

Argus White Paper:

Ammonia market volatility: Record prices and an extended period of Black Sea supply disruption – what does this mean for new pricing mechanisms?



The ammonia market is facing a supply disruption which could dramatically change global trade flows going forward. Prices were already trading at record-highs before the removal of Black Sea ammonia exports because of the Russia-Ukraine conflict. A global supply crunch of ammonia in 2021 had raised the possibility of inflated feedstock costs and higher realised prices in the years-ahead, and with the current turmoil in global energy markets, it is inevitable that the ammonia market will be exposed to further volatility.

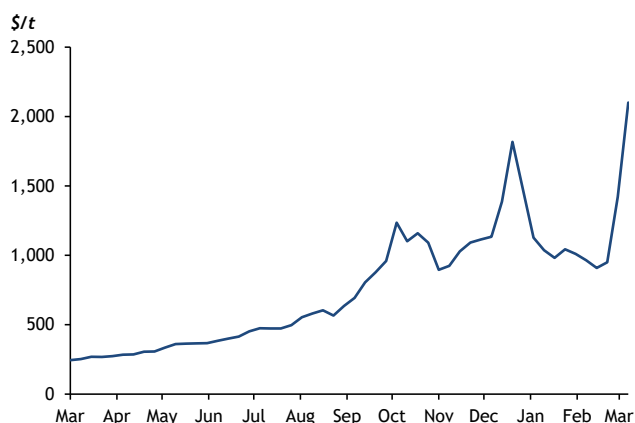
While the market continues to operate predominantly around contracts and formula agreements, spot trade is growing in relevance, particularly in these periods of volatility. To support transparency and empower existing and new entrants in the market, Argus has launched the Argus Ammonia Daily Marker pricing tool - supplementing our existing portfolio of daily price assessments published in the Argus Ammonia price reporting service.

Ammonia prices skyrocketed in 2021, breaching record-highs across the globe. What started out as an unusual spate of production outages, causing a prolonged period of supply tightness, evolved further when the energy crunch hit in Europe, creating unprecedented costs for producers exposed to European gas prices.

Spot trade subsequently increased as traders took opportunities to trade around the steep price movements across the market. Argus Ammonia recorded over 1.5mn t of fixed-price trade in 2021, with a large volume of unconfirmed trade likely to have transacted in addition to this figure. This represents around 8pc of the global traded ammonia market. It is a steep increase from around 675,000t of confirmed trade in 2020, and 500,000t in 2019. While some of this is down to a lack of volatility in 2020-21, there is also a case to argue that parts of the market are becoming more liquid, with more willingness to engage in fixed-price spot trade instead of relying on contract shipments.

With so much uncertainty surrounding the outlook for 2022, it appears unlikely that ammonia prices will return to pre-2021 levels in the medium term, and further price volatility will be seen in the near-term. European ammonia production costs averaged around \$160/t in 2020, but have since risen sharply and were averaging just over \$1,000/t in the first two months of 2022, before spiking to over \$2,500/t in the immediate aftermath of the Ukraine-Russia conflict.

European ammonia production costs



With a lengthy supply deficit forecast in the west, the addition of over 1.3mn t of new capacity from the Middle East later this year is attracting close attention. This new capacity, most of which is coming from Ma'aden's new Ras al Khair facility, could create more opportunities for spot trade, especially as the region is well-placed to take advantage of the increasing arbitrage opportunities from east to western markets.

There is little doubt that the trading landscape for ammonia is starting to look very different in the years ahead, particularly with the interest being generated around low-carbon ammonia. New entrants are gathering on the sidelines of

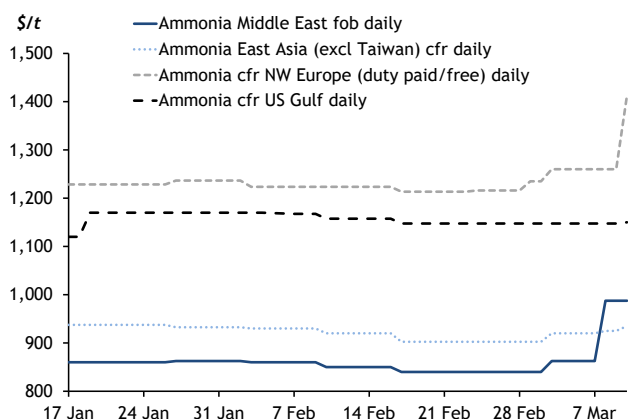
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the market, with banks, brokers and traders watching and evaluating how demand could develop in the years ahead. The ammonia market has rarely garnered so much attention, and this in turn is bringing more focus on how pricing mechanisms can evolve to support the market. We'll continue monitoring these developments in the [Argus Ammonia](#) price reporting service, as well as our [Argus Monthly Ammonia Outlook](#) and [Argus Ammonia Analytics](#) service.

Daily pricing gains momentum

In March 2021, [Argus Ammonia](#) launched a series of daily price assessments for the east of Suez markets, the east Asia cfr and fob Middle East price. This has been supplemented in January 2022 by the addition of key west of Suez pricing; cfr US Gulf and cfr northwest Europe. Argus' daily ammonia pricing has provided greater clarity on how markets are developing throughout the week. Clients have used the additional data points to support negotiations, and have found them particularly helpful for commercial decision-making during periods of dramatic price changes.

Argus daily ammonia pricing

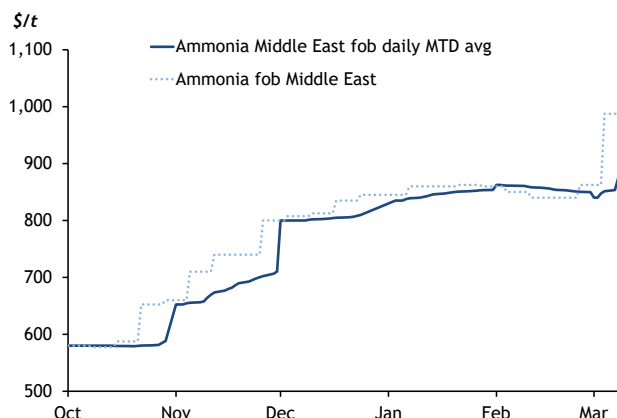


The predominance of contract pricing in the ammonia market has previously created some limitations for how spot liquidity can develop. Wide ranges have become prevalent especially when the market moves aggressively in either direction because weighting needs to be given to formula-based trade. Market participants also utilize the ranges in different ways in different regions, negotiating off the low, mid or high of a range, or applying their own premiums or discounts to certain regions. New entrants into the market are looking for a standardized approach, with a preference towards a flat price reference.

The Argus Daily Ammonia Marker (ADAM)

The Argus Daily Ammonia Marker is a new price mechanism launched in February which publishes a flat price based on Argus' daily price point. This is supplemented by a rolling monthly-average price for all the markets Argus assesses on a daily basis, which in turn provides a monthly price for the market to settle against.

Middle East ADAM vs daily pricing



SCB NW Europe Ammonia Curve

Argus has supplemented this daily coverage by publishing a forward curve for the northwest Europe market, providing further transparency and support for the development of a swaps market.

SCB NW Europe Ammonia Curve	
April	2,443
May	2,357
June	2,285
July	2,206
August	2,138

Data supplied by SCB

Argus Ammonia's new coverage offers improved levels of transparency and clarity, empowering market participants to utilize different approaches to navigate the challenges of both spot and contractual trading in the months and years ahead.

Would you like to know more?

Our team would be happy to discuss the ammonia market with you, and hear what data/analysis would help support you and your organisation. We are confident our analysis and data will provide great value to you.

See the next page for more details, or simply contact us: fertilizer-m@argusmedia.com | www.argusmedia.com

Argus ammonia market services

Argus Ammonia



Access accurate and reliable ammonia weekly and daily price assessments, real-time market news, market commentary and insight, trade trends, as well as key current and historical data.

Argus Monthly Ammonia Outlook



Insightful short-term ammonia market intelligence and outlook on prices, supply, demand and trade for the major fertilizer exporting and consuming regions. Includes the underlying data in Excel.

Argus Ammonia Analytics



Essential mid-to-long-term outlook and analysis for the global ammonia markets, connecting you with quarterly analyses alongside an annual report, an innovative and interactive data visualisation tool and the underlying data in Excel.

Argus Green Ammonia Strategy Report (includes 2022 updates)



Essential analysis of the exciting low and zero-carbon ammonia market with demand forecast to 2050. The report incorporates our multi-commodity expertise in ammonia, marine fuels, power and energy transition and is enhanced by our proven track record of delivering highly valued bespoke green ammonia studies.

Daily ammonia price assessments from Argus:

- Middle East fob
- East Asia cfr (excl Taiwan)
- NW Europe (duty paid/free) cfr
- US Gulf cfr

How Argus' daily ammonia prices will help support you:

Argus launched daily ammonia price assessments in early 2021 – it was a groundbreaking step for the industry, with Argus further enhancing the accuracy and frequency of its price reporting.

Our daily prices offer unique benefits:



Greater certainty

Increased price frequency gives you immediate clarity for volatile markets



Lower risk

Additional data points ensure your business calculations are more robust



Smarter outcomes

Daily data powers the most sophisticated data analysis and algorithmic trading tools



Confident approach

We give you the largest editorial team with the greatest geographical reach and most rigorous methodological adherence

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