ANALYSIS

DESYNCH OR SINK
A Political Analysis of Baltic Electricity Desynchronization

Emmet Tuohy  Anna Bulakh  Yuri Tsarik

MAY 2017

RAHUUSVAHIJINE KAITSEUURINGUTE KESKUS
INTERNATIONAL CENTRE FOR DEFENCE AND SECURITY
EST - ESTONIA

elering
As recently as April 12, in Brussels, agreement was reached to proceed via Poland on what “is the key energy project for Lithuania and the Baltic states”: desynchronizing their electricity grid from that of Russia and Belarus and instead synchronizing with that of Continental Europe.1 Or was it? The goal of leaving the BRELL common synchronous area—named for the first initials of the five participating countries—has been included on the highest levels of the Baltic political agenda for over a decade now, but has yet to materialize. Are the prospects for leaving BRELL—of a BRELLxit, in other words—still realistic for the Baltic countries?

To advance the public debate on these questions in a constructive way, we will first explain just what electricity grid synchronization is and why it matters, before exploring the history of the Estonian and Baltic systems and efforts to synchronize them with the grids of its European Union partners. In subsequent sections, we address the benefits and risks of BRELLxit and the current policy of both Belarus and Russia.

1. Background

1.1 What is synchronization, and why does it matter?

Electricity—to say nothing of interlinked grids or of the frequency-support function that an electricity grid operator in principle provides—tends to be something people take utterly for granted. Even in government and media circles, the topic of synchronization is less easily understandable—and less widely understood—than the security challenges faced by the Baltic states in other sectors, from oil transit cutoffs to dependence on a single gas supplier.

In recent years, some of those challenges have been overcome, however. Arguably, thanks to the electricity connections established between Estonia to Finland (Estlink 1 and 2, respectively) as well as the more recent NordBalt and LitPol electricity cables linking Lithuania to Poland and Sweden respectively—the completion of which has given the Baltic states “the ability to get 100% of their electricity from non-Russian sources,”2 while facilitating their integration (albeit with some hiccups)3 into the Nord Pool Spot (NPS) electricity market of the Nordic region—the Baltic “energy island” might better now be described as an energy peninsula—and the reader might well be wondering where the problem lies in the first place.

The issue lies in the difference between the two main types of electricity flows: alternating current (AC) and direct current (DC). Domestic electricity grids focus on delivering AC power—called alternate because it reverses direction many times a second at a steady rate known as frequency—to consumers, as it is much easier to adjust its voltage via transformer stations in between generating plants and household outlets. By contrast, the cables that now connect the Baltics to the

---


EU are not AC but high-voltage DC lines; for this power to be used by the receiving grid, it has to be converted by specialized facilities on either end to the synchronized frequency of the receiving area. In the Baltic case, that frequency is still established in—and managed by—Russia.

But what is synchronization? Essentially, in a synchronized grid, the operator ensures that the frequency of the electricity it supplies (that is, the rate at which the alternating current switches direction—for historical reasons, this tends to be either 50 or 60 times per second [50-60 Hertz]) stays constant. A certain degree of frequency shifting can happen with load changes to any system, from household generators up to continent-wide power grids, though the goal is to keep these shifts as tiny as possible. If the built-in governors that damp such shifts fail to function correctly, and if the grid operator fails to stabilize them, then “many people are in for a dark and cold night”; as Chris Lee of Ars Technica observes, “some relatively large power outages have been due to relatively small operator errors.”

The advantage of larger synchronized grids is that fluctuations—or errors—can be more easily managed. As Steven Blume writes, interconnected systems are “specifically built to take advantage of electrical inertia in order to maximize system stability, reliability, and security.” Of course, all systems—or their operators—are not alike; as we will see later in this report, BRELL has certain technical shortcomings that make desynchronization an attractive option for the Baltic states even in the absence of political or geopolitical factors.

4. HVDC connections permit “the asynchronous interconnection of networks that operate at different frequencies, or are otherwise incompatible, allowing them to exchange power without requiring the tight coordination of a synchronous network.” Department of Economic and Social Affairs, Multi Dimensional Issues in International Electric Power Grid Interconnectors (New York: United Nations, 2006), p. 15

1.2 BRELL AND THE SOVIET LEGACY

Due to their annexation by the Soviet Union, however, the Baltic states lacked any choice as to the evolution of their electricity systems for a period of several decades. As with their oil and gas infrastructure, the Baltic electricity grid was constructed as part of a broader Soviet network, with local interests being only incidental to the larger interests of the USSR as a whole. In the case of the main Estonian electricity transmission system, for example—constructed from 1955 to 1985—the main objective was to ensure electricity supply to the much larger regional centers of Leningrad and Riga from the oil-shale-powered generating stations in and near Narva.

After independence, the system continued to function much as it did before, with the frequency for the whole network (known as IPS/UPS [the Interconnected Power System, which includes Mongolia and most former Soviet countries, and the Unified Power System of Russia]) still controlled by a central dispatching center in Moscow. For the Baltic states specifically, synchronization is provided by the primary power reserves of the Russian system via the ring connecting them as well as Belarus and the northwestern & central regions of Russia (built in the early 1960s). The operation of this ring—known as BRELL (for the
first initials of the five participating countries) was formalized in an agreement among the grid operators in 2001 and since updated. The agreement does not explicitly prohibit any of the parties from withdrawing from the agreement, “but it does require them not to leave each other in a worse-off situation.” As argued below, Russia and Belarus are pursuing a strategy of discouraging the Baltic states from desynchronizing—while preparing to do so on their own.

1.3 PURSUING BRELLxIT

As mentioned above, desynchronization from BRELL presents an attractive option even leaving aside the political and geopolitical factors. Of course, the attractiveness of an option is not enough to guarantee it will become chosen in reality—indeed, for some time, policymakers and energy officials in the Baltic states have been considering whether and how to bring about grid desynchronization.

As early as the beginning of the 1990s, feasibility studies were already being launched in order to investigate the technical possibilities of synchronizing the Baltic grids with that of Continental Europe. Yet, desynchronization itself remained far in the future, despite a wave of studies and political declarations ranging from the 1998 Baltic Ring study to the 2007 Baltic prime ministerial declaration confirming their mutual strategic objective “to become part of the European...synchronous area as soon as possible.”

After EU membership—and especially after the European Commission expanded its role in energy security, as explained below—the Baltics were no longer alone in dealing with their larger neighbor on the issue, especially after being included in a broader regional Baltic Electricity Market Interconnection Plan (BEMIP) created by the Commission and littoral states in 2009. In 2012, the European Commission “launched negotiations with the aim of concluding an inter-governmental agreement [on desynchronization],” which at the Baltic states’ own request were suspended as they awaited the results of a technical feasibility study. Nonetheless, the Commission continued to make progress forward, for example granting the project PCI (Project of Common Interest) status in October 2013, and including it both in the landmark European Energy Security Strategy of May 2014 and the European Council conclusions of October of that year.

Of course, none of these welcome moves actually brought desynchronization itself into being. As Pierre Schellekens, deputy head of the cabinet for European Energy Commissioner Miguel Arias Cañete, noted in Tallinn in 2015, desynchronization is “a very important endeavor, but argued that BEMIP “has been successful to date, but [is something] which we can take to the next step.” Before looking at what that next step could be, let us first examine the EU’s role in greater detail.

1.4 THE ROLE OF THE EU

One of the key aspects of the EU’s broader vision for its energy future—the Energy Union—is a “fully-integrated internal energy market,” within which the free flow of electricity across borders will both improve security of supply

---

12. Естей электрсиустеми varustuskiidule aruanne 2016 (Тallinn: Elering, 2016), p. 16
The EU sees the build-out and upgrade of energy infrastructure, especially electricity grids, as indispensable investments in energy security, competitiveness, and sustainability. Deeper integration—including eventual synchronous operation—of the Baltic states’ power grids with the electricity systems of the rest of the EU meets all three objectives. Promoting interconnectivity throughout the EU is a specific goal of EU energy policy, as evidenced by the establishment in 2002 of a 10% interconnection target; that is, for each member state to have an interconnection capacity equal to at least a tenth of its installed electricity production capacity, to be reached by 2020. From a European perspective, dependence on third parties like Russia or Belarus—which are not subject to EU legislation or policies—creates a legislative vacuum, disrupts market harmonization, and cannot fully guarantee security of the grids. Accordingly, to address this obstacle, the Commission and the Baltic Sea littoral member states agreed on a roadmap for Baltic energy infrastructure, the above-mentioned BEMIP.

In order to complete their full integration into the common EU energy market, however, the Baltic states have to guarantee the reliability and adequacy of their power grids—that is, to enhance power system security. This concept refers to the ability of the system to continuously fulfill its functions even in the face of possible adverse situations. Aside from the risks of natural disasters or accidents, the threat of intentional actions (terrorism, cyber attacks, military activities) against the power systems is increasing in light of turbulent events in the EU’s neighborhood. The Baltics’ continued physical integration with the IPS/UPS synchronous electricity grid entails particular challenges to ensuring system security, which we explain in more detail below.

2. The BRELLXIT Boost: Benefits of Desynchronization

2.1 Security and Geopolitical

The choices that the Baltic states make at both the infrastructural and operational levels not only determine the security of their electricity power networks, but also the ability of the region to protect its assets and interests against any tools of destabilization. There are three main factors that form the near-term electricity security agenda in the Baltic region in the near future: 1) changes in the energy mix on the generation side and
the development of new generation capacity under the constraints of EU climate change policies; 2) the development of and investment in new electricity infrastructure, both internally and cross-border; 3) desynchronization from BRELL.22

So long as the Baltic states’ electricity systems continue to be an integral part of the IPS/UPS system, frequency—and therefore, to an extent, security of supply—depends on the Russian operator of that system, as explained above. In light of the unstable international security environment, reliance on the power system of a potentially hostile power like Russia raises the importance of Baltic energy issues inside both NATO and the EU—while also raising the possibility that energy will be used as part of a hybrid warfare campaign. Accordingly, BRELlixit can have the positive impact of initiating a political dialogue on the broader scale that would put the energy on the agenda of regional security cooperation. Similarly, given that remaining dependencies—especially in critical infrastructure—enable the Kremlin to argue that it has an indispensable role to play in Europe’s economic future, minimizing them not only neutralizes one potential point in an information warfare campaign, but also boosts Europe’s ability to project meaningful deterrence.

In reality, BRELlixit means that only the technical management of the connections with Russia and Belarus will change. After the system begins operating synchronously with the continental European or Nordic networks, electricity trading between e.g. Lithuania and both Russia and Belarus can continue as they do now—based on the NPS procedures for trade with countries outside the market.23

Reliance on the power system of a potentially hostile power like Russia raises the importance of Baltic energy issues inside both NATO and the EU—while also raising the possibility that energy will be used as part of a hybrid warfare campaign.

2.2 ECONOMIC

Since all three Baltic countries joined Nord Pool Spot—the above-mentioned Nordic power exchange that has already been in operation for 15 years, and that now unites them with the electricity trading markets of the Nordic countries [Denmark, Finland, Sweden, and Norway], Germany, and Great Britain—their main economic orientation has been directed northwards. This has boosted electricity market development in the region while harmonizing wholesale prices thanks to the NPS price and capacity optimization system.24

Yet, while Estonia, Latvia, and Lithuania are economically part of the Nordic electricity area, they cannot reap the full benefits of their NPS participation while synchronized with non-EU electricity grids. After all, a joint wholesale electricity market requires operational systems to be reliable and secure to minimize the risk of outages or malfunctions that can affect the wholesale price. Key differences in the electricity market models of the EU and Russian grids on aspects such as network access and fees, transit, and balancing responsibility create obstacles for optimal trade flows.

These fundamental differences in the way IPS/UPS operates compared to EU systems do not merely impede trade with the Nordic countries, but also undermine the reliability and endanger the market value of the Baltic systems themselves—presenting a powerful economic argument for desynchronization. First, Russia does not adequately disclose its electricity grid investment plans to the EU or to its BRELL partners.25 While there has not been a complete lack of discussion on the issue—for example, Commission vice

---

22. Ibid.
23. “Lithuania PM on BRELL Agreement: Compensations to Russia Are Not Even Being Considered”. The Baltic Course.
president Maroš Šefčovič and Russian energy minister Alexander Novak reportedly promised to develop an intergovernmental agreement on BRELL in 2016—such exchanges remain subject to the political risks we discuss in the next section.26 Second, the infrastructure itself is simply less reliable: as the OECD notes, the average number of unplanned outages per year in systems such as IPS/UPS is around ten times higher (and the outage duration two times longer) than in those of the West 27. Third, as the EU JRC report notes, a key current feature of the system to which the Baltic systems are currently synchronized is that “any occurring problems of the [BRELL] electrical ring cannot be solved locally, i.e. within particular power systems, because such solutions are neither technically effective nor economically reasonable, and do not ensure power supply reliability.”28

3. A BRELLxit tax?
Costs and risks of desynchronization

While we conclude that it is a step worth taking for the reasons outlined above, it is nonetheless also true that desynchronization of the Baltic electricity grid would represent a dramatic shift in the energy landscape in the region—bringing with it risks as well as benefits. BRELLxit would require not only meeting the cost of the needed investments in new infrastructure, but also addressing two areas of concern: first, political unpredictability (that is, about the stability of the governments and energy policies of Russia and Belarus) and second, geostrategic threats (of supply cutoffs or of more aggressive state action, whether military or non-military).

3.1 Technical and economic

In general, synchronized electricity grids provide greater economic and social benefits than do isolated networks. However, this is not to say that there are no risks—even of a technical nature. After all, in a large synchronized grid, problems—including blackouts—that occur in one region “are quickly felt in another,” spreading throughout the interconnections that in times of normal operation help to ensure stable frequency support. As the UN report goes on to explain, “large scale disturbances can propagate through interconnections and result in cascading outages, bringing down systems that had previously been functioning normally.”29

Such disturbances are more frequent—and more likely—inside the UPS-IPS area than in the EU, as explained below.

Moreover, there are physical costs associated with desynchronization as well, ones that must be budgeted for—and require expertise to minimize. Given that Estonia currently has no experience itself in managing frequency—with these functions still carried out by the Russian TSO—the new costs associated with maintaining necessary reserve capacity and

28. Purvins, Fulli, Covrig, et al., The Baltic Power System Between East and West Interconnections, p. 5
29. Multi Dimensional Issues in International Electric Power Grid Interconnectors, p. 17
exploitation after 2025 would be around €15 million per year; however, as Elering’s 2015 Security of Supply report argues, these costs will gradually decline later on as real experience with frequency regulation is gained, and as reserve usage is optimized.30

Before 2025, costs are estimated at €10m to prepare for isolated functioning (the last step in desynchronizing from BRELL), including €1m for testing and about €1.5m/year in increased labor costs—including the hiring of foreign experts.31

These costs do not include the investments necessary to upgrade grid controls and construct new (and reinforce existing) power lines within and among the Baltic states, however, which “could take a decade to complete and could cost the Baltics €1 billion,” as Litgrid CEO Daivis Virbickas told IEEE Spectrum in an article that went on to suggest that this sum might “be more than the Baltics can earn back from a more fluid power market.”32 Of course, given the Baltic experience of having earned and then lost sovereignty within a generation, not everything can be expressed purely in financial terms. Accordingly, let us turn now to the political dimension.

3.2 POLITICAL UNPREDICTABILITY

Russia’s aggression in Ukraine presents valuable lessons (as explored in further detail below) on the importance of energy security and the importance of geography—specifically, that cross-border connections represent a source of both economic and political power.33

The Soviet-era BRELL power system maintains electricity interdependencies that simply do not reflect either the foreign policy priorities or internal political trends of the interconnected states.

Given the Baltic experience of having earned and then lost sovereignty within a generation, not everything can be expressed purely in financial terms.

30. Eesti elektrisüsteemi varustuskindluse aruanne 2015, p. 22
31. Ibid, p. 23
32. Fairley, “The Great Baltic Disconnect”, p. 11

Beginning in 2000, the centralization of political power under the regime of Vladimir Putin undercut the hold of regional governors, including in the electricity sector, while also demonstrating the strength of the state relative to other economic actors. Putin’s reassertion of the Kremlin’s authority, rooted in the experience of the Yeltsin administration’s dependence on the new class of oligarchs, did not simply consist of eliminating

35. Susanne Wengle, Power Politics: The Political Economy of Russia’s Electricity Sector Liberalization, University of California Berkley (2010) http://escholarship.org/uc/item/2pz5w0k#page-10
 monuments, however. Its objective was to re-establish the state as a social provider, something that meant restoring its ability to manage the economy while maintaining financially beneficial ties to global markets. This is perhaps best exemplified by the fall—and rise—of Anatoly Chubais.

Once deputy prime minister and privatization chief under Boris Yeltsin, and later chairman of Unified Energy System of Russia, Chubais earlier tried to launch a radical privatization reform in electricity power networks for the sake of modernization. At the time, the unpopular campaign was labeled an attempt “to sell Russia” and deprive it of “the heart of its economy,” its electricity networks and power plants—and popular protests called for Chubais’ imprisonment. Ultimately, however, Chubais’ reforms succeeded, and UES broken up into separate production and distribution companies. This was made possible due to favorable political winds, generated in particular by the alliance between former security/military officials (siloviki in Russian) and political liberalizers.

Despite the improvements to the system mentioned above, the very fact that it came about due to these shifting political fortunes emphasizes the risks of the Russian model. It cannot be ruled out that another political shift will happen in the country in the near-to medium-term future—a shift that would have obvious impact on BRELL and thus on the energy security of the whole BRELL system.

Similar risks are inherent in the Belarusian case, especially as presidential elections approach in 2020. Russian media, for example, are already promoting the narrative of worsening relations between Minsk and Moscow, this process of discrediting Lukashenka as a reliable partner for Russia can be considered a prelude to a more active campaign to destabilize the country. The unpredictability of the political climate inside both Russia and Belarus—including the deteriorating trust between the two governments—clearly undermines the security of the whole BRELL system.

3.3 GEOPOLITICAL RISKS

3.3.1 RUSSIAN ENERGY POLICY: EXPLOITING ENERGY DEPENDENCE

As noted above, the collapse of the Soviet Union left behind a dense energy infrastructure network designed in the interests of the Union as a whole—thus, in theory, creating mutual interdependencies among the successor states. However, not only was the network largely centered around Russia, but that country also inherited the lion’s share of the USSR’s oil and gas reserves. Combined with the delayed and incomplete liberalization of Russian energy markets, this situation has allowed its leadership to use energy as a tool for pursuing its foreign policy objectives. Its consolidation of control over regional energy infrastructure has also provided both a political and physical pretext for its continuing presence in the region—one that it still views as its legitimate sphere of influence.

Russia maintains its presence in the EU energy sphere by means of two factors: its control over legacy energy infrastructure and its large market share. Despite seeing declines in both over the last few years, Russia has maintained its position as the main channel for—and supplier of—both crude oil and natural gas to the Baltic states.

As illustrated below, Russia has leveraged this presence in the Baltics to apply both political

The unpredictability of the political climate inside both Russia and Belarus—including the deteriorating trust between the two governments—clearly undermines the security of the whole BRELL system.
Russia maintains its presence in the EU energy sphere by means of two factors: its control over legacy energy infrastructure and its large market share.

Even though the Baltic countries’ oil terminals still primarily serve as transit centers for Russian westward exports, this does not imply that any real interdependency exists; in 2001 the Baltic Pipeline System (BPS), which bypasses the Baltic countries, was completed. This system has made it possible—and not just theoretically—for Russia to cut the supply of oil to the Baltics without affecting its exports to the rest of the EU. In the decade after the completion of the BPS, all three Baltic states have been affected by supply interruptions or closures. For example, the Ventspils Nafta port facility in Latvia and Lithuania’s oil refinery Mažeikių Nafta been cut off from Russian oil supplies since 2003 and 2006 respectively, albeit partially due to commercial reasons. By contrast, the most recent regional example—that of Estonia in 2007—was arguably more political in nature. That year, the Estonian government decided to relocate a monument commemorating the Soviet defeat of Nazi Germany. In response Russia temporarily cut off all oil exports to the country, citing a previously-unmentioned need for “urgent track repair.” Even if the incident in question was relatively brief and indeed proved unable to shift the course of Estonian policy, the precedent remains a worrying one.

The 2009 and 2014 gas cutoffs to Ukraine were also worrying to the Baltic states, given that at the time they were 100 percent dependent on Russia for gas supplies, and at the moment still lack a physical gas connection to the rest of the EU. While Lithuania’s construction of a floating LNG terminal at the port of Klaipėda brought non-Russian gas supplies to the Baltic region for the first time, even this success story highlights the need to address the problematic nature of Russian energy policy in the region: while before moving ahead with its construction Lithuania paid the highest price of any EU country for its gas imports (some 15% more than did Germany, for example)⁴², progress on the project led Gazprom to offer much cheaper gas to the country in order “to make LNG less attractive to potential customers.”⁴³ There are therefore grounds to prepare for the future possibility of such actions in the electricity sector as well.

3.3.2 Military Aggression—Conventional and Otherwise

Russia’s asymmetric activities in Ukraine in recent years—from influence operations, disinformation, and subversion to attacks on critical infrastructure in both the cyber and physical domains—have alarmed the EU and NATO, including of course the Baltic states. In particular, the Russian role in managing Baltic electricity infrastructure presents a clear target for potential operations.

According to the latest (2014) version of the Military Doctrine of the Russian Federation, modern conflicts integrate the use of conventional force with nonmilitary methods; for both, energy (whether infrastructure or supply) represents a key target.⁴⁴ In the event of a conventional attack (whether overt or covert), energy infrastructure would become a focal point given its centrality to the key objective of establishing and maintaining territorial control; meanwhile, in both conventional and unconventional campaigns, electronic warfare would likely be used to weaken national resilience—including against electricity grids. Electricity networks are highly vulnerable to cyber attack. A well-planned and coordinated strike, whether executed prior to or instead of the use of conventional force, would likely trigger chaos by paralyzing multiple sectors

⁴¹ Ibid.
⁴⁴ Совет Безопасности Российской Федерации, Военная доктрина Российской Федерации (Москва, 2014) http://static.kremlin.ru/media/events/files/41d52a959a2a1d60b0e1de3530.pdf (accessed May 7, 2017)
of the economy while affecting the targeted state’s capacity to defend itself (for example, by disrupting the functioning of hospitals, military bases, etc.).

In either scenario—conventional or non-conventional attack—the continuing dependence of the Baltic grid on a potentially hostile state only increases the network’s vulnerability. This vulnerability is highlighted by the example of Crimea in three key ways. First, Russia has experienced considerable difficulties since annexing the peninsula because its grid was—and remains—fully integrated into the electricity network of Ukraine. For example, in 2015 the Crimean network was physically damaged, leaving two million people—as well as a Russian naval base—without power for some time. Russia is still not able to cover the electricity demand of Crimea due to the absence of a land connection; as a result, it will have to invest heavily in a so-called “energy bridge” consisting of several high-capacity interconnectors across the Strait of Kerch.

In addition to highlighting the importance of deepening Baltic connections with EU networks in the event of an attack, the Crimean example also demonstrates the ability even of small groups of ostensible non-state actors to disrupt electricity connections and foster social tensions: after the above-mentioned network damage in 2015, Crimean Tatar activists and Ukrainian nationalists inside Ukraine prevented repair crews from restoring the main power lines that supply Crimea, significantly increasing the duration of the disruption—and escalating Ukrainian-Russian tensions further. Finally, as another strategically valuable warm-weather naval port disconnected from Russian territory, Crimea can be compared to Kaliningrad, the exclave sandwiched between Lithuania and Poland whose electricity future is a key element in Russia’s plans to respond to BRELLxit, as we discuss shortly.

4. BRELLXIT AS SEEN FROM MINSK AND MOSCOW

Thus far, our analysis has almost exclusively been concerned with the point of view of the Baltic countries, both because of the pragmatic need to begin a constructive debate about BRELLxit in the three states, and because as independent states, Estonia, Latvia, and Lithuania have the sovereign right and obligation to make their own energy policy choices. Nonetheless, they certainly are not the only actors with agency in the BRELLxit debate. In addition to Brussels, as discussed above, Minsk and Moscow will of course shape the outcome of the desynchronization process as well. After all, despite the 2015 comments by Vladimir Putin and other Russian leaders that desynchronization is unnecessary and expensive, it may well be that the three Baltic countries need to leave BRELL before BRELL leaves them first!
In this section, we review the current political and practical approaches of both countries towards BRELLxit before outlining potential Belarusian and Russian actions under both crisis and non-crisis scenarios.

4.1 Political approaches to BRELLxit

Russia’s stance on the prospect of Baltic states’ exit from the BRELL agreement and the IPS/UPS power system is embodied in two mutually complementary strategies: promoting skepticism about it while also preparing for it as an inevitable reality.

As for the first, Russia’s moves to prepare for BRELLxit are focused on ensuring the stability of electricity supplies to Kaliningrad and hedging the risks of a possible escalation in energy-related tensions in the region (especially if a conflict develops over gas supplies as well.) On the second, its skepticism-promotion activities include information operations designed to raise public doubts about the economic, political, and even technical feasibility of BRELLxit while working directly with stakeholders and decision-makers in European states and the EU as a whole to create incentives to reject the whole project.

In general, the Russian approach to BRELLxit is strategic—that is, it utilizes a wide range of instruments, whether political or sectoral, in order to encourage other actors to make decisions that it sees as favorable. However, in the event a new crisis with the West emerges (for example, due to intensified conflict in Ukraine), Russia will use the same approach with the same instruments to strengthen its perceived position; to that end, it might undertake hostile measures in the Baltic region, including in the energy sphere.

Belarus, for its part, maintains a neutral stance on the issue. Its energy strategy is focused on integrating the generating capacities of the under-construction Astravyets nuclear power plant (whose first reactor is scheduled to begin operating in 2019, and the second in 2020-2021) into the country’s power system. However, given the pragmatic mindset of the Belarusian leadership, there is also a high probability that it will strive to create opportunities for electricity exports from Astravyets to the EU (whether the Baltic States or Poland), most likely, in an unconffrontational manner, through the proposal of establishing an HVDC link (i.e., one that would not affect the synchronization issue).

4.2 Preparing for potential BRELLxit?

From a Russian perspective, BRELLxit brings with it two challenges: ensuring the continued energy independence of Kaliningrad, and ensuring the energy sufficiency of the country’s northwestern region. Let us look at the latter challenge first.

According to Russia’s Energy Strategy for the period up to 2030 (ES-2030), in recent times, electricity consumption in the country was growing almost twice as fast as electricity production between 2000 and 2008 (4% ahead of official forecast for consumption versus 2.8% for production). More specifically, according to the base scenario of the official forecast by the Agency for Electric Power Balance Forecasting, the northwestern Russia regional energy grid (officially known as the North West United Energy System) will consume 116.8 billion kWh in 2020, 128.3 billion kWh in 2025 and 140.2 billion kWh in 2030. If such trends were to continue without ES-2030 establishes the goal of turning the region into one with a primary energy surplus. It envisions achieving this aim by increasing production using a range of energy sources, including gas, oil, coal, atomic energy and renewables. Such increased production is

intended in part to meet the challenge posed by BRELLxit, as the grid development measures—for both the northwestern and central regional energy grids—are already included in the planning documents of Rosseti, the Russian power grid operator.

In 2015, as the prospect of Baltic desynchronization became more realistic, the Russian authorities began taking steps aimed at ensuring the continued post-BRELLxit energy a possibly isolated Kaliningrad system feasible. This program includes constructing or rebuilding over 250 substations and over 900 miles (1460 km) of transmission lines, thereby equipping the Kaliningrad closed-loop grid with a dual-redundancy configuration.52

In order to ensure that the region’s existing and new natural gas-fired plants can function without transit supplies via Lithuania, Gazprom plans by the end of this year to finish construction of a floating LNG terminal in Kaliningrad large enough to cover the region’s complete current demand for natural gas (over 2 million tons of LNG annually). Meanwhile, in 2013, Gazprom opened a Kaliningrad underground gas storage facility that by this July will be able to store 156 million cubic meters (mcm) of natural gas, with subsequent planned expansions to 336 mcm by 2020 and 800 mcm by 2025.53

Hence if Russian authorities implement their plans as outlined, by 2021 at the latest (and in fact most likely by 2020), Russia will be both technically and economically prepared for the complete decoupling of the energy systems both of Kaliningrad and of northwest Russia from those of Estonia, Latvia and Lithuania.

As for Belarus, it also plans to be ready by 2021, in large part because its controversial nuclear power plant—now being constructed at Astravyets, located within sight of the Lithuanian capital of Vilnius at a distance of 28 mi/45 km—will see its first reactor come online no later than in 201954; the second is planned for 2020 but will likely not enter service until 2021.55

Given the international situation surrounding Astravyets’ construction of the plant, Belarusian

authorities have at least officially shelved their ambitions to export its electricity, now declaring that all power generated will be consumed domestically.\textsuperscript{56} However, not only does Belarus need to finish plans for integrating substantial amounts of electricity into its existing grid, but must also complete construction of the necessary infrastructure in advance.

\section*{4.3 Window of vulnerability}

Russia’s strategy of beginning to invest in the energy independence of Kaliningrad well in advance of BRELLxit seems to have paid off. As things now stand, Russia will enjoy substantial leverage over the Baltic states from 2020 (when the dual-redundancy configuration of Kaliningrad’s grid will become operational) to 2025, the announced target date for BRELLxit by the Baltic states. During this window of vulnerability, Moscow will be able to cause a partial blackout in the Baltics by carrying out a deliberate unilateral desynchronization of the two systems. Moreover, thanks to the Kaliningrad LNG and gas storage facility projects as well as investments in storage in northwest Russia (whose largest city of St. Petersburg is currently supplied by the Inčukalns storage facility in Latvia during times of winter peak demand), Russia will also able to curb natural gas supplies to the Baltic without disrupting supplies to its own citizens.

Certainly, there is an element of unpredictability that must be acknowledged when seeking to assess the probability that the above measures will actually be used; after all, despite the politically-motivated energy supply cutoffs noted earlier in our analysis, it remains also true that Russia did not cut electricity supplies to Georgia even during the 2008 war between the two countries.\textsuperscript{57} It is however safe to conclude that Moscow would be more likely to resort to measures such as forced blackouts (as well as other specific moves such as or disrupting electricity imports via the undersea Estlink and NordBalt cables\textsuperscript{58}) in the event that tensions with the Baltic states and/or NATO as a whole significantly escalate during the window of vulnerability.

Such military-political escalation in the region would be even more feasible if Russia received full support from Belarus—which would enable the deployment of conventional as well as non-conventional measures against Latvian and Lithuanian energy infrastructure (and other targets) from Belarusian territory.

However, at the moment it is far from guaranteed that Belarus would consent to doing so. Currently, the Belarusian leadership seeks to maintain and enhance its stance of quasi-neutrality (as a “donor of regional security and stability.”)\textsuperscript{59} Given this stance—as well as other indicators, such as Minsk’s increasingly more constructive posture in relations with the EU, or its record of cooperating with Ukraine


in the post-Crimea period, it is reasonable to expect Belarus to try to de-escalate a conflict between Russia and the Baltic states, perhaps even by supplying energy to Latvia and Lithuania if it is able.

On the other hand, it is important to remember that Belarus may well undergo a significant political transition in 2019-2020, perhaps including the departure from office of President Lukashenka—an event that would incentivize Russia to strive to end the policy of quasi-neutrality once and for all.

If such a broader regional confrontation does not take place, Russia will likely continue to focus on the second half of its BRELLxit policy: seeking to prevent it. Its strategy may include lobbying the EU and key member states whose support is needed for desynchronization (notably Poland but also Germany and the Nordic countries), or seeking to exploit political differences among the Baltic states on different aspects of the process. Even in this scenario, Russia is still likely to issue indirect or direct threats of a forced blackout during the window period, and could even carry them out for short-term periods. Belarus would be more likely to offer some level of support for Russian policy in this case; however, its support would not consist of any hostile steps, but instead focus on lobbying against BRELLxit by stressing its readiness to provide stable, low-cost electricity supplies to the Baltic states and the lower economic cost of continued synchronization.

**Conclusion**

Given the frequency with which desynchronization is once again being discussed in the Baltic region, it seems as if BRELLxit may now finally take place by 2025, as announced. Certainly, it is a sign of progress that as of this writing, the prime ministers of the Baltic states and Poland are preparing to meet shortly in order not to debate whether BRELLxit should happen, but how it should take place.60

Nonetheless, as the Baltic states seemingly prepare to bid farewell to BRELL, there remains some doubt—and some difference of opinion among the Baltic states—as to which desynchronization option is best. Is the already existing LitPol Link 1 cable sufficient to synchronize with the Continental European grid, or will it be necessary to wait for LitPol 2 to come online? Does Poland need to make additional investments in e.g. transmission or generating capacity in its relatively sparsely populated northeastern region in order to make synchronization possible? Is the option of synchronizing instead with the Nordic countries still on the table and, if not, should it be? Given the urgent need to ensure desynchronization before the Baltics’ vulnerability increases in 2020, it is important not to sink into inaction, but to develop a clear and concrete plan for desynching: precisely the topic to which the ICDS research study on BRELLxit, due out this autumn, is devoted.

*Emmet Tuohy and Anna Bulakh* are non-resident research fellows at the International Centre for Defence & Security (ICDS) in Tallinn, Estonia. Yuri Tsarik is head of the supervisory board of the Center for Strategic & Foreign Policy Studies in Minsk, Belarus.

---
