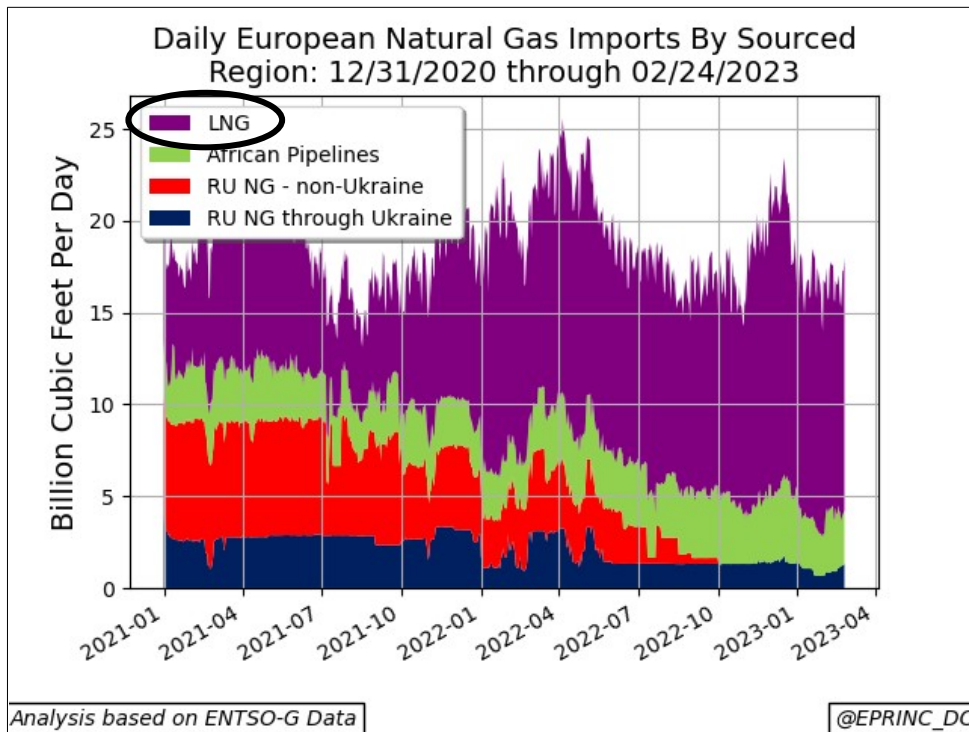
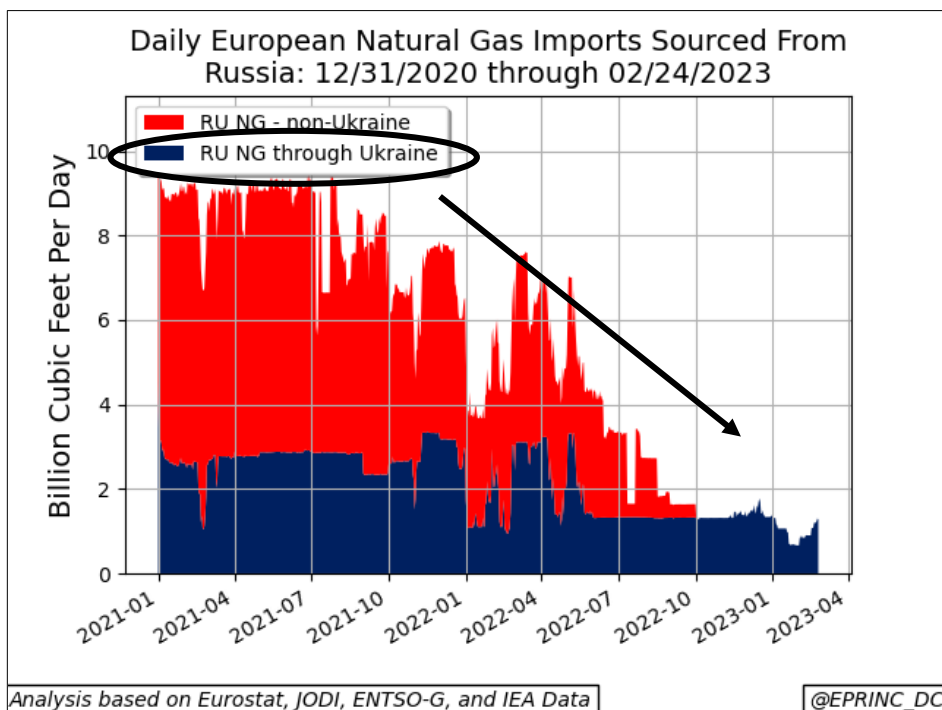


Chart 2023-09-Europe – March 1, 2023 – Daily Natural Gas Receipts: Jan 2021 to Feb 2023 On the Anniversary of Russia's Escalation

As policymakers continue to seek ways to cut imports of Russian natural gas, LNG became the primary source of natural gas for Europe over the course of 2022.



Despite non-Ukraine transit and the War, Ukraine has maintained throughput of 1 BCF/d of Russia's gas, utilizing about 1/18th of NaftoGaz's transit capacity.



During 2022, Poland's PGNiG, U.K.'s Ineos, France's Engie, among others, signed an additional 2 BCF/d in long-term contracts of U.S. LNG to begin deliveries between 2023 and 2026.

Italy has been the most active in its move away from Russian natural gas signing or strengthening natural gas procurement agreements with ten countries including Qatar, Azerbaijan, Egypt, and the U.A.E.

Germany's reliance on Russian natural gas has gone from 35% in January 2022 to 0% in December 2022.

Despite early fears at the time that Russia's escalation began, there have been no sustained sizeable physical disruptions. Aggressive replenishment of inventories coupled with a mild winter have helped. Combined, this has mitigated whatever potential severity and costs that could have been incurred.

However, Europe's actions have so far been tactical not strategic. Russia's War has led to long-term restructuring of trade flows, especially LNG ones. Forecasters foresee European LNG requirements moving from 10 BCF/d, as they were over the prior five years, to levels in the range of 17 to 20 BCF/d. This will require significant infrastructure and planning.

While Germany has begun to repurpose existing infrastructure with FSRUs (floating storage and regasification units) and build additional new facilities to accommodate LNG inflows, other potentially large LNG consuming European countries have not begun to act.

Furthermore, if East Asian consumers such as China and Japan revert to using more LNG, along with new LNG demand from South and Southeast Asian consumers, global LNG markets are set to tighten considerably without new liquefaction plants being commissioned.

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Key Events:

Even before Russia's February 2022 escalation of military aggression against Ukraine, Russia's Europe-bound pipeline natural gas exports had been on the decline from their highs of 15 BCF/d during 2019.

Failure on April 27th to receive payment for deliveries in rubles, Russia halted both transit through and deliveries to Poland and Bulgaria.

On July 27th, GazProm shut a key Nord Stream 1 compressor pending maintenance, further curtailing Europe-bound flows.

On September 26th, apparent sabotage caused a complete shutdown of the Germany-bound Nord Stream 1 system.