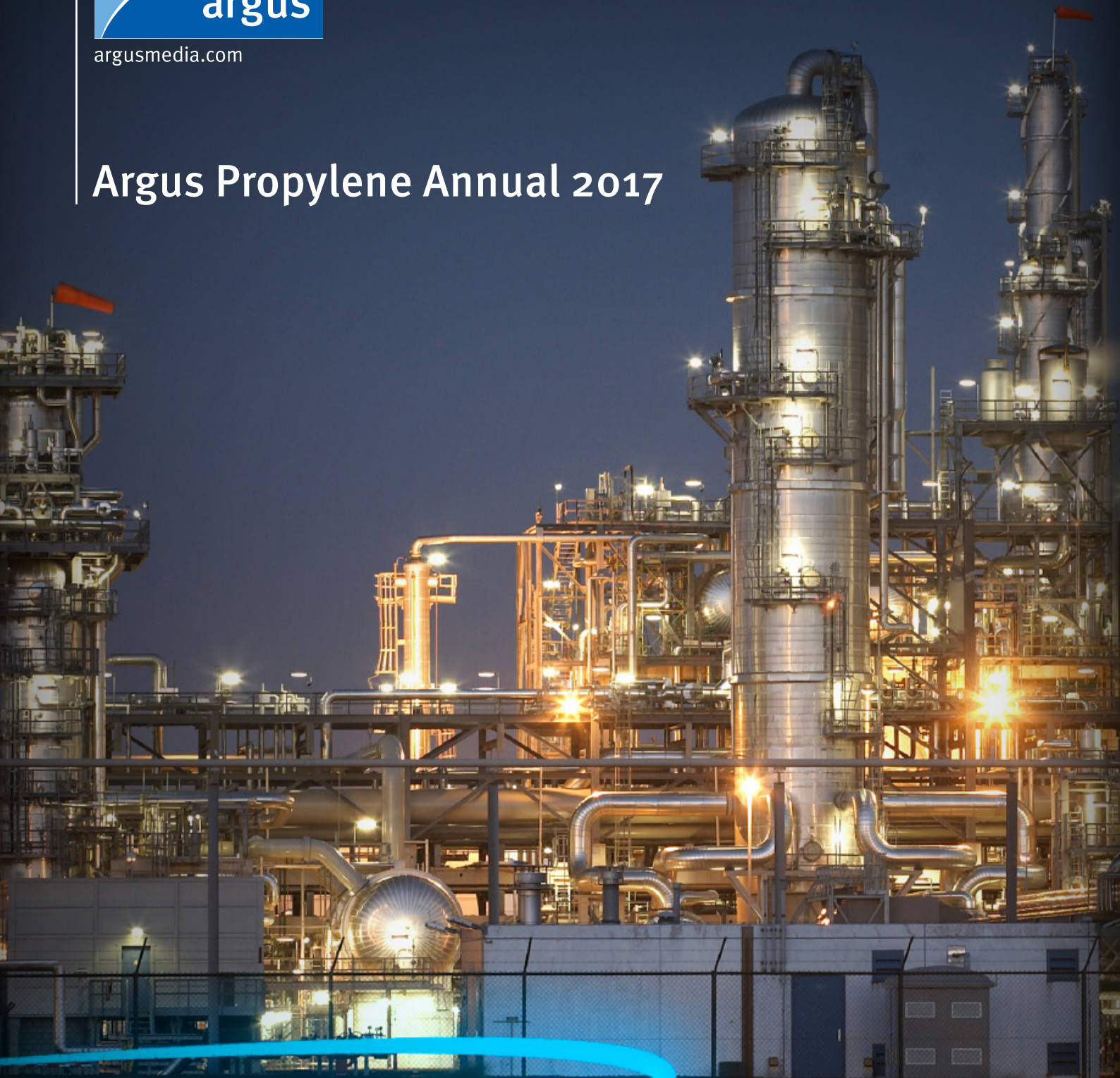




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Argus Propylene Annual 2017



Petrochemicals

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Summary

Propylene continues to show healthier growth than ethylene as consumption is spurred by strong growth for key derivatives. But the rate will decline in the next few years as global economic growth slows and developed economics settle into the new normal of lower annual GDP growth. Asian markets continue to expand, but domestic growth has slowed and countries dependent on export business have seen these volumes shrink. The next peak of the economic cycle is forecast by the World Bank to be in 2019-21, although it will coincide with a supply-induced trough for ethylene margins, which will also have some impact on propylene markets.

Propylene demand growth continues at a healthy pace, with CAGR of 4.1pc across the 2012-21 period, but at a slightly slower 3.9pc from 2016-21. The leading derivative, polypropylene, is forecast in the same period to increase 4.6pc while it continues to capture new consumer uses and displaces more expensive polymers in some engineering applications. The polymer accounts for about two-thirds of propylene consumption worldwide. Other propylene derivatives will grow similar to GDP levels, except for a few speciality markets such as super absorbent polymers – a derivative of acrylic acid.

Worldwide, 48pc of propylene is produced in steam crackers as a coproduct with ethylene. The portion will continue to decrease as some steam crackers move to lighter feedstocks that yield less propylene. This trend is particularly strong in the US where NGL and LPG prices remain low, and in Europe where imported light feedstocks are becoming more common. Some Asia-Pacific crackers have also begun to use NGL feedstocks as they become available in the region.

About one-third of propylene production is sourced from refineries. The current moderate crude price environment and similar outlook through the forecast period will keep gasoline demand strong and refinery operating rates high. This supply boost has helped to fill the gap of lost propylene production resulting from lighter cracker feedstocks.

Key findings

- The most important development for propylene supply is the rapid increase in on-purpose production units. These units have been critical in addressing the supply gap that emerged as propylene derivatives grew at faster rates, and continues as crackers move to lighter feeds. Additionally, the anticipated over-supply outlook for ethylene in 2019 and 2020, and possible reduced operating rates, further supports a need to source propylene from processes that are not dependent on the economics of another product.
- Coal-based and methanol-based propylene production capacity will grow fastest, at about 15pc across from 2016 to 2021, followed by propane dehydrogenation production with 11pc growth. Although these rates remain healthy, they represent a few percentage-point drop from rates for 2012-2016.
- The majority of capacity growth will take place in China, continuing the trend set in the previous five-year period. Overall, China has invested in propylene capacity and derivative growth at a greater rate than for ethylene, with 11.5pc capacity growth from 2012-2021, versus 8.5pc for ethylene.
- The US will begin to build its capacity share, taking advantage of cheap LPG to support propane dehydrogenation units, and recovering from an earlier decline in capacity when several steam crackers shifted to ethane feedstock. The US and China are also the leading countries for propylene production and consumption.

Key findings

- Most of the capacity expansions in China will be based on coal-to-olefins and methanol-to-olefins technology, although PDH units are also an important production source. As China seeks to reduce its dependence on imported raw materials, the use of domestic supplies of coal is seen as a strategic, rather than a commercial, option.
- China's propylene imports are expected to decline slightly during the forecast period, replaced by higher domestic production. But as a number of new coal-to-olefins facilities will be located inland and away from the major consuming markets of the east coast, imports will continue to compete with naphtha-based production capacity at the coast. This leaves other northeast Asian exporters such as Japan and South Korea, which are mainly based on naphtha, having to find new export markets or reduce operating rates. Japan has responded to this pressure with the closure of three steam crackers during 2015 and 2016.
- Propylene trade is expected to increase in the next few years, led by increased exports from the US. These exports will be reduced later in the forecast period as US derivative capacity begins to catch up with propylene production. Intra-regional trade in Asia will remain high as China uses imports to support its high derivative capacity expansion, which is growing at 11.6pc annually from 2012-2021.
- China imports propylene from the region, even as domestic production capacity grows. China is expected to procure the largest portion of polypropylene worldwide and export finished goods throughout Asia and other regions.

Key features

In addition to providing analysis and background on these trends on a country-by-country basis, the *Argus Propylene Annual* also contains the following major components:

- A history and forecast of supply and demand balances from 2012 to 2021 for each region and each propylene-producing country. A further five years of forecast data to 2026 is available on Argus Direct, our online platform.
- A discussion of process technologies for propylene production and derivative processes, and history and forecast of propylene sources by country and region.
- An overview of regional and world propylene markets, including a demand analysis of all major propylene derivatives.
- A history and forecast of propylene imports and exports by country, and an analysis of regional net trade.

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About Argus

Argus Consulting Services offers you tailored research, independent data, benchmarking, modelling, strategic analysis and decision-making support. The focus is firmly on markets – their structure, outlook, logistics and economics – where Argus' experience and understanding of the global petrochemical and energy sectors provides you with a clear competitive advantage.

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