

## **Gamechanger: Energy R-exit**

### **Russia attack on Ukraine as a gamechanger on the strategy and tactics of decarbonization and energy transition.**

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- **In the light of the Russian attack on Ukraine and bloody war that is shaking Europe and European sense of security, building independence from Russian resources will become a must.**
- **Already we can see signs of clear realignment of energy strategies EU countries, in particular Germany, with energy security and diversification of supply away from Russia will become a new important objective influencing climate change mitigation measures and energy transformation plans.**
- **In the short term (few months), supplies from Russia will be difficult to cut because of scale of dependence, and lack of necessary infrastructure. Discontinuing of supplies in the short term will require strong curtailing of demand, mostly for energy and gas heavy industries. Prices will remain volatile and likely very high.**
- **In the mid-term (6 months - 2 years) as structural adjustments are made on gas infrastructure, market rules and global oil and coal supply, room to reduce supplies from Russia will grow significantly.**
- **In the long run (2-3+ years), regardless of the outcome of the conflict, this experience will result in acceleration of strategies towards fossil fuel independent energy and transportation systems, mostly renewables based, to avoid dependence of Russia or any other sources of fossil fuels. Russia supply position will not return to pre-war level for a long time, if ever, regardless of political outcomes.**

**As the world is watching in shock the horrifying images of Russian brutal aggression on Ukraine, it is also coming to terms with the extend of the impact the current situation will have on global and European energy markets.**

In a brutal wakeup call, the Western political and economic elite has come to the realize that Putin has weaponized energy-related economic relationships to paralyze the European capability for deterrence of his Russian expansionist agenda. Worst yet, many have realized that they may have fallen into a trap, with strategically premeditated moves like the Nordstream pipelines, takeover of German gas reserve storage capacities, manipulation of the energy markets and building a dense network of money-oiled ties to business and political leaders of Germany and Western Europe.

There have been significant signs of reckoning and accelerating turnaround of energy business and political strategies, including in the energy sector. These include:

A remarkable political U-turn in Germany, with immediately announced changes not only to defense strategy (including killing the “sacred cow” of no arm exports to conflict zones or limited military spending), but remarkable shifts in decades-long energy policy principles, including:

- Practical killing of the NordStream2 – at least for a long time
- Decision to accelerate and support the building of LNG gas terminals
- Hinting at possible short term replacement of gas with coal as a back-up energy source for renewables
- Hinting at possible extension of operation of remaining nuclear power plants in Germany

At the same time, Germany has reinforced its commitment to even further accelerating energy transition towards renewables and electrification, as the main long-term solution, with a target of reaching 100% of renewables to be accelerated from 2040 to 2035 (with some qualifiers).

Beyond Germany, there have been clear signs of rapid strategy adjustment from European oil majors, in particular BP (announced writing-off and sale of stake in Rosneft) and Shell (similar decision of exiting all stakes and links with Russian companies). Similar steps were announced by Norway’s Equinor and US Exxon.<sup>1</sup> While French Total, with significant exposures to Russia have not followed as of the time of writing, it is not infeasible that it will join in and cut ties to Russian oil conglomerates.

Despite the fact that the sanctions have been designed with the objective of not fully cutting off the supplies of gas and energy to European and global markets, it is becoming very clear that indirect effects of “economic war” of NATO / EU with Russia may result in just that: there are increasing number of secondary effects curtailing flow of Russian energy exports, in particular oil. The relative discount of Russian oil vs. European sources (differential between Urals and Dated Brentt Northwest Europe) increased by 15 USD<sup>2</sup>, which is a sign that traders are actively avoiding Russian oil.

Also, in certain areas the response of business has been more aggressive than sanctions themselves. An example is Orsted, the Danish energy company, that, while delegating the issue of Russian gas imports to the political EU level, has made individual, unilateral decision on cutting all other ties to Russia, including stop on sourcing of biomass and coal from Russia, stop on entering any new contracts with Russian companies, ban on Russian suppliers in renewable buildouts.<sup>3</sup> Companies that truly value their ESG credentials, like Orsted, will tend to overdeliver beyond the sanction compliance expectations (coincidentally, this will also allow to easily separate real corporate responsibility / ESG leaders from superficial spinners).

It is impossible to predict the specific outcomes. They will be shaped by the interplay of military outcomes in Ukraine, the depth and duration of public opinion outrage and determination of political

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<sup>1</sup> <https://www.ft.com/content/cf7f4bc0-f3a1-4863-809f-c08f6e48642a>

<sup>2</sup> <https://www.ft.com/content/dc93a656-5305-4642-9bc5-6922e33faa06>

<sup>3</sup> <https://orsted.com/en/media/newsroom/news/2022/02/13644342>

and corporate leaders in the west to adjust to the new circumstances. For understanding likely impact on business, it is necessary to differentiate between three different horizons. They differ significantly in the degrees of freedom allowed to governments, energy players and companies, and each horizon will entail a different set of risks and opportunities to manage for companies in the current situation.

### **1. Short term volatility before any structural adjustment**

In the short term – defined as few weeks to few months, as situation in Ukraine unfolds, businesses will face at the very least, significant further volatility of energy and oil prices. This will be driven both by physical supply changes and market expectations about further developments of the situation. A particular scenario, currently analyzed by all players, is full termination of energy supplies from Russia, as either the final and most severe round of sanctions or reaction / retaliation of the Russian regime. In this case the market may be pushed into supply shortages, severity of which in each country will depend on its particular level of dependence on Russian imports of coal, gas and oil and availability of infrastructure to physically replace shortages with deliveries from the global markets.

The biggest vulnerability points in gas are Germany and Italy, that are the large economies with strongest dependence on Russian gas - 49% for Germany and 46% of total consumption for Italy, with high share of Russian imports via pipelines, exasperated by lack of LNG terminal infrastructure in Germany.

Poland has lower dependence on Russian gas with approx. 40% of total consumption, as 25% of Polish demand is covered by domestic supply. Poland has existing LNG terminal capacity that can be extended, and, by the end of 2022 should achieve full ability to swap out Russian gas, due to completion of Baltic Pipe pipeline supplying gas to Poland from the North Sea. Potential gas shortages will not affect household heating market (as households would be likely prioritized and they constitute 25% of consumption, plus heating season is now coming to an end), however short term supply shortages would affect industry and companies with significant use of gas (e.g. share of industry in gas consumption of Poland is 51,4%, figures are similarly high for other markets).<sup>4</sup>

Overall, 35% of total imports of gas into EU were from Russia in 2020, up from 26% in 2010. There is also significant vulnerability in smaller economies with high share of Russian gas in consumption (e.g. Estonia, Bulgaria and Slovakia with over 70% dependence or Austria with 64%).<sup>5</sup>

Historically, protecting the supply of cheap gas for industry has been a top priority (especially in Germany), however companies now should consider possibility that this priority will be balanced by security considerations. Countries with high reliance on Russian gas (Germany and Italy in particular)

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<sup>4</sup> <https://www.forum-energii.eu/pl/blog/stop-import-rosja>

<sup>5</sup> <https://www.statista.com/statistics/1201743/russian-gas-dependence-in-europe-by-country/>

may be very vulnerable economically to short term disruptions, hence their careful maneuvering during imposing of sanctions (and attempts to keep the gas flowing). Other major European economies like France and the UK, are not meaningfully depended on Russian gas imports.

It is important to note, as was evident in the fall of 2021, that raising gas prices lead to jumps in electricity prices on European markets. In many important countries gas is the marginal capacity needed to balance the market demand – it means that the costs of energy production in gas power plants defines electricity market clearing price. This mechanism is a key design of the how the energy market works. Therefore, right now the increase of gas will impact in the electricity price in the short term. However, the design of market pricing mechanism can be changed in the medium term already, potentially lessening this effect (consultations about potential changes to market design and marginal pricing mechanism have been ongoing since the energy crisis had started).

As for oil, the short term situation will be mostly related to pricing in the global markets. It is clear that despite lack of formal sanctions, many customers in Europe are already swapping Russian crude with supplies from global markets. How quickly and at what price the entirety of Russian supply could be swapped, depends in large part by supply decision of OPEC and ability of US to supply additional volumes to global market. US has already reacted with release of strategic reserves to global markets, while prices have rallied to over 110 USD / barrel, the highest in 7 years. In the worst case scenario, there may be temporary supply shortages or rationing of supply in case of abrupt cut of Russian supply.

It is important to note, that given the structure of coal, gas and oil consumption, early full embargo on the Russian imports would most likely have main economic impact on business, as the large industrial customers would potentially shield most of the blow. Fears of mass blackouts or lack of supply for heating individual homes are largely unfounded, as residential sector's share of electricity, gas and coal market is too low to be affected by shortages, if prioritized ahead of industry. Although some limitations, e.g. temporary limitation on gasoline/diesel purchase quantities per transaction, lowering of district heating operational temperatures and similar "soft" measures may be introduced.

## **2. Mid-term structural adjustments in gas and oil markets and developing backup scenarios.**

In the mid-term – defined as a few months to a year, several important structural adjustments to the market should influence the dynamics of market reactions to disconnecting Russia. These specifically include:

1. Implementation of all measures to increase LNG import capacity in Europe, including capacity extensions at existing LNG terminals and the buildout of new terminals, in particular in Germany. This would increase liquidity of Russian-independent sources and, stabilize the market and reduce dependence on Russian gas infrastructure.



2. Adjustment to gas reserves and gas storage regulation that would build more backup and resilience before 2022/2023 heating season (measures to that effect were already announced in Germany)
3. Preparation and implementation of mid-term tactical/temporary measures reducing dependence on gas, in particular:
  - a. Plan to include temporarily additional capacities of coal energy production to substitute gas energy production in Germany – this might be very unpopular politically, but may be introduced as temporary war-time measure and has already been announced by Green party representatives
  - b. Delay or canceling of plans to shut down nuclear power plants in order to reduce demand for gas-powered energy generation
4. Acceleration of the measures in place to diversity European gas supply, like Baltic Pipe completion to Poland as well as potential stronger coordination on joint procurement of gas on the EU level
5. Coordinates (in particular with US) further interventions to stabilize global oil supply, including working/pressuring OPEC countries to “take over” Russian volumes, as well as increasing supply by the US, in particular with w renaissance and of shale oil and gas production
6. Similarly, working with Australia and other coal producing countries to temporarily increase supplies to replace Russian coal – this actually might come the quickest as evidence by calls from Poland to immediately stop Russian coal exports into the EU

These initiatives, implemented in 2022 (with selected ones to be implemented into 2023) will gradually enable increasingly hawkish stance of European countries towards a possibility of a full Russia energy embargo, by softening the resulting economic blow and eliminating risks of supply shortages. It could start with coal (already suggested by Poland), and then gradually move into oil, with gas probably sanctioned at the latest. The embargo could start with self-sanctioning by market participants (which is already happening), followed by gradual country-level exit from Russian supplies (in a coordinated way). Escalation of military and political situation may simply accelerate the exit from Russian energy supplies (“Energy R-exit”) due to political and public pressure.

### **3. Long term development of energy supply scenario.**

By the time the mid-term scenario of “Energy R-exit” plays out ,the structure of supplies to Europe will have changed significantly, and largely independently of military situation. Development of military situation will only accelerate the full “Energy R-exit” in case of escalation. It is likely to assume that by that time, the reliability of Russia as a major supplier will be tarnished and the willingness on the part of European countries to return to high dependence on Russian supplies will be economically unjustified and politically untannable. Developments in Germany will be the particularly important determinant. Even in case of regime change in Russia, the rebuilding of full pre-war position of Russia supplies in highly unlikely. In such case, some level of energy cooperation with new, stabilized Russia is likely to come back, in order to avoid a full-failed state or full takeover of Russia by Chinese influence. Future energy relations with Russia will however always be carefully managed and capped at safe and easily substitutable levels.

In the long run, the experience of the consequences of fossil-fuel based energy dependence on Russia will strongly reinforce the push towards energy transformation, basing electricity supply fully



on renewables, and electrifying transport to shift away from oil. Green hydrogen sourced locally and from a diversified pool of non-threatening suppliers, including in Africa and other emerging markets, will also be a clear winner, with additional security-related justification of potential higher costs (think in terms of “cost premium” on sourcing carbohydrates from non-democratic countries, similar to EU ETS cost of CO<sub>2</sub>). There will be further pressure to accelerate scaling of offshore wind in Europe, in particular the entire Baltic region. Elements of this are already visible in the early German response which suggested further acceleration of the goal of 100% renewable electricity from 2040 to 2035.

There will be a strong deepening of energy transformation strategies to account for real energy security understood in a way more relevant to current environment, to include the paradigm of de-concentration of supply, diversification away from Russia (and potentially other non-stable or non-democratic regimes), but also physical security where a distributed renewables-based model will have additional security benefits compared to a system based on centralized generation in high power installations.

One interesting case which is not clear is the impact on current situation on prospects of nuclear energy. On one hand, the main obstacle for nuclear, which is high cost, will be more manageable as local nuclear energy sources allow to reduce dependence on important (Russian) fossil fuels, in particular gas as a complementary energy source to renewables. However, sources of supply of nuclear fuel will have to be reviewed and diversified, as evidenced by recent emergency deliveries of Uranium from Russia to Slovakia over closed skies of Poland and other countries. On the other hand, much more attention will be put on physical security risk of large nuclear power plants in unstable geopolitical environment. As a symbol, proposed location of first nuclear power plant in Poland in Choczewo is a few minutes flight of an Iskander missile from the Kaliningrad region. Much depends on whether the integrity of the Ukrainian nuclear power plants will be kept as conflict escalates. Any intentional or accidental incident in any of the Ukrainian nuclear power plants engulfed by military conflict will be a poignant reminder of vulnerability of nuclear in case of military conflict.

Decarbonization of the economy, has always had an undertone of improving geopolitical independence from fossil-fuel rich regimes, in addition to being required to save the planet from catastrophic climate change. Right now, this benefit of energy transition will strongly come front and center. The European focus on green transition will gain additional momentum, and align with goals of protecting security in Europe and freedom for all. While short term tactics may bring more CO<sub>2</sub> emissions as countries do whatever they can to reduce dependence on Russia, in the long run, it is fully emission free, independent and energy-secure economy that will remain the ultimate goal.

We are now living through a dry-run of what overdependence on fossil-fuels that can run out feels like. Let’s make sure we escape fossil-constrained world as soon as possible.

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