

The Impact of Securing Alternative Energy Sources on Russian-European Natural Gas Pricing

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Executive summary

In October 2014, Lithuania opened its first Liquefied Natural Gas (LNG) import terminal, a floating storage and regasification unit named the FSRU Independence, with LNG supplied from Norway. This permitted the country, previously completely dependent on Russian sourced gas, to secure, for the first time in its history, an alternative supplier for natural gas. That same year, Lithuania negotiated a 23% price decrease for natural gas from Russia through 2015, in line with lower prices charged to it by Norway.

In recent years, Europe has undergone many structural changes to reduce its dependence on Russian supplied gas. It has implemented legislation to encourage market liberalization and seen an increasing presence of hub based pricing for natural gas. These changes have been most effective in Western Europe, where access to non-Russian suppliers and connectivity to other Western European countries was possible primarily through existing infrastructure. Eastern Europe, which lacks such LNG import terminals and has less pipeline interconnectivity, has seen very little reform in terms of natural gas security. The advent of floating LNG import terminal technology, which is more flexible, cheaper and requires less regulatory approval than land based import terminals, provides these countries, previously dependent on Russian sources, with the opportunity to seek alternative suppliers and negotiate reduced prices, as demonstrated in the Lithuanian case. This paper explores the relationship between diversification and Russian gas prices.

An asymmetric Nash Bargaining model is introduced to theoretically examine this relationship. Model results suggest that as dependence on Russian supplied gas decreases, prices should also decrease. This result stems from the ability of gas purchasers to threaten reduced consumption of Russian gas by substituting the latter with LNG or other non-Russian supplies if Russian prices are not competitive. Using a correlated random effects framework, I estimate an empirical model that finds a positive correlation between a nation's average Russian gas dependency and prices paid for Russian gas. This suggests that further price discounts are possible, especially in Eastern Europe, if countries invest in diversification, such as building connections to existing or new LNG import terminals or building their own floating LNG terminals.

Using the model estimates, I find that the discounted gas price Lithuania negotiated, on an average, yearly basis, more than offset its investment to acquire the FSRU Independence. I show that both Estonia and Latvia can diversify from Russian gas and receive substantial discounts by purchasing natural gas from Lithuania, whose import terminal has the capacity to provide for 90% of gas demand in the Baltic Region.

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The gas market paradigm is changing in Europe and is providing new opportunities for those who have traditionally maintained very little power when bargaining with Russia and Gazprom. This paper finds evidence that European gas purchasers can tangibly benefit from pursuing diversification strategies.

Keywords Natural Gas Pricing, Asymmetric Nash Bargaining, Game Theory, Outside Options.