

The future of Russian gas exports

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Executive summary

Russia has for decades been the biggest supplier of natural gas to the European markets, with most of the gas transiting Ukraine on its way. However, disputes between Russia and Ukraine catalyzed construction of the Nord Stream pipeline, whereby Russia could bypass Ukraine by transporting some of its natural gas directly to Europe (Germany). More pipelines bypassing Ukraine are under construction or planned; one – Turkish Stream – to Turkey and Greece, and another – Nord Stream 2 – to Germany. While Russia repeatedly argued that its disputes with Ukraine should have no impact on its business reputation as a secure source of natural gas, the disagreements, which also affected EU member states, initiated policy development in the EU aimed at reducing the dependence on Russian natural gas. In the EU there is ambivalence towards new Russian pipelines, some arguing that they will contribute to improved security of supply, others maintaining that they will isolate Ukraine and other Central European countries, making them vulnerable to Russian economic or political pressure. Uncertainties about EU policies as well as European demand has given Russia an incentive to find additional markets for its natural gas, for example, piped gas to China and Turkey, or LNG.

This paper examines how the international repercussions of the conflict between Russia and Ukraine may have powerful implications for the Russian and European natural gas markets. We discuss how new pipes for Russian gas to Europe, bypassing Ukraine, may affect the natural gas markets. We also investigate to what extent gas exports from Russia to China, through the planned gas pipe Power of Siberia, will have an impact on the European gas market.

The present paper uses a well-established, numerical energy market equilibrium model (LIBEMOD) to analyze long-run effects of new pipes – intended to reduce natural gas transit through Ukraine as well as to reach new markets – on the Russian and European natural gas markets in 2030. LIBEMOD is well suited to explore these types of effects as it covers all

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European countries, including EU member states, Russia and Ukraine. It provides a detailed description of all major energy goods, including natural gas, through the entire energy value chain – investment, extraction of fossil fuels, production of electricity and bio energy, trade and consumption of energy – thereby offering a simultaneous and consistent determination of all prices and quantities in the energy markets. LIBEMOD takes into account different uses of natural gas (by sector and country), as well as inter-fuel competition between natural gas and other energy goods. Also the long distance between gas extraction sites and gas consumption centers in Russia, as well as the low and regulated end-user prices of natural gas in Russia, are integral parts of the model.

We find that each of the three projects Nord Stream 2, Turkish Stream and Power of Siberia leads to a moderate increase in net total Russian export (see the figure), but the increases are considerably lower than the capacities of the new pipes. Net gas import to EU-30 is somewhat increased if Nord Stream 2 is built, but slightly reduced if Turkish Stream or Power of Siberia are built. The impact on consumption of natural gas in EU-30 is minor in the three cases. If all three pipes are constructed, net total Russian export of natural gas increases by one third, whereas net Russian export to EU-30 is almost unchanged. We have also examined the impact of new export pipes for Russian gas if subsidies to large Russian natural gas consumers are reduced by 50 percent, or if there are no sales to, or transit via, Ukraine. We find that the effects of increased export capacity are much stronger in these two cases.

An important upshot of our analysis is that it is in Russia's interest to see a continued development of an open, flexible inner European energy market with many interconnectors. As shown in the simulations, central European countries are not drastically affected in the long run if supplies via the traditional transit routes through Ukraine are phased out; this indicates that the leverage Russia has on this country is already reduced. Paradoxically, this means that Ukraine could be less concerned over contracting substantial volumes of Russian gas in the future.

Russia's challenge in the European market is also caused by sluggish demand. Some of the stagnation is connected to a development where gas, in many circles, is regarded as a less reliable energy source than earlier; the resentment has partly been caused by Russian behavior. A development where the market becomes more open and flexible, and as a result seem more reliable, will be beneficial for all suppliers. Therefore, the policy implications for the EU and Russia are similar – to support further integration of European markets – but for somewhat different reasons. Russia wants to sustain, or increase, its exports to Europe, whereas the EU wants to make sure that the market functions well and that no country becomes vulnerable to pressure from Russia.

Figure. Net export of gas from Russia in 2030. Mtoe per year.

