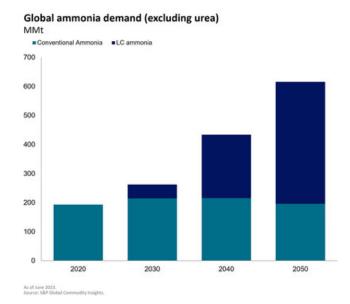
Ammonia Market to Triple by 2050 with Nearly All Growth Coming from Low-Carbon Supply

Global ammonia trade expected to increase ten-fold as demand for low-carbon ammonia used for shipping fuel and power generation transforms market

NEW YORK, July 11, 2023 / PRNewswire -- The global market for ammonia is poised to triple in the coming decades with nearly all of the growth coming from low-carbon ammonia, a new analysis by S&P Global Commodity Insights says. Driven by improved economics resulting from decarbonization policies, low-carbon ammonia is expected to grow from its current nascent state to 420 million tons—two thirds of the total market—by 2050.



"Decarbonization policies, including incentives in the U.S. Inflation Reduction Act and the EU's Carbon Border Adjustment Mechanism, are transforming the economic fundamentals of low-carbon ammonia," said Sean Mulholland, Director, Agribusiness Consulting, S&P Global Commodity Insights. "The transition from concept to reality is already happening."

The new strategic report, <u>Low-carbon Ammonia: Facilitating the Transition to a Sustainable Future</u> says that the potential use of low-carbon ammonia as a marine bunker fuel, industry feedstock and as a carrier for hydrogen used in power generation represents a profound shift for the industry—from one geared primarily towards fertilizer production to one driven by energy markets.

S&P Global Commodity Insights expects global trade of ammonia to increase nearly ten times over by 2050 (160 million metric tons) as a result. While most ammonia is currently consumed on-site to produce other products that are then traded, low-carbon ammonia will more often be traded as a commodity in its own right. The Americas, the Middle East and Australia are expected to emerge as major exporters with Europe and East Asia emerging as major demand centers, the analysis says.

"The rapid growth in ammonia driven by low-carbon supplies will change the current market beyond recognition," saidRyan Monis, Director, Chemical Consulting, S&P Global Commodity Insights. "The diversification of supply routes and demand applications will introduce carbon capture, renewables, power utility and shipping market participants to an industry currently dominated by fertilizer producers."

The current pipeline of low-carbon ammonia projects for power generation—with owners consisting of public utilities, oil and gas majors, investment funds and others—illustrates the shift towards a broader group of market participants, the analysis says. Joint ventures between renewable energy producers, hydrogen producers and ammonia producers can also be expected to emerge.

While decarbonization policies have provided an irreversible momentum for low-carbon ammonia, several factors will be key in determining the ultimate composition of the market, the analysis says.

S&P Global Commodity Insights expects 'blue' ammonia (hydrocarbon-based production coupled with carbon capture and storage) to be more economically attractive than conventional production in some key markets before 2030 due to a combination of carbon emissions penalties and production subsidies. However, 'green' ammonia (produced from renewable electricity) will require further policy support beyond the incentives already announced to make it cost competitive in most markets.

Other points of high potential impact on the development of the market include the development of certification and classification systems to harmonize international trade; greater clarity from some major markets regarding acceptable emissions thresholds for hydrogen and ammonia in their decarbonization plans; and the pace of innovation and efficiency improvements for ammonia's use in power generation, the analysis says.

"Despite some policy and technological uncertainties remaining, it is now clear that the fundamental economics of low-carbon ammonia have been transformed," said Monis. "We expect the number of projects reaching Final Investment Decisions to accelerate significantly in the coming years, not only in production capacity but also in the associated infrastructure required to take the low-carbon ammonia market from concept to reality."

In addition to the new strategic report, S&P Global Commodity Insights has also introduced a new Monthly Low-carbon Ammonia Report service. Produced by Fertecon, the fertilizer analysis team at S&P Global Commodity Insights and the leading provider of data and insights for ammonia for more than 40 years, the new monthly report offers a regular and recurring market analysis that provides business intelligence and short-term forecasts for the low-carbon ammonia market as an individual sector. For more information about the new Monthly Low-carbon Ammonia Report, visit: https://www.spglobal.com/commodityinsights/en/ci/Info/0423/lowcarbonammonia.html

Additional Ammonia Resources from S&P Global Commodity Insights:

Ammonia - Chemical Economics Handbook

Ammonia Fertilizer Market and Price Analysis

Interactive: Ammonia Price Chart

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