



POLICY BRIEF

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Energy Security in Europe Current and Future Challenges

Based on

The 2022-2023 EUCOS Policy Symposium – European Common Security

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The 2023 EUCOS Symposium¹ focused on the complex energy security issues confronting the member states of the European Union, whose energy decisions show significant variability. The symposium addressed the need for unified approaches to EU energy and technology policies, which have been made more urgent by Russia's invasion of Ukraine. Symposium participants then noted the corollary requirements for improving energy independence for individual EU members and the EU as a whole.

As emerging technology revolutionizes energy markets, it has never been more important for European countries to synchronize their standards on protecting critical energy infrastructure, including electric grids, smart grids, gas pipeline sensors, and wind and solar technologies. The symposium showcased cutting-edge research on where the European Union is headed on energy security, what the U.S. and the EU can learn from each other, and how global developments impact EU energy security. Two separate panels discussed a range of challenges, including:

- the unpredictable course of hybrid/disinformation/cyber warfare between Russia and Ukraine
- disruptive Western embargos on virtually every sector of the Russian economy
- the EU's enduring commitment to an energy transition away from fossil fuels
- the EU's remarkably rapid switch to non-Russian sources of oil and gas
- the painful adjustments of EU national economies to higher energy costs
- the crystallization of a geopolitical divisions of Eurasia into three groups: a EU/NATO/OECD coalition, an emerging Moscow-Beijing bloc, and a collection of states disinterested in the Russia-Ukraine war but very interested in extracting concessions from the contending superpowers.
- and how an accelerating climate crisis threatens major upheavals in every human community on the globe.

Before the 2022 sanctions imposed on Russia, the European Union relied on Russia for about 45 percent of its imported natural gas. But the degree of dependence on Russian gas varied greatly. The Baltic states, Finland, Poland Slovakia each relied on Russia for 60 percent or more of their imported gas. Purchases of Russian oil followed roughly the same pattern. Before the Russian invasion of February 2022, Europe imported slightly more than 18 million tons of Russian petroleum; by March of 2023, EU sanctions had reduced Russian oil exports to the EU to less than 2 million tons. As the speakers credited the EU with making remarkably quick (but very unpopular) adjustments in energy supplies, they asked to what degree it is possible for the EU to

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combine an anti-carbon climate policies with policies that provide energy security for each of the national economies.

Panel One: Energy Security in an Era of Hybrid Warfare

Panelists:

Dr. Sarah Lohmann, Acting Assistant Professor of International Studies in the Henry M. Jackson School for International Studies. Her research focuses on cyber and energy security in the context of EU and NATO policy, and she is a co-lead for a NATO project on “Energy Security in an Era of Hybrid Warfare”.

Dr. Aleksander Olech, Deputy Director in the Department of Africa and the Middle East at the Ministry of Foreign Affairs of Poland. Dr. Olech was a visiting lecturer at the Baltic Defense College and has conducted research at several international institutions, among them the Université Jean Moulin III in Lyon, the Institute of International Relations in Prague, and the NATO Energy Security Center of Excellence in Vilnius. His main research interests include energy security, international cooperation for security in Eastern Europe and the role of NATO and the EU with regard to hybrid threats.

Lieutenant Colonel Dr. Frank J. Kuzminski, U.S. Army officer strategist, holds a doctorate from the Jackson School of International Studies and a Master’s in Public Administration from Harvard University. His dissertation addresses how leaders shape military space posture in Europe.

Dr. Lohmann offered a detailed analysis of NATO’s evolving military, diplomatic, and economic cooperation policies since the 2014 Russian annexation of Crimea with a focus on practical measures to defend the vulnerable points of Europe’s energy grids against hybrid Russian threats, including cyberattacks in tandem with kinetic attacks. She argued that the alliance has shown enormous flexibility, but different standards across member states in protecting energy critical infrastructure make it difficult to altogether shield Europe from Russia’s cyber and hybrid attacks.

Dr. Lohman noted that, in particular, Russia has been waging economic and political warfare against the NATO allies most politically supportive of Ukraine -- Poland, Lithuania, Latvia,



Estonia, Moldova, and Romania. Russian cyberattacks aimed at Ukraine's energy infrastructure early in the war have turned increasingly to Poland, the Baltics and the Nordic countries, prompting both Finland and Sweden to drop their decades-long of neutrality and join NATO. She proposed that NATO and EU unite around the expansion of renewable energy, supply chain issues, and cybersecurity to help improve European energy independence and protection against Russia's hybrid warfare.

More specifically, Dr. Lohmann proposed four solutions for Europe's energy independence and cyber protection of energy infrastructure in the future. First, expanding the use of bioenergy to close the energy supply gap that has been left in the wake of Russia's withdrawal of LNG and many European countries cutting back on nuclear energy. The use of biomass, in particular, can help Europe diversify its energy supply, create growth and jobs and lower greenhouse gas emissions. Secondly, for the short term, she suggested some governments rethink their policy toward expanding coal and totally eliminating nuclear energy. As a short-term strategy, nuclear energy does not produce emissions, whereas expanded use of coal is driving up greenhouse gases and forcing EU countries to fall short of their energy goals. Third, she proposed that cities, neighborhoods, and NATO bases expand and develop opportunities for microgrids, which allow them to convert to their own energy sources if the main grid is attacked. Finally, she encouraged EU and NATO member states to develop a new generation of Cyber Early Warning systems to protect energy infrastructure, so that cyber attacks can be thwarted before they cause damage to crucial systems.

Dr. Alexander Olech focused on Warsaw's long term goals to cooperate on green energy policy with the Nordic/Baltic states and other Central European states, including Ukraine. Poland also plans to construct several nuclear power plants, but is being challenged by a series of technological and financing problems in obtaining long-term commitments from the six possible foreign vendors of nuclear power plants (Russia, China, France, South Korea, Canada and the US).

Currently, Polish coal mined by 90,000 Polish workers remains the cheapest source of electric power generation and supplies 70 percent of Poland's total energy needs (down from 90 percent in 2010). The EU embargoes on Russian oil and gas have significantly raised energy costs for the Polish economy as a whole and stressed a society which has accepted over 200,000 Ukrainian refugees. The immediate effect is to make Poland dependent on the oil and gas producers of the Middle East and Africa. Clean green energy in Poland is at this point a rhetorical goal.

Lt. Colonel Dr. Frank Kuzminski elaborated on the Polish energy dilemmas in regard to the high costs of building a more efficient electrical grid, replacing cheap Russian natural gas shipped in



existing pipelines with the high-cost terminals to import natural gas from the US, Norway, Qatar and other suppliers. Poland confronts enormous new energy burdens and military security risks as it in effect has evolved into the strategic rear of Ukraine and become a target of Russian cyber attacks and related forms of hybrid warfare, including occasional public claims on Polish territory by Russian officials.

Panel Two: The Global Context of European Energy Policy

Panelists:

Dr. Scott Montgomery, Geoscientist and Affiliate Faculty in the Henry M. Jackson School of International Studies. For more than two decades, he worked as a geoscientist in the energy industry, writing over 100 scientific papers and 70 monographs on topics related to oil and gas, energy technology, and industry trends.

Muhammad Abdulgayumov M.A. in the REECAS Program of the Henry M. Jackson School of International Studies. His work focuses on Central Asia, more specifically the short-term impact of the Russia-Ukraine war on Russia's role in Central Asia in the context of Russia's historic role in Central Asian regional security and energy trade.

The second session of the EUCOS program began with a detailed outline of world energy trends by Professor Scott Montgomery of the Jackson School. He noted that green energy sources to date play a minor role in world energy consumption: hydropower accounts for only 4 percent of world energy consumption, nuclear power plants only 3 percent and wind/solar/other renewables only 4 percent. In contrast coal is the source of about one third of global energy consumption, as is petroleum. These statistics shed light on the ambitious energy goals of the EU, which he claimed was in the midst of the most severe energy crisis its members have ever experienced. Professor Montgomery argued that Europe had tied itself to Russian pipelines for both oil and gas during the first two decades of the 21st century. Some of those pipelines crossed Ukrainian territory. But Putin sought to construct new systems which bypass Ukraine and the Baltic states as well: Northstream I and II under the Baltic Sea from Russia to Germany, as well as two pipelines under the Black Sea: Turk Stream and Blue Stream. The result, he submitted, was an enormous geopolitical miscalculation about the long-term relationship of the democracies of the EU with the Putin autocracy in Russia.



Professor Montgomery presented empirical evidence of a pre-2014 growing dependence of many EU states on Russian gas and oil, followed by abrupt and disruptive reductions of Russian energy supplies. This constituted an energy transition of unprecedented scope. Seen from one angle this transition is a slow-motion epochal change for the EU, but from other angles a highly-damaging assault on key sectors of EU national economies. Dr. Montgomery also noted the changed role of the US in Europe's energy markets as a result of fracking and other drilling technologies which have transformed the United States into an energy exporter to Europe. That said, he argued that US energy exports to Europe were driven more by the commercial interests of private companies than by US government policy. It remains unclear whether the US is actively assisting the EU in its energy transition away from carbon-based fuels or is competing with Europe in regard to immediate access to fossil fuels and in the development of renewable energy technologies.

Muhammad Abdulqayumov added observations about oil and gas production in Central Asia and its potential impact on Europe. Drawing on his Master's Degree thesis at JSIS, he examined the theoretical possibility that Kazakhstan and Turkmenistan could supply Europe with oil and gas in quantities equivalent to those bought from Russia at the outbreak of the war in Ukraine. Turkmenistan is credited with the world's four largest proven reserves of natural gas. Kazakhstan ranks just behind Russia in proven petroleum serves. And Uzbekistan is developing both oil and gas fields.

Mr. Abdulqayumov demonstrated, however, that the devil is in the fine details of pipelines and geography. Most importantly, for the Central Asian energy exporters to supply Europe, they would have to secure the cooperation of Russia, which controls the existing pipelines linking Central Asia and Europe. Russia also can complicate projects to build pipelines and shipping routes across the Caspian Sea and or across Caucasus states to either the Black Sea or to Turkey. Mr. Abdulqayumov noted that alternative routes to Europe through Iran, Iraq and Syria involved unlikely cooperation with competing vendors of oil and gas to Europe. Thus, the geopolitical facts are that the most logical customers for Central Asia carbon energy sources are China, India and Pakistan - now Russia's preferred customers for oil and gas shipments that ultimately arrive in maritime vessels. In addition, Russia has hopes of Chinese financing for new pipelines connecting eastern Siberia with China and Pacific Ocean ports. Additional complications arise from the sheer costs of building pipelines through the daunting geography of the region.

Summary of Major Policy Recommendations to Strengthen European Energy Security

- *Expand the use of bioenergy* to close the energy supply gap that has been left in the wake of Russia's withdrawal of LNG and many European countries cutting back on nuclear energy.



- For the short term, Europe might need to *rethink their policy toward expanding coal and totally eliminating nuclear energy.*
- Cities, neighborhoods, and NATO bases should expand and develop opportunities for *microgrids*, which allow them to convert to their own energy sources if the main grid is attacked.
- EU and NATO member states should develop a new generation of *Cyber Early Warning systems* to protect energy infrastructure.