

GLOBAL MARKET TRENDS AND INVESTMENTS IN POLYETHYLENE AND POLYPROPYLENE

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Polyethylene (PE) and polypropylene (PP) continue to be the world's leading thermoplastic polyolefins in terms of market size; over 150 million tonnes in 2015. PE volumes remain dominant, although PP is the largest single market when the various PE types (LDPE, LLDPE, HDPE) are considered.

Asia dominates global consumption of polyolefins by far, accounting for more than half of the market. China alone consumes over a quarter of PE and over a third of PP, while India consumes a further 5% and 6.5% respectively.

Aggregated demand growth for polyolefins reached 5.5% in 2015, outpacing global GDP growth of 2.3%. This trend is consistent with the preceding two years, where GDP grew by 2.5-2.6% compared to 3.5% for PE and 4.5% for PP.

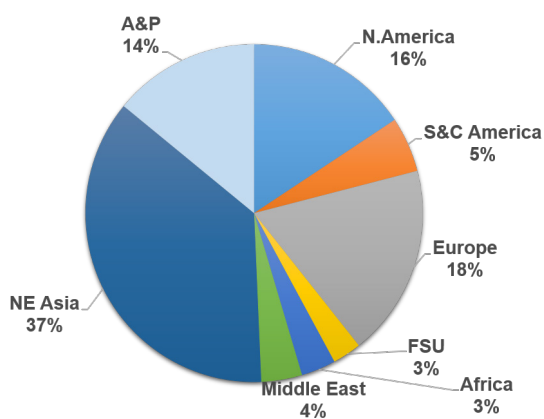
As such, despite ongoing volatility and uncertainty worldwide, there is clearly no debate over whether it pays to invest in polyolefins.

unprecedented series of force majeure left buyers with limited supply. The situation eased in late 2015, allowing the market to enjoy a higher pace of growth so far in 2016.

Market expansions also occurred in Turkey and Eastern Europe, most notably, in the Czech Republic, Slovakia, Hungary, Romania and Poland. This was in stark contrast to South America, where the previously promising markets of Brazil, Argentina and Venezuela contracted due to political and economic upheavals.

Russia, meanwhile, has been investing heavily in its processing capabilities, with a focus on BOPP film and injection-moulded products used in the auto and construction sectors. These investments have promoted a high substitution to imported plastics; economic issues have not had a negative impact on the market in 2015 or 2016 so far.

Total PE + PP Consumption 2015 – 153 Mt



Source: ICIS Supply and Demand Database

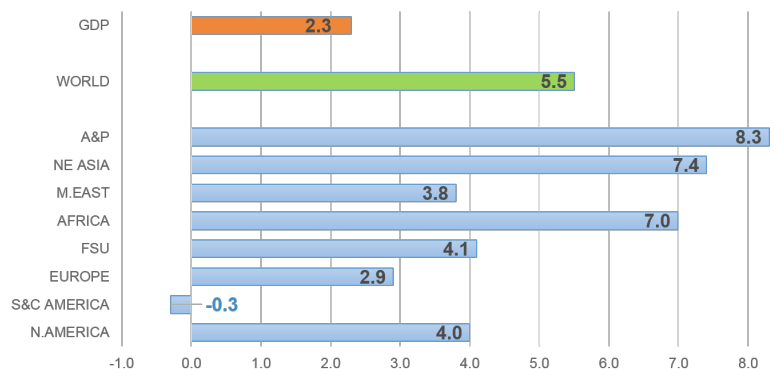
Regional Highlights

The polyolefins markets were characterised by diverse trends in key regions in 2015: the advanced economies recorded steady growth in spite of bearish conditions, while emerging economies had a very mixed performance.

North America saw a good recovery, with an expansion in plastic resin production and sales. The US polyolefins markets recorded the highest growth rates since 2010, particularly for LLDPE and PP, driven by improvements in the retail, housing and automotive sectors.

In Europe, low oil prices and strong consumer demand bolstered a recovery in polyolefins, although an

AAGR% Total PE + PP Consumption 2015, by Region



Source: ICIS Supply and Demand Database

Growth Engines: Asia, Africa & The Middle East

China continues to be the real engine of global polyolefins consumption. Despite a deceleration of the economy for the third consecutive year, GDP growth remained a noteworthy 6.8% in 2015, with polyolefins demand far exceeding this rate.

Elsewhere in Asia, India has emerged as one of the most promising PE and PP markets, driven by demand from packaging, durable goods, automotive and other industrial applications. A similar situation can be seen in Indonesia, Thailand, Vietnam, Malaysia and Pakistan.

While Asia relies largely on imports, the Middle East is regarded as an exporting hub for petrochemical products. In 2015, the region saw a strong drive to develop the

plastics processing industry, with large investments in the UAE, Saudi Arabia, Oman and Qatar. Political events, however, have impacted the region, and demand has been affected.

Another emerging player on the global polyolefins scene is Africa. This market may be complex and highly fragmented with strong differences between the northern, sub-Saharan and South African markets – and yet this region is expanding at a rapid pace, though starting from a very low level.

Emerging Challenges

A number of issues are weighing on the current and future configuration of the polyolefin sector, including several economic factors. Perhaps the most pressing concern is the Chinese economy; as GDP growth slows, so will that of the downstream plastic sectors, meaning a lower growth pattern is likely.

On a global level, the 2014 crude oil price crash continues to influence key economies. This impacts the petrochemical industry directly in terms of feedstocks, and indirectly by shaping exchange rates for the Chinese yuan, euro, British pound, Turkish lira and many other currencies against the U.S. dollar, with mixed implications for global trade dynamics.

Political factors have also played a leading role. For example, the lifting of sanctions imposed on Iran is likely to speed up polymer investments in the country; already in 2015, there has been an increase in export volumes for PP and all types of PE.

Other factors are more difficult to predict. For instance, the Brexit, recent events in Turkey, trade barriers and the refugee crisis, will all have an impact on the global polyolefins market.

Polyolefin Investments

In North America, cheap natural gas has driven a surge of investment into new olefins and polyethylene capacities, paving the way for the US to export PE on a major scale. However, the situation for PP is dramatically different, as the US faces a bottleneck in polymerisation capacity.

The other big investor is China, which remains committed to reducing its dependence on PE and PP imports. These investments have a particular focus on PP, meaning volumes from exporting regions will have to find alternative routes.

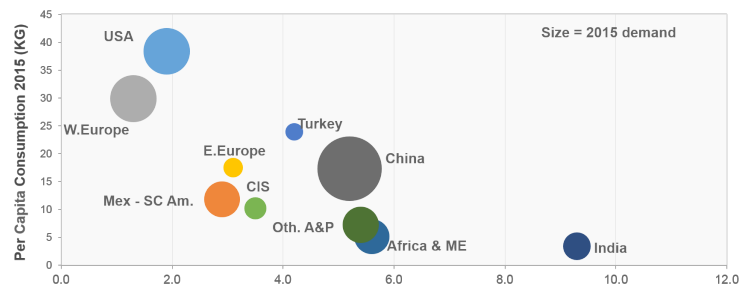
As a low-cost block for export-oriented polyolefin production with an abundance of cheap gas, the Middle East continues to see capacity expansion. The Sadara J. V. PE complex is a key project in the region, as is Borouge 3 in the Emirates.

Supply & Demand Outlook

Looking ahead to the end of the decade, world plastics consumption will be led by the aim of increasing the performance and efficiency of final products, while reducing the environmental impact of plastics production.

Demand for PE will continue to grow fast, especially in China, India and other developing countries.

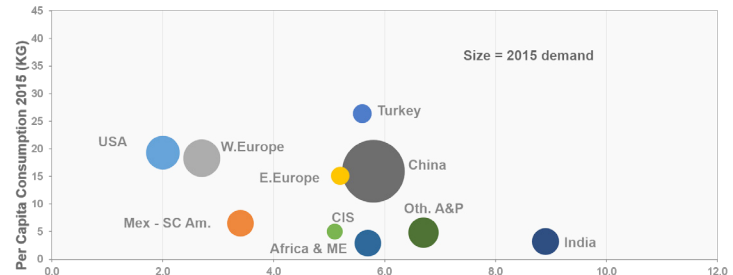
Polyethylene (PE) Projected Demand Average Annual Growth Rate 2015-2020 (%/year)



Source: ICIS Supply and Demand Database

The picture for PP is similar, albeit with lower per capita volumes. Turkey is a notable exception, due to its tremendous PP processing capabilities.

Polypropylene (PP) Projected Demand Average Annual Growth Rate 2015-2020 (%/year)



Source: ICIS Supply and Demand Database

The Middle East will maintain its dominant position as an exporter, particularly for PP, over the coming years. By 2020, North America will be 'in excess' of about 6 million tonnes of PE, as new capacities come on stream.

All other regions will continue to show deficits, with PE exports continuing to target Central and South America and China, while PP exports are aimed at Asia, Europe and Africa.

For further analysis and to view additional global data from the ICIS Supply and Demand Database, [watch the on demand webinar recorded by Fabrizio here »](#)

Fabrizio Galìè



Fabrizio is a senior member of the ICIS consultants, leading the global Polymer and Plastics team.

Over the course of 11 years' experience in the petrochemical business, he has provided studies and analyses and realised several projects covering commodity polymers. Fabrizio has helped companies and industry participants worldwide to make informed decisions, plan strategically and take advantage of opportunities.

Fabrizio has published numerous articles and editorials in international journals and has been a frequent and popular speaker at conferences in Europe, America, Africa and the Middle East. He is also the author of the ICIS Polypropylene and Polyethylene Price Forecast reports for Europe.

Global Petrochemicals Supply and Demand Database

The data referenced in this whitepaper was sourced from the ICIS Supply and Demand Database. The database can provide you with the comprehensive data necessary to your planning season. It covers all of the main products in the downstream hydrocarbon processing supply chain from refineries to petrochemical derivatives, including import-export volumes, trade flows, producers, plant capacities, production, consumption, supply and demand balances.

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