

Borders and pipelines

The Russia–Ukraine war highlights energy consequences and drivers of conflicts that cannot be ignored.

Crude oil prices and petroleum prices for consumers at the pump reached heights not seen since 2008 this month. The prices of oil and other commodities have been rising for some months now, but the Russia–Ukraine war has accelerated this trend. Fears that the US and allies might embargo Russian oil as the next step in the escalation of sanctions are driving the hike in the price of Brent Crude. Meanwhile, sanctions have already disrupted supply of Russian gas to Europe, in particular Germany. The energy implications of the Russia–Ukraine conflict are dour and are being felt all over the world.

While the conflict has obvious energy implications, the energy drivers that may be exacerbating the political divide are less clear. A key element here is the Nord Stream 2 gas pipeline connecting Russia to Germany. Completed in September 2021, with a capacity of 55 billion m³, the pipeline was expected to double the supply of Russian gas to Germany, significantly increasing European dependence on Russian gas. Towards the end of 2019, the US sanctioned Nord Stream 2 and pipe laying activities were suspended temporarily. After a brief hiatus, though, even while a question mark hung over the future operations of the pipeline, Russia continued with pipe laying activity. In July 2021 a deal between the US and Germany saw the project move ahead with the understanding that its use as a political weapon by Russia would trigger sanctions on the pipeline. The deal also included support for Ukrainian energy independence through investments in the green energy transition.

Meanwhile, reliance on Russian oil and gas has long been seen as a point of vulnerability in Europe. Before the conflict, Russia supplied nearly 40% of European gas and almost a quarter of its oil. Reliance on Russian oil and gas means that energy prices in Europe — including electricity prices — are increasingly dependent on disruptions in supply. These disruptions can come not just from geopolitical developments at the national scale but also more local incidents such as terrorist attacks targeting infrastructure.

Now, after effective suspension of Nord Stream 2 operations for the foreseeable future, the European Union is targeting reductions in dependence on Russian gas by 80%. In a ten-point plan to achieve this energy security goal, the International Energy Agency recommended gas storage expansion, new renewable energy, heat pumps and building efficiency improvements as critical action items. Top of this list of advice was termination of further gas contracts with Russia and sourcing of gas from alternative sellers (<https://go.nature.com/3KyGi9k>).

This is why Europe is seen as a growing market for US gas. After Russia attacked Ukraine, sanctions were immediately placed on Nord Stream 2. Germany cancelled pipeline operations putting the business future of the pipeline at serious risk. The Swiss company that owns the pipeline (and is in turn owned by Russian state company Gazprom) filed for bankruptcy and let go of all of its employees. Germany has since started construction on its first liquified natural gas terminal, which will make it much easier to import gas from the US.

The Russia–Ukraine war is ostensibly a territorial conflict, yet the implications have been profound for energy markets. This war may not be a fossil fuel war, but we cannot dismiss that the economics of global gas trade have exacerbated the situation one way or another. Policy makers now need to ask critical questions about how to reorient energy supply against a need to meet sustainability goals.

Many therefore see renewable energy resources as offering a solution to mitigate against the problems caused by oil and gas in conflicts. They can increase energy security of supply, reducing the consequences of conflicts. They also have the potential to reduce the risk of energy-driven conflict. The less dependent we are on oil and gas, the less wealth and power regimes should be able to accumulate. The less valuable oil is, the less reason there would be to fight for it.

To what extent renewable energy can achieve these security and democratization goals is yet to be seen. Certainly, the energy transition is well underway albeit not at

the pace needed to meet climate goals. Countries like Iceland and Norway draw more than half of their primary energy from renewable sources. Plans for renewable power deployment are growing all over the world. The Ukraine–Russia war could well accelerate these efforts. The increasing independence from global oil and gas trade should start to be reflected in the foreign affairs of these nations, if the theory that energy is a major driver of international politics and conflicts holds water.

Of course, in one way at least renewable energy is no more decentralized than conventional fossil fuels. Many of the minerals that are needed to realize the energy transition are still mined in a small number of countries. Meanwhile, manufacturing for renewable energy technologies relies on global supply chains and production. It is also true however that solar panels or rechargeable lithium-ion batteries, for instance, are not consumables like oil and have long lifespans that allow for some independence from supply dependency once the energy system is purchased. So, the question is complex. New political dynamics are likely to emerge. At the same time, we also know that worsening climate change will only exacerbate resource conflicts going forward.

This changing landscape and potential future developments raise important questions for further research. We need to better understand the role of renewables in mitigating conflict risk and impact. There are implications from a geopolitical perspective for how domestic supply mix influences foreign relations and the tools we use or can be used against us. There are also questions about the role distributed renewables (like rooftop solar) can play in lessening the impacts of conflict.

How much freer and less conflict prone the renewable energy transition can make the world is certainly a question worth tackling rigorously. □

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