

Hybrid Warfare and Gaseous Absurdity

Description

The RF has demanded payment in roubles. The response of the EU states is to refuse this demand. The RF has indicated it will terminate the supply of LNG for non-payment. The EU suggests it will seek substitute LNG supply. The EU position represents an absurdist element of Hybrid Warfare. This post sets out some of the issues.

According to the IEA the EU consumed 155 billion cubic metres of LNG in 2021. Of this supply 45% was obtained from Russia (<https://www.iea.org/news/how-europe-can-cut-natural-gas-imports-from-russia-significantly-within-a-year>).

The RF 2021 EU import share was 69.75 billion cubic metres per year or 5.8 billion cubic metres LNG per month. If the EU seeks to substitute for RF LNG this is the approximate monthly quantity required.

The largest LNG tankers are the QMAX class. These can transport 266,000 cubic metres of LNG (<https://en.wikipedia.org/wiki/Q-Max>).

A simple calculation shows the monthly transport of 5.8 billion cubic metres of LNG by vessels with a capacity of 266,000 cubic metres of LNG requires a total of 21,852 shipments per month or approximately 705 shipments per day.

This volume of shipping will saturate the existing EU LNG offloading ports. These ports are already dedicated to handling other LNG imports. The time to unload an LNG cargo is approximately one day. This implies the need to construct 705 new LNG offloading ports because immediately following the day 1 arrival of 705 vessels there will be the Day 2 arrival of another 705 vessels with the same vessel traffic for Day 3 and all following days. The transit from Houston to Rotterdam takes 18 days outbound and 18 days empty return. With one day devoted to loading, and a further day to unloading, each vessel will spend 28 days on voyage. These figures make no allowance for vessel downtime for required maintenance intervals.

The transport of the required monthly volume of LNG will therefore require 705 QMAX x 31 days or total QMAX fleet of 21,855 vessels. Since the available yards are fully booked it is not clear when the full build out of the required fleet will occur. My experience in the offshore industry is that it takes approximately two years to construct an offshore drilling rig (MODU). The complexity of a QMAX may be slightly less than a MODU but even if construction were to require no more than a single year the required time to fleet completion would be 5,463 years if 4 yards were involved in the build out. At present the only yard competent in this vessel construction is in South Korea; the other three required yards would need to be upgraded, or new built. LNG tankers require a speciality steel to address thermal stress issues. This steel has a high nickel content; Russia is a major global supplier of nickel.

Since the EU has voiced the intention to fully eliminate the need for Russian LNG by the year 2030 the time to recover the investment in vessels and related LNG infrastructure is extremely limited. Within 8 years the EU seeks to fully replace the entire volume of LNG represented by Russian imports. The IEA

Net Zero Emissions by 2050 Roadmap helps fulfil the European Green Deal, an ambitious plan to eliminate all FF emissions in 28 years.

In 2020, U.S. natural gas production was about 10% greater than U.S. total natural gas consumption. The volume of produced gas surplus to US demand amounts to 91.5 billion cubic feet per day or 2.5 billion cubic metres of natural gas per day. This surplus is already contracted to the following countries:

TOP 10 US EXPORT DESTINATIONS

SOUTH KOREA.....	453,483
CHINA.....	449,667
JAPAN.....	354,948
BRAZIL.....	307,714
SPAIN.....	215,062
INDIA.....	196,218
UK.....	195,046
TURKEY.....	188,849
NL.....	174,339
FRANCE.....	170,780

The US is therefore in the position of withdrawing supply from some of the above to punish them for lack of compliance to US demands and to reward vassal states. Looking at the list, which countries do you think will be disfavoured?

The full list of US foreign LNG exports by country is found here:

https://www.eia.gov/dnav/ng/NG_MOVE_EXPC_S1_A.htm

Any commodity gravitates toward the highest price. The peak price is set by the marginal buyer. It is expected that the EU attempt to displace Russian LNG supply will be impossible to achieve in the short term without an extreme impact on price. These price impacts will not only affect EU consumers, they will impact all consumers including those in the US.

The EU will replace dependency on Russia by dependency on the “international rules based order” as interpreted by the global hegemon.

Mea Culpa – Review of Data

I utilized IEA figures for total LNG consumption in the EU and relied on an IEA statement that 45% of this LNG consumption was derived from Russian supply.

In fact Germany receives the majority of its Russian gas as pipeline NG. My error.

The EU presently has 37 operating LNG terminals and the IEA is reporting on LNG received via those terminals. Germany has at present no LNG terminals (3 proposed) but is believed able to obtain NG from an interconnection to the EU pipeline system. I have not yet found the supporting data but suspect some of the LNG unloaded in Rotterdam makes its way to Germany.

Germany once benefited from the Groningen gas field. It was the depletion of Groningen and problems resulting from land subsidence and earthquakes associated with gas withdrawals (See

https://en.wikipedia.org/wiki/Groningen_gas_field

) that resulted in a decision to cease gas extraction by 2022. This planned cessation has now been postponed until between 2025 and 2028.

The article at this link reports on German requests for additional supply of Dutch gas:

<https://www.politico.eu/article/the-netherlands-earthshaking-gas-deal-with-germany/>

Gas from the Groningen field has a low calorific value due to a high percentage of nitrogen. It therefore requires a distribution pipeline different from that for regular NG. According to the Politico article, Germany is seeking additional Dutch supply which suggests Germany has a connection to the Groningen gas distribution network. This would be a distribution network distinct from the EU NG pipeline system.

The implication of the correction is that I *underestimates* the total German demand for LNG imports to replace the existing flow of Russian pipeline NG which flow was not included in the cited IEA statistics for LNG.

The LNG volume is about 593 times less than the piped gas volume, resulting in a requirement for nine 266,000 m³ LNG containers per week to transport the RF supplied volume of 69.75 B m³ of gas over a year. Using a turn-around time of 9 weeks for loading, shipping to EU, unloading and returning to USA, – a spread-sheet indicates that 90 LNG vessels should do the trick. This includes an additional eight ships to cover for peaks, maintenance and other mishaps. So we are looking at a minimum of 90 man years to build the required LNG fleet.

Correction:

21,852 LNG shipments per month → 81 LNG shipments per month

705 LNG shipments per day → 2.6 LNG shipments per day

705 new LNG offloading ports → 3 new LNG offloading ports

QMAX fleet of 21,855 vessels → 91 vessels

Time to fleet completion 5,463 years → 20 years