Congressional Research Service
Informing the legislative debate since 1914
INSIGHT

The Role of Russian Natural Gas

March 23, 2022

Russian natural gas exports have been and continue to be of interest to Congress, whether regarding the Nord Stream 2 and TurkStream natural gas pipelines, European energy security, or geopolitical influences. Particularly for Europe, Russia's natural gas industry holds greater geopolitical significance than Russian oil. Most of Russia's natural gas exports to Europe, its largest market, are by pipeline, which limits Europe's supply flexibility. Some European countries are wholly reliant on Russian natural gas imports, and Russia has appeared to adjust its natural gas prices and, occasionally, supplies on the basis of its relationship with consuming countries and as leverage in contract negotiations.

In recent years, Russia has widened the market for its natural gas exports, primarily by liquefied natural gas (LNG). Russia has looked to Asia, particularly China, for future natural gas exports. In 2020, 17% of Russia's natural gas exports were LNG transported by ships and 83% were non-LNG transported by pipelines. In 2020, 78% of Russian natural gas exports went to Europe, including Turkey, 11% went to Asia, and 11% went elsewhere.

Energy is the most important sector in Russia's economy, and natural gas is a key resource. Russia is the second largest consumer and producer of natural gas in the world, and the top reserve holder and exporter. Natural gas accounts for more than half of Russia's primary energy consumption and exports are a major source of foreign currency and revenues. Oil and natural gas accounted for approximately 36% of Russia's government revenue in 2021. Natural gas made up about 13% of Russia's total exports (compared to 37% for oil). Gazprom, Russia's state-owned natural gas company, is the largest publicly listed natural gas company in the world by revenue. Russia is a founding member of the Gas Exporting Countries Forum (GECF), a cartel-like organization of natural gas-producing countries.

Natural gas is more a regional commodity than a global one like oil, meaning most natural gas is consumed in the country that produces it or in nearby countries. Major natural gas exporters, like Russia, can have a greater influence in markets, like Europe, where Russia is the dominant supplier, in part because pipelines more closely link producers and consumers. Natural gas is also expensive to transport, whether by pipeline or as LNG. Pipelines must be pressurized, while to liquefy natural gas means dropping its temperature to -260ºF, which contracts the volume by 600 times, making it economical to transport by ship.

In 2020, Russia supplied about 44% of the EU's natural gas consumption, with Germany and Italy being the top two recipients. Approximately one third of the EU members (Austria, Bulgaria, Estonia, Finland,

Congressional Research Service
https://crsreports.congress.gov
IN11900

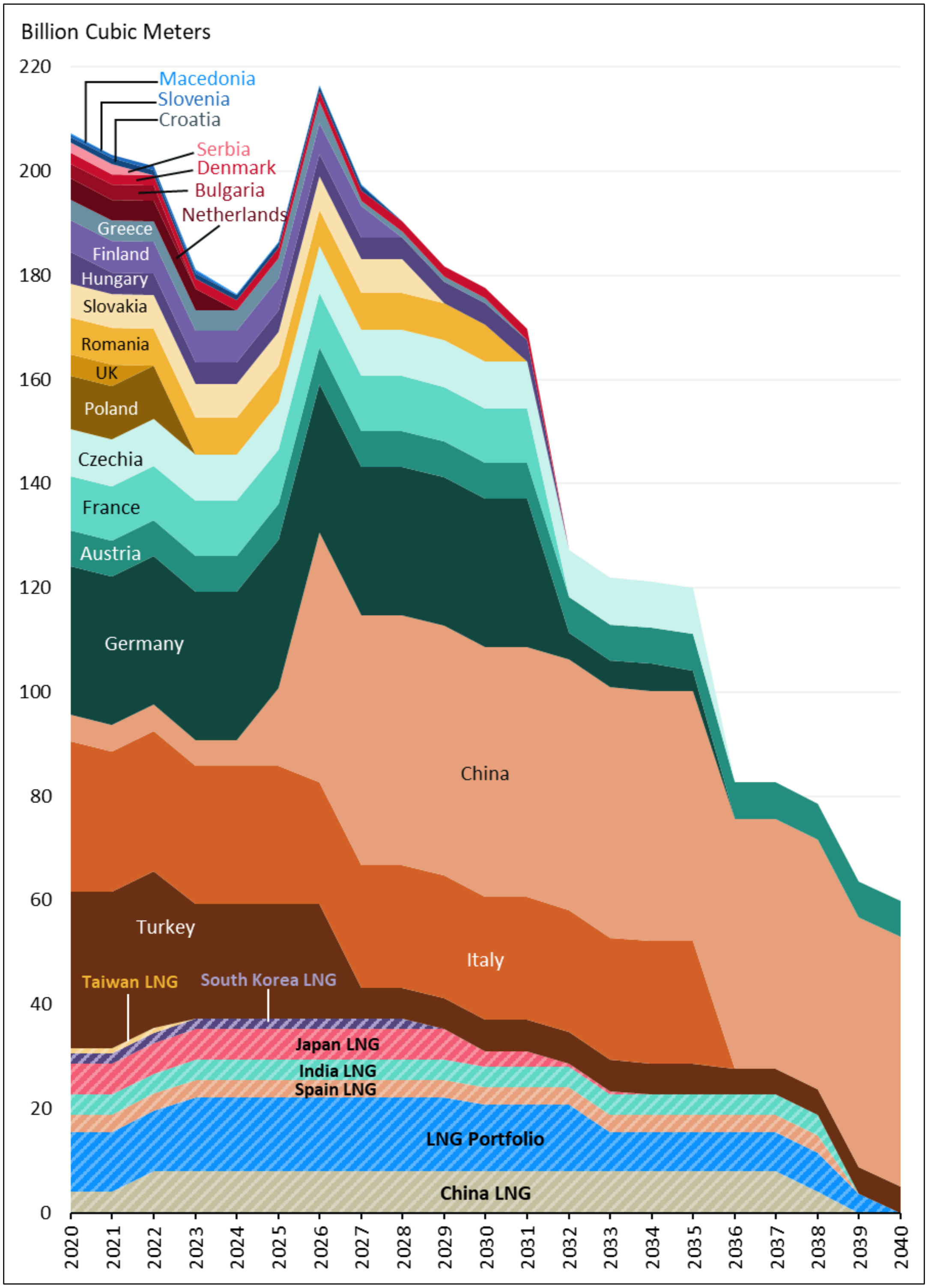
Hungary, Latvia, Poland, Slovakia, and Slovenia) import more than half their natural gas from Russia; some of which is re-exported to other countries. EU internal production of natural gas has declined for more than a decade; production in 2020 was 59% lower than in 2011. Although not an EU member, Turkey is a large importer of Russian natural gas, and one seen as growing. Additionally, Russian investments in European natural gas infrastructure like storage and distribution companies give Russia additional leverage over certain countries.

As shown in **Figure 1**, most of Russia's exports to Europe are by pipeline, but LNG exports are growing and give Russia a broader market for its natural gas. Russia opened a pipeline to China in 2020, in a deal that was reached in 2014, shortly after Russia's first invasion of Ukraine. Russia recently announced a possible second pipeline to China is in discussions. LNG exports from Russia mostly go to Asia, and Russia developed its own liquefaction technology, in part because of sanctions.

Europe and Russia: Bound by Contracts

In light of Russia's 2022 invasion of Ukraine, there have been calls for companies not to renew their natural gas import contracts with Russian companies. This is not easy with pipelines and LNG import capacity constraining Europe's ability to import natural gas from other countries. As can be seen in **Figure 1**, between 2020 and 2025, Europe is the dominant recipient of contracted Russian pipeline exports, but in 2026 China is set to become the single largest contracted importer; it is also a significant importer of Russian LNG.

Figure 1. Russian Natural Gas Contracts



Source: Cedigaz, an industry subscription database, www.cedigaz.org; and industrial articles.

Notes: The chart is a snapshot of Russian pipeline and LNG contract volumes from 2020 to 2040 and should not be viewed as complete nor comprehensive. Contract information is not usually publicly disclosed. The volumes shown for each country represent a consolidation of multiple contracts in the database, and many of the contracts started before

2020 and continue after 2040. Contract volumes are not actual imports by a country and do not include volumes bought outside of the contracts, possibly on the spot market. LNG Portfolio are volumes sold to companies, but do not have a destination specified in the contract. The final recipient will be determined by market conditions when the LNG is available.

As expiration dates approach, contracting parties must decide whether to renew their contracts and if so on what terms. Depending upon market conditions, the importer or the exporter may have a negotiating advantage. For example, contracts promulgated by U.S. LNG export companies have been instrumental in making natural gas a more tradeable commodity like oil. This has given consuming countries leverage in dealing with traditional suppliers, including Russia. After Lithuania installed an LNG import terminal, giving it an alternative to Russian pipeline imports, Russia agreed to more favorable prices for Lithuania in its contract renegotiation. Poland, on the other hand, is putting in enough non-Russian import capacity that by the end of 2022, when its last contract expires, it will not have to import natural gas from Russia. **Figure 1**, in part, shows where Russia, primarily through Gazprom, will face decreases in its export contracts in the coming years, possibly giving consuming countries more negotiating leverage and the opportunity to find other sellers.

Author Information

Michael Ratner
Specialist in Energy Policy

Disclaimer