Ammonia and Urea

Global overcapacity to continue to subdue global operating rates in the medium term

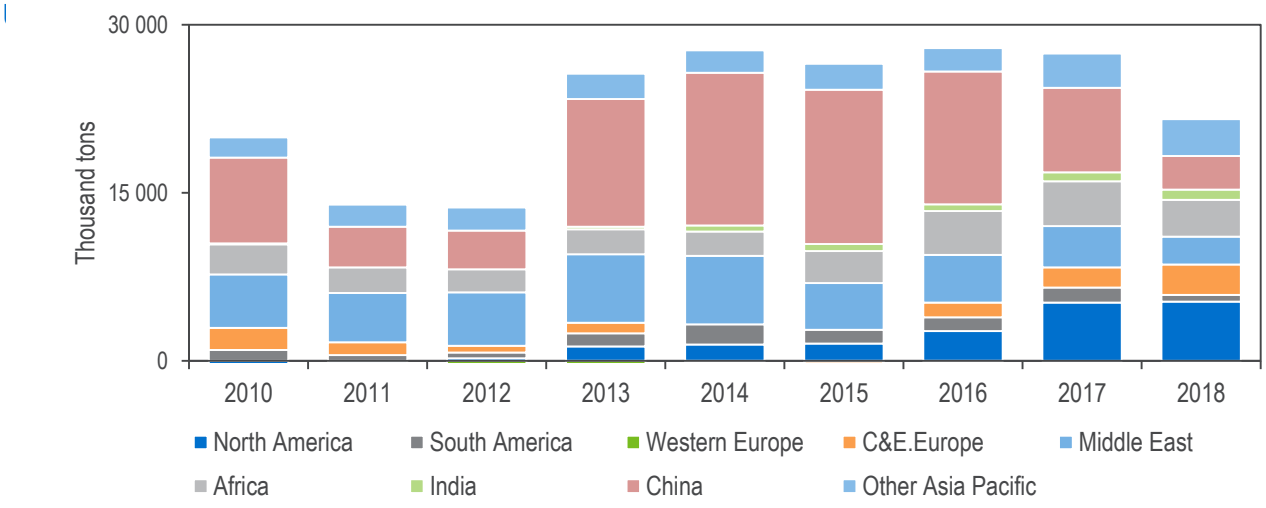
Background

Ammonia is a key intermediate for fertilizers such as urea, ammonium nitrate, ammonium phosphate and NPK compounds as well as a variety of industrial applications such as synthetic resins (urea-based), synthetic fibers (acrylics and nylons), polyurethanes, explosives (ammonium nitrate-based) and refrigeration. Globally, more than half of ammonia is used for urea production. Ammonia production is predominantly gas based globally, with coal used as feedstock in China.

Urea is used as the primary source of nitrogen for crop nutrition. It has a high nitrogen content (46 percent), is an easily transportable solid at room temperature, and is traded widely on international markets. Global urea consumption is estimated to have totaled about 173 million tons in 2018, with about 80 percent for fertilizer use, and most of this applied directly for food production. Around four percent is blended with other nutrients to form NPK blends and another four percent was consumed for biofuels production. About 12 percent of urea is used for various industrial applications, mainly for the synthesis of amino resins and melamine.

2010 to 2018: Global overcapacity, mainly due to addition in China

Ammonia and urea global production is concentrated in Asia Pacific, North America and Western Europe – these regions represent around 95 percent of global capacity in 2018. China's capacity has grown by about 13 million tons from 2010 to 2018, accounting for about one third of the global growth in capacity. The huge increase in China's capacity has been the result of the change in country's tariff policy, allowing export of increased volumes of urea. Middle East, North America and Eastern Europe are responsible for the remainder of capacity growth. The partial lifting of the sanctions in 2016, spurred the construction of new fertilizer complex's in Iran. Capacity developments in North America are driven by the availability of low cost shale gas in the U.S. Overall, global urea capacity has increased by 42 million tons from 2010 to 2018.



2010 to 2018: Global overcapacity, mainly due to addition in China (Cont'd)

Over the same period, global urea demand has increased by only 21 million tons, leading to reduced operating rates. Global operating rates declined to 78 percent in 2018.

From an average operating rate of 84 percent between 2000 and 2010 for Chinese producers, the country's average rate in 2018 was about 70 percent. Many plants have been operating intermittently given the poor margins which have also resulted in the mothball and closure of several plants in China. The government's continued focus on controlling pollution has forced a number of older coal based plants to shut down. Low coal prices have helped the competitiveness of coal based production routes for ammonia and urea over the past three years, but the underlying overcapacity still remains.

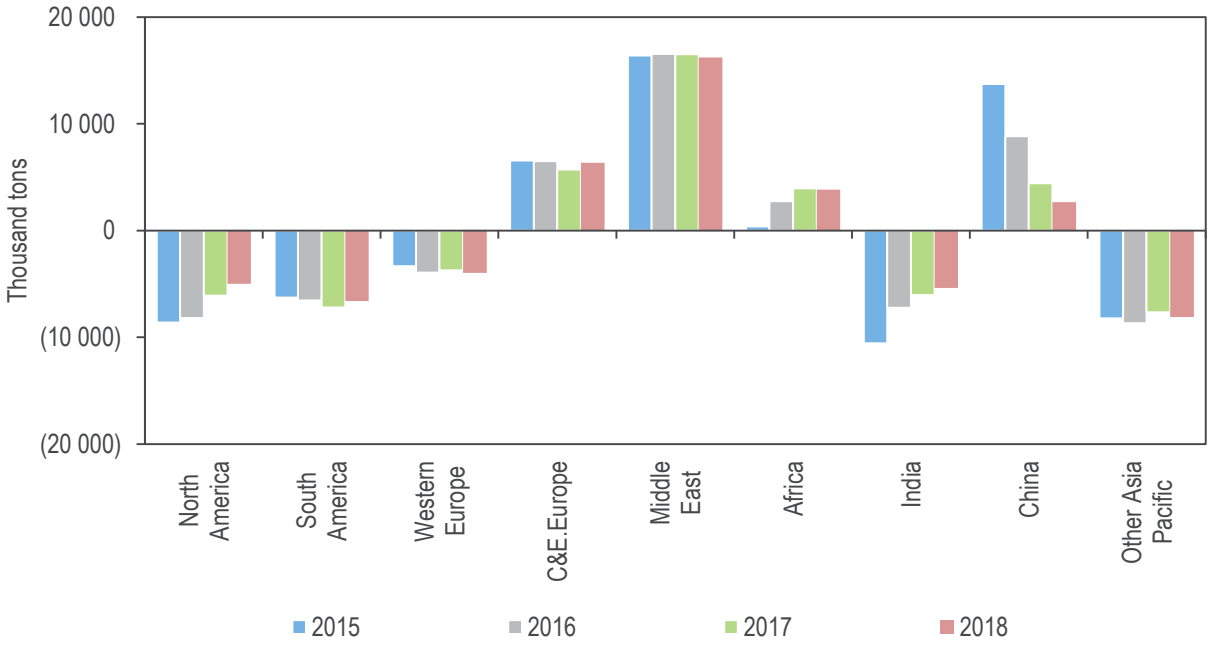
China became the largest urea exporting country in 2016, with exports totalling 8.8 million tons. However, the imports have dropped by more than 50 percent since then due to shut downs an reduced operating rates in local plants. Qatar has once again become the largest urea exporting country in the world.

China's weakening urea export position, and global opportunities for other global producers

As weak demand and regional overcapacity continue amidst the poor economy, competition between producers across the region is expected to intensify with average operating rates remaining relatively low in the region over the medium-team. Operating rates in Asia Pacific are forecast to stay below-80 percent until 2034, with further capacity rationalisation also expected in China as the operating rate averages about 10 percent below the regional average.

Future export volume from China is expected to decline as the country continues to shut down plants and decrease the pace of new capacity additions. The conflict between heating and industry applications lowers operating rate of gas based plants during the heating season, will continue. The country is expected to become closer to balanced in terms of net trade in the long term.

Urea Net Exports for Key Regions, 2015 to 2018



China's weakening urea export position, and global opportunities for other global producers

The Americas, Western Europe, India and other Asia Pacific (excluding China/India) are historically net importers of urea and are expected to retain this status through the outlook period. Eastern Europe, the Middle East and China are currently major net exporters. Capacity in the Middle East is expected to expand over the next two decades, and net exports are projected to exceed 21 million tons by 2035. Eastern Europe, particularly Russia will strengthen its export position, with the new capacity developments, supplying to Western Europe, Central Europe and some African countries. With China's exports reducing, the Middle East will continue to supply its traditional markets in Asia, India, Americas and some African countries. Interestingly, South America is a major ammonia net exporter but a urea net importer. This is because most of Trinidad's ammonia output is exported to the United States (Florida phosphates mainly), leaving a shortage in regional urea supply as well as capacity. South America's needs will continue to be met from the Middle East. North America's dependence on imports will continue to decline as new capacity comes on-stream.

Summary

For further information, please refer to Nexant's report "**Market Analytics: Ammonia & Urea - 2018**". This report provides analysis and forecasts to 2035 of supply and demand of the global ammonia and urea markets. This analysis identifies the issues shaping the industry as well as provide demand, supply and net trade data for 40 countries.

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