

RUSSIAN GAS CHEMICAL  
INDUSTRY. PART 2.  
AMMONIA: PROCEED AT YOUR  
OWN RISK

EXECUTIVE SUMMARY

**AUTHORS**



**Dmitriy AKISHIN**  
Division Head Gas & Chemicals  
[D.Akishin@vygon.consulting](mailto:D.Akishin@vygon.consulting)



**Artem LEBEDSKOY-TAMBIEV**  
Consultant  
[A.Lebedskoy-Tambiev@vygon.consulting](mailto:A.Lebedskoy-Tambiev@vygon.consulting)



**Anton KOROVYAKOV**  
Analyst  
[A.Korovyakov@vygon.consulting](mailto:A.Korovyakov@vygon.consulting)



**Ivan TIMONIN**  
Analyst  
[I.Timonin@vygon.consulting](mailto:I.Timonin@vygon.consulting)



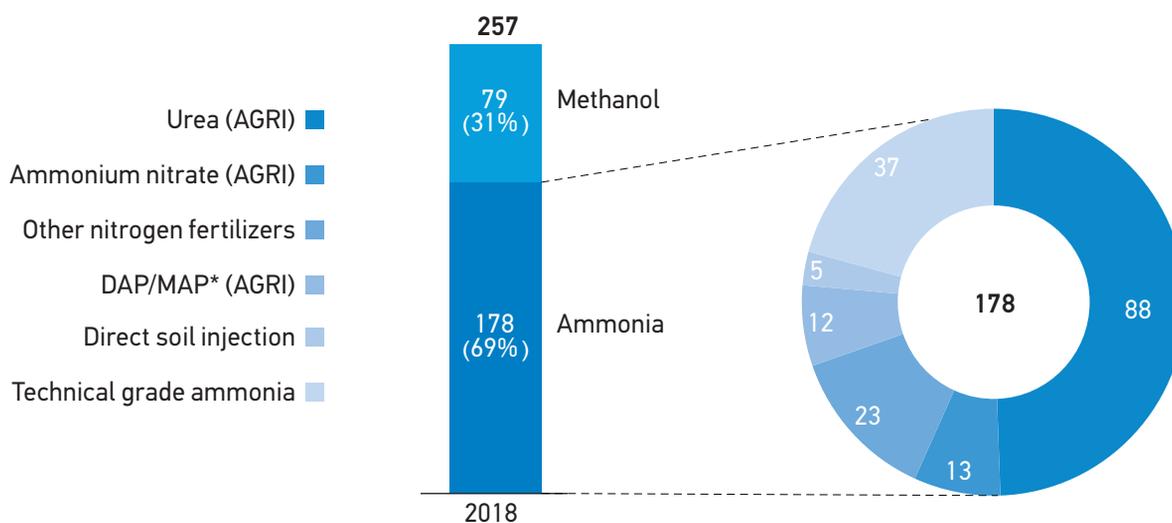
**Maksim SPIRIDONOV**  
Junior Analyst  
[M.Spiridonov@vygon.consulting](mailto:M.Spiridonov@vygon.consulting)

**SUMMARY**

The purpose of this research paper is to analyze an alternative line of methane chemistry through the prism of potential for natural gas monetization through ammonia, urea and ammonium nitrate. As for the agriculture – the major segment of ammonia consumption – the authors focused on the analysis of the nitrogen fertilizer markets and examination of industrial consumption.

- Ammonia and the products of its processing comprise the largest branch of methane chemistry. In 2018, global production of the commodity amounted to 178 million tons, of which 85% were used for fertilizer production (Figure 1).

Fig. 1. Global methane chemicals production structure in 2018, Mt



\* Diammonium phosphate / monoammonium phosphate

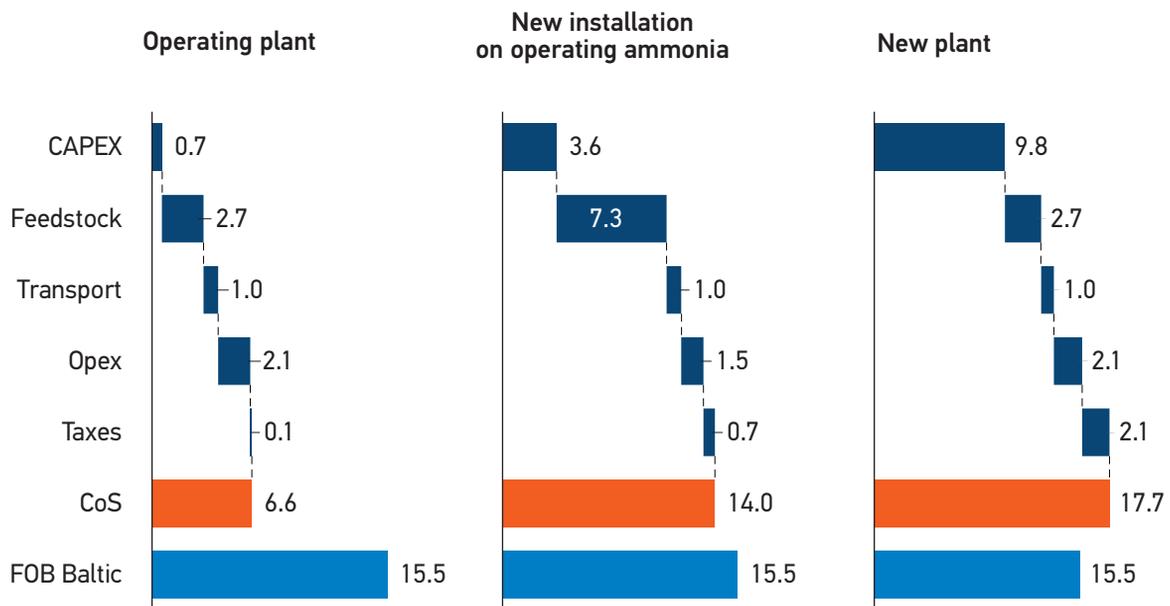
Source: IFA, Yara, VYGON Consulting

- The industry is resilient to global financial and economic shocks. Despite a possible slight decline in 2020 due to the COVID-19 pandemic, VYGON Consulting experts expect an almost full market recovery by 2021. However, in the long term, annual consumption growth for the product will not exceed 1.5-2%.
- Support measures, such as subsidies, guaranteed minimal prices for agricultural products or import customs duties can stimulate the agricultural sector as the largest consumer of ammonia-based chemicals. In the developed countries, the share of direct and indirect subsidies in gross farm proceeds can exceed 50%.

- Since the introduction of the food import embargo in 2014, domestic agriculture has developed as a result of the provided state support. The total amount of annual subsidies to the industry during 2014–2017 increased by more than 30% to almost 242 billion RUB, although it remained relatively small compared to other major producing countries.
- Today, large export volumes of ammonia and fertilizers are directed to target markets through transit. There are no marine ammonia terminals in Russia, although with the necessary port infrastructure, its transshipment in our territory remains competitive even at a cost of more than 45 USD/ton, which is significantly above the market price.
- Nowadays, the effect of import substitution in the agricultural sector has almost exhausted itself. In the next 5-10 years, we can expect a moderate growth rate of the Russian farming of up to 3%. As a result, according to VYGON Consulting estimates, ammonia consumption could grow by 10 million tons by 2025.
- Manufacturers of nitrogen fertilizers are usually characterized by a high degree of vertical integration up to the marketing of products through their own retail networks. In order to start up a fertilizers production business a new player must either develop a sales network on their own, or use someone else's one and take on the risk of dependence on the consumer.
- Due to the decline in global natural gas prices, the amount of the so-called "price subsidy" (that exists due to the difference in gas prices for foreign and domestic consumers) for Russian fertilizer producers decreased by several times (from 165 billion RUB in 2018 to about 33 billion RUB in 2019).
- A distinctive feature of international trade in fertilizers is the widespread application of protectionist import duties. The decrease in the price subsidy significantly reduced the competitiveness of Russian fertilizers on the global market. In particular, the authors point out that in 2019 European producers of some nitrogen fertilizers outperformed the Russian ones.
- Differentiation of duties imposed by importing countries for Russia, the United States and Trinidad and Tobago reduces the attractiveness of some of Russian nitrogen fertilizers in the European market despite the geographical proximity.

- The production of nitrogen fertilizers in Russia at operating facilities is still cost-efficient. As for the new projects, only urea plants based on existing ammonia capacity may be sustainably profitable given the current environment, while economic efficiency of such investments does not depend on the location of the plant (Figure 2).

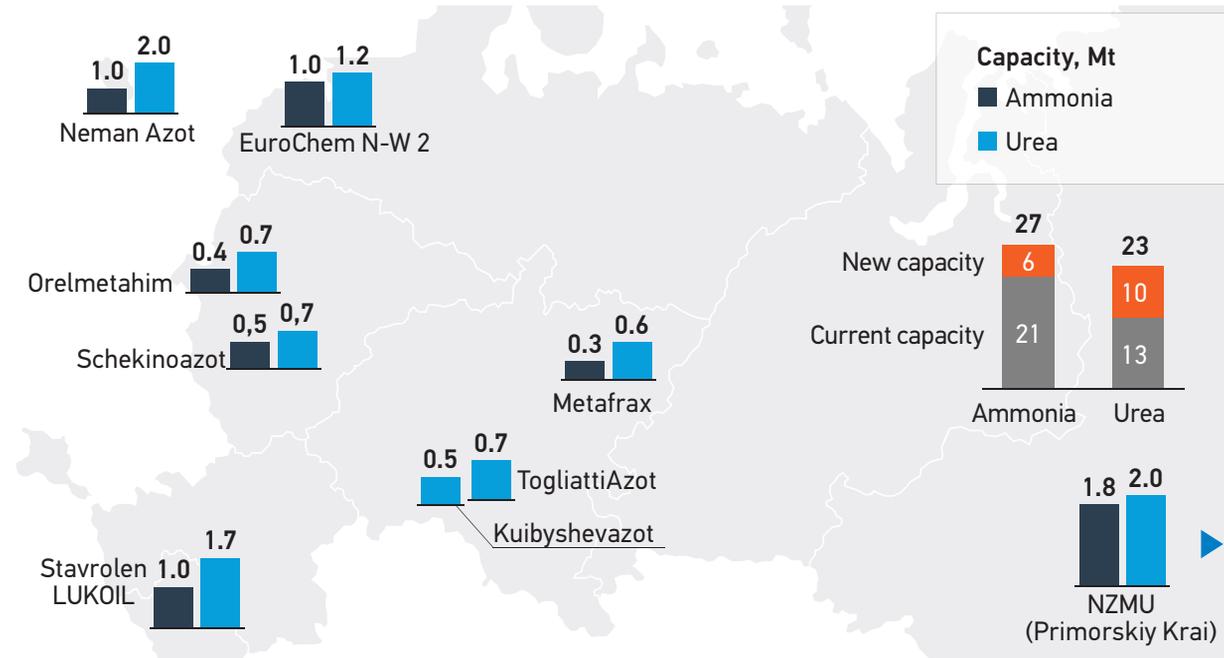
Fig. 2. Economics of urea production in Russian Baltic in 2019, th. RUB/t



Source: company data, VYGON Consulting

- Nine new major projects have been announced in the Russian ammonia industry with urea as the final product at all of them. In case of their implementation, the production of ammonia will grow by more than a third (up to 27 million tons), and urea production will double (up to 23 million tons) (Figure 3).
- Ammonia chemistry should not be viewed as a driver of gas demand in Russia. Incremental gas consumption of all the above projects will not exceed 7 bcm, which is 1.5% of the current total demand. However, investments in the industry will allow oil and gas companies to diversify their business in a period of high volatility and unstable demand in the hydrocarbon markets.

Fig. 3 New projects in ammonia methane chemicals



Source: company data, VYGON Consulting

- State regulation of gas prices in Russia along with the introduction of special duties for our producers restrict the inflow of foreign investment into the methane chemistry sector. Deregulation of gas prices for export-oriented ammonia plants is the first and the most effective measure that will eliminate restrictions to the industry development in the Russian Federation.
- A comprehensive plan for the development of the Russian gas chemical industry will close the huge gap between the top-level strategy of the entire chemical sector and the vital issues of gas chemistry development.

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### **VYGON Consulting**

123610, Russia, Moscow, Krasnopresnenskaya nab., 12  
3rd entrance, office 1608-1610

phone: +7 495 543 76 43  
e-mail: [info@vygon.consulting](mailto:info@vygon.consulting)  
web: <http://vygon.consulting>

