

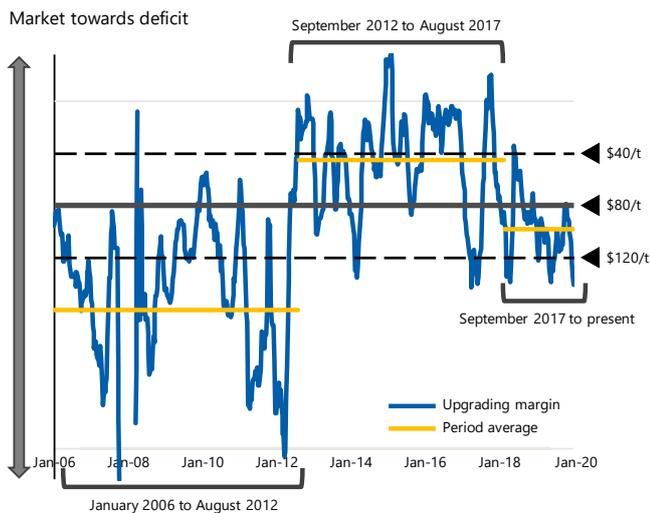
Argus White Paper: High upgrading margins boost urea



Weak ammonia prices have raised the upgrading margins on urea production to their highest since 2012.

Upgrading margins have averaged about \$100/t since the second half of 2017, nearly 50pc above the long-term average, according to analysis by Argus consultants

A fourth, Schekino Azot, is building new urea and nitrates capacity, but is also building a new ammonia plant so the net reduction in ammonia supply will be small.



Argus' urea-ammonia upgrading margin is created by subtracting the product of the ammonia price and a urea plant's ammonia consumption rate — assumed at 575 kg/t — from the urea price. This provides a measure of the added value that can be achieved in the urea market above the input cost of ammonia.

The historical average for this value is around \$80/t, which needs to cover the conversion costs on a urea plant — power, chemicals and consumables, labour and maintenance — and provide a level of return to incentivise the operator to produce and sell urea, rather than selling the ammonia. At \$80/t, a marginal plant can cover costs of \$50-60/t.

Market towards oversupply

Short payback period

The increased margin has raised the attractiveness of new urea capacity. Argus estimates that the return on investment period for a new 2,000 t/d urea plant in Russia is only 4-5 years based on current margins and an estimated capital cost of around \$200mn for such plants.

Merchant ammonia weakness

The rise in urea margins has been driven by the comparative weakness of merchant ammonia prices, which recently fell to two-year lows, and the comparative firmness of urea (see differential chart below).

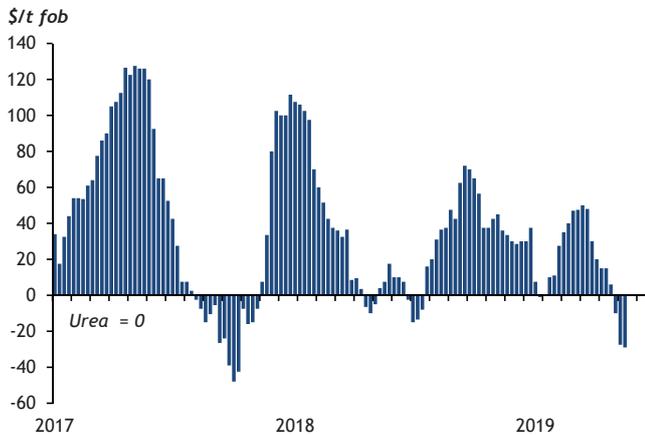
Three Russian producers — Acron, Togliatti Azot and Kuibyshev Azot — have so far decided to add urea capacity to convert ammonia that is currently sold on the open market.

Upgrading margins averaged only about \$40/t between September 2012 and August 2017, making ammonia a more profitable product than urea. But the situation has reversed since then, especially in the past nine months, which have seen a near continuous fall in ammonia prices.

Black Sea ammonia prices are about \$220/t fob at present, compared with urea at \$250/t fob.

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Merchant ammonia trade is small, totalling only 18mn-19mn t/yr, so relatively minor changes in supply and demand have a large influence on pricing. Urea trade is around 48mn t/yr, with prices correspondingly more stable.



New ammonia plants are ramping up to full production in Russia, the US and Indonesia that will add more merchant ammonia supply. At the same time, it appears that ammonia import demand in China has fallen this year as domestic producers have increased their share of the local market.

As a result, ammonia prices are forecast to average below \$230/t fob Black Sea in the coming year.

In contrast, urea prices have averaged \$241/t fob Black Sea — \$12-13/t higher than last year — and are forecast to average close to \$260/t fob in the coming year.

Market implications

The rise in urea capacity will reduce the supply of merchant ammonia from Russia from 2021 onwards, when the new plants are scheduled to start production.

The three new units in Russia will require about 1.1mn t/yr of ammonia to run at full capacity, implying a drop of that amount in merchant ammonia supply from the country.

This is a significant amount, representing more than a quarter of the 4.2mn t of ammonia that Russia exported in 2018.

The stronger margins also raise the question of whether there are other producers that may decide to install urea units.

Trinidad and Tobago is the largest exporter of merchant ammonia in the western hemisphere, exporting close to 3mn t/yr, although analysts doubt that there is significant potential for additional upgrading in the country given the age of the plants and continuing concerns about gas supply.

But further north in the US there are a number of plants supplying the near 3mn t/yr market for direct application ammonia, and delivering ammonia to the key consuming states in the Corn Belt will become more challenging from summer 2019 onwards owing to the permanent closure of one of the two dedicated pipelines. The Magellan pipeline, running between plants in Oklahoma and terminals in the western Corn Belt, will close this year. Owners of plants linked to Magellan either need to find alternative means of transport or look to upgrade more ammonia to urea, UAN or DEF.

More information

We will be monitoring this and other developments in the global urea and ammonia markets through our short term outlook services, and long-term analytics services:

- Argus Monthly Urea Outlook
- Argus Monthly Ammonia Outlook
- Argus Urea Analytics
- Argus Ammonia Analytics

Request more information on these services using the contact details below:

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