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Facing the double crisis: geopolitics and climate change put a strain on the Baltic Sea Region energy security

Trine Villumsen Berling & Izabela Surwillo*

Abstract

Green energy technologies hold a geopolitical promise. Although it may seem like Europe was thrown into an energy crisis when Russia invaded Ukraine, it had been long in the making. The war just brought the Union's overdependence on Russian gas to the fore. New energy infrastructure, technology and increased regional cooperation are key to increasing the resilience of the Baltic Sea region.

Introduction**

The current crisis combines hurdles of geopolitics and climate change constituting a wake-up call for the Baltic Sea Region and the European Union (EU) as a whole to:

- Focus on aligning Eastern and Western European policy perspectives and working towards a common energy policy approach at the regional and EU level.
- Improve coordination and invest in new energy technology and infrastructure.

- Set common goals on energy efficiency to tackle the energy demand as well as the energy supply side.

The deep crisis that was a long time coming

The current energy situation in Europe is a disaster happening in slow motion. The geopolitical reality after the Russian invasion of Ukraine only added to the energy crisis brought about by extreme weather in 2021 and the long-term climate crisis looming in the background. Although both the geopolitical and the climate crises have brought about green(er) energy to the top of the policy agenda, bringing in gas as a “bridge fuel” to reach climate goals made the situation worse. The EU's reliance on imported Russian gas has increased - further locking the political bloc in a dependency that hinders its room of maneuver *vis-à-vis* Russia in economic and political domains alike.

Pulling the plug on Nord Stream 2 by German Chancellor Olaf Scholz only days before the Russian invasion of Ukraine was a first sign that Western Europe started to realise the security dimension of the overdependence. And while Russian energy blackmail following the outbreak of war in Ukraine at the end of February 2022 seemed to come as a surprise to

* Dr Trine Villumsen Berling is a Senior Researcher at the Danish Institute for International Studies (DIIS). Dr Izabela Surwillo is a Postdoctoral Researcher at the Danish Institute for International Studies (DIIS). All the opinions expressed in this briefing are the sole view of the authors, and do not represent the position of the Danish Institute for International Studies nor of the Trans European Policy Studies Association.

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the EU at large, Eastern European countries were used to such maneuvers. The countries invested in costly interconnector pipelines and liquified natural gas (LNG) infrastructure and tried to raise the urgency of the matter to their Western European partners on multiple occasions – with little success. The war in Ukraine started to realign these two competing perspectives, but the acute need for rapid diversification of energy supply and energy transition makes designing viable energy solutions challenging.

Zooming in on the Baltic Sea Region, this process' success will depend on numerous factors, including further synchronisation of energy networks, development of new energy infrastructure and technologies, improving energy efficiency measures, and the creation of a common regional gas market. Additionally, the political will to tackle energy policy on the regional and the EU levels is more pressing than ever.

Political changes are needed

As opposed to climate policy, the energy policy domain has been largely a national prerogative in the EU. With plans such as “Fit for 55”, regional attention on low carbon energy sources has affected energy policy as well. Initiatives such as the Projects of Common Interest (PCI) introduced by the European Commission in 2013 strengthened a regional focus on the interconnection of the European energy infrastructure. However, a comprehensive focus on how to beat climate change while increasing geopolitical resilience has been insufficient. The establishment of the Energy Union was a step in the right direction, as it emphasised the need for increased energy security pointing to alternative sources of supply, an integrated energy market, and further steps needed for the gradual decarbonisation of the European economy. In practice, however, with countries deciding on

individual projects such as Nordstream 2, much was left undone.

The current crisis has produced a centripetal effect on the views of energy across Europe. It is important to build on this momentum in devising sound energy strategies for the future. The RePowerEU plan from March 2022 is an important first step with an ambition to cut import of Russian gas by 2/3 by the end of the year, but detailed plans for phasing out Europe's dependency on Russian fossil fuels are also needed. This should be coupled with a more ambitious schedule for further development of alternative energy technologies. Moreover, a joint effort of businesses and individual consumers is necessary to tackle energy demand through reduced consumption.

Achieving energy security needs to be seen as a common regional goal. First moves have already been made, such as the EU-US deal to buy gas equating to 15 bcm of regasified LNG in 2022.¹ An EU Platform for the common purchase of gas, LNG, and hydrogen has also been established. The initiative will aid in the refilling of gas storage facilities across Europe before next winter, as well as facilitate cooperation with key external suppliers.

All EU-level decisions will have a key impact on the regional dynamics. However, while the political angle is central, nothing happens if the technological challenges are not dealt with one by one. The Baltic Sea region is a case in point here, as new developments will be needed across different energy sectors.

The devil is in technology

In the Baltic Sea Region key developments must happen in the gas infrastructure, electricity networks, and the development of low carbon energy sources independent from Russian influence.

¹ European Commission (2022), “[Joint statement between the European Commission and the United States on European Energy Security](#)”, March 25 2022.

Gas

Gazprom's continuous grip on energy infrastructure since the 1990s prompted the diversification of gas supply routes in the region. With LNG terminals opening in Lithuania (in Klaipėda in 2014) and Poland (in Świnoujście in 2016), and with more projects on the way, such as new LNG projects in Poland, Latvia, and Finland, as well as the Baltic Pipe project to send Norwegian gas to Poland through Denmark (to be completed by the end of 2022), the Baltic Sea region has been gradually breaking away from overdependence on Russian gas. After the invasion in Ukraine, Germany joined this trend and announced the construction of two LNG terminals "ASAP".

Furthermore, projects such as the Balticconnector between Finland and Estonia, and the Gas Interconnector between Poland and Lithuania (GIPL), will link the Baltic and Finnish gas networks with continental Europe, creating a regional LNG market. A planned integration of gas markets in Estonia, Finland, Latvia, and Lithuania, agreed in April 2020, will strengthen this trend. In the long term, this will provide the basis also for decarbonised gas sources such as hydrogen.

Coal

Gas is not the only fossil fuel that will remain part of the energy mix in the region, and following the Russian invasion on Ukraine coal is likely to become more important in the short term – both to mitigate the impact of decreasing dependency on Russian fossil fuels and potentially also a way to e.g. support Ukraine with Polish coal.

Coal is especially important to Poland, where 70 % of power generation comes from local coal and where the rapid phasing out of coal could impede economic growth and make Poland more reliant on Russian oil and gas. However, even in Poland the overall policy of decarbonisation will continue long-term. And that implies gradual phase-out of coal, as the

so far development of clean coal technologies has stalled, and in the current crisis the policy focus across the EU has shifted towards faster implementation of the "Fit for 55" package and further investment into renewable hydrogen and biomethane.

Electricity networks

Many of the new solutions to the problem of shifting the geopolitical balance in the region depend on the development of alternative electricity grids. Several key electricity infrastructure projects (e.g. Estlink, Nordbalt and the LitPol Link) have improved the connections between the Baltic states and Finland, Sweden and Poland, making them more integrated into the EU energy market.

Further integration of the electricity market has been obtained through key initiatives, such as the Baltic Energy Market Interconnection Plan (BEMIP), which connects the Baltics to the EU. However, the three Baltic States are still tied up with Russian and Belarusian grid. A plan to synchronise the Baltics with the European network by 2025 led by the Commission has been accelerated following the war in Ukraine.

On a regional scale, the Baltic Sea region also has a high, untapped potential for diffused electricity generation, e.g. in the form of so-called "prosumer" energy, where the production and consumption of energy are mutually dependent. These are especially needed in countries experiencing increasing shortfalls in power supply capacity, such as Sweden and Finland.

Nuclear

One of the energy sources with the greatest potential for replacing fossil fuels with stable energy provision and shifting the geopolitical balance in the region is arguably nuclear energy, which has been recently classified as "green" in the EU's taxonomy. In the Baltic Sea Region, the overall trend is to further develop nuclear energy. With certain exceptions, such as Lithuania that shut down its Ignalina nuclear

power plant (NPP) in 2009 and opted out of further investments in nuclear power.

Finland was planning to double its nuclear power generation to supply 60 % of electricity and to replace coal completely. After Russia's invasion of Ukraine, contract with the Russian partner (RAOS Project) on the construction of Hanhikivi 1 NPP in Finland was terminated. Poland on the other hand, revived its nuclear energy plans and intends to open its first NPP in 2033, with six reactors to start operating by 2043. In Estonia, by 2035 energy startup Fermi Energia is set to develop Europe's first NPP based on small modular reactors to help meet the 2050 climate goals and increase its energy security.

Offshore wind

The overall trend concerning wind at the Baltic Sea coast has been to scale up to mega-projects. In November 2020, the EU announced ambitious plans for the further development of offshore renewable energy technologies, with a five-fold increase in offshore wind capacity planned by 2030, and a 25-fold increase by 2050.² Eight EU countries in the Baltic region have strengthened their commitments to the development of offshore wind.

Numerous other large-scale projects are currently being developed. Estonia and Latvia have been planning a joint offshore wind farm to start operating in 2026; Polish energy companies, together with foreign investors, have plans for several offshore wind projects starting in the next few years; and Germany and Denmark have decided to increase their cooperation in offshore projects (e.g. by linking their offshore wind farms at Kriegers Flak and Baltic 1 & 2 via the world's first offshore interconnector) and renewable hydrogen production. Following the war in Ukraine, the

above plans are further prioritised and might be accelerated.

Energy islands

One of the most ambitious mega-projects in the region to break gas dependency are the Danish "energy islands"³, costing an estimated EUR 28bn. The first artificially constructed energy island will be located in the North Sea and will serve as a hub for 200 offshore wind turbines and provide energy for 10 million households. Development of further islands is envisioned in the Baltic Sea area.

In the long term, these energy hubs will operate under power-to-X technology, which enables green hydrogen production using surplus electricity generated by wind that is not possible to store otherwise.

The only way forward is to work together

Taken together, these various energy projects and technologies have the potential to shift the geopolitical balance in the region, while staying on a decarbonisation path. Apart from the development of energy technologies and infrastructure, a coordinated regional approach is required. With a combined focus on the climate crisis and the region's geopolitical predicament, the only way of obtaining energy security in the long-term is through concerted efforts towards green transition at the supranational level.

² European Commission (2020), "[Boosting Offshore Renewable Energy for a Climate Neutral Europe](#)", Press release, November 19 2020.

³ Danish Energy Agency, "[Denmark's Energy Islands](#)", official website.

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Trans European Policy Studies Association

Rue d’Egmont 11, B-1000
Brussels, Belgium

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Danish Institute for International Studies

Østbanegade 117 2100
Copenhagen, Denmark

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