real-time portfolio and risk management. Such a system can handle the complex, ever-changing and increasingly volatile world that petrochemical companies are facing.

[a] *Allegro Horizon*

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