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The Energy War:

How Europe Turned the Tables on Russia

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Preface

As cited in Joint Publication 3.07, the economic considerations addressed in this paper are a subset of the stabilization framework that assists the joint force commander in conceptualizing part of the operational environment (OE) of a nation that requires stabilization in support of U.S. national strategy and interests. The economic framework emphasizes the training and organization of forces prior to initial deployment. This paper outlines the framework to help organize stabilization activities to achieve their objectives, whether supporting combatant command campaign plans and integrated country strategies or in a major contingency operation. Military and civilian leaders link military and civilian activities to achieve unity of effort. Economic activities are one subset of the larger unity of effort. [1]

Introduction

In this regard, the energy war between Russia and Europe is part of this seamless economic framework. The energy war began in the context of the international energy market. This marketplace has a boom-and-bust energy cycle and is therefore extremely unstable. Russian President Vladimir Putin knows how to operate in this chaotic battlefield.

In 2014 Putin attacked Crimea and consolidated Russian political/military gains in Donbas. As we study Russian strategy, there are two strategically important questions: First, why did Putin just settle for Crimea and Donbas in 2014? Second, why didn't Russia invade all of Ukraine back then?

The economic context provides some insights. For starters, Putin knows that that Russia's energy reliant economy is a one trick pony. As a result, Russian military power is situational and depends on the price of energy. Back in 2014 the boom-and-bust energy cycle created low

energy prices. That meant the Russian economy was weak. A weak Russian economy could handle Russian interventions in Crimea and Donbas because these operations were relatively small, affordable and low risk. But a weak Russian economy in 2014 could not sustain a long, costly war of attrition in Ukraine.

Instead, Putin bided his time and patiently wait for energy prices to soar in the boom-and-bust energy cycle. At that moment, high energy prices turned Russia back into a militarily superpower. Russia's invasion of Ukraine in February 2022 was then more timely, more affordable, more viable and a more promising war of attrition.

Applying Theory to Practice

Nikolas K. Gvosdev, Jessica D. Blankshain, and David A. Cooper –- three scholars at the Naval War College, cite Amherst College Professor Alexander George's cognitive models of national security decision-making in a recent book they wrote. [2] These cognitive models help us understand Putin's behavior in terms of Putin's instrumental beliefs and the timing of Putin's actions. [3]

Instrumental beliefs: In terms of the utility and role of different means for advancing his interests in Ukraine, Putin weaponized natural gas in an effort to coerce Europe to abandon its support for Ukraine.

Timing of Actions. In terms of choosing the right time for the energy war, Putin patiently waited until 2021 when high energy prices strengthened the Russian economy enough to sustain a long, costly war of attrition in Ukraine. Putin also timed his last cut-back on supplies of natural gas to Europe as winter approached.

These factors helped Putin win the first phase of the energy war. However, Russia's early success was short-lived. The EU was resilient. Although Hungary broke ranks, EU solidarity generally held. In fact, Europe's decisive response exceeded expectations. EU leaders

crisscrossed the globe and lined up new sources of energy. European households and industry reduced their demand for Russian gas. A breakthrough in liquified natural gas (LNG) technology was especially decisive. And fate rewarded Europe with warm weather. As a result, the EU's hard pivot away from Russian gas was successful. Europe no longer needs much Russian gas.

No Clear Way to Offset Russian Losses

Now let's turn to Russia's future. Russia has now lost Europe as its main export market for its gas. To make a bad situation worse, Putin has done so without a clear way to offset his losses. Putin's best option would be a pivot toward China. But ending energy trade with Europe is not like growing onions somewhere else. There is no quick-fix replacement button. It will take 10 years for Russia to build costly new gas pipelines from Russia to China to replace European pipelines.

On the military front of the Great Power Competition, the US would appear to be the "odd man out" in the strategic triangle among the US, Russia and China. But the economic front is different. When it comes to trade, the West is a lot more important to Beijing than Russia. How much more? China's trade with the West ($1.62 trillion) is over 9 times the size of China's trade with Russia ($190 billion). [4]

Why was Germany so Vulnerable?

Now let's turn to Europe. A good place to start is with Germany, the economic powerhouse in Europe. In retrospect, two strategic questions come to mind. Why did Germany put itself at so much risk? Why was it so vulnerable to Russian blackmail? The short answer is German chancellors hoped the German-Russian energy partnership could be just as special as the German-French partnership.

A little history is important to understand how this happened. As part of the Treaty of Versailles Peace Treaty following World War I, the allies opted to keep the German economy weak. The allies thought it would be impossible for a weak German economy to have a strong military. How did this work out? It led to German resentment, the rise of Hitler and World War II. The great French statesman Jean Monnet had a better idea. Instead of economic coercion, Monnet

argued for German participation in the European Coal and Steel Community (ECSC) and economic interdependence with France. The French and Germans would bond and economic interdependence would turn French and German enemies into friends. Not a bad way to keep peace and security in Europe for 70 years.

Professor Ulrich Krotz at the European University Institute in Italy points out that relations between France and Germany went through three grand periods since 1871:

- Hereditary enmity (up to 1945),
- Reconciliation (1945–63) and
- "The Special Relationship" embodied in a cooperation called Franco-German Friendship (since 1963). [5]

If shared prosperity worked between Germany and France, why not try the same thing with Germany and Russia? Why not have a special relationship between Germany and France? Actually, German-Russian energy cooperation worked for a long time. In fact, Russia was a reliable exporter of energy to Germany throughout the Cold War. There was mutual benefit. If so, why did it fail?

Applying More Theory to Practice

The short answer is Putin was no Jean Monnet. That said, two cognitive models help us to understand why German chancellors were blind to Russian economic coercion when it was "hiding in plain sight."

- Gvosdev, Blankshain, and Cooper -- our three Naval War College scholars -- cite Colombia Professor Robert Jervis' research. Jervis says policymakers often make decisions based on their perceptions rather than the facts. They disregard inconvenient pieces of information that contradicts that preferred worldview. [6]
- MIT Professor Leon Festinger's model of cognitive dissonance tracks with this idea. In real life people often cling to their existing beliefs and preconceptions, often rationalizing away the new information as insignificant or explaining it away so as to preserve their existing attitudes and mind-sets. [7]

Using these models, Jervis would say the Germans misperceived Putin's intentions. Festinger would say the Germans suffered from cognitive dissonance. The Germans dismissed signs that Putin's determination to restore the Soviet empire would outweigh economic interdependence between Germany and Russia.

Others say shared prosperity between Germany and Russia might have worked if the West did more for Gorbachev. But Putin was also no Gorbachev. Putin harbored anger and hostility toward the west. He calls the end of the Soviet empire the greatest catastrophe in the 20th Century. Putin also hated NATO expansion to Russia's doorstep.

Why Boom and Bust Energy Instability?

If national security decisionmakers are ever going to stabilize the unstable boom and bust cycle in the global energy market, it's important to understand why both the boom and the bust have been happening since 2014.

For starters Europe struggled with trying to understand and navigate through the energy boom and bust cycle. For instance, why were energy prices so low in the boom phase of the energy cycle? And what needs to be done to stabilize energy prices and mitigate the bust phase of this resource war that Europe is now experiencing?

Back in 2014 US political leaders and many economists were quick to take credit for low energy prices. US and European consumers could buy cheap gasoline. Many consumers argued that it was time to celebrate. They wanted a victory parade.

But in economics and international business, appearances can be deceiving. For instance, shale oil producers in the United States would ultimately learn a bitter lesson about the cyclical nature of the international energy market. The more energy they produced, the more energy prices fell and the more their profits got squeezed. The point is that low oil prices created the worst slump that the global oil industry had faced since 1986. [8]

Oil companies in the United States were fighting for survival. Worst of all, oil companies were forced to cut capital spending to the bone and lay off thousands of their employees.[9] The U.S.

corporate approach of cutting costs and capital spending would come back to haunt Europe with a lack of energy by the early the 2020s. [10]

This short-sighted corporate mismanagement would create conditions for a dramatic rise in Europe's energy crisis that began in mid-2021 – eight months before the shooting war in Ukraine in February of 2022. Instead of this chaotic boom and bust cycle, there should have been more energy cooperation and price stability.

On the supply side, lower energy prices in part reflected booming U.S. energy production. The real "game changer" was the discovery of unconventional energy. The global energy market was then "swimming" in one trillion more barrels of oil that was not included in the world oil supply a few years before then. This new oil supply mostly broke down into three types of unconventional extraction of oil: Brazil's deep-water oil, U.S. shale oil, and Canada's oil sands.

On the demand side, there continued to be a sluggish global economy. For instance, Japan, Germany, and Italy were all suffering from near economic contraction. China's growth was rapidly slowing down and was a far cry from its double-digit growth before then.

Since there was still not nearly enough aggregate demand after the global financial crisis to generate strong economic growth, the Federal Reserve (Fed) increased the money supply via quantitative easing. Wall Street somehow misperceived that all of this money would be inflationary (despite data to the contrary) and would weaken the US dollar. As a hedge against their fears of a weak dollar and inflation Wall Street bought lots of oil on the futures market.

Back in 2014 the world had plenty of oil. Thanks to breakthroughs in energy technology, the new game changer was a new supply of unconventional oil (i.e., shale oil in the United States, oil sands in Canada, and deep-water oil in Brazil). The low oil prices reflected an oil glut outweighing weak demand for oil.

Wall Street especially worried about inflation after the global financial crisis when the federal government (Fed) bought a trillion dollars' worth of global assets to boost weak global demand. That spooked Wall Street, which took a leap of faith (rather than due diligence) and felt the Fed was creating runaway inflation. As a hedge against their fears about inflation, Wall Street

investors bought vast quantities of oil in the futures market as a hedge against inflation. That distorted the market and drove oil prices sky-high.

But Wall Street guessed wrong. Runaway inflation never happened in 2014. The Fed's growth of the money supply was nowhere near the huge shortfall in aggregate demand that the global economy faced after the global financial crisis. When this new reality became a painfully obvious mistake on Wall Street, there was a hysterical sell-off. Oil prices nosedived.

Once it became obvious Wall Street had guessed wildly wrong about inflation, the new worry was deflation and weak demand in Japan and the Eurozone, and a rapid Chinese economic slowdown. That, in turn, weakened the global demand for oil.

As discussed earlier, the combination of rising oil supplies, weak oil demand, financial shifts on Wall Street, and a strong U.S. dollar put downward pressure on oil prices. [11] The results were vicious price wars between global oil companies.

As we look back at the boom in the global oil market, it's clear that the world saw a surge in oil and gas investment starting at the turn of the century. That surge peaked in 2014, the same year Russia attacked Crimea. What drove this investment boom? That investment boom was driven by two factors. On the cyclical side there was buoyant demand and high energy prices. On structural side technological innovation in fracking unconventional deposits drove a U.S. shale oil and gas revolution. While consumers liked the low prices, the result was financial instability in the global energy sector. [12]

Booms Sow the Seeds of Busts

As the IMF points out, booms sow the seeds of their busts. Instead of steady as she goes investment, global oil and gas investment was sharply cut. [13] As we try to explain the boom-and-bust energy cycle, two questions come to mind:

- How did Europe go from low-cost energy to a high-cost energy crisis?
- And how vulnerable were energy markets before the Russian shooting war worsened the trend in high gas prices?

Take Germany. For a country that prides itself on being well organized, Germany was totally disorganized in the way it managed and poorly timed its transition to renewable energy. But other European countries took their cue from the muscle-bound European powerhouse.

- First, energy producers slashed capital spending and overall investment.[14] They especially divested rapidly from fossil fuels. Had there been a rapid rise in renewables, then renewables could have offset the rapid divestment in fossil fuels. But there was no sensible offset. Quite the contrary. Renewables failed to scale up fast enough. In fact, investment in renewable energy lagged far behind the UN target of net zero emissions by 2050 by about $1 trillion a year. [15]
- Second, European economists also underestimated rising demand for gas after the pandemic. And given the interruptions in renewable (wind, hydro, solar) energy production, it was only logical that European consumers and industry would turn to natural gas as a buffer to the long wait for renewables. The demand for natural gas in OECD countries far exceeded the supply of natural gas. In OECD countries, the share of natural gas in power generation rose from 23% to 30% during the same period. The global share of natural gas in total primary energy production soared from 16% in 2010 to 22% in 2021. [16]

If we fast forward to 2022 it's clear that the world has gone from energy abundance back in 2014 to energy scarcity today. European energy prices have soared 14-fold (from the third quarter 2019 to the third quarter of 2022). These high gas prices have also driven high inflation and dragged down GDP growth in Europe. [17]

Toward International Energy Stability

Instead of this chaotic boom and bust energy cycle, the international community must promote more energy cooperation and price stability. The time to set up institutions to avert energy instability is long overdue. The international community needs to create a bank as a lender of last resort for oil companies. However, a bank that bails out oil companies in distress is not all that is needed. We also need an early warning system for the oil industry.

If international strategists want to foster stability in the world, they need a clear understanding of the forces that determine the supply and demand for energy. Such an understanding will

help them shape national policy on matters with potentially unprecedented consequences. What is needed from world leaders is an unprecedented level of cooperation in the formulation of a long-term international energy strategy. One consequence of failure could be resource-driven conflicts that might have been avoided had policymakers understood the nature and extent of world oil supply and demand and taken decisive steps to deal with it.

The real danger is to relegate the world oil supply to the backwater of strategic studies. Strategists need to understand that world energy supply and demand is a global challenge that bears most heavily on the peace and prosperity of the international system. World leaders have an unprecedented opportunity to move this global issue to the top of their agendas. If they fail, their successors may have to deal with the problem "when it comes to visit" once again as a major and enduring energy war in the not-too-distant future.

Russia Gets Ready for the Energy War

As a result of energy mismanagement, Europe was not ready for an energy war with Russia. In contrast, Russia spent many years getting ready to launch an energy war. Russia built financial buffers to insulate itself and soften the blows from expected sanctions from the West.

Take food. The Kremlin opted for an import substitution strategy that applied countersanctions on food imports. Prior to the pandemic that reduced Russian food imports by one-third to just $ 24 billion. That signal inspired Russian farmers to increase agricultural production and made Russia more self-reliant in food production.

Not surprisingly, the Russian farming sector boomed. Prior to the pandemic Russian wheat production was the highest ever on record – and Russia earned a record $24 billion in agricultural exports in 2019, over twice what it made from arms exports. [18]

Far from being an economic basket case and collapsing, the Russian economy became more resilient and resurgent. Putin learned a bitter lesson from the simultaneous external shocks of low oil prices and economic sanctions against Russia. That meant Russia would build an economic fortress and be less vulnerable in the future. Russia would have financial buffers that would cushion the economy during phase one of the energy war with Europe.

This economic strategy worked, at least for a while. All three levels of the Russian government ran a budget surplus in 2018 and 2019. [19] Russia boosted its foreign reserves by 50% between the end of 2015 and the end of November 2019. Russia's foreign reserves rose to $570 billion – the 4th largest in the world. [20]

Russia now had enough foreign reserves to enable it to survive without borrowing for at least one year and Russia also took advantage of higher oil prices after 2014. Russia's finance ministry funneled excess revenues from taxes on oil exports into a giant Sovereign Wealth Fund (SWF). Russia's SWF rose to $125 Billion or 7.3% of GDP. [21]

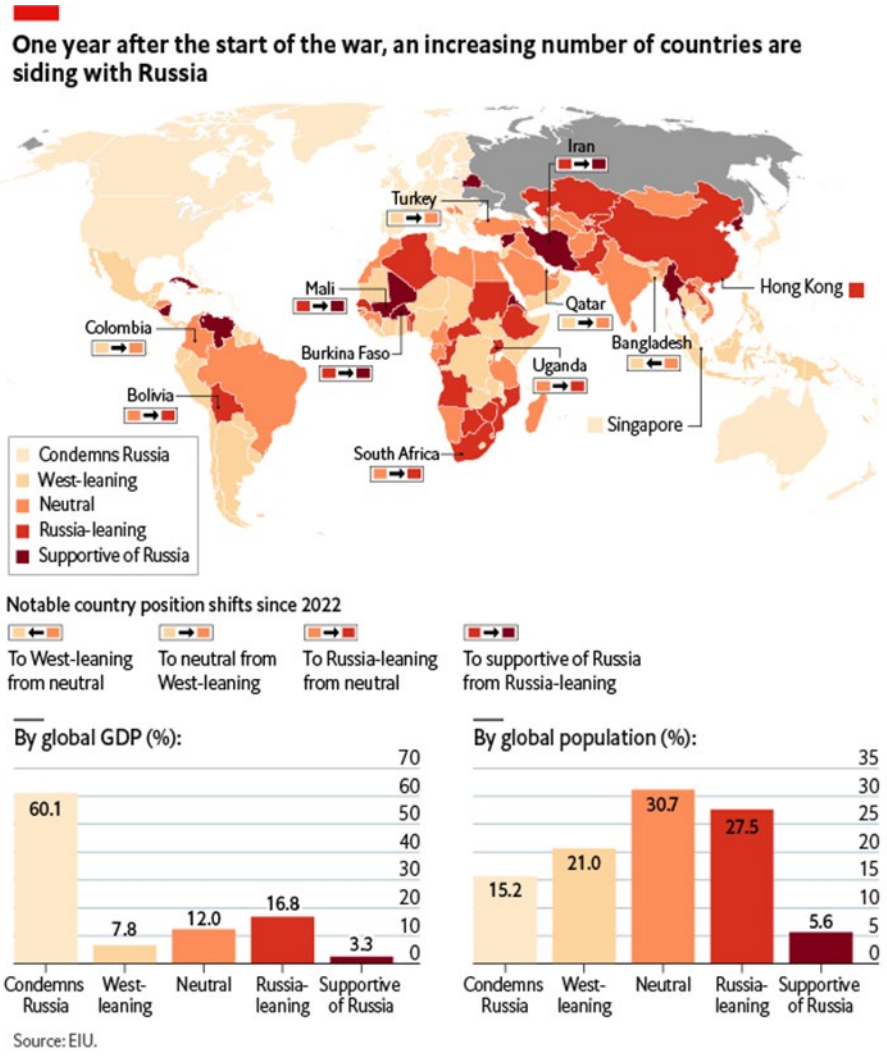
Global Support for Russia is Growing

In addition to Russia's energy ties with China, global support for Russia has been growing. As the chart below shows, the number of countries actively condemning Russia over the past year has fallen from 131 to 122. The number of neutral countries has risen from 32 to 35 (representing more than 30% of the global population). Some previously West-aligned countries, including Colombia, Turkey and Qatar, have moved into this category as their governments have sought to reap economic benefits from engaging with both sides. There has also been a large shift in stance among countries that lean towards Russia, whose number has increased from 29 to 35. [22]

But while this support has helped Russia along the way, we will see how Putin's economic squeeze on Europe is ultimately counter-productive. Perhaps the best insight comes from William Shakespeare in Hamlet. Putin would ultimately "hoist himself on his own petard" (i.e., hurt his own energy industry by being too coercive with his longstanding energy partner in his pursuit of elusive geopolitical gains).

Putin's willingness to weaponize energy should not have come as such a surprise to Germany. Putin's gas brinkmanship dates back to 2004, when Gazprom cut deliveries to Belarus, in a battle for control of a transit pipeline into Western Europe. In 2009, as Ukraine sought NATO membership under a pro-Western president, Mr. Putin ordered a sharp reduction in gas flows through the country; after Ukraine elected a pro-Russian president a year later, the Kremlin rewarded him with a 30 percent cut in natural gas prices. Even before Putin ordered tanks into

Ukraine in February 2022, Putin had been squeezing supplies of gas to the EU, which had been reliant on Moscow for 40 per cent of its gas imports. [23]



Soon after February's invasion in February of 2022, Putin reduced exports in the summer of 2021, and Russia did not refill Gazprom-owned storage sites in Europe. European countries-imposed sanctions on Russia. [24] But as the following chart shows, the EU's 40% over-

dependency on Russian gas shaped their attitudes toward sanctions. [25]

Europe's dependence on Russian gas will shape attitudes to sanctions

	Gas imports/ total imports (%)	Gas energy supply/ total supply (%)	Gas imports from Russia (%)	Russian gas cut-off vulnerability index*	Against sanctions on Russian gas
Hungary	45.1	33.6	95.0	57.9	x
Czechia	29.6	18.1	100.0	49.2	x
Latvia	23.1	21.2	100.0	48.1	x
Slovakia	25.4	24.9	85.4	45.2	x
Italy	41.5	41.6	43.3	42.1	x
Germany	31.0	26.6	65.2	40.9	x
Bulgaria	23.2	14.2	75.2	37.5	x
Poland	24.7	17.0	54.9	32.2	
Netherlands	23.5	45.1	26.3	31.6	
Romania	12.2	30.1	44.8	29.0	
Lithuania	18.6	26.0	41.8	28.8	
Finland	9.1	6.6	67.4	27.7	
Greece	13.3	24.0	39.0	25.4	x
Estonia	11.2	7.8	46.2	21.8	
France	32.3	15.8	16.8	21.6	
Luxembourg	16.4	18.2	27.2	20.6	
Spain	25.9	25.3	10.4	20.5	
Belgium	23.4	30.2	6.5	20.0	
Portugal	24.9	24.9	9.7	19.8	
Malta	10.0	45.3	0.0	18.4	
Slovenia	12.9	11.7	8.7	11.1	
Sweden	3.9	2.8	12.7	6.5	

* Average of first three columns.
Note. 2020 data.
Sources: Eurostat; Institute for International Political Studies (ISPI); EIU.

Many EU countries were reluctant to target important sectors such as energy because of their high dependence on Russian gas supply. Given their sense that sanctions were a double-edged sword, they didn't want to start biting the hand that fed them. As a result, many EU countries continued to tread carefully with their sanctions.

Russia's Repeated Cutbacks of Gas to Europe

Russian president Vladimir Putin used his grip on a large chunk of the world's energy supplies to inflict economic pain on Europe as part of his wider war strategy in Ukraine. Even before the 24 February invasion, Russia's aim was to make the supply of gas to Europe as unpredictable as possible and thus undermine economic confidence and EU resolve on sanctions. Toward this end, Gazprom, Russia's giant energy company, made a number of cutbacks:

- In September 2021, Gazprom, the Russia's energy giant, cut back on gas exports to Germany and the rest of the EU.
- In July 2022 Gazprom announced that it would cut gas exports to Germany once again. Data from Nord Stream 1 showed flows were reduced to about 20% of the pipeline's capacity. [26]
- Then on 31 August Russia launched its biggest weapon. Russia totally stopped the flow of gas to Europe through Nord Stream 1.[27]

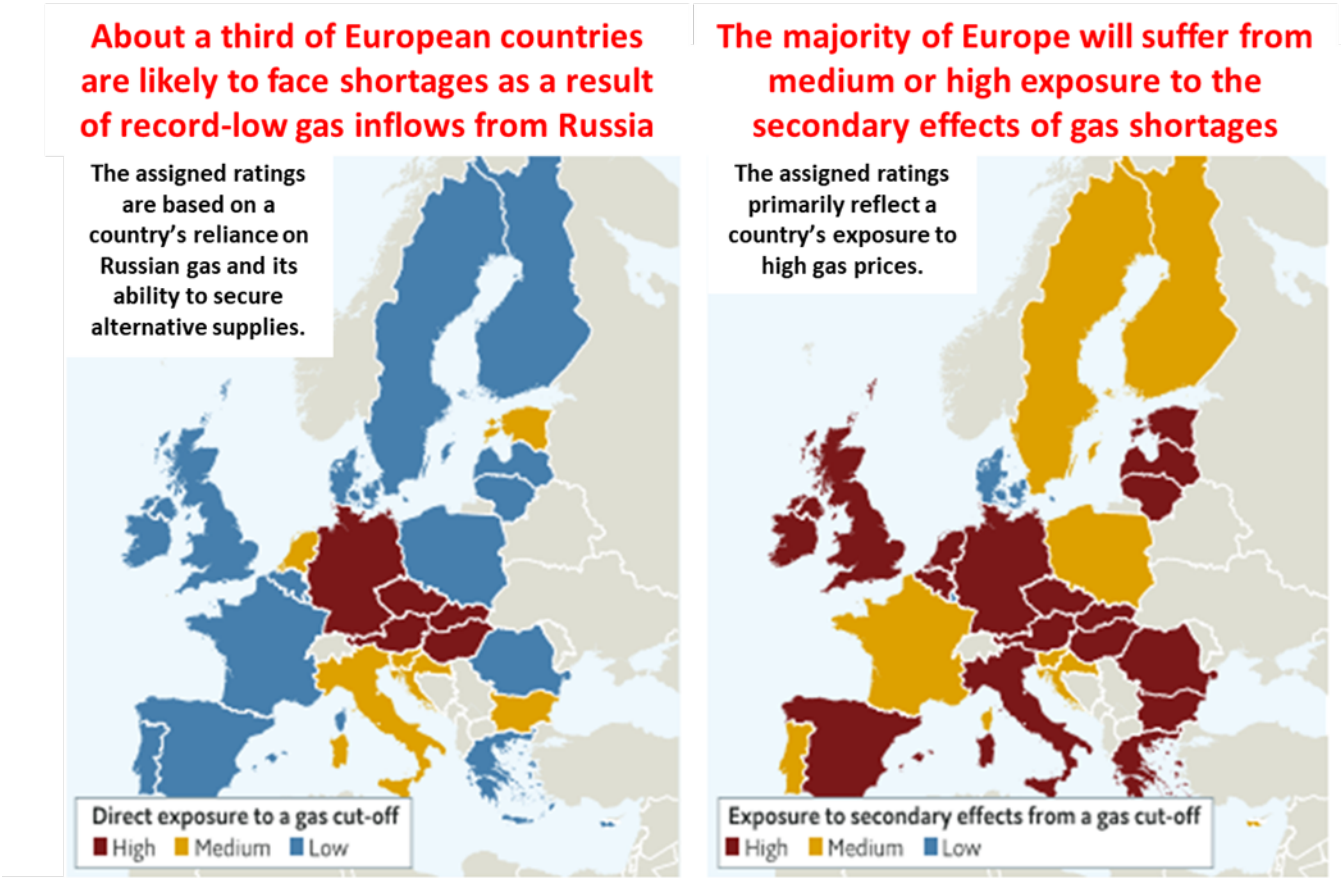
Russia Halts Gas Exports to Poland and Bulgaria

Putin's willingness to eventually halt gas exports to all EU countries should not have come as much of a surprise after Russia totally halted gas deliveries to Bulgaria and Poland on 27 April 2022. From a political perspective, Russia's decision to target Poland and Bulgaria was not a shock. Poland's hawkish rhetoric towards Russia and unyielding support for Ukraine, which it is supplying with heavy weaponry, made it a target of Russian retaliation. In contrast, Putin saw Bulgaria as a weak link. Bulgaria's ruling coalition was divided regarding its response to the invasion of Ukraine. Putin no doubt thought a cut-off of gas to Bulgaria could cause additional instability and further erode public trust in the government. [28]

Negative Economic Impact on Europe

Finland's economy minister Mika Lintilä said the region could be on the verge of the energy sector's version of the Lehman Brothers bank collapse in 2008. [29] As the following chart shows,

Russian economic coercion had a negative impact on both the availability of natural gas as well as its affordability. [30]



Note: EIU's Europe analysts have produced this infographic after conducting a qualitative assessment of recent trends and data.

About a third of European countries faced absolute shortages of natural gas because of record low inflows of Russian gas. But most Europeans also suffered from other economic hardships (such as high inflation and /or unemployment).[31] Altogether, these Russian cutbacks of natural gas had a devastating impact on European economies. Gas prices rose over 11 times higher. The cost of a megawatt hour of gas went from €25 to just over €340 in August.[32] That pushed inflation to 40-year highs. [33]

Berenberg Bank calculated that Europe's dependence on imported gas had a huge economic impact on EU economies.

- For every sustained €100/MWh increase in the price of gas, EU members would need to pay gas exporters an extra €380bn a year.

- That was the equivalent to 2.4% of Europe's GDP or 4.5% of household consumption.

Not surprisingly, consumer confidence dropped to the lowest level since records began in 1974 in the UK and it plunged to a near record low in the eurozone. Consumers braced for the biggest hit to living standards in a generation as wages fail to keep pace with prices. [34]

Questions over EU's Hard Pivot

Therefore, it was an open question: Would the EU be able to stand up to Putin? Just how successful would EU's hard pivot from Russian gas be? With so many balls in the air, success was certainly not certain. Would Europe line up enough new sources of natural gas? How extensive would the EU's ability be to substitute alternative sources of energy to replace natural gas?

There would be trade-offs between social and financial risks:

- Would governments use fiscal subsidies to soften the blow and shield consumers from rising gas prices?
- If so, could the EU find the right balance?
- Would that be enough to avert social unrest?
- Would too much financial support boost consumption of gas, reduce global supply and send gas prices soaring even more?

The EU also had to think about the weather:

- What kind of winter was expected?
- Would EU stockpiles on gas get it through a cold winter?

Finally, national security starts at home. How strong would the demand response be?

- Would households voluntarily reduce their demand for natural gas?
- Would industry have to ration or opt for black-outs?
- Would conservation efforts make a difference?

The ERU also had to dis-aggregate the needs of 27 EU states:

- Which of the 27 EU countries would be hit the hardest?
- Which industrial sectors in Europe would be hit the hardest?
- Given national diversities, would EU solidarity prevail or fray? [35]

The Showdown

The showdown between Russia and Europe occurred the first week of September 2022. As cited earlier, Russia launched its biggest weapon on 31 August Russia totally stopped the flow of gas to Europe through Nord Stream 1. That meant the only natural gas Russia was sending to Europe flowed through pipelines through Ukraine and the Turk Stream pipelines. This natural gas amounted to about a fifth of the total amount Russia had been sending in June.

But Putin was willing to close these pipelines as well. Putin played up this threat at an economic forum in Vladivostok on 7 September 2022. Putin warned that Europe would "freeze, freeze" if the EU were to proceed with a $60 price cap on Russian gas, saying Moscow would retaliate by "not suppling anything at all if it is contrary to our interests. No gas, no oil, no coal, no fuel oil, nothing," he said. [36]

Russian officials were watching and waiting for what they believed would be the inevitable collapse of European resolve as the economic pain bites. In an interview with the Russian state-run news agency Tass, Russian energy minister Nikolai Shulginov said "I think that the coming winter will show how real their belief is in the possibility of refusing Russian gas," "This will be a completely new life for the Europeans. I think that, most likely, they will not be able to refuse." In short, Putin expected European unity against Russia would crumble under the weight of high gas prices. [37]

Would EU leaders stand up to Putin?

Would Putin's blackmail work? Would EU leaders "cave in" to energy coercion and renege on their commitment to Ukraine? EU leaders sent a clear response. Guess again Vladimir. Not on our watch. We have mobilized for war and made a hard pivot away from your unreliable natural gas. [38]

How did an ex-KGB officer like Putin badly underestimate the resilience and resolve of the EU? Colombia Professor Robert Jervis reminds us that even the most intelligent human beings have cognitive limitations. [39] To compensate for their cognitive limitations, they often rely on cognitive shortcuts. For example, MIT Professor Leon Festinger might talk about Putin's cognitive dissonance. [40] Putin was determined to maintain cognitive consistency and wishful thinking about prospects for energy coercion against the EU in the face of psychologically uncomfortable new information about EU resilience and resolve to support Ukraine.

EU Starts Winning

Instrumental beliefs like this blinded Putin and his enablers to EU's ability to mobilize a hard pivot away from Russia gas imports. The EU had totally turned the tables on Russia. Ursula von der Leyen, European Commission president, announced that Russian gas was rapidly decreasing in importance as it found new sources of supply.

- Russian natural gas had fallen from 40 per cent of EU gas imports before the war to just 9 per cent in early September 2022.
- Gas storage at EU facilities rose to 82%, well ahead of the 80 per cent target the bloc set for the end of October. [41]

Rising EU Confidence

As a result, confidence was growing in European capitals that Europe could get through the winter without severe economic and social dislocation or energy rationing. Von der Leyen said the EU had "weakened the grip that Russia had on our economy and our continent." [42]

Von der Leyen became confident enough to declare victory in December 2022: “We have managed to withstand Russia’s energy blackmail . . . the result of all this is that we are safe for this winter.” [43]

Admittedly, LNG was a more costly replacement and more expensive for consumers and businesses than natural gas exports from Russia. These consumers and businesses were understandably concerned about skyrocketing energy costs. But this affordability issue was a separate question from whether there is enough gas available for Europe to fully replace Russian supply. [44]

In this regard, European governments were also showing confidence in already prioritizing fiscal relief for consumers with respect to both heating and electricity costs with massive subsidies and transfer payments. European governments were cushioning the blow of higher gas prices for households and companies. EU governments spent about 3 per cent of national income on energy subsidies, according to think-tank Bruegel. [45]

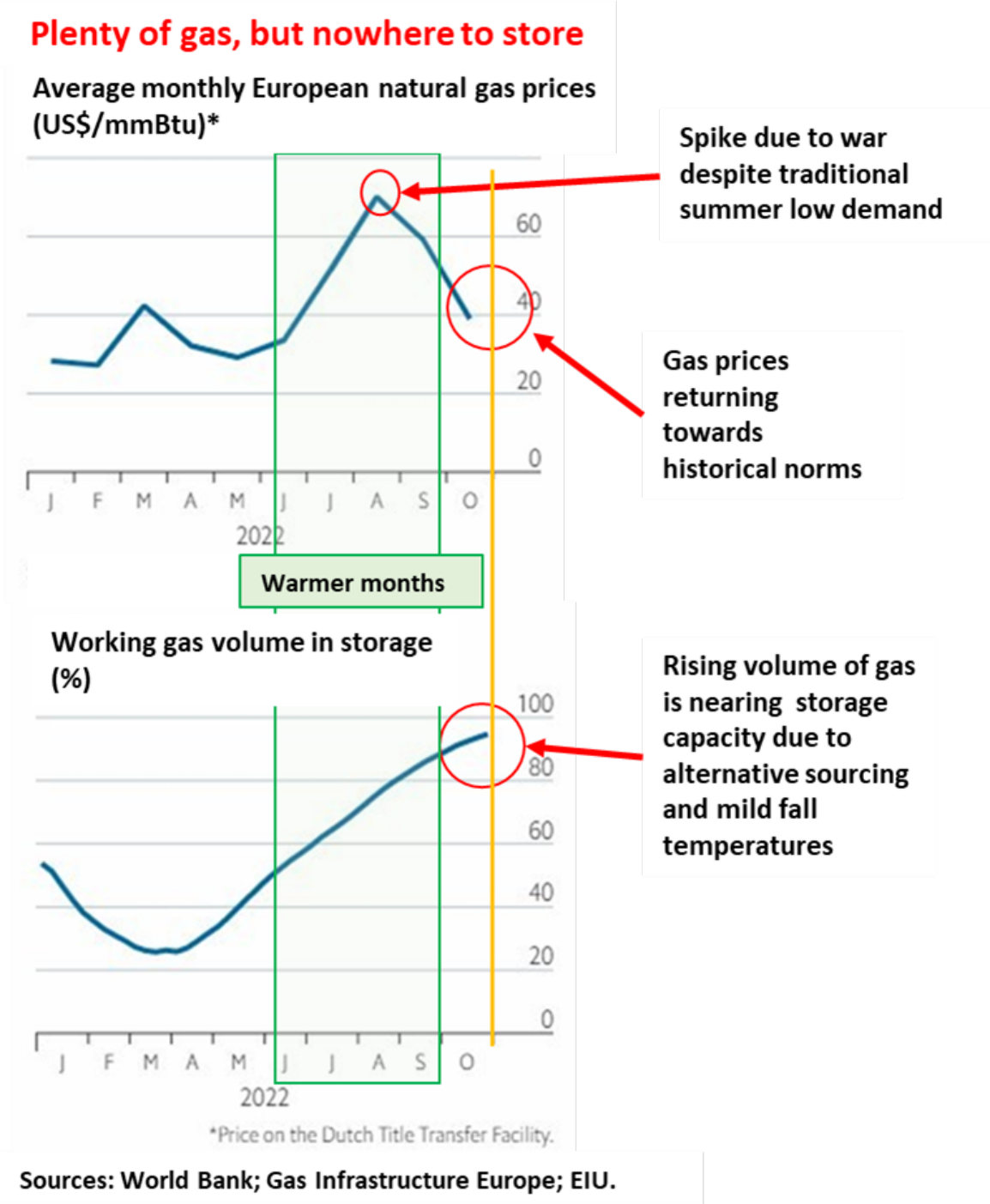
As 2023 started, European gas storage facilities were roughly 85 per cent full compared with an average of 70 per cent at the same time of year during the past five years. [46]

The European price of natural gas was down by more than 75 per cent from its peak and hovering at around €75 per MWh in the first week of January. That was still three times normal levels and much higher than in the US, but a price that many households and industries felt was manageable. [47]

Ole Hansen, head of commodity strategy at Saxo Bank, said that with European gas demand down 10 per cent, European gas prices needed to stay low in order to divert LNG shipments away from Europe in order not to overwhelm storage facilities. [48]

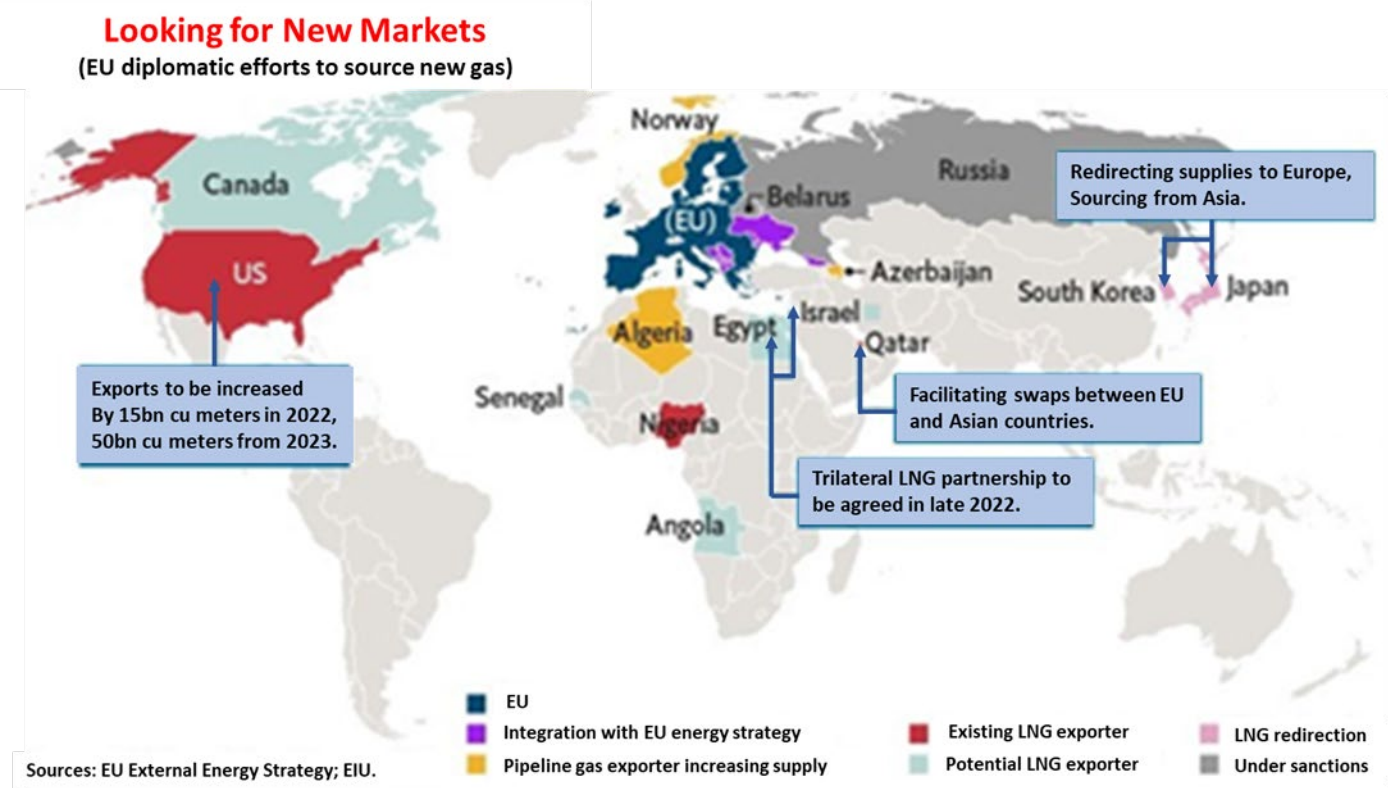
The chart below shows the recent collapse in European natural gas prices. Prices fell from a high of more than US$100/mmBtu in late August to about US$40/mmBtu in October. The fall is due to the near-total build-up of natural gas reserves in storage. By November European storage was 95% full.

That gas reserve level falls during the winter. But it has fallen less than usual because of increase of supply and decrease in demand. As a result, the filling level by March 2022 was around 55% which is much more than the 26% in the same month of 2022 reserves. The EU had gotten to the point where there is plenty of gas but nowhere to store it in November. [49]



How did the EU Turn the Tables on Russia?

European leaders turned the tables on Russia by crisscrossing the globe and lining up new sources of energy. See chart below. EU leaders visited Algeria, Qatar, Senegal, Congo, Norway, Azerbaijan and Canada and negotiated deals to replace Russian supplies. [50] Germany especially leaned heavily on Norway and the Netherlands, which agreed to extend the life of its biggest gas field to combat the energy crisis. Germany's dependence on Russian oil fell from 50% before the energy war began to 10% by September 2022. [51]



Europe has also reconstituted its energy supply mix in a way that should be deeply worrying for the Kremlin. [52] Renewables developers have accelerated the continent's green push takes up the energy security mantle. Coal suppliers are winning too, for now at least. [53] EU sanctions also stopped purchases of seaborne Russian crude oil and all oil products on 5 December 2023 and 5 February 2023. In short, all EU energy producers have helped the cause to move away from Russian energy coercion.

EU officials held meetings with officials in Nigeria on increasing natural gas exports to Europe, and Japan has agreed to divert some surplus exports. In addition, liquefied natural gas (LNG) suppliers in the US and elsewhere were winning with new supply deals. High energy prices and the fear that Russia could cut off natural gas exports to Europe led to discussions around LNG as a potential solution to the region's energy security. The US negotiated with Qatar, the world's largest natural gas exporter, to divert some of its existing LNG exports from Asia to Europe.

The EU's Amazing Turnaround

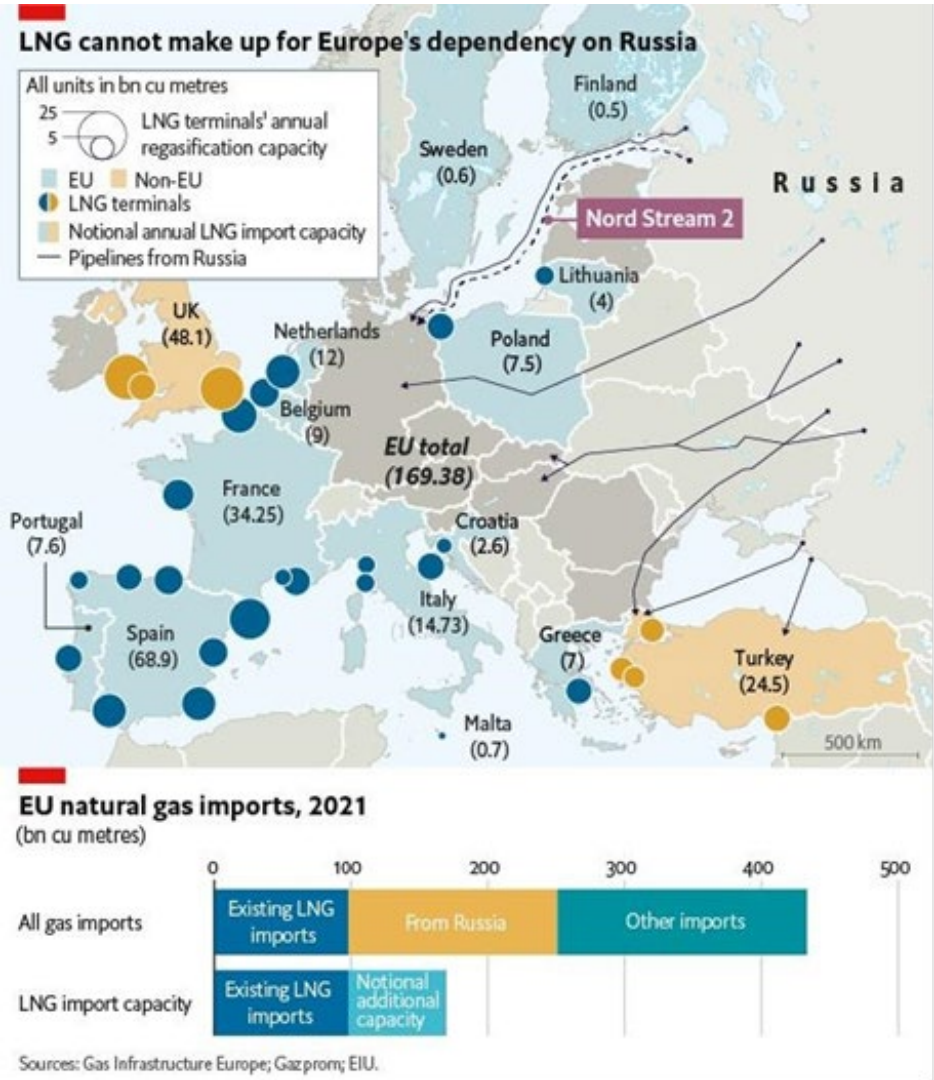
If we look back to September, it's clear the EU orchestrated an amazing turnaround. Back then, Putin warned that Europe would "freeze, freeze" if the EU were to proceed with a price cap on Russian gas, saying Moscow would retaliate by supplying "no gas, no oil, no coal, no fuel oil, nothing."

To sum up, Europe turned the tables on Russia. Gas storage in Europe is more than 95% full as of Nov. 19, surpassing the EU's 80% target level and, more importantly, complementing demand destruction caused by unreasonable prices and energy-saving measures. As a result, a resilient Europe avoided acute shortages and blackouts during winter and now in late March. Europe's dependence on Russian gas has also declined from 40% pre-invasion to less than 20% of its total imports. [54]

Initial LNG Pessimism

To fully appreciate this turnaround let's do a short case study of LNG. Shortly after Russia invaded Ukraine, EU leaders were pessimistic about LNG making up for Europe's dependency on Russian gas for the following reason. LNG needed to ship to specialized regasification terminals. The combined regasification capacity of all EU terminals was roughly 170bn cu meters per year. Given the fact that the EU imported almost 100 cu meters of LNG in 2021, its regasification terminals have a notional additional capacity of about 70bn cu meters. Unfortunately, that was less than half of the 155bn cu meters of gas provided last year via Russian pipelines. [55]

Then on 25 May 2022 US President Joe Biden, offered to increase the supply of LNG by an additional 15 cubic meters. President Biden said that the US would work to increase the supply of liquefied natural gas (LNG) to Europe this year, targeting an additional 15bn cu meter (compared with a total of 22bn cu meters in 2021). The White House described the initiative—which is designed to help Europe to reduce its dependency on Russian gas as quickly as possible. [56] However, that would do little to fill the gap. The point is it appeared to be very difficult to replace such a large quantity of gas. And insufficient infrastructure also made it appear difficult to fill the gap. [57] See chart below that shows why there was not enough LNG to fill the gap in 2021: [58]



The Situation Changes

But then things in the fall of 2022. Putin's plans to stoke fears of a European freeze come winter (2022-23) backfired. While Russia needed to sell the EU its natural gas, Europe no longer needed these supplies. Gas was becoming a buyer's market.

Professor Sonnenfeld's analysis of underlying supply patterns reveals that, contrary to common belief, Europe is securing enough gas and LNG liquefied natural gas from global markets to fully substitute for lost Russian supplies already.

What is more, it can fully replace every bit of Russian gas without any need for demand destruction or even substitution away from gas. Since the invasion of Ukraine in February, EU sourcing of Russian gas has plummeted from 46 per cent to 9 per cent. This pivot came partially through increased piped gas from Norway and Algeria. Even more noteworthy, the dramatic increases in shipped LNG imports from the US and elsewhere replaced the lost Russian vaporous gas from the targeted pipelines.

The LNG Game Changer

While some say fate giving Europe warm weather should get the lion share of the credit for turning the tables on Russia, I would argue that the revolution in LNG deserves a lot of credit as well. In this regard, Professor Sonnenfeld calculated that new LNG supply surge to the EU approached 40% of total global LNG supply. He concedes that it was easy to overlook this LNG revolution because it was still very new. But his review of every large LNG development project, liquefaction terminal and production field showed that in this past year alone, more than 100bn cubic meters of additional LNG supply was expected to be brought online. This was a 20% increase in total LNG supply. These new additions to global supply were enough to fully replace Europe's dependence on Russian gas from the Nord Stream and Ukrainian transit pipelines.

How was it possible to scale up LNG so fast?

- Europe has been successful in acquiring floating storage regasification terminals (FSRUs), mobile LNG terminals that can be installed quickly.

- By next winter Europe expect six FSRUs to be online in Germany, and an additional two in Italy, along with one recently installed in the Netherlands.
- The new LNG capacity will allow for greater throughput of LNG from tankers onto the European grid, allowing overall LNG imports to increase significantly.

In Germany, Europe's biggest consumer of Russian gas, there is a rush to build terminals on the North Sea coast to receive shipments of LNG. LNG, which arrives by seagoing tanker from producers including the United States and Qatar, was once considered an expensive alternative to Russian gas delivered by pipeline. Now it is seen as the most readily available source of fuel to make up for the shortfalls. [59]

To sum up, all of Professor Sonnenfeld's indicators suggest that contrary to fears of a supply crunch, Europe has secured enough gas and LNG from global markets to fully replace supplies from Russian gas. [60]

The Demand Response

Equally important was a study by Economics Professor Ben Moll of the London School of Economics that included evidence that higher gas prices (Giles) were encouraging households and companies to cut their gas consumption and find alternatives to Russian supply at low costs. This also showed that European economies to be more resilient than feared. [61]

"The demand response was much larger, and the economic costs were much smaller than many observers predicted earlier last year, in particular industry CEOs and lobbyists who predicted economic Armageddon if Russian energy were to stop flowing," Moll says. [62]

Russia's Coercion Loses its Potency

By September 2022, it was clear that Putin's energy coercion strategy was losing its potency. Putin overplayed his hand when he closed Nord Stream 1 on 31 August. That action was supposed to be the Kremlin's big weapon that would cause gas prices to soar. But even the market dismissed Russia's announcement. [63] In many ways closing Nord Stream 1 was Putin last big weapon. Putin also had limited energy ammunition left. [64] Putin learned that the potency of

energy as a weapon only worked well when the EU was unprepared for an energy war. [65] In fact, Putin's energy coercion backfired.

Russia's best option at this point is to soften the blow is to pivot toward China. But Putin is discovering that the ending energy trade with Europe is not so easily replaced. The China option is simply not going to happen in a way that makes up for losses in Europe; [66]

The single pipeline connecting Russia to China only carries 10% of the capacity of Russia's European pipeline network. And China is not rushing to build any new ones. [67] Beyond those practical difficulties, there are also likely to be limits to China's appetite for more Russian energy. One of the abiding principles of Chinese energy policy for the past two decades has been supply diversification. Beijing will see Europe's pain today as not just an opportunity to buy cheap resources, but also as a cautionary tale of over-reliance on Russia.[68]

The China option will also come with a hefty price tag as many billions of dollars would have to be spent on infrastructure to link Russian gas fields to China. [69] It will also take 10 years for Russia to build costly new gas pipelines from Russia to China to replace his energy exports to Europe.

In addition, Putin has set its own energy industry on a perilous trajectory. [70] Russia lacks the energy technology to be successful without western oil and gas technical expertise. And that option is long gone.

Russia's Long-Term Decline

There is no question that Europe and Russia both face difficult challenges. But if we take the long view, Russia is on balance declining more than the EU as an energy superpower due to the structural problems plaguing this sector.

Earlier in this study, we noted that Russia had taken steps to insulate itself with financial buffers. As a result, Russia was ready for the energy war. In contrast, Europe was unprepared. Europe never saw this energy war coming. Europe's cognitive consistency was economic interdependence. Europeans dismissed the geopolitical consequences of Putin harboring anger

and hostility to the west over a) the end of the Soviet Union and b) NATO expansion to Russia's doorstep.

However, Russia's "victory" has been short-lived. This is partly because Russia's strategy was counter-productive by zeroing out 80% of Russia's its own gas exports to the EU in September 2022. That only left 20% of Russia's gas exports to Europe through the Turk Stream and Ukraine pipelines.

Warning Signs for Russian Oil

Up until now, we have not talked much about Russian oil because Russia got far more geopolitical leverage with Europe due to Europe's over-reliance on Russian gas. Oil is also a much more flexible commodity than natural gas, and Putin's hand is stronger here.

The Price Cap and Embargo

But there are still plenty of warning signs for Russia. The first warning sign Moscow must confront is the price cap initiative led by the US that sets a top price of $60 per barrel for Russia crude oil, and was endorsed by the Group of 7 countries, Australia and the EU. The second warning sign is an embargo that prohibits EU countries from buying most Russian crude as of 5 December 2022.

Some of the hardline countries like Poland and Estonia wanted to punish Russia with a far lower price cap. But that move would prompt the Kremlin to slash production and the global oil price would soar once again in the boom-and-bust cycle we have cited earlier in this study. In contrast, the US approach seeks to gradually limit Russia's oil revenues while also providing enough financial incentive to keep the cruse flowing onto the global market, thus avoiding oil shocks. [71]

The "Goldilocks" Level

Interestingly enough, the US led price cap of $60 dollars per barrel limit roughly matches what buyers are said to be paying for Russian crude, a discount of almost $20 a barrel from the Brent crude oil price. The US bet is that despite bluster from the Kremlin, Russia will keep pumping

oil, and major customers for Russia crude, like refiners in China and India, will see the benefit in the combination of low prices and a relatively stable global oil market. To sum up, the $60 price is a “Goldilocks” level, not so high as to give Russia even more revenue than it is currently receiving, or so low as to discourage Moscow from producing oil at all. [72]

Moscow is also becoming dependent on a smaller pool of customers, weakening its bargaining power. India and China are helping to keep far more oil flowing than western policymakers and analysts expected a few months ago. Yet those countries now have more leverage to continue extracting favorable terms from Moscow. (Justin Jacobs)

The West’s $60 a barrel of oil price cap has been heavily criticized and it’s unlikely China and India will go along with the plan. But even if they don’t accept the plan, they’ll likely use its existence as leverage to lower their purchasing price in their own negotiations with Moscow and thus steep discounts. For the US and Europe that may even be a preferable outcome to a major downward disruption in supply. Scarce global supply that would send crude prices soaring again, just like before the recent energy war between Russia and Europe began. [73]

But the postwar exodus of western oil majors and oilfield services firms from Russia’s oil patch is of a completely different level from previous rounds of sanctions that had put fairly narrow restrictions around western operators in the country. [74]

The Kremlin’s fight with ExxonMobil over the future of Sakhalin-1, a highly complex project in Russia’s far east, is an example of the difficulties facing the future of Russian energy. (Justin Jacobs) The Kremlin is trying to force Exxon to continue operating Sakhalin-1 in large part because Russian firms do not have the technical capabilities to operate the field. Russia is suffering economically because output from the Sakhalin-1 field has dropped from 220,000 b/d to 10,000 b/d. [75]

With the EU contributing, by some counts, 54% of Russia’s revenues from fossil fuel exports for the first 6 months of the war, the oil embargos have diminished both Russia’s export earnings and its ability to fund its military operation in Ukraine. [76] Yale Professor Jeffrey Sonnenfeld calculates that Putin is now losing about $100 billion a year from lost gas sales to Russia

annually. Putin has very little export capacity and faces difficulty building more given icy conditions and challenges to Arctic shipping. [77]

There are already tentative indications of a fall in the volume of Russian oil exports since October 2022 and a decline in oil and gas receipts in August 2022. Even Russia's own Finance Ministry is expecting a decline in oil production volumes of 7% to 8% in 2023 versus 2022. Production of Russian coal, another major energy export, could fall by between 6% and 17% in 2022 due to a European import ban in effect since August and to falling demand in Russia for industrial steel in construction and aluminum in automobile manufacturing. [78]

Additionally, Harvard Research Professor Li-Chen Sim persuasively argues that three structural limitations inherent in Russia's energy sector will become more apparent with time.

First, Russia's oil industry is in long-term decline. For example, its reserves are dwindling: In 2020, they were 7% lower than levels recorded in 1991, whereas the U.S. and Saudi Arabia increased their proven reserves by 114% and 14%, respectively, over the same period. Sim explains how this hurts Russia's chances for long-term development since the oil sector accounts for most of the combined oil-and-gas contributions to federal budget revenue (50%) and GDP (20%). [79]

Second, limited storage capacity means that a fall in exports will inevitably result in production shut-ins. Sim explains how maintaining pressure at Russia's many small, ageing oil fields to enable them to be restarted in future would be a costly and painstaking undertaking. [80]

Third, Sim agrees with Yale Professor Sonnenfeld that Russia's infrastructure was purpose-built to service customers in Europe. Consequently, there is no existing pipeline that can redirect western Siberian gas from Europe to Asia. Construction of such a dedicated gas pipeline is still pending final agreement by Russia and China "in the near future. Therefore, there is little chance for gas flows to begin before 2030. [81]

And finally, Sim also notes that Russia lacks enough ships to transport its own oil and gas because it has traditionally relied on European vessels, which will become virtually inaccessible if these commodities are purchased below the $60 price caps. [82]

European Energy Opportunities

If Andy Marshall were still the Director in Net Assessments, he would probably want to know which factors would improve European security and which ones would worsen European security? [83]

On the positive side, the EU is off to a good start. The EU has created a viable REPowerEU Plan with factors that promise to improve European energy security by moving away from Russia's energy coercion: [84]

- First, the EU is diversifying its sources of energy. It has created an EU Energy Platform to co-ordinate purchases and transportation of LNG. It has set up an external energy engagement strategy for liaison and co-ordination with suppliers abroad. It now requires energy storage facilities to be filled to 80% by November.
- But as cited earlier, the new LNG infrastructure has been and will continue to be a game changer as more and more infrastructure goes online. Europe has been successful in acquiring floating storage regasification terminals (FSRUs) and mobile LNG terminals that can be installed quickly. By next winter six FSRUs will be online in Germany, and an additional two in Italy, along with one recently installed in the Netherlands. The new LNG capacity allows for greater throughput of LNG from tankers onto the European grid, allowing overall LNG imports to increase significantly.
- Second, the EU is investing in green energy. It is raising the 2030 green power target from 40% to 45%. It is simplifying permitting process for renewable energy. It is mandating solar power on residual buildings by 2029. It is targeting the production of 10 million tons of domestic hydrogen and 10 million tons of imports by 2030. And it is targeting 35 billion cu meters of biomethane production by 2030.
- Last but not least, the EU is strengthening its energy efficiency and savings. It is increasing 2030 energy efficiency target from 9% to 13%. It is implementing "Save Energy Communication" to incentivize behavioral change. It is proposing tax incentives for member states for efficiency measures. And it is preparing contingencies for cut-off of non-protected energy customers.[85]

European Energy Challenges

While the EU deserves three cheers for turning the tables on Russia, this turnaround has come at a its turnaround at an enormous price that will haunt Europe in the short and medium term. By the end of October 2022, the EU spent around $105 billion in frantic efforts to increase storage levels.

At the micro level, households endured a 90% increase in energy bills compared to the previous year. Governments across Europe have agreed or are under pressure to subsidize consumers, which will result in higher levels of public debt.

In addition, Europe's industry is in crisis. Energy importer Uniper reported a $40 billion net loss in the first nine months of 2022, one of the largest in German corporate history. Steel, fertilizer, chemical and automotive manufacturing plants are drastically cutting production or shutting down due to high energy costs and slowing demand. [86]

IMF also says the war in Ukraine has created new headwinds, including curtailment of gas flows from Russia and higher energy prices. German GDP growth has slowed from 2.9% in 2021, to an estimated 1.2% in 2022 and an almost flat 0.8% in 2023. Surging energy costs are feeding into an overall German inflation rate that reached almost 8% in 2022. [87]

IMF says uncertainty in the German economy is extremely high, with risks to the baseline growth forecast skewed downward and risks to the inflation forecast skewed upward. In response to surging energy prices, the government is expanding income support for vulnerable households, cutting fuel taxes, and providing liquidity support to firms.[88]

If we look at EU economies, the EU economic strength will enable the economic giant to continue to spend vast sums, incurring debt in the process, to outbid other customers in order to ensure adequate gas supply over the next few years. The bad news is fears of a "deindustrialization of the German economy" and a general blow to Europe's competitiveness have already surfaced. [89] Finally, next winter could be cold and China's decision to end its zero-covid policy means Chinese demand for energy will rise. That means there is no time to

celebrate or be complacent. Europe is not out of the woods. Energy security is job one for the European economy in 2023.

Final Thoughts

Finally, it's important to keep in mind that the economic considerations that have been addressed in this paper come directly from Joint Publication 3.07. These economic considerations are therefore are a subset of the stabilization framework that assists the joint force commander in conceptualizing part of the operational environment (OE) of a nation that requires stabilization in support of U.S. national strategy and interests. The economic framework emphasizes the training and organization of forces prior to initial deployment. This paper outlined the framework to help organize stabilization activities to achieve their objectives, whether supporting combatant command campaign plans and integrated country strategies or in a major contingency operation. Military and civilian leaders link military and civilian activities to achieve unity of effort. Economic activities are important but just one subset of the larger unity of effort. [90]

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