INSTYTUT SOBIESKIEGO

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OPENING REPORT (2026)
ENERGY AND RESILIENCE
IN POLAND AND CENTRAL AND EASTERN EUROPE



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CONTENTS

INTRODUCTION **6**
WHEN HAS A LUMP OF COAL BECOME RIGHT-WING, AND WHEN DID PHOTOVOLTAICS START VOTING FOR THE LEFT? 7

ABOUT THE PROJECT **12**
IN SEARCH OF A CONSENSUS ON THE POLISH ENERGY POLICY 13

1. INTRODUCTION **16**

2. EXECUTIVE SUMMARY **22**
STARTING POINT 24
AN INVITATION TO DEBATE 25

3. STRATEGIC CONTEXT **26**
THE WAR IN UKRAINE AS A TURNING POINT 27
THE END OF A STABLE GLOBAL SYSTEM 28
REASSESSING THE EUROPEAN MODEL 30
THE GROWING ROLE OF CEE 32
STRATEGIC CONCLUSION 33

4. NARRATIVE, LANGUAGE, AND CONDITIONS FOR CONSENSUS **34**
WHAT IS THE REAL ISSUE AT STAKE? 37
WHAT IS NEEDED TO REACH A CONSENSUS? 38
HOW TO CONDUCT THE CONSENSUS-BUILDING PROCESS? 38
IMPLICATIONS FOR PARTICIPANTS IN THE PUBLIC DEBATE 39

5. A NEW PARADIGM: ENERGY = SECURITY AND RESILIENCE 40
ENERGY AS CRITICAL INFRASTRUCTURE 42
ENERGY AS AN ELEMENT
OF A STATE'S OPERATIONAL CAPABILITIES 45
THE STATE AS A CENTRAL ACTOR 46
TECHNOLOGY AS A NEW DIMENSION OF SECURITY 47
IMPLICATION/DISCUSSION POINT 47

6. FOUR SYSTEMIC DILEMMAS 49
INTRODUCTION 50
TRANSFORMATION AND SECURITY 54
THE STATE VS. THE MARKET 55
AUTONOMY VS. THE EU/PARTNERS 57
CLIMATE VS. COMPETITIVENESS 61

7. FOUR ANALYTICAL AREAS 63
INTRODUCTION 64
GEOPOLITICS OF ENERGY 70
DUAL-USE 72
ENERGY TRANSITION 73
CENTRAL EUROPE 75

8. GLOSSARY 77

ABOUT THE AUTHORS 81

ABOUT THE PUBLISHERS 85

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INTRODUCTION



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WHEN HAS A LUMP OF COAL BECOME RIGHT-WING, AND WHEN DID PHOTOVOLTAICS START VOTING FOR THE LEFT?

One of the biggest misunderstandings in the contemporary energy debate is the way we've come to understand the concept of energy transition.

We talk about it as if it were a project with a clear beginning and end. Today we are at point A, where fossil fuels dominate and we must move to point B, where low-emission sources will dominate. Once we get there, the transition will be complete. A simple narrative naturally follows this perspective: we need to phase out some energy sources, build some others, bear the costs of the transition, and eventually get to the other side.

I disagree with this way of thinking. The energy transition did not begin with the European Green Deal, the Fit for 55 package, or the Paris Climate Summit. It has been ongoing virtually since the birth of the modern electric power industry—and it will never end, because there is no such thing as a final, definite energy system.

When Thomas Edison was building his first direct-current (DC) grids in New York in the 1880s, it seemed plausible that a model for the electrification of cities had just been developed. A few years later, the development of alternating-current (AC) systems—associated primarily with Nikola Tesla and George Westinghouse—radically increased the ability to transmit energy over longer distances. The entire way of thinking about energy generation, transmission, and distribution therefore had to change. This was one of the first major transitions in modern electric power engineering—decades before anyone even uttered the word "climate" in its current, political sense.

Coal itself has undergone its own revolutions time and again—from subcritical units, through supercritical, to ultra-supercritical units, which allow for much more efficient use of the same fuel. At the same time, we have developed technologies for dust removal, desulfurization, and denitrification of flue gases. A coal-fired power plant from half a century ago and a modern coal-fired unit use the same raw material, but technologically, they are separated by an entire era.

The oil crises of the 1970s became one of the main catalysts for the rapid acceleration of France's nuclear program. In a relatively short time, France built one of the largest reactor fleets in the world. This, too, was an energy transition—driven not by climate policy as we understand it today, but primarily by the need to reduce dependence on imported fuels.

The situation was similar with natural gas. Gas-fired power plants have evolved from simple turbines with efficiency factors in the low 30s to modern, combined-cycle gas and steam systems with efficiency factors exceeding 60 percent. The development of LNG has enabled the transport of gas between continents, and the shale revolution in the United States has reshaped the global map of oil and gas producers and exporters—it is precisely this process that this report describes.

And today, as the authors emphasize, the new driving force behind change does not necessarily have to be another climate directive. It could be artificial intelligence, data centers, system digitization, electrification of subsequent economic sectors, or the new pattern of energy generation distribution. The modern system is becoming increasingly digital and algorithm-driven, which opens up new opportunities but also creates entirely new security risks.

In other words: **the energy transition is not a bridge that you cross once, when going from one bank to the other. It is a river.** It flows continuously, changing its course under the influence of new technologies, new threats, new economic demands, new interdependencies, and new capital costs—and no one will ever stand on its other bank with the feeling that the matter has been settled.

There is no such thing as a "target energy mix" if by "target" we mean "final." We can and should plan the system for the years 2030, 2040, or 2050. But the energy system of 2050 will not mark the end of the transition. It will be the next stage of it. Technologies, prices, the availability of raw materials, geopolitics, energy demand, and our ability to manage the system will all change. New risks and new interdependencies will emerge. Some of today's assumptions will prove accurate, while others certainly will not.

Perhaps that is precisely why what has been done with the energy debate in recent years is so dangerous. **We have turned one of the most fundamental—and, at the same time, most complex—areas of state governance into a field of ideological conflict.**

By definition, the energy mix is an engineering and economic issue, as well as a matter of national security. It's the physics of the grid. It's the need to balance production with demand at all times. It involves power reserves, system stability, the cost of capital, fuel availability, transmission capacity, the geopolitics of critical raw materials, supply chains, and the resilience of infrastructure to crises. It is one of those areas where a wrong decision does not simply result in losing an argument in the political debate. It can result in, among others, loss of industrial competitiveness, in long-term dependence on an external supplier, or energy shortage precisely when the country needs it most.

And yet, technologies that should serve as tools have become political symbols. At some point, a lump of coal began to be seen as right-wing, photovoltaics started "voting" for the left, and nuclear energy gathered its own political tribe around it.

We have turned the energy mix from an engineering and strategic problem into a test of political identity. And this is, in my view, one of the most costly mistakes we have made in this debate over the past decade.

Because when technology becomes part of our political identity, we stop assessing it in technological terms. We exaggerate its advantages, downplay its costs, and overlook its risks. The drawbacks of a solution proposed by "our" camp become an inconvenient detail, while the advantages of a technology associated with the opposite side of the debate become something improper to acknowledge. Instead of considering what this technology is good for, we start asking, "Is this technology good?". Instead of asking about its function, we ask about its affiliation.

I attribute much of the responsibility for this state of affairs to the European climate policy. Not because the European Union has presented us with the challenge of reducing emissions—that challenge is very real. Nor because it supports the development of new technologies. The problem arose when in the public debate the direction of change set by the regulations began to shift toward a value judgment on the technologies themselves. Some became, by definition, "good," modern, and desirable, while others were deemed "bad," obsolete, and in need of elimination. Discussions about the function of technology have increasingly given way to discussions about its political legitimacy.

MEANWHILE, AN ELECTRON HAS NO POLITICAL VIEWS.

Coal generation entails high emissions and, under European conditions, is increasingly burdened by emission costs. At the same time, domestic fuel may be valuable from the perspective of system security and availability. Generation from natural gas has lower emissions than coal and provides the flexibility the system needs, but for Poland and Europe, it translates into a significant degree of dependence on imported fuel. Nuclear power offers stable, low-emission generation but requires enormous capital, time, and long-term consistency in government decision-making. Renewable energy sources (RES) allow for fuel-free energy production, reduce emissions, and enable system decentralization, but their growing share increases the importance of the grid, system balancing, storage, and other sources of flexibility.

At the same time, reducing dependence on imported fuels does not necessarily mean the end of dependence altogether. It may signify a shift toward dependence on technologies, components, critical raw materials, software, and supply chains controlled outside of Europe. The report captures this issue very accurately: replacing fossil fuels with critical raw materials means a change in the nature of energy dependencies, not their complete elimination.

THE TRANSITION DOES NOT ELIMINATE RISK. IT MERELY CHANGES ITS NATURE.

And that is precisely why I consider the question, "Which technology is good?" to be one of the least useful questions that can be asked today. A far more important question is: **For what purposes can a given technology be used, what risks does it mitigate, and what new threats does it introduce into the system?**

The energy sector is, after all, a system of trade-offs. Every technology gives us something, and every technology requires a price be paid. That price may be money, emissions, construction time, the need to expand the grid, reduced flexibility, fuel imports, technological dependence, or the concentration of the supply chain in a country whose interests do not always align with ours. A mature energy policy, in my opinion, begins when we are able to say in all honesty: "My favorite technology also has its drawbacks."

This approach has taken on even greater significance in light of the experiences of recent years. The war in Ukraine has brutally reminded Europe that energy is not merely a commodity or solely a climate issue. It is a matter of national security. Energy infrastructure can become a target of attack. Dependence on a single supplier can be a tool for exerting pressure. Diversifying sources can increase resilience to physical destruction, but the digitization of millions of devices creates new vulnerabilities. A reserve that seems economically inefficient under normal conditions may prove invaluable during a crisis. A cheap solution can actually be very expensive if it comes at the cost of strategic dependence.

That is why the approach presented in this report resonates deeply with me: security, affordability, and sustainability cannot be considered in isolation. Nor can the transition be reduced solely to a shift in technologies within the energy mix. What is at stake is the restructuring of the entire system of dependencies—from fuels to critical raw materials, from large centralized sources to distributed resources, and from infrastructure treated as an economic asset to infrastructure of strategic importance.

Therefore, we do not need to answer the question of whether Poland should be "for the transition" or "against the transition." That is the wrong question to ask. The transition is already underway—just as it has been for the past hundred-odd years and just as it will continue for decades to come.

The right question is: **What are our priorities?**

What kind of system do we need as a country located on NATO's Eastern Flank? How much are we willing to pay for security and redundancy? How much technological dependence are we willing to accept in exchange for lower costs? Which capabilities and value chains must we preserve or build in Poland and Europe? How can we reconcile decarbonization with industrial competitiveness? Where should the market decide, and where is it important for the state's strategic interests to prevail? And

finally: how can we create a system flexible enough to utilize technologies we do not yet know of today?

The report presented to you by the Sobieski Institute in collaboration with the Polska z Natury Foundation does not provide a single answer to these questions. And that's a good thing. In the energy sector, we should be particularly wary of those who claim to have found the answer. We do not need an end to energy transition, but rather the ability to continuously transform ourselves—without ideological labels, with a sober assessment of costs, benefits, and risks, and with the awareness that we are not meant to build an energy system according to our own views.

Let's build it in accordance with what Poland needs.

Krzysztof Perycz-Szczepański
Polska z Natury Foundation

ABOUT THE PROJECT



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IN SEARCH OF A CONSENSUS ON THE POLISH ENERGY POLICY

The energy transition is one of the most important processes shaping the future of Poland and Central and Eastern Europe today. Its significance extends far beyond issues related to the functioning of the energy sector or the achievement of climate goals. The way in which the countries of the region will restructure their energy systems in the coming years will have a direct impact on their security, the competitiveness of their economies, the health of their industries, and their ability to respond to crises and capitalize on new development opportunities.

The significance of these challenges has become particularly evident in recent years. The war in Ukraine, the energy crisis, the growing importance of critical infrastructure, changes in global supply chains, and intensifying technological and industrial competition have shown that energy security cannot be considered in isolation from national security and economic resilience. At the same time, in the face of rising energy costs, pressure to reduce emissions, and the gradual loss of traditional cost advantages Poland is presented with an additional challenge: it needs to carry out the transition in a way that does not weaken the competitiveness of its businesses but that serves as a catalyst for modernization and the creation of new economic advantages instead.

In Poland's case, this challenge is particularly complex because the energy transition is taking place amid a profound shift in the country's economic development model, in which long-standing dependence on domestic and imported fossil fuels had for years been one of the sources of the Polish economy's competitive advantages, providing relatively cheap energy and supporting industrial competitiveness. However, due geopolitical changes and growing climate policy requirements—including costs associated with the EU ETS— this model has been undergoing a fundamental shift. Thus, the search for a new development paradigm to maintain competitiveness must begin. Poland can no longer rely on relatively low labor costs to the same extent as before. The focus should be on new technologies, investments, and the modernization of the economy; however, a transition in this direction will simultaneously lead to an increase in energy demand. The key challenge, therefore, is to carry out a transition that

will build a system resilient to geopolitical turbulence and harness new development potential—particularly in the areas of technology, industry, and infrastructure—without compromising energy security, economic security, or the continuity of the state's operations. This means that the energy transition must be approached not as a mere process of reducing emissions, but rather as a component in building a new model of competitiveness for the Polish economy.

"Energy & Resilience in Poland and Central and Eastern Europe 2026–2027" is a project dedicated to one of the most significant challenges Poland and Central and Eastern Europe are facing today: how to build an energy system that is simultaneously secure, crisis-resilient, economically competitive, and capable of long-term development.

The project was launched in response to a fundamental shift in the environment and circumstances the Polish and European energy sectors operate under. The war in Ukraine and the restructuring of the security architecture, the growing importance of critical infrastructure, technological and industrial competition, changes in global supply chains, and challenges related to the competitiveness of the European economy mean that energy policy is no longer just a sectoral policy. Decisions regarding energy sources, infrastructure, or technologies today will have direct consequences for the national security, position of the industry, resilience of the economy and society, and the strategic agency of Poland and the entire region. This approach is reflected in the project's five interrelated areas: security, energy, industry, consensus, and technologies.

One of the project's most important objectives is to create a space for developing the broadest possible consensus on the strategic directions of the Polish energy policy. The scale of investments, their long-term character, as well as the consequences of decisions made today mean that the energy transition requires predictability and continuity extending beyond a single political cycle. This does not mean striving for agreement on all issues or eliminating disputes regarding specific technologies and instruments. Rather, it is about seeking common ground on fundamental matters: security of supply, national resilience, economic competitiveness, cost acceptability, and the long-term direction of the energy system's development. Such a consensus is intended to enhance the sustainability of strategic decisions while preserving the natural, public debate over specific technologies and the instruments for their implementation.

The opening report is the first stage of this process. Its role is not to present a ready-made model for transition or a closed set of recommendations. Instead, the report identifies the most significant changes in the environment where Poland and the region operate, organizes strategic dilemmas, and formulates questions that will be subject of further debate. In this way, it aims to establish a common ground for the dialogue among representatives of public administration, business, the energy sector, industry, expert and scientific communities, and other participants of the public debate.

The publication of the report marks the beginning of the next phase of the project. In 2026, the questions raised in the report will be explored during an opening conference and five roundtable discussions, which will bring together representatives from expert

and analytical circles, business and industry, the energy and technology sectors, and organizations focused on security, public policy, and the development of Central and Eastern Europe. Bringing together diverse experiences and perspectives is intended to deepen the analysis, compare possible solutions, and gradually develop recommendations in key areas of the project. The process will continue in 2027 and will lead to the development of a white paper outlining the conclusions and recommendations formulated throughout the project, followed by a final conference and a declaration summarizing the whole process.

The goal of the entire process is to translate the identified challenges and various perspectives into strategic courses of action that will allow for the integration of national security and resilience with economic competitiveness, technological and industrial development, and the building of social and political consensus regarding the future of the Polish energy sector.

Konrad Szymański

1. INTRODUCTION



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The triad of affordability, security, and sustainability is one of the most frequently used concepts in energy policy as a whole. It refers to the three objectives that should guide a well-designed policy.

Affordability means that energy should be available at prices acceptable to households and businesses—prices that do not undermine the economy's competitiveness or lead to energy poverty.

The challenge of energy *security* means that the energy system should ensure uninterrupted energy supplies, resilience to crises, and risk mitigation—including through the diversification of sources and import routes—as well as adequate infrastructure.

The much broader concept of *sustainable development*, as it applies to energy policy, means that energy production and consumption should minimize their impact on the environment and climate, including through the reduction of greenhouse gas emissions, the development of renewable energy sources, and improvements in energy efficiency.

This is precisely the source of high-profile political dilemmas. Should sustainability be achieved by curbing consumption through regulation and taxation, or should the emphasis be placed on innovation—including fiscal incentives—to drive change through more market-based methods, thereby reducing environmental impacts without curbing consumption or, even worse, economic growth? How should social costs be distributed if a scenario involving restrictions is adopted?

This leads to the *energy trilemma*, because improving one aspect often hinders progress on the others. Thus, an accelerated transition away from fossil fuels may increase energy costs in the short term (reducing *affordability*), while maintaining *a* short-sighted *status quo* of cheap energy from high-emission sources worsens environmental indicators (*sustainability*) and shifts the ever-increasing costs of change onto future generations.

This is where the less-discussed issue of the sequence of actions most often arises—one in which not only regulatory capacity plays a key role (which, when it comes to the Western world, is unrivaled), but also the commercial maturity of the technology and society's readiness for behavioral change. Here, the aging societies of the West have fewer and fewer advantages.

The still-fluid geometry of the *security–sustainability–affordability* triangle has accompanied European energy policy from the very outset.

However, no single, uniform approach has ever been developed regarding the order in which the components of this energy trilemma are presented.

In recent years, especially following the energy crisis triggered by Russia's aggression against Ukraine and tensions in the Middle East, the EU energy policy has placed increasing emphasis on balancing all three elements of this triad. It sounds good. However, achieving such a balance is not easy. A significant part of the—often very heated—political debate centers precisely on what this balance should in practice mean.

Historically, a deliberate evolution can be seen in the European Commission documents.

Between the gas crises of 2006–2008—triggered by Russia's gas blackmail against EU countries—and the emergence of Poland's concept of the Energy Union in 2015, the triad emphasized security of supply and the internal market, that is, energy competitiveness.

The 2015 Energy Union Strategy already stated that its goal was to provide Europeans with "secure, sustainable, competitive, and affordable energy." *Security* was given consistent precedence, although the Energy Union itself emphasizes the balance among the three vertices of this triangle.

Following the energy crises—which proved extremely costly for European taxpayers, businesses, and national budgets—triggered by Russia's full-scale aggression against Ukraine in 2022, energy security, which has been undermined by the war, remains at the forefront, but affordability is also becoming increasingly important. This comes as no surprise. According to data from Bruegel, between 2021 and 2023 the EU member states spent as much as 540 billion euros to protect citizens and businesses from high energy prices.

In initiatives such as the "Action Plan for Affordable Energy: Unlocking the True Value of our Energy Union to Secure Affordable, Efficient, and Clean Energy for All Europeans" (2025) or "AccelerateEU—Energy Union: Affordable and Secure Energy through Accelerated Action" (2026), *affordability* has become *a* top-of-the-agenda *buzzword* in Brussels.

This time, it is not just because of the war in the East. There are internal reasons too. The EU's poorly calibrated climate policy—in which the commercial maturity of innovations cannot keep pace with increasingly ambitious emissions reduction targets—is now entering a phase of change and long-awaited reforms.

Squaring the circle cannot be achieved through further deliberations on priorities within the framework of the energy trilemma. The missing element—not only in these models, but in others as well—is interdependence.

And this is the greatest value of the presented study. The authors of the report **Energy and Resilience in Poland and Central and Eastern Europe (CEE)** point to the deep interdependence of all three components of the energy triangle, which resolves the fierce competition among the three elements of the energy trilemma by making it futile. In particular, the report highlights the close link between the energy transition (*sustainability*) and security, and significantly broadens the very concept of security in energy policy beyond the existing framework of security of supply. It points out that "energy is no longer merely a sector of the economy. It has become one of the main arenas where the security of states, the resilience of societies, the competitiveness of industry, and the balance of power among great powers are decided. The energy transition, therefore, does not simply mean a shift from one set of technologies to another. It signifies a restructuring of the entire system of interdependencies: from fuels to critical raw materials, from centralized power plants to distributed resources, from global free trade to protectionist industrial policies, and from civilian infrastructure to infrastructure of strategic importance" (p. 24).

This brings about "a shift in the starting position of Poland and Central Europe," which must now play a far more proactive role in building Europe's resilience. On the other hand, it means that the delays in the transition—which until now have resulted in ever--higher energy costs for Poland—now pose ever-greater risks to hard security.

Such a reversal of the competing paradigms that have guided energy policy planning over the past 20 years is neither automatic nor unconditional. It may occur—and thereby replace competition with synergy—only once a number of conditions are met.

That is why we are presenting you with a report intended to launch a public debate—a document that is by design not a finite study, but rather a broad and very precisely worded invitation to resolve 43 dilemmas and answer the questions associated with them. Although these issues overlap in many places, it is still possible to imagine very different sets of answers that will lead to different future scenarios.

One thing, however, is certain. Neither Poland nor the rest of the world can afford the false comfort of reducing the problem of the energy transition to a simple "yes" or "no." The question has long since ceased to be whether to carry out the energy transition. The question fundamental for Poland's future today is how to carry out the country's energy transition.

This is yet another reason why there must be so many intermediate answers leading to the final conclusion. The energy transition—especially when understood in such a broad context as in this analysis—cannot be reduced to the simplistic scenarios and slogans we hear in today's public debate in Poland. Currently, the debate is all too often dominated by a vision of the transition reduced to an energy mix, expressed in alarmist language that refers to the abstract notion of "saving the planet." In response, we hear increasingly vocal calls to defend *the status quo*, which is already imposing high costs and posing growing threats to the country's security.

A debate structured in this way not only leads to inertia and growing, increasingly costly delays. Instead of creating a vision of a secure and predictable future, it breeds fear and social destabilization, which only weaken us in the face of security challenges—and potentially even war—especially in our part of Europe. Destabilization, fear, and the erosion of already low levels of public trust are the last things we need today. Grotesque visions of the energy transition play a significant role here.

The matter is urgent, but no amount of haste justifies ill-considered and superficial responses.

Only by working through these numerous, precisely described dilemmas and strategic questions do we stand a chance of writing a Polish scenario for the transition—one that addresses concerns about our country's security, economic future, and natural environment all at once.

The alternative is the regression in thinking about energy, the economy, and security—as observed in many areas of our public debate—in the context of Poland's energy and climate transition.

This is a crucial part of a broader debate: one about Poland's development beyond the middle-income levels and away from potential excessive dependence.

A radical broadening of the concept of security in the context of energy has systemic consequences. The state plays a crucial role. Even in such sensitive areas as security, however, this does not mean that we can afford a simplified, Polish version of dirigisme, in which the state simply replaces the market. It is a matter of the optimal allocation of goods and talent, which the market ensures, but more importantly – it is also the matter of the availability of capital. Given the financial scale of the challenges, no country today can afford to disregard the mobilization of private capital. The fact that Poland's development remains heavily dependent on foreign capital does not significantly alter this reality.

However, this does not relieve the state of its responsibility to play a strategic role in creating a well-thought-out and stable regulatory framework that will allow for the planning of long lifecycle investments such as those in the modern industry and energy sector.

Poland, as one of the main beneficiaries of the global trade, has reasons to be concerned about the rising tide of protectionism. The main drivers of deglobalization are operating outside Europe. As a trading bloc, we must respond to this trend by minimizing risks through proportionate market protection measures, such as subsidies or reciprocity, or by de-escalating trade wars, for example, in our dealings with the U.S.

This requires a cautious responses within the EU itself, as misguided protectionist sentiments also have their supporters here. For Poland, this would be exceptionally risky. A war waged with national subsidies or public aid, war over renationalization of the EU budget, or the radical localization of production in Europe's traditional development hubs will not solve the problem of the lost competitiveness of the continent. However, the first victims will be those countries which, like Poland, still have limited capital resources. All those who read about the facets of the European crisis in Draghi's and Letta's reports—whether out of concern or *Schadenfreude*—should read these studies through to the end. The path to greater resilience for Europe and Poland lies in controlled, and as transparent as possible trade integration that will be law-based but also deeper. We need more of a common market, not less.

On a broader scale, the issue of Europe's autonomy arises. This ambiguous concept is understood quite differently in different capitals of the EU member states—ranging from the moderate and still transatlantically-oriented visions of Central and Northern Europe to versions formulated in a far more confrontational manner, particularly in Paris. Paradoxically, the continuation of the U.S.'s protectionist—if not outright isolationist—policy toward Europe significantly fuels this trend. This is a new development. But here, too, we can no longer afford the luxury of asking "whether," but rather "how?"

Europe's growing autonomy may cement Poland's peripheral status relative to the continent's major industrial centers. The problem is that other centers do not automatically offer us any additional benefits.

This paper shows in great detail how difficult it is to coordinate the energy transition amid deglobalization, wars on our borders, and the digital revolution.

To start with, the report **Energy and Resilience in Poland and Central and Eastern Europe** provides us with a good map that will help us navigate this very steep ridge. The weather is worse than usual, people are tired, but at least we have a map. Return to base is not an option because... **no such base exists.**

2. EXECUTIVE SUMMARY



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Polish energy policy is entering a period when the existing divisions increasingly fail to reflect actual choices. The war in Ukraine, the restructuring of global trade, industrial competition between the U.S., China, and Europe, and the development of new technologies mean that energy is simultaneously becoming a matter of security, competitiveness, infrastructure resilience, and economic sovereignty.

In this situation, the Polish right must also develop its own position on the changes in the energy sector. It is no longer sufficient to define this position solely as a stance on the EU's climate policy or as defense of the existing model. The energy system is changing: the importance of renewable energy sources, grids, energy storage, and electrification is growing, while successive crises are once again raising questions about the role of domestic fuels, dispatchable sources, and strategic reserves.

However, the direction and pace of these changes are not yet set in stone. A debate is needed on the principles guiding the development of the Polish energy system and the interests of the state that it should safeguard. Technologies and instruments should be evaluated primarily in terms of their impact on security, energy costs, competitiveness, technological sovereignty, and economic resilience.

The purpose of this report is to structure this debate, identify changes that cannot be ignored, and highlight the most important strategic choices that Poland is facing.

STARTING POINT

The report's first premise is the recognition that **energy has become part of the nation's security architecture**. Ukraine's experience has shown that power plants, grids, and transmission infrastructure can be targets of military operations, cyberattacks, and sabotage. Energy security therefore means not only access to fuels and generation capacity, but also the protection of critical infrastructure, the ability to rapidly restore the system, strategic reserves, and the capacity of the economy to function under crisis conditions.

The second key point is the growing importance **of the electric power sector as the backbone of the entire economy**. The electrification of transportation and heating, data centers, and industrial automation all underscore the importance of a stable system. Consequently, not only generation sources but also transmission lines, connectors, storage facilities, and flexibility are becoming strategic assets. Both - lack of generation capacity as well as a mismatch between the developmental pattern of new generation sources and consumption, and the infrastructure needed to support their use – may be the problem.

This is linked **to the system's** growing **dependence on weather and hydrological conditions for its security**. The widespread use of air conditioning and other cooling devices increases power demand in the summer, while heat waves, droughts, and low water levels combined with high water temperatures can simultaneously limit the generating capacity of some thermal power plants as well as the network carrying capacity. The system must therefore be designed not only to accommodate the growth in annual energy consumption but also to address the changing demand profile and the accumulation of adverse conditions during peak demand periods.

Poland's starting point for this debate is unique: it possesses domestic coal reserves and a system historically built around conventional power generation, the economics of which are being increasingly reshaped by regulatory and market conditions. The decision regarding coal's future role therefore requires an assessment of the costs of mining and modernizing power units, security of supply, the availability of alternative energy sources, the impact of European regulations, and the strategic value of domestic fuel. The question is: **from a rational perspective**, **what role can coal play and at what cost**?

Another premise is that **restructuring the fuel mix changes the nature of energy geopolitics but does not eliminate it from the equation**. Reducing dependence on imported fuels may enhance security, but new technologies create dependencies on critical raw materials, components, software, and foreign production capacity. Europe may thus reduce its dependence on Russian raw materials, but at the same time increase its dependence on Chinese technologies. In this context, energy sovereignty means consciously managing interdependencies and limiting the concentration of risk.

Energy is also one of the key factors in industrial competitiveness. Its price, the availability of grid connection capacity, and the pace of infrastructure development are having an increasingly strong influence on investment locations. At the same time, the

modernization of the energy sector is giving impulse for creation of new industries—ranging from grid equipment and storage facilities to nuclear technologies, *offshore energy*, recycling, and cybersecurity. It is therefore important for Poland to consider both the cost of these changes and what portion of the value created will remain in the country.

Another important aspect is that **the state is once again becoming a central player in the energy and industrial policies**. The U.S., China, Japan, South Korea, and European countries are using public funding, regulations, and industrial policy to develop strategic technologies. However, the question arises: where does reasonable risk mitigation end, and where does the costly selection of technologies and development paths—financed by the public—begin?

Finally, **the geographical location of Poland and Central Europe lends these choices particular significance**. The region is NATO's Eastern Flank, an area undergoing infrastructure reconstruction following the reduction of dependence on Russia, and a natural base for Ukraine's reconstruction. The development of North–South infrastructure, nuclear power, networks, and domestic industrial capabilities could strengthen Poland's position. European strategic autonomy offers Poland an opportunity to advance within new value chains, but it may also entrench the concentration of technology, capital, and added value in the EU's largest economies.

AN INVITATION TO DEBATE

The report does not presume to provide answers to the questions it raises. Its starting point is the conviction that a sustainable energy policy requires moving away from a simplistic division between supporters and opponents of the transition. The real debate today centers on the pace of change, costs, technologies, the acceptable risk levels, the role of the state, and considerations on which interdependencies are acceptable for Poland.

The aim of further work should be neither to confirm a predetermined path of energy transition nor to simply return to an energy model developed for different economic and geopolitical conditions. What is needed is an assessment of the available options in terms of their actual consequences. A domestic energy source is not automatically a secure and competitive one, just as low-emission technology is not automatically a cheap, resilient, and beneficial solution for the Polish economy.

In this sense, the report marks the beginning, not the end, of the discussion. It does not prejudge what the target energy mix should be or what the optimal pace of change is, but rather seeks to create a common framework within which costs, benefits, and risks can be consciously weighed against one another. What is at stake in this debate is not only the shape of the energy sector, but also the answer to a broader question: **what kind of energy system does Poland need in order to remain a secure, competitive, and self-reliant nation amid growing uncertainty.**

3. STRATEGIC CONTEXT



INSTYTUT SOBIESKIEGO

THE WAR IN UKRAINE AS A TURNING POINT

Russia's full-scale war against Ukraine has finally dispelled the illusion that Europe's energy infrastructure is primarily a civilian resource, protected by the very logic of economic interdependence. In practice, it has become a primary operational target: Russia has systematically targeted power generation, transmission grids, distribution networks, and heating facilities. According to a joint assessment by the Government of Ukraine, the World Bank, the European Commission, and the United Nations[1] from December 2025, the value of direct damage to the energy and mining sectors reached $24.8 billion, where $17.1 billion was the value of damage done to the electric energy sector, including $14.2 billion damage to generation assets. The needs for reconstruction and modernization of the sector were estimated at $90.6 billion, and the scale of damaged or destroyed energy assets rose by approximately 21% compared to the previous edition of the assessment.

Significantly, the attacks resulted not only in physical damage to infrastructure but also in energy shortages, restrictions to heat supply, and disruptions to the economy. The need to implement rolling blackouts in Ukraine was therefore not merely a side effect of the war, but in practice served as an instrument of psychological, social, and fiscal pressure: it raised the costs of running the state, reduced the predictability of industrial operations, increased pressure on the civilian population, and forced the reallocation of resources from development to emergency system maintenance. In 2025, the European Bank for Reconstruction and Development (EBRD) justified[2] an additional 1 billion euros in support for Ukraine's energy sector precisely due to the scale of the damage, blackouts, and the need to decentralize the system, while the IAEA emphasized[3] that the war had repeatedly led to the loss of external power supply

1 *Ukraine Rapid Damage and Needs Assessment (RDNA5), February 2022 – December 2025*, World Bank, Government of Ukraine, European Union, United Nations: https://documents1.worldbank.org/curated/en/099022026094036395/pdf/P514499-22f93f3a-4278-42bc-b907-db9553d12069.pdf (accessed July 4, 2026).

2 *EBRD to Provide 1 Billion Euros to Ukraine's War-Ravaged Energy Sector in 2025*, Reuters, April 2, 2025: https://www.reuters.com/world/europe/ebrd-provide-1-billion-euros-ukraines-war-ravaged-energy-sector-2025-2025-04-02/ (accessed July 4, 2026).

3 Update 354 – IAEA Director General's Statement on the Situation in Ukraine, IAEA, June 19, 2026: https://www.iaea.org/newscenter/pressreleases/update-354-iaea-director-general-statement-on-situation-in-ukraine?utm_source=chatgpt.com (accessed July 4, 2026).

to the occupied Zaporizhzhia nuclear power plant; by June 2026, 19 such incidents had already been recorded there.

From a strategic perspective, the war in Ukraine is therefore a turning point because it has revealed a new hierarchy of threats: first, it is necessary to maintain the physical continuity of power supply, grid resilience, and the ability to rapidly restore essential services; only then can we discuss efficiency, cost, and the pace of transformation. For EU member states, especially those in the East, this means treating electricity, gas, liquid fuels, storage facilities, cross-border interconnections, and cybersecurity as dual-use infrastructure. This conclusion is also clearly evident on NATO's Eastern Flank, where - following the experiences of Ukraine - Poland, Lithuania, Latvia, and Estonia have begun preparing programs to strengthen power stations, enhance physical protection, and implement anti-drone safeguards for critical infrastructure[4] .

THE END OF A STABLE GLOBAL SYSTEM

At the same time, what is nearing the end is the model of the world in which companies and nations could simply assume a relatively stable predictability in trade, industrial policy, and geopolitics. In April 2025, the WTO drastically lowered its forecast for global merchandise trade growth from an expected increase to a 0.2% decline, citing the sharp resurgence of tariffs, escalating tensions, and the "unprecedented" nature of changes in trade policies as the main causes for this revision[5] . The WTO itself emphasized that, given this level of uncertainty, it had become exceptionally difficult to construct a credible baseline scenario.

This does not signify a complete retreat away from globalization, but rather a transition to an era of selective deglobalization and the geopolitical restructuring of interdependencies. In 2025, the OECD warned that aggressive reshoring and changes to the localization of supply chains could reduce the value of global trade by 18% and, for some economies, incur costs of up to 12% of GDP compared to a more open scenario[6] . This is significant because it shows that the new model will not be a simple "return to domestic production," but rather a shift away from the logic of maximum cost efficiency to the logic of resilience, diversification, and politically acceptable dependencies. In practice, companies are not abandoning global supply chains; rather, they are shortening them, duplicating them, moving them closer to end markets, or locating them in politically trusted jurisdictions.

4 A. Sytas, M. Strzelecki, *"On NATO's Eastern Flank, Bunkers and Anti-Drone Nets Set to Protect Power Grids*," Reuters, August 29, 2025: https://www.reuters.com/business/energy/natos-eastern-flank-bunkers-anti-drone-nets-set-protect-power-grids-2025-09-29/ (accessed July 4, 2026).

5 *Global Trade Outlook and Statistics April 2025*, WTO, 2025: https://www.wto.org/english/res_e/booksp_e/trade_outlook25_e.pdf (accessed: July 4, 2026).

6 *OECD Supply Chain Resilience Review: Navigating Risks*, OECD Publishing, Paris 2025, https://doi.org/10.1787/94e3a8ea-en.



WAR IN UKRAINE AS THE TURNING POINT

Since the beginning of the full-scale agression on Ukraine, its **critical infrastructure facilities became operational targets for the agressor**.

Russia has been systematically targeting energy generation facilities, transmission lines and heating networks in Ukraine.

THE ATTACKS RESULTED IN:

- DESTROYED INFRASTRUCTURE
- **BLACKOUTS**
- LIMITED SUPPLY OF HEAT
- DISRUPTION TO THE FUNCTIONING OF THE WHOLE ECONOMY

Blackouts in Ukraine functions as tools to exert psychological, social and fiscal pressure:

- increased costs of running the State
- lowered predictability of industrial output
- increased pressure on the civilian population
- forced reallocation of funds from the development to system maintenance

The IAEA* has underlined that the war many a time brought about the loss of external power supply to the Zaporizhzhia Nuclear Power Station; 19 incidents of loss have been recorded since June 2026.

* International Atomic Energy Agency
- international nuclear watchdog organization

According to joint evaluation by the government of Ukraine, the World Bank, the European Commission and the UN from December 2025, the **estimated direct damage to the energy and mining sectors amounted to**

24,8 bln USD

of which
17,1 bln USD
was allocated to the electricity sector

which encompassess
14,2 bln USD
of damage to the power generation capacity

The estimated value required to **rebuild and modernize the energy and mining sectors amounts to** **90,6 bln USD**

The war in Ukraine is evidence to the new hierarchy of risks: first, continuity of supply, grid resilience and ability for quick recovery of the basic services must be maintained. It is only then that energy transition can be considered.

For the EU countries, especially those located in the east, this picture translates into the requirement to treat the power generation, gas and liquid fuels sectors, as well as the transboundary connectors and cybersecurity as dual-use infrastructure elements.

INSTYTUT SOBIESKIEGO
GRAFIKA: NOWEMEDIA24.PL PIOTR PERZYNA

The tension between the U.S. and China remains the most visible driver of this shift. In 2025, the trade conflict between the two economies escalated sharply once again: China filed a complaint with the WTO over the new U.S. tariffs[7] , and a few days later, Reuters[8] reported that the tariffs imposed by both countries on each other had reached 145% on the U.S. side and 125% on the Chinese side. For Europe, this translates into more than just a risk of an indirect impact on global trade. It also means a growing pressure regarding critical raw materials, technology, components, and industrial policy. In June 2026, Reuters reported[9] that the EU's trade deficit with China had risen to approximately 360.6 billion euros annually, and the European Commission was considering the use of further trade defense tools and supply diversification mechanisms.

In this context, the role of the United States is also being redefined. The U.S. remains a pillar of security and a key partner for Europe; however, cooperation with the U.S. is becoming increasingly transactional and less predictable. It's becoming more and more difficult to regard the U.S. – Europe cooperation as a stable basis for long-term strategic planning. In June 2026, U.S. Secretary of Defense Pete Hegseth announced[10] a six-month review of the U.S. military presence in Europe, accusing some allies of "free-riding"—that is, benefiting from U.S.-provided security without bearing the corresponding costs—and tying future U.S. engagement to the levels of their defense spending. At the same time, in 2026, the European Union was implementing its part of the trade agreement with the United States, under which U.S. tariffs on most goods from the EU were to remain at 15%. This shows that transatlantic relations are no longer free from costly trade pressures.

REASSESSING THE EUROPEAN MODEL

In this context, the existing European model — based on the assumption of simultaneous maintenance of high regulatory standards, relatively low-cost security, broad trade openness, and competitive industrial base — is also facing a crisis. On the webpage dedicated to the Draghi report, the European Commission itself points out that Europe is under pressure from declining productivity, demographic challenges, rising energy costs, and intensified global competition[11] . This is therefore not merely external criticism, but a diagnosis coming from the very heart of the debate on the EU's future competitiveness.

7 *China files complaint with WTO over new U.S. tariffs*, Reuters, April 4, 2025: https://www.reuters.com/world/china/china-files-complaint-with-wto-over-new-us-tariffs-2025-04-04/ (accessed July 4, 2026).

8 J. Cash, Y. Zhang, *"China raises duties on U.S. goods to 125%, calls Trump's tariff hikes a 'joke,'"* Reuters, April 11, 2025: https://www.reuters.com/world/china/china-increase-tariffs-us-goods-125-up-84-finance-ministry-says-2025-04-11/ (accessed July 5, 2026).

9 P. Blenkinsop, *"EU leaders weigh tougher measures to combat China trade imbalance*," Reuters, June 18, 2026: https://www.reuters.com/world/china/eu-leaders-strive-unity-china-trade-imbalance-2026-06-18/ (accessed July 5, 2026).

10 P. Stewart, S. Siebold, L. Bayer, *"Hegseth Announces Review of U.S. Troops in Europe, Scorns Some Allies*," Reuters, June 18, 2026: https://www.reuters.com/business/finance/hegseth-announces-review-us-troops-europe-scorns-some-allies-2026-06-18/ (accessed July 5, 2026).

11 *The Future of European Competitiveness: Report by Mario Draghi*, European Commission: https://commission.europa.eu/topics/competitiveness/draghi-report_en (accessed July 5, 2026).

The energy issue remains central. The European Commission emphasizes in REPowerEU[12] that, although energy prices in Europe have fallen compared to their 2022 peak, specific measures must still be undertaken to ensure energy stays affordable, exposure to price shocks is limited, and market integration accelerates. The European energy system remains vulnerable to global fluctuations in commodity prices and to geopolitical tensions, a fact reflected in the European Commission's actions, including the launch of new initiatives such as the Affordable Energy Action Plan and AccelerateEU. In practice, high and volatile energy costs are becoming one of the factors increasing the risk of deindustrialization in the EU. Cost competitiveness of the energy, predictability of the regulatory environment, time required to obtain permits, and availability of public support instruments are increasingly factored into decisions by investors in the energy-intensive sectors, next to the potential of the internal market.

Competitive pressure from the U.S. and China is fundamentally different in nature. The United States is primarily concerned with the advantage stemming from more developed capital markets, simpler investment incentives, and a larger scale of subsidies or industrial incentives. Reuters reported[13] that as recently as early 2025, European companies were considering shifting some of their investments overseas to take advantage of the U.S. support measures for clean technologies (provided for in the Inflation Reduction Act—IRA). Pressure from China, on the other hand, stems primarily from the scale of production, cost advantages, and industrial surpluses: in mid-2026, the EU faced a record trade deficit with China and expanded its trade defense measures, fearing a lasting erosion of its own manufacturing base. Europe thus finds itself in a difficult strategic position, facing both a more active U.S. industrial policy and China's cost and scale advantages.

The shift in the nature of EU funding is particularly significant: EU funds are no longer solely a tool for leveling out the development disparities (cohesion policy), but increasingly serve to advance strategic EU priorities, such as the energy transition, digitalization, and strengthening economic resilience. The Recovery and Resilience Facility (RRF) illustrates this shift well, as it is a results-based instrument in which access to funding depends on the implementation of reforms and milestones that have been agreed on. This means that access to substantial European funds increasingly depends on the ability to align national projects with the framework of strategic priorities defined in Brussels, rather than solely on locally identified investment needs.

12 *REPowerEU. Affordable, secure, and sustainable energy for Europe*, European Commission: https://commission.europa.eu/topics/energy/repowereu_en (accessed July 5, 2026).

13 K. Abnett, *"Trump's pause on clean funding is a 'window of opportunity' for Europe, Poland says*," Reuters, Jan. 27, 2026: https://www.reuters.com/sustainability/sustainable-finance-reporting/trump-pause-clean-funding-is-window-opportunity-europe-poland-says-2025-01-27/ (accessed July 11, 2026).

THE GROWING ROLE OF CEE

In this new order, the importance of Central and Eastern Europe is increasing - the region is no longer just a territory on the periphery of the EU and NATO but is growing into a frontline region of the entire European system. It is here that the main axes of military, energy, logistical, and infrastructure risks intersect. In 2025, Reuters reported[14] on the aforementioned joint plan by Poland, Lithuania, Latvia, and Estonia, valued at 382 million euros, which aims to physically strengthen the power infrastructure on NATO's Eastern Flank based on Ukraine's wartime experiences. In June 2026, the U.S. was conducting a review of its military presence in Europe, while at the same time Poland was seeking a permanent U.S. base, demonstrating that the center of gravity of European security is shifting eastward—not temporarily, but structurally.

However, the region's significance stems not only from its location on the map of threats but also from the role of its infrastructure. In February 2025, the Baltic States disconnected from the post-Soviet power grid and synchronized with the European system, breaking their historical dependence on Moscow. This was a move that was at once technical, geopolitical, and symbolic: it demonstrated that interconnectors, power stations, undersea cables, storage facilities, and transmission hubs are today instruments of sovereignty. The same applies to Poland, which, by virtue of its location, is becoming a key hub for military mobility, energy transmission, raw material imports, and logistics for Ukraine's needs. It is no coincidence that the new defense agreement between Germany and Poland from June 2026[15] covered precisely military mobility, cybersecurity, new technologies, and the protection of the Baltic Sea region.

Central and Eastern Europe is also benefiting economically, as it is becoming a natural base for Ukraine's reconstruction. The future market is of an enormous scale: according to a joint assessment by the World Bank, the European Commission, the United Nations, and the Ukrainian government, reconstruction needs amount to $524 billion, and more than 10 billion euros in support and investments were already pledged during the reconstruction conference in Rome in July 2025[16] . At the same time, Ukraine is accelerating the process of aligning its institutions with EU standards. In June 2026, its central bank estimated the banking sector's compliance with the *acquis communautaire* at approximately 78%, and ongoing reforms are intended to facilitate the raising of private capital for post-war reconstruction. For Poland—and the entire Central and Eastern European region—this presents an opportunity to serve as the primary logistics, services, financial, and industrial hub for investments directed towards the East. This is not an abstract potential but a market that is already institutionalized, financed, and actively Europeanized.

14 A. Sytas, M. Strzelecki, *"On NATO's Eastern Flank: Bunkers and Anti-Drone Nets Set to Protect Power Grids."*

15 *New German-Polish defense agreement concluded*, The Federal Government, June 10, 2026: https://www.bundesregierung.de/breg-en/news/cabinet-german-polish-defence-2438794 (accessed July 11, 2026).

16 A. Amante, *"Conference commits over 10 bln euros to Ukraine rebuilding, Italy says,"* Reuters, July 10, 2025: https://www.reuters.com/business/aerospace-defense/conference-commits-over-10-bln-euros-ukraine-rebuilding-italy-says-2025-07-10/?utm_source=chatgpt.com (accessed July 11, 2026).

STRATEGIC CONCLUSION

The shortest summary is this: energy security has ceased to be merely one of several sectoral policies and has become the language used to describe an entirely new strategic order. The war in Ukraine has shown that the energy system can be a primary target of attacks, a system failure can become tool of destabilization, and the resilience of infrastructure is a prerequisite for the functioning of the state. At the same time, the geopolitical fragmentation of trade, pressure from the U.S. and China, and the growing importance of industrial policy mean that energy costs, supply stability, and the ability to finance the energy transition are now directly linked to competitiveness and sovereignty.

From the perspective of Poland and Central and Eastern Europe (CEE), this signifies a fundamental shift to the starting position. The region is beginning to grow into playing an independent role, it is becoming a frontline security zone, a hub for critical European infrastructure, and a natural base for Ukraine's reconstruction. Therefore, the strategic rationale for investing in energy resilience in Poland is not limited to mitigating domestic risks. It lies in building capabilities that will simultaneously serve as a pillar of national security, a prerequisite for sustaining industry, an instrument of regional influence, and a gateway to participation in Europe's new economic order.

4. NARRATIVE, LANGUAGE, AND CONDITIONS FOR CONSENSUS



INSTYTUT SOBIESKIEGO

Today in Poland, the energy transition is the subject of a dispute over the hierarchy of goals, the distribution of costs, and the credibility of the state. From an analytical perspective, the most important observation is this: the potential for reaching a consensus exists, just not around a single slogan, but rather around a shared set of criteria for evaluating energy policy. The International Energy Agency currently treats energy security and the clean energy transition as parallel, rather than competing, goals; it also emphasizes that the clean energy transition can enhance security through diversification of sources and reduced dependence on imported fuels[17] .

The Polish context reinforces this conclusion. Forum Energii points out that in 2025, as much as 85% of Poland's primary energy still came from fossil fuels, including 41% from coal, 27% from oil, and 17% from natural gas. At the same time, the system's high emissions rates translate into energy costs: according to Forum Energii, the price of electricity for industry alone was 128.8 euros/MWh, including 46.1 euros/MWh in 2024 as the direct cost of CO2 emission allowances[18] . Eurostat data also show that in the second half of 2025, Poland was among the countries with the highest electricity prices for households, calculated using the Purchasing Power Standard (PPS).

In the public debate, this means that the "climate versus cost" narrative is too narrow. Public expectations are more complex: energy must be affordable, secure, and gradually become less carbon-intensive. This is not a hypothesis, but a description of the public sentiment. A CBOS survey conducted in 2025 showed that 57% of Poles support the parallel development of renewable and non-renewable energy sources, 24% want to prioritize renewable energy sources today, and only 14% favor non-renewable sources. In the same survey, CBOS notes that respondents see a need to diversify energy sources to ensure security of supply[19] . At the European level, the picture is similar: 81% of respondents support the EU's goal of climate neutrality by 2050, 88% support greater

17 Reliable, affordable access to all fuels and energy sources, IEA: https://www.iea.org/topics/energy-security (accessed June 29, 2026).

18 Energy Transition in Poland | 2025 Edition, Energy Forum: https://www.forum-energii.eu/transformacja-energetyczna-w-polsce-edycja-2025 (accessed June 29, 2026).

19 CBOS, *Opinions on Climate Change and the Energy Transition*, Research Report No. 128/2025: https://www.cbos.pl/SPISKOM.POL/2025/K_128_25.PDF (accessed June 29, 2026).

Forum Energii points out that in 2025 as much as
85% of the primary energy in Poland was still sourced from fossil fuels,
incl. 41% from coal, 27% from oil and 17% from natural gas.

According to Eurostat data, in the second half of 2025 Poland was among
countries with the highest household electricity prices in terms of PPP.

INDEPENDENT ENERGY AND SECURITY - PRIORITY FOR EU CITIZENS

The framework of "climate protection vs cost"
has became too narrow to address the issue in the public debate.

Social expectations are more complex.

The energy must be: affordable, secure and increasingly less carbon intensive.

It's not a hypothetical, it's a description of social attitudes:

81% of Poles support the deployment of low carbon technologies to a varying extent.



57%
of Poles support parallel deployment of **RES and conventional energy sources.**

24%
bets primarily on **RES.**

14%
cwants to bet on **non-renewable** energy sources.

WHEN IT COMES TO THE EU, THE ATTITUDES ARE SIMILAR:

81%
of respondents supports the EU climate neutrality goal set for 2050

88%
supports more investments into RES and energy efficiency.

INSTYTUT SOBIESKIEGO — GRAFIKA: NOWEMEDIA24.PL PIOTR PERZYNA

investment in renewable energy and energy efficiency, but at the same time, energy independence and security remain among the top priorities for EU citizens.

WHAT IS THE REAL ISSUE AT STAKE?

In practice, there are three simplified narratives at play today. Each of them is partially true, but none is – on its own - sufficient as a framework for consensus. The first is the climate narrative: the transition as an obligation to reduce emissions. The second is the security narrative: the transition as a means to become independent from imported fuels and geopolitical shocks. The third is the cost narrative: the transition as a response to high energy prices and competitive pressure. The problem is that in the public debate, these three frameworks are often treated as separate, even though international institutions and regulators are increasingly describing them as interdependent.

This split in the narrative has specific political consequences. If the transition is communicated primarily as a climate initiative, it is easy to trigger a counter-narrative about the cost of living, employment security, and changes being imposed from above. If it is communicated exclusively as a cost-reduction initiative, the risk of disappointment grows, because some systemic costs (especially grid and investment costs) remain unavoidable in the medium run. ACER emphasizes that even where the cost of energy itself has fallen, rising grid costs and the phasing out of certain subsidies have impacted the final bill. This means that the promise of "quick and cost-free" is politically convenient but, in reality, untrue.

Another point of contention today is the distribution of costs and benefits. Research by the IMF and the OECD[20] shows that acceptance of climate policies depends primarily on three factors: whether people consider them effective, whether they view them as distributed fairly, and whether they see co-benefits such as better health, jobs, or cleaner air. In other words, support is declining not because the public "does not believe in the energy transition," but because they often do not know who will pay, who will benefit, and whether the policy will deliver promised results.

The third problem lies in the low credibility of the process. The OECD points out that in an area as polarized and susceptible to misinformation as climate and the energy transition, reliable sources of information, open data, clear communication, and a tangible link between public consultations and decisions are essential. Without these, public participation becomes a mere formality rather than a consensus building tool.

20 *Getting the Public on Side. How to Make Reforms Acceptable by Design*, OECD, March 26, 2025: https://www.oecd.org/en/publications/getting-the-public-on-side_262255fd-en/full-report/developing-a-public-acceptability-tool-how-can-the-insights-from-perceptual-and-behavioral-data-be-harnessed-to-improve-reforms_ae6fc506.html (accessed July 1, 2026).

WHAT IS NEEDED TO REACH A CONSENSUS?

The first prerequisite is a shift in how the debate is frames: moving from the question "should the transition continue?" to "what kind of transition do we consider safe, just, and feasible?" This is not merely a matter of language, but an attempt to build a common ground for discussion based on measurable criteria, rather than on entrenched political and ideological divisions.

The minimum common denominator should include three tests for each proposal:

- whether it strengthens security of supply,
- whether it is affordable for households and businesses, and
- does it reduce emissions and the risk of future costs.

This approach better aligns with both the logic of international institutions and public opinion's preferences evident in Poland and the EU.

The second condition is the state's financial credibility. Consensus will not emerge if the transition is associated with an abstract goal rather than with a package of safety nets and investments. For this reason, the following are so important: protection for vulnerable consumers and groups, support for micro-enterprises, pre-financing of energy efficiency, regional packages for areas losing jobs, and local mechanisms for sharing the investment benefits. This approach is already reflected in EU policies. The Social Climate Fund is set to provide 86.7 billion euros in support between 2026 and 2032 precisely to mitigate the cost impacts the energy transition may exert on households, transportation users, and microenterprises.

The third condition is an institutional anchor that transcends the political cycle. The experience of countries that have been able to pursue stable climate and energy policies demonstrates the significance of independent, statutorily mandated expert bodies, regular reporting, and the government's obligation to publicly respond to recommendations. In the United Kingdom, the Climate Change Committee operates as an independent statutory body, advising the government and reporting to Parliament. Meanwhile, the Irish Citizens' Assembly recommended almost unanimously that a new or existing independent body be adequately funded, operate transparently, and have statutory authority to oversee the implementation of climate policy. This is an important lesson: it is not only a dialogue that is required for a sustained consensus but also institutions that translate this dialogue into continued actions.

HOW TO CONDUCT THE CONSENSUS-BUILDING PROCESS?

The best examples demonstrate well-designed conflict management procedures. The German Coal Commission with broad stakeholder representation was established to develop a common path toward phasing out coal and a support package for regions and workers. The mere presence of different parties does not guarantee success, but

the German experience shows that the chances of reaching an agreement increase when negotiations on objectives are accompanied by negotiations on compensations, timelines, and protective measures.

From the perspective of the public process, four principles are paramount:

1. First, separate agreement on objectives from the debate over instruments. It is easier to reach consensus on security, predictable bills, and resilience than on a specific technologies or deadlines.

2. Second, present each proposal as a package: the cost to the consumer, the impact on safety, regional effects, implementation risks, and the source of funding.

3. Third, disclose not only the benefits but also the transitional costs and how they will be offset.

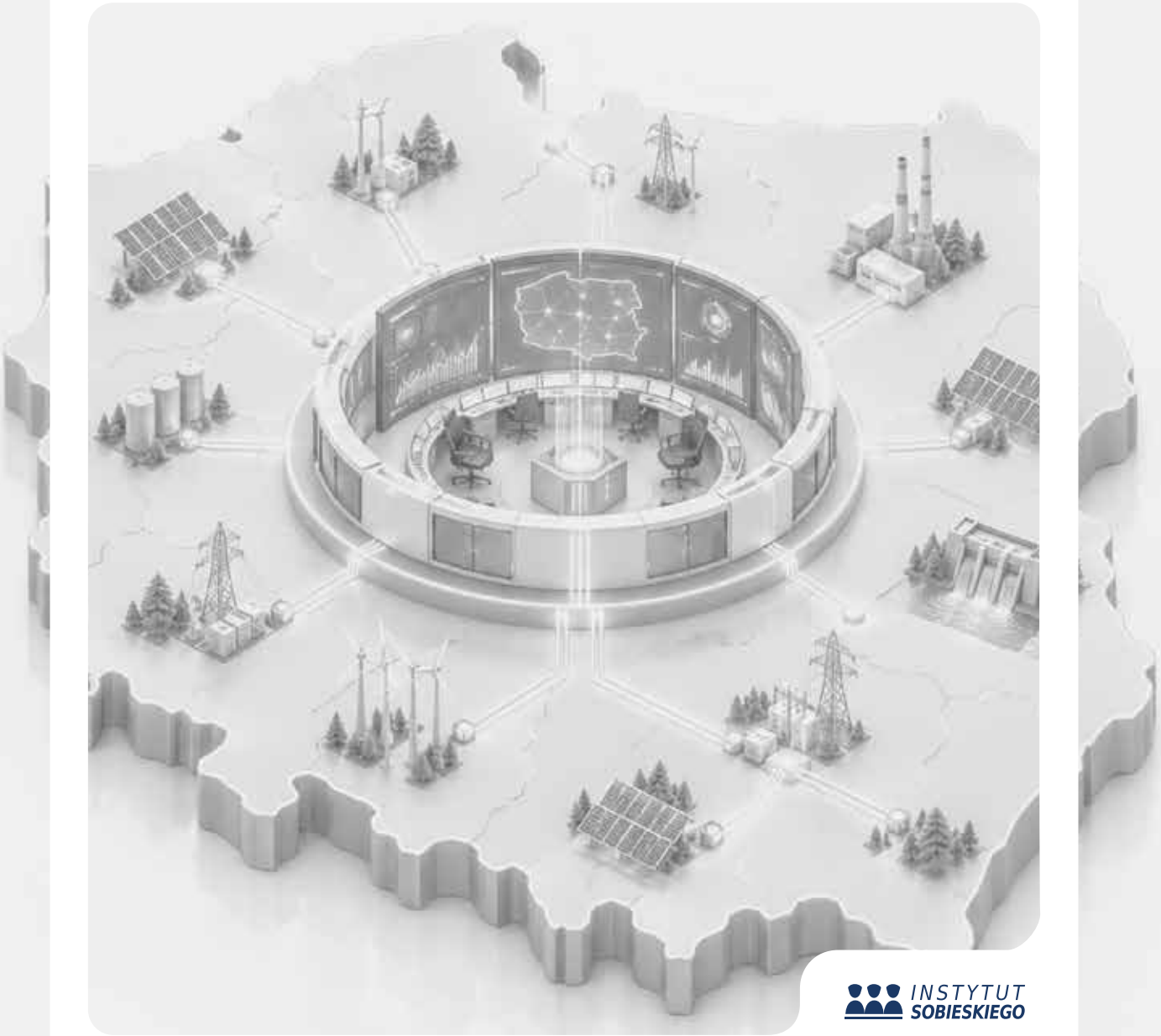
4. Fourth, consultations must have a predetermined impact on the decision made; giving citizens a voice and communicating the evidence used to make decisions are among the most effective ways to strengthen trust in the fairness of the climate policy.

In practice, this must also result in the change to the communication style. The language of the debate should be less prescriptive and more contractual. Instead of saying, “society must accept the transformation,” it is better to say, “the government and the business sector must demonstrate how the transformation will reduce security risks, how it will distribute costs, and how it will protect vulnerable groups.” Instead of a narrative about “sacrifice,” a story about system resilience, modernization, and greater control over future costs will be more effective. The OECD emphasizes that in an environment of polarization and disinformation, strategic, accessible, and data-driven communication is not an add-on to policy but one of the conditions for its success.

IMPLICATIONS FOR PARTICIPANTS IN THE PUBLIC DEBATE

It is not worth starting with a clash of grand identity-based arguments. It is better to start with a brief, shared consensus: Poland needs energy that is simultaneously cheaper, safer, and less carbon intensive; some transitional costs are unavoidable; a fair distribution of these costs is a prerequisite for political acceptance; and stable rules and institutions that extend beyond the current political calendar are essential for the sustainability of decisions. It is only on this foundation that we can have a meaningful discussion of the issues at the heart of the actual disputes: the pace of change, technologies, financing, and the hierarchy of investments. The most useful framework for further discussion is one in which the parties no longer ask, “who is for and who is against the transition?” but rather, wWhat minimum conditions must be met for different groups to consider a specific path politically and socially acceptable?” That is precisely where the real space for consensus lies.

5. A NEW PARADIGM: ENERGY = SECURITY AND RESILIENCE



INSTYTUT SOBIESKIEGO

The aim of this section of the report is to demonstrate that the way we think about energy is changing: from an economic sector to one of the key pillars of a nation's security and resilience. This chapter organizes the most important elements of this shift and defines its implications for public policy in Poland and the CEE region. It also takes into account the experiences of Ukraine as a country taking action under wartime conditions.

This section of the report highlights dilemmas across four key dimensions: recognizing energy infrastructure as critical infrastructure; treating energy as a prerequisite for a state's operational capabilities; the return of the state as the central actor in planning and securing the system; and the growing importance of technology as a source of both advantage and new dependencies. From this perspective, energy security no longer relies solely on diversification of supplies, but on the state's ability to anticipate risks, maintain adequate reserves, protect infrastructure, manage technological dependencies, and respond rapidly to crises.

ENERGY AS CRITICAL INFRASTRUCTURE

DILEMMA 1

Thesis statement: Following acts of sabotage in the Baltic Sea (Nord Stream, Baltic-connector) and facing the threat of saturation attacks (drones, missiles) and sabotage operations by the Russian Federation, the protection of facilities such as the Baltic Pipe, the LNG terminal, and the Gdańsk Refinery has become a pillar of defense planning. In 2025, NATO launched the Baltic Sentry mission; however, day-to-day practice reveals a systemic dilemma: state and private operators have the financial flexibility to rapidly acquire modern detection and defense systems (e.g., anti-drone systems and electronic warfare systems). Meanwhile, they are constrained by procedures and the legal monopoly held by military structures and intelligence agencies, which deny civilian entities the right to independently possess and operate active defense measures (both jamming and kinetic).

IMPLICATION/DISCUSSION POINT:

Where does the responsibility of the state and NATO end, and where does the operator's obligation and right to self-defense begin? How should one respond when standing on the brink of hybrid war, when attribution is hard to prove?

Autonomy or a monopoly of the armed forces? Should the state redefine the military's legal monopoly and grant key operators (e.g., state-owned enterprises) autonomy in the deployment and immediate use of active defense systems?

The risk posed by the ***status quo****. Maintaining the current bureaucracy risks a scenario like the one in the Strait of Hormuz - where asymmetric attacks paralyzed an unprepared infrastructure – is repeated. On the other hand, doesn't granting civilians the right to use lethal force/electronic warfare create an uncontrollable risk of escalation and a cascade of errors in airspace?*

DILEMMA 2

Thesis statement: System flexibility is a new, intrinsic element that can serve as a strategic reserve. The International Energy Agency (IEA) defines demand flexibility as a core component of modern electric power systems, and the European Commission and ACER demonstrate that energy storage, price-responsive consumers, and other sources of flexibility are essential for ensuring stability, security of supply, and mitigating price spikes. This is clearly evident in ACER's analysis for Southeast Europe, where a lack of flexible resources and limited cross-border capacity exacerbated system stress and price pressure[21] .

21 "*Increasing Cross-Zonal Capacity and System Flexibility in Southeast Europe*," ACER Report to the Energy Union Task Force, May 20, 2026: https://www.acer.europa.eu/sites/default/files/documents/Publications/ACER-Monitoring-Report-Increasing-SEE-cross-zonal-capacity-and-flexibility-2026.pdf (accessed July 15, 2026).

IMPLICATION/DISCUSSION POINT

Should security be measured not only in gigawatts of installed capacity, but also in "gigawatts of controllability"? And should the end user (home, electric vehicle, prosumer storage) remain a customer, or could they become a system resource sharing responsibility for grid security? How can this transition be carried out in a way that is safe for the system?

DILEMMA 3

Thesis statement: Today, the grid is just as strategic as generation itself. The IEA warns[22] that delays in grid investments could become a bottleneck for the transition and grid security, and the European Commission is already speaking of the need for investments that anticipate future demand and the future generation capacity[23] . This is a very important shift: security no longer depends solely on the ownership of energy sources, but on the ability to connect them and integrate them into the system so that they can be used efficiently.

IMPLICATION/DISCUSSION POINT

Is it worth investing in advance, or should we merely respond to actual demand? How should grid investments be planned to avoid building excess infrastructure? Grid expansion must account for future growth in demand for connections and the electrification of the economy; however, these forecasts are subject to a significant degree of uncertainty. Overly cautious investments may limit economic development and the energy transition, while excessive expansion leads to underutilization of assets and higher costs for energy consumers.

DILEMMA 4

Thesis statement: Climate resilience is no longer an environmental policy but a security policy. The European Commission is incorporating climate and natural hazards into its Preparedness Union Strategy[24] , NATO is including climate into its security agenda, and the IEA treats resilience to extreme weather events as an integral part of energy security[25] .

22 *Electricity Grids and Secure Energy Transitions*, IEA: https://iea.blob.core.windows.net/assets/ea2ff609-8180-4312-8de9-494bcf21696d/ElectricityGridsandSecureEnergyTransitions.pdf (accessed July 15, 2026).

23 *EU guidance on ensuring electricity grids are fit for the future*, European Commission, June 2, 2025: https://energy.ec.europa.eu/news/eu-guidance-ensuring-electricity-grids-are-fit-future-2025-06-02_en (accessed July 16, 2026).

24 Strategy for a Resilience Union, European Commission, https://commission.europa.eu/topics/preparedness_pl (accessed July 16, 2026).

25 *Electricity Security Matters More Than Ever – Power Systems in Transition*, IEA: https://www.iea.org/reports/power-systems-in-transition/electricity-security-matters-more-than-ever (accessed July 18, 2026).

Climate change affects both the demand and supply sides of the electric power system. Heat waves increase summer power demand associated with air conditioning and cooling, while droughts, low water levels, and high water temperatures can limit cooling capacity and, consequently, the output of some conventional power plants and combined heat and power plants. The overlap between rising demand and reduced availability of some generating capacity creates a risk that is not reflected in averaged annual energy balances. It also demonstrates that resilience requires maintaining diverse and complementary resources, reserves, and flexibility, which under normal conditions may seem economically underutilized.

A local example of this relationship is the Siekierki CHP plant, whose operation requires water intake from the Vistula River, primarily to cool the equipment. Low water levels demonstrate that the resilience of energy infrastructure also depends on securing access to water and alternative cooling solutions.

Ukraine's experience further demonstrates that resilience means a system's ability to function under conditions that exceed standard planning—following cyberattacks, physical attacks, and sudden failures.

IMPLICATION/DISCUSSION POINT

If droughts, heat waves, floods, storms, and fires are already treated as security threats, should operators and regulators plan infrastructure according to "normal efficiency" standards or according to "survival under adverse conditions" standards? This is, in fact, a debate over what level of redundancy and what cost societies are willing to accept before the next crisis.

DILEMMA 5

Thesis statement: Decentralization is becoming a tool for achieving resilience, not just for market liberalization. Ukrainian experiences, compiled by the IEA, show[26] that short-term security is the system's ability to cope with events that go beyond standard planning conditions, and the dispersion of sources, storage facilities, and local resources can increase this resilience. At the same time, the U.S. Department of Energy (DOE) and the National Renewable Energy Laboratory (NREL) point out that such decentralization complicates cybersecurity oversight, as the number of devices, owners, and communication channels increases.

IMPLICATION/DISCUSSION POINT

Is a more decentralized system more secure because it is harder to "take it down with a single blow"? Or is it less secure because it is harder to manage and enforce standards? Which solution is more advantageous? How can a balance be struck?

26 *Ukraine's Energy Security*, IEA, October 22, 2025: https://www.iea.org/reports/ukraines-energy-security (accessed July 17, 2026).

ENERGY AS AN ELEMENT OF A STATE'S OPERATIONAL CAPABILITIES

DILEMMA 1

Thesis statement: In NATO documents, energy is presented as a factor that directly influences the ability to conduct military operations. The Alliance declares both: a commitment to strengthening the protection of energy infrastructure and to ensuring energy supplies for the armed forces. U.S. defense programs fund the energy resilience of facilities precisely within the logic *of mission assurance*.

IMPLICATION/DISCUSSION POINT

If energy is a prerequisite for the functioning of the military, intelligence services, hospitals, telecommunications, and command centers, then in a crisis situation, should the state explicitly prioritize consumers according to a strategic hierarchy? And who should decide which segments of the economy are "critical": only the military and the government, or also the data centers, semiconductor factories, and the defense industry?

DILEMMA 2

Thesis statement: Grid capacity and access to energy are becoming instruments of industrial policy. The IEA forecasts[27] that by 2030, global electricity consumption by data centers will roughly double, with the largest increase in demand coming from the U.S. and China; Japan explicitly warns that a lack of sufficient supply of decarbonized energy could hinder industrial investment, and in Southeast Asia, rising demand from data centers is already forcing a rapid modernization of the power grid.

Implication/Discussion point

Should the government treat grid connections and network expansion as a strategic resource and allocate them according to economic priorities? In other words, should priority today be given to those first in line, or to those who strengthen national security and the country's industrial base?

DILEMMA 3

Thesis statement: Transformers, HVDC cables, and electric substations are strategic security assets. The DOE notes[28] that domestic manufacturing base for many critical grid components is either limited or non existent, over 90% of the energy consumed in the U.S. passes through high-power transformers that have been in operation for approx. 40 years on average. At the same time, the European Commission estimates that by 2040, grid expansion in Europe alone will require hundreds of billions of euros in investment in distribution and transmission.

27 *Energy and AI*, IEA, April 2025: https://iea.blob.core.windows.net/assets/de9dea13-b07d-42c5-a398-d1b3ae17d866/EnergyandAI.pdf (accessed July 18, 2026).

28 *Electric Grid Supply Chain Review: Large Power Transformers and High Voltage Direct Current Systems*, U.S. Department of Energy, February 24, 2022: https://www.energy.gov/sites/default/files/2022-02/Electric%20Grid%20Supply%20Chain%20Report%20-%20Final.pdf (accessed July 18, 2026).

IMPLICATION/DISCUSSION POINT

Should the government maintain strategic reserves of transformers, cables, and equipment, even if this increases system costs? And if so, should these reserves be financed by the operator, the national budget, consumers through the prices they pay, or a joint EU mechanism?

THE STATE AS A CENTRAL ACTOR

DILEMMA 1

Thesis statement: The state is returning as an active participant in the energy market, playing a strategic role in shaping the energy transition and assuming greater responsibility for setting the sector's development direction and planning infrastructure and the technology mix. National and EU initiatives are strengthening the role of public authorities in long-term planning for the development of the energy system, identifying priority technologies, and creating conditions for investments that serve energy security, decarbonization, and industrial competitiveness goals.

On the U.S. side, a similar logic is evident in the scale of infrastructure funding allocated by the DOE and in the centralization of strategic decisions at the White House.

IMPLICATION/DISCUSSION POINT

Where does the line between rational security policy and administrative selection of technologies and resources lie? In other words, should the state merely correct market failures, or should it consciously build a "secure industrial-energy mix," even at the expense of some competition and price efficiency?

DILEMMA 2

Thesis statement: The state is becoming the insurer of last resort for the energy system. ACER shows[29] that in 2024, EU member states spent nearly 11 billion euros on capacity mechanisms and programs supporting energy storage and peak-load reduction. As part of the Preparedness Union Strategy, the Commission is already discussing the stockpiling of energy equipment, pan-European exercises, cooperation with NATO, and integrated risk assessments[30] .

IMPLICATION/DISCUSSION POINT

If system security requires duplicating resources, maintaining hardware stockpiles, and keeping underutilized reserves, how long can the political consensus on the "cost of idle readiness" be sustained? And should resilience be funded in the same way as ordinary efficiency, or from a separate, explicitly security-focused budget?

29 *Security of EU Electricity Supply*, ACER 2025 Monitoring Report, November 20, 2025: acer.europa.eu/sites/default/files/documents/Publications/ACER-2025-Security-of-EU-electricity-supply.pdf (accessed July 18, 2026).

30 Joint Communication to the European Parliament, the European Council, the Council, the European Economic and Social Committee, and the Committee of the Regions on the European Preparedness Union Strategy, European Commission, Brussels, March 26, 2025, JOIN(2025) 130 final.

DILEMMA 3

Thesis statement: More and more often, energy sovereignty is defined as a controlled interdependence rather than self-sufficiency. The synchronization of Lithuania, Latvia, and Estonia with the continental European grid has cut them off from the BRELL system and eliminated Russian influence over grid management, but it has - at the same time - increased the importance of cross-border cooperation and the reliability of interconnections; ACER emphasizes[31] that the EU's integrated and interconnected power system strengthens security of supply by enabling energy exchange between countries, better utilization of available resources, and joint management of risks related to power shortages.

> **IMPLICATION/DISCUSSION POINT**
> *When does interdependence strengthen resilience, and when does it increase the system's vulnerability to disruptions? Where does the line between the benefits of further integration and the risks of increased complexity, vulnerability, and operating costs for the entire system lie?*

TECHNOLOGY AS A NEW DIMENSION OF SECURITY

DILEMMA 1

Thesis statement: Information and communication technologies (ICT), smart meters, and machine learning are key drivers of modern grids and local markets. The processing and aggregation of massive volumes of data enable precise forecasting of consumption and generation, which opens the door for innovations such as virtual power plants (VPPs) and blockchain-based *peer-to-peer* transactions. However, a paradox emerges: modern artificial intelligence (AI) systems and data centers, which are intended to optimize the grid, are themselves becoming one of the most energy-intensive loads in the history of the economy, placing unprecedented pressure on the power system. Furthermore, entrusting the management of distributed generation, storage, and flexibility to automated, self-learning algorithms carries the risk of losing actual operational control over the system under conditions of extreme grid stress.

IMPLICATION/DISCUSSION POINT

The line between rational grid optimization by algorithms and the risk of a "systemic black swan" event, in which autonomous VPP management programs make cascading, unpredictable market decisions in response to weather anomalies or cyberattack – where does it lie?

31 Security of the EU's Electricity Supply, ACER 2025 Monitoring Report.

We face a profound dilemma: should Poland pursue maximum, aggressive digitization of the energy market and hand the control over to AI algorithms in order to safeguard grid stability? And also - accept a drastic increase in power demand from data centers themselves? Or—in the name of robust physical and cybersecurity—should the state limit the autonomy of digital energy platforms, reserving final control decisions for centralized, traditional operational systems, even if this slows down market innovation and local energy transition?

DILEMMA 2

Thesis statement: Monopolization versus fragmentation of clean energy (Cleantech) technology. China has dominated the production chains for photovoltaics, batteries, and inverters not only thanks to cheap labor, but also thanks to decades of subsidies and technological consolidation.

> **IMPLICATION/DISCUSSION POINT**
> *How can we prevent the monopolization of equipment supply sources? How can we support European manufacturing? Is this an effective defense against a monopoly, or the beginning of a destructive subsidy war that could lead to inefficient market fragmentation?*

DILEMMA 3

Thesis statement: Modern energy systems are distributed and digitally controlled (smart grids, energy storage management software, inverters). The European Commission has adopted the EU's first cybersecurity code for the electric energy sector, focused on periodic risk assessments of digital processes critical to cross-border flows. It has also proposed a revision of the Cybersecurity Act, providing for the possibility to designate any given entity as a "high-risk" supplier. At the same time, some European countries (Sweden, Denmark, Lithuania) have introduced restrictions excluding high--risk suppliers in the IT, telecommunications, and energy sectors.

> **IMPLICATION/DISCUSSION POINT**
> *To what extent do Chinese hardware and software in critical infrastructure pose a threat capable of paralyzing networks in the event of a conflict? How can this be prevented? Does using Chinese hardware while retaining European software reduce the risk? Are Europe and its member states prepared to accept higher equipment costs in exchange for greater control over standards and maintenance?*

6. FOUR SYSTEMIC DILEMMAS



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The future of energy, economic, and security policy in Poland and the Central European region will depend on resolving a number of key strategic dilemmas. There is no single, universal answer to the challenges decision-makers face—the most important decisions will require choosing between competing priorities, such as security, competitiveness, the pace of energy transition, and system resilience. The purpose of this section of the report is to identify the most important strategic decisions Poland and the region are facing today and to demonstrate that their consequences will extend beyond the technical dimension, affecting the country's long-term economic position and national security.

INTRODUCTION

The starting point today is - from Poland's perspective - fundamentally different than it was just a few years ago. By the end of 2025, renewable energy sources accounted for 51% of installed capacity in Poland and 31.4% of domestic electric energy production[32] . The Polish Energy Regulatory Office (URE) also reports over 1.636 million micro-installations with a capacity of nearly 13.9 GW. These figures show that **Poland's energy transition is no longer a project for the future, but a systemic reality on a scale that is transforming the logic of the grid and the market.** At the same time, the government's National Energy and Climate Plan (KPEiK) calls for an increase in the share of renewable energy sources in gross final energy consumption to 32.6% by 2030, while PSE, the Polish transmission system operator, has announced a strategy to prepare the system for 110 GW from renewables, 24 GW from energy storage, and 5.3 GW from nuclear power by 2040.[33]

At the same time, this is not a "naturally cheaper" transition. In its national assessment of resource adequacy, PSE indicates that maintaining safety standards will require mechanisms to sustain and expand dispatchable capacity, particularly gas-fired units

32 K. Kwidziński et al., *Energy Transition in Poland. Yearbook 2026*, Forum Energii, June 2, 2026: https://www.forum-energii.eu/transformacja-energetyczna-w-polsce-edycja-2026 (accessed July 18, 2026).

33 *Guardian and Architect. PSE Strategy through 2040*, PSE: https://strategia.pse.pl/ (accessed: July 18, 2026).

The situation in Poland has evolved over the last few years.
At the end of 2025, RES constituted 51% of installed capacity and 31.4% of power generated in the country was provided by RES.

According to ERO*, Poland already has:

1 636 000
microinstallations



13,9 GW
is their total installed capacity

POLISH ENERGY TRANSITION
IS NO LONGER A PLAN FOR THE FUTURE.

IT'S A STRUCTURAL FACT DRIVING CHANGES IN THE GRID AND MARKET LOGIC.

In parallel, the Polish NPEC assumes the increase in RES participation in the final energy consumption up to 32,6% in 2030,

and the grid operator's strategy until 2040 declares the readiness for:



110 GW
RES



24 GW
energy storage



5,3 GW
nuclear

This transition is not "cheaper by default".

In the national resource adequacy assessment, the Polish TSO indicates the **need for mechanisms allowing to maintain and develop dispatchable energy sources**, in particular gas installations that can later be converted to hydrogen or biogas units, and energy storage.

The same document shows potential increase from 162 TWh to 215 TWh in electric energy demand until 2040 due to electrification of heating and transportation, as well as the roll-out of data centers and hydrogen technologies.

This fact inherently shifts the clue of the "energy transition or security" dilemma:

the largest threat lies not only with insufficient capacity only but with the disparity between the pace of increase in new demand and the pace of grid and grid flexibility development.

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GRAFIKA: NOWEMEDIA24.PL PIOTR PERZYNA

with the potential for later conversions to hydrogen or biomethane, as well as energy storage facilities[34] . The same report also shows that by 2040, net electricity demand could rise from 162 TWh to 215 TWh, with the increase driven not only by the electrification of heating and transportation but also by data centers and hydrogen. This fundamentally changes the nature of the "transformation vs. security" dilemma: the greatest threat no longer lies in a simple power shortage, but also in a mismatch between the rate of increase in new loads and the pace of grid development and flexibility.

In the United States, the government is moving further towards active derisking. The Department of Energy (DOE) has launched the HALEU Accessibility Program, under which it provides funding for the commercialization of Gen III+ SMR technology, develops reactor and fuel pilot projects, and maintains loan guarantee instruments for projects that increase energy supply and system reliability. At the same time, the digital sector has begun to enter the energy sector directly: Amazon has announced agreements regarding new nuclear projects, including several SMRs in collaboration with Energy Northwest[35] , and the IEA notes[36] that between 2024 and 2025, global electricity consumption by all data centers increased by 17%, while electricity consumption by data centers specializing in AI rose by 50%. This is no longer a side trend: artificial intelligence is becoming a new source of pressure on grids, prices, connections, and available capacity.

The European Union is responding to these challenges in a different way. Instead of a single large-scale EU program, it is building a set of regulatory layers: energy market reform, support for long-term contracts and CfDs, flexibility mechanisms, NZIA, CRMA, an electrification plan, and the CISAF state aid framework. These regulatory initiatives are being implemented against the backdrop of high energy prices for the European industry—2 to 3 times higher than in the U.S. and China—which means that further economic development may be at risk for Poland and the region, and that costs of the transition may prove to be excessively high.

These challenges take on added significance in the context of Asia's growing role in global value chains related to the energy transition. For Poland, this region is important for two reasons. First, China is no longer merely a market or a supplier of components, but above all a central player in the geopolitics of supply. The IEA notes[37] that by 2024, the concentration of critical mineral processing had increased further, and China maintains a dominant position in the refining of nearly all key raw materials: for example, in the case of rare earth magnets, its share of refining exceeds 90%. At

34 Publication of the report pursuant to Article 15(i) of the Energy Law, PSE, November 15, 2024: https://www.pse.pl/-/publikacja-raportu-zgodnie-z-art-15-i-ustawy-prawo-energetyczne (accessed July 18, 2026).

35 *Amazon signs agreements for innovative nuclear energy projects to address growing energy demands*, Amazon, October 16, 2024: https://www.aboutamazon.com/news/sustainability/amazon-nuclear-small-modular-reactor-net-carbon-zero (accessed July 18, 2026).

36 Key Questions on Energy and AI, IEA, April 2026: https://iea.blob.core.windows.net/assets/3179f7f8-01f6-4dd6-bffa-c9f7b73f1dc9/KeyQuestionsonEnergyandAI.pdf (accessed July 18, 2026).

37 Global Critical Minerals Outlook 2025, IEA, May 2025: https:// iea.blob.core.windows.net/assets/ef5e9b70-3374-4caa-ba9d-19c72253bfc4/GlobalCriticalMineralsOutlook2025.pdf (accessed July 18, 2026).

The digital sector has begun to enter the energy sector directly:
Amazon has announced closure of agreements on new nuclear projects, including a few SMRs with Energy Northwest.

IEA shows that between 2024 and 2025

GLOBAL ENERGY CONSUMPTION

by data ceters has increased by:

all data centers

17%

AI-specific data centers

50%



It's not a minor, side trend:

AI is growing into a new pressure factor for energy transmission networks, energy prices, grid connections and dispatchable capacity.

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GRAFIKA: NOWEMEDIA24.PL PIOTR PERZYNA

the same time, the European Commission shows[38] that the share of supplies from third countries to the EU in 2023 reached: 96% for PV modules and cells, 100% for PV wafers, and 62% for PV inverters. Second, some Asian countries treat energy directly as an element of industrial policy: Japan, in its Seventh Strategic Energy Plan, links rising demand to DX/GX and the need to provide competitive, decarbonized energy[39] , while South Korea, through its state-owned champion, KHNP, is developing SMRs and exporting the technology[40] .

TRANSFORMATION AND SECURITY

DILEMMA 1

Thesis statement: The rapid increase in the share of weather-dependent, intermittent renewable sources of energy is forcing a complete departure from the country's traditional balancing of the system relying on baseload power plants. System flexibility is becoming a key concept. This applies to storage, DSR, dynamic tariffs, and local balancing areas. ACER emphasizes that unlocking *demand response* is also necessary for a clean, secure, and competitive energy sector, and the Commission notes that the reformed market is intended to attract investment in flexible, zero-emission technologies.

> **IMPLICATION/DISCUSSION POINT**
> *The resilience of modern grids depends on the integration of distributed energy storage, demand response systems, and peak-shaving services. These tools are becoming essential for preventing system-wide outages (blackouts) caused by extreme weather events. The example of the outage on the Iberian Peninsula in April 2025 shows that systemic risks also include protection settings, control, operational coordination, as well as monitoring of inertia, voltage stability, and reactive power. Cyber and hybrid threats add another layer to this picture.*

Should we entrust system control to digital algorithms, demand response (DR) systems, and distributed automation in order to stabilize renewable energy sources and thereby drastically increase exposure to cyberattacks and control errors? Or should we maintain conservative, analog safety buffers that limit the pace of the transition?

38 Communication from the Commission providing updated information to determine the shares of the European Union's supply of final products and their main specific components originating in different third countries under Regulation (EU) 2024/1735 on establishing a framework of measures for strengthening Europe's net-zero technology manufacturing ecosystem (Net-Zero Industry Act), C/2025/3236, Official Journal of the European Union, June 18, 2025

39 *The 7th Strategic Energy Plan*, Agency of Natural Resources and Energy, February 2025: https://www.enecho.meti.go.jp/en/category/others/basic_plan/pdf/7th_outline.pdf (accessed July 19, 2026).

40 CEO Message, KHNP: https://www.khnp.co.kr/eng/contents.do?key=4647 (accessed July 20, 2026).

DILEMMA 2

Thesis statement: A modern energy system will become increasingly digital, distributed, and algorithmically controlled. Millions of prosumers, storage facilities, heat pumps, chargers, aggregators, and industrial devices will become part of critical infrastructure. This will boost the system's flexibility but simultaneously radically expand the scope of potential threats. Cybersecurity is no longer an afterthought for the energy sector; it has become one of the prerequisites for national security. The risk no longer applies to large power plants, operators, and gas pipelines only, but also to the software of inverters, storage facilities, chargers, demand management systems, data centers, and metering infrastructure. The more distributed the system is, the greater the importance of interoperability standards, device certification, supplier oversight, and the ability to quickly restore operations after a disruption.

> **IMPLICATION/DISCUSSION POINT**
> *To what extent should the energy system be opened up to new business models, aggregators, data, and automation, without creating a new vulnerability to cyberattacks, sabotage, or dependence on foreign technology suppliers?*

THE STATE VS. THE MARKET

DILEMMA 1

Thesis statement: The energy transition should not rely solely on individual investor decisions and the development of projects in locations where technical and economic conditions are favorable. In the face of grid constraints, system security challenges, and growing competition for space, the state must play a greater role in planning and coordination, while also maintain room for market mechanisms.

> **IMPLICATION/DISCUSSION POINT**
> *A key question arises: who decides on the order and location of investments—the market through individual connection applications, or the state through mapping system needs, prioritizing infrastructure, and linking energy sources to the grid, industry, storage facilities, and strategic consumers? Does Poland want a transition driven solely by the availability of grid connections and the logic of return on investment, or a transition planned around system security, industry, and national resilience?*

DILEMMA 2

Thesis statement: In the United States, the rapid increase in energy demand from AI data centers has become one of the driving forces behind major technology companies' choice to enter into agreements related to nuclear energy, including future deployments of SMRs and advanced reactors. These are not yet operational gigawatt-scale

off-grid facilities: most projects are in the planning stage, and the first launches are scheduled for the 2030s.

Poland and the CEE region are at a different stage of market development. Poland already has cloud regions operated by global providers, supercomputing centers, AI facilities under development in Poznań and Kraków, and the country's first quantum computing infrastructure. However, it is still not one of Europe's major hubs for large--scale AI computing campuses. Access to competitively priced and reliable energy, the ability to quickly secure a power connection, and growing expectations regarding low-carbon power will have a significant impact on Poland's ability to attract investments of a large scale.

The primary barrier is not lack of digital infrastructure, but rather the limited availability of high-capacity grid connections, the need to expand the grid, and the shortage of new, low-emission dispatchable power sources.

The demand for AI infrastructure is already growing today, while potential implementations of SMR/AMR technologies in Poland remain a prospect for the next decade. Modular reactors will therefore not address the immediate needs of new investors, but they may become part of the regional energy mix in the future.

> **IMPLICATION/DISCUSSION POINT**
> **Preparing the market or waiting for demand:** *Should the government already factor in the development of strategic computing hubs when planning the grid, energy sources, and investment zones, or should it leave their emergence to market forces?*
>
> **Competition for applications:** *Provided SMR/AMR technologies reach commercial maturity, which applications should take priority: the ones aiming to replace the decommissioned power plants and combined heat and power plants, to supply energy and heat to industry, or to power the new digital hubs? How should these applications be evaluated in terms of system security, public cost, technological readiness, and value created in Poland?*

DILEMMA 3

Thesis statement: Technologies such as hydrogen, fusion, superconductors, and new types of batteries—sodium, semiconductor, and flow batteries—are becoming tools of geopolitics too. Technological development is not merely an engineering issue but also a race to set global standards and secure licensing rights. Development of these technologies impacts the control over future value chains, access to key raw materials, ability to establish global technical standards and build industrial advantage. Countries and regions that are the first to achieve industrial scale and the ability to commercialize breakthrough solutions can shape the rules governing new markets through devising standards, patents, licenses, and exerting control over critical infrastructure.

IMPLICATION/DISCUSSION POINT

Who should bear this risk—the state or the market? And how can we prevent a situation where authoritarian countries gain control over a new generation of nuclear technologies?

DILEMMA 4

Thesis statement: The commercialization of breakthrough technologies, such as SMRs and AMRs, will not depend on pure market mechanisms in Poland. Due to technological risks and high capital cost for initial deployments, state participation in sharing investment risk is inevitable. This is illustrated by the example of the U.S., where government agencies are taking on, among other things, the construction of the HALEU fuel supply chain and providing financial guarantees. In Poland, public-private initiatives (e.g., OSGE, which will apply in June 2026 for a contract-for-difference mechanisms) are officially opening the discussion on public support for SMRs.

IMPLICATION/DISCUSSION POINT

If the state assumes the financial risk of the first deployments (through CfDs, guarantees, or access to fuel), how can we ensure that **Polish industry and local value chains** *also benefit from this support, and not just foreign technology suppliers?*

Where does legitimate state support for pioneering innovations in energy end, and where does **subsidizing private commercial projects without a guarantee of a real return for taxpayers and the economy begin***? How can we avoid dependence on a single supplier when selecting individual SMR technologies?*

AUTONOMY VS. THE EU/PARTNERS

DILEMMA 1

Thesis statement: Poland formally retains the right to define its own energy mix, but the practical ability to shape it is largely determined by the EU regulatory framework. The ETS system, taxonomy, state aid rules, emissions standards, and access to funding all influence both the profitability and the pace of deployment of individual technologies. This means that while the EU member States can – in theory - independently decide on the structure of their energy mix, each path they select will entail specific regulatory, financial, and investment costs. In practice, coal is becoming less competitive due to ETS-related and rising costs; natural gas must justify its role as a transition fuel; nuclear power relies on long-term financing models and complex investment procedures; and the development of renewable energy depends on grid availability, system flexibility, and appropriate market signals.

Implication/Discussion point

Where does the line between a country's freedom to shape its energy mix and the constraints imposed by the EU's regulatory framework really lie? Does greater regional integration strengthen Poland's resilience, or does it create new dependencies? How can we build a system where cooperation with partners enhances security without depriving the state of its ability to act independently in a crisis?

DILEMMA 2

Thesis statement: Reducing the debate to a dispute over jurisdiction between Warsaw and Brussels oversimplifies the actual issue. In practice, Poland needs, on the one hand, greater flexibility in adapting regulatory instruments to national conditions and, on the other hand, modernization incentives stemming from EU policy. Weakening these incentives could increase the risk of postponing necessary investments and fossilizing the existing structure of the energy sector. At the same time, overly restrictive regulations can raise operating costs for the industry and households as well as limit the competitiveness of Poland's economy. Conversely, relaxing requirements too far could entrench dependence on fossil fuels and imported technologies, delaying investments in power grids, energy efficiency, and the development of domestic industrial capabilities.

IMPLICATION/DISCUSSION POINT

Should Poland seek exemptions from EU rules, or should it work to redesign them in a way that balances decarbonization with the region's security and competitiveness?

DILEMMA 3

Thesis: EU industrial policy (CRMA, NZIA, Clean Industrial Deal) aims to build European autonomy vis-à-vis China and the U.S. This objective does not automatically translate into strengthening Poland. European autonomy can be built primarily in the countries that already have strong industry, capital, administration, and the ability to attract investment. Poland could benefit if it integrates into value chains: networks, cables, components, batteries, recycling, offshore operations, warehouses, heat pumps, cybersecurity, prefabrication, and engineering services. The alternative is to remain merely a market for technologies produced in Germany, France, Scandinavia, the U.S., or Asia.

IMPLICATION/DISCUSSION POINT

Dilemma: will "European autonomy" be an industrial opportunity for Poland, or a new form of peripheral dependence within the EU? How can we leverage the opportunities created by the energy transition in order to build new industrial sectors based on new technologies?

DILEMMA 4

Thesis statement: The EU is attempting to respond to the U.S. Inflation Reduction Act (IRA) and China's dominance through its own industrial policy, but in practice, member states do not have equal capacity to subsidize their companies. Liberalizing state

aid could help rebuild a net-zero industry in a rapid way, but it would favor the largest economies with the greatest fiscal leeway. According to PIE, the EU's state aid system leads to an uneven distribution of support among member states, as the largest economies—primarily Germany and France—have greater capacity to finance domestic companies, particularly in strategic sectors such as the energy transition[41] . For Poland, the risk lies in a situation where the single market remains unified formally, but the real investment advantage shifts to countries capable of providing multi-billion support to their own industry leaders.

IMPLICATION/DISCUSSION POINT

Should Poland support greater flexibility pertaining to state aid, or rather demand stronger common EU instruments to avoid losing out in intra-EU competition? How can the internal market be protected so that it does not become dominated by entities subsidized by the largest EU countries? How can we ensure a fair redistribution of support funds, such as the EU Innovation Fund?

DILEMMA 5

Thesis statement: Poland cannot achieve true energy autonomy on its own. Its energy security will increasingly depend on its position in the region: the Baltic Sea, CEE, Ukraine, the Baltic States, North-South infrastructure, interconnectors, gas, offshore energy, and the protection of critical infrastructure. The EU may be a constraint for Poland, but it can also be a strong multiplier of its strength provided Warsaw builds regional coalitions. This applies to: nuclear power, the capacity market, the ETS, grid financing, protection of the Baltic infrastructure, hydrogen, biomethane, and the reconstruction of Ukraine.

IMPLICATION/DISCUSSION POINT

Does Poland want to negotiate with the EU on its own, as a country defending the exemptions, or as a leader of the CEE regional energy security agenda? Are the interests of the region's countries truly aligned, given local conditions? Are the countries of the region ready to form alliances with Poland in strategically important areas?

DILEMMA 6

Thesis statement: The obstacle for implementation of a new generation of nuclear energy (both large-scale and SMR/AMR) lies in the absence of technological, manufacturing, and fuel infrastructure in Poland and the CEE region. In the field of advanced reactor technologies, Central and Eastern Europe remains a technology consumer, entirely dependent on external giants (primarily from the U.S., South Korea, and Japan).

41 *The EU's state aid system contributes to uneven development among member states*, PIE, July 22, 2025: https://pie.net.pl/system-pomocy-publicznej-w-ue-wplywa-na-nierownomierny-rozwoj-panstw-czlonkowskich/ (accessed July 20, 2026).

THE CRUX OF THE PROBLEM
(PASSIVE MARKET VS. TECHNOLOGICAL PARTNERSHIP)

The "black box" risk: Purchasing off-the-shelf, foreign SMR microreactors without the ability to service them, inspect their control systems, or participate in the fuel cycle incurs the risk of replacing former dependence on raw materials (Russian gas/coal) with a new technological dependence.

IMPLICATION/DISCUSSION POINT

Since the development of Poland's own SMR reactor from scratch is unrealistic, how should we structure our relationships with suppliers (e.g., from the U.S.) so that we do not remain in the position of a payer and a sales market, but rather secure a genuine transfer of knowledge and the right to manufacture components in the CEE region?

What related industries (e.g., manufacturing of I&C equipment, specialized construction, maintenance, cooling) should Poland and the countries of the region develop locally to build relative autonomy within the allied nuclear sector?

DILEMMA 7

Thesis statement: Shale revolution in the U.S. has reshaped the global landscape of oil and gas producers, shifting some influence away from traditional fossil fuel powers to North America. Thanks to advances in hydraulic fracturing technology, the United States has become one of the largest producers and exporters of oil and gas, strengthening its geopolitical position vis-à-vis the countries of the Middle East, Russia, and other existing hydrocarbon producers. This shift has had a particular impact on Europe, which, following the reduction in Russian gas supplies, has accelerated the diversification of its energy sources by increasing LNG imports, primarily from the U.S. The new energy landscape shows that a country's position is no longer determined solely by its raw material resources, but also by extraction technologies, infrastructure, and the ability to ensure stable supplies to the global market.

IMPLICATION/DISCUSSION POINT

The importance of U.S. LNG in European gas supplies is growing, with significant impact on transatlantic relations. This raises the question about the extent to which the United States can be considered a reliable supplier, and the extent to which the concentration of imports, the resurgence of U.S. protectionism, and Europe's increased exposure to price fluctuations pose excessive risks.

DILEMMA 8

Thesis statement: The shift from fossil fuels to critical raw materials signifies a deep change to the nature of energy dependencies instead of their complete elimination. Europe has reduced its dependence on Russian oil and gas, but the energy transition translates into a growing importance of minerals essential for the production of batteries, wind turbines, photovoltaic panels, and other clean energy technologies. Lithium, cobalt, nickel, graphite, and rare earth metals are becoming new strategic resources that industrial competitiveness and technological security depend on.

The issue is not only access to deposits but also control over the entire value chain—from extraction, through refining, to the production of components. China plays a dominant role in the processing of many strategic raw materials and the production of technologies, which creates new geopolitical dependencies.

IMPLICATION/DISCUSSION POINT

How can the sector's resilience be built? Will aggressive friend-shoring and near-shoring drive up costs and delay the energy transition? Is geopolitical risk acceptable in the name of a cheaper and faster energy transition?

CLIMATE VS. COMPETITIVENESS

DILEMMA 1

Base case: Small Modular Reactors (SMRs) and Advanced Micro Reactors (AMRs) are no longer the exclusive domain of the commercial power sector. They are growing into a vital component of decentralized security infrastructure, driven by the critical and urgent needs of the technology sector (AI data centers) and heavy industry.

THE NATURE OF THE CONFLICT AND THE CHALLENGES (ASYMMETRY BETWEEN THE U.S. AND EUROPE):

Industrial applications: SMRs are changing the geography of supply—they will be built on-site, directly next to energy-intensive facilities (e.g., Amazon's partnership with Energy Northwest, Dow Chemical in Texas, or Nuscale's cooperation with ENTRA1 for 6 GW), which will reduce consumers' exposure to risks associated with the operation of the power grid.

The position of Europe and the CEE region: Europe is structurally and significantly lagging behind in this area. European small modular reactor projects are in the early conceptual phases, which threatens to drastically widen the competitive gap and lead to progressive deindustrialization compared to the U.S. and Asian markets.

Should the EU relax the taxonomy criteria and stringent environmental and safety procedures for SMRs/AMRs in order to give its industry a chance to survive, or should it maintain the highest standards while accepting the loss of digital and industrial sovereignty?

DILEMMA 2

Base case: The construction of new energy infrastructure (offshore foundations, safety containment structures for nuclear power plants, grid reinforcements, SMRs, etc.) will drastically increase domestic demand for cement and concrete. At the same time, the cement sector—as one of the most carbon-intensive industries—is hitting a harsh ceiling imposed by the EU climate policy, the reduction of free allowances in the ETS, and cost pressures.

IMPLICATION/DISCUSSION POINT

The cement industry is attempting to defend itself against EU restrictions by implementing ultra-expensive, large-scale carbon capture and storage (CCS) projects. Go4ECOPlanet project (a collaboration between Holcim and the Orlen Group at the Kujawy Cement Plant), supported by the EU Innovation Fund (with over 228 million euros), is a prime example here. The project involves capturing CO_2 from clinker production, liquefying it, transporting it by rail to the Polish coast, and then shipping it by sea for storage in depleted gas fields in the North Sea. Should the state - through utility rates - approve and co-finance the logistically daunting CCS megaprojects in order to artificially prop up the domestic cement sector, treating it as the backbone of the country's construction sovereignty? Or should the state allow for the risk of bankruptcies and leakage of domestic emissions, as well as accept that key energy investments (nuclear and offshore) will become fully dependent on cheaper, carbon-intensive cement imports from third countries in the name of pure market efficiency?

7. FOUR ANALYTICAL AREAS



INSTYTUT SOBIESKIEGO

The purpose of this section of the report is to organize the main thematic areas that will form the core of further analytical work and debate within the project. This chapter is diagnostic in nature; it identifies the main directions of change and formulates questions for which no clear answers can currently be found. The four areas under discussion reflect the most important fields where security, economic, and political issues intersect. Each of them points to different sources of risk, interdependencies, and potential courses of action.

INTRODUCTION

Energy has stopped to be just one sector of the economy. It has become one of the key areas determining national security, societal resilience, industrial competitiveness, and the balance of power among major players. The energy transition, therefore, does not mean a simple shift from one set of technologies to another. It signifies a restructuring of the entire system of interdependencies: from fuels to critical raw materials, from centralized power plants to distributed energy sources, from global free trade to protectionist industrial policies, and from civilian infrastructure to infrastructure of strategic importance.

The scale of this shift is evident in the numbers. According to the IEA, the world is entering the "age of electricity," when demand for electricity is growing much faster than total energy consumption. The future of fossil fuels, however, remains uncertain, and experts are outlining various scenarios for this market. In its *Oil 2025* report, the IEA forecasts that global demand for oil will stabilize by the end of the decade at approximately 105.5 million barrels per day. The *World Energy Outlook 2025*, however, presents various possible trajectories: in the STEPS scenario, oil demand stabilizes around 2030 and then gradually declines, while in the CPS scenario, oil and gas consumption continues to rise through 2050.

The old and new geopolitics of energy will coexist for an extended period, mutually reinforcing existing interdependencies and risks. Access to oil and gas, and control over their transport routes will remain strategically important, while the role of networks, technology, data, critical raw materials, and industrial capacity will grow. During the transition period, characteristic turbulences will be felt: supply disruptions and fuel price fluctuations, a mismatch between the pace of phasing out existing energy sources and the development of new capacity, and the emergence of new technological and raw material dependencies. In 2025, approximately 20 million barrels of crude oil and petroleum products flowed through the Strait of Hormuz daily. This represents nearly 20% of global liquid fuel consumption, demonstrating that the "old" energy system remains of fundamental importance.

At the same time, the strategic role of critical raw materials is growing, as they are becoming one of the key factors determining the success of the energy transition. The European Commission estimates that demand for certain rare earth metals in the EU could increase as much as sixfold by 2030. In response, the EU adopted the Critical Raw Materials Act (CRMA), which sets targets for diversification and the development of its own industrial capacity: at least 10% of annual consumption of strategic raw materials is to come from mining in the EU, 40% from processing within the EU, 25% from recycling, and the share of supplies from any single third country should not exceed 65% for any strategic raw material. This means that the energy transition is no longer solely a decarbonization project—it is also becoming a raw materials, industrial, and security policy, the success of which depends on the resilience of European supply chains and the ability to reduce dependence on external suppliers.

The definition of defense is also evolving. In 2025, NATO agreed on a spending target of 5% of GDP by 2035, of which 3.5% is to be allocated to conventional military capabilities and 1.5% to areas such as critical infrastructure, civil resilience, cybersecurity, innovation, and the industrial base. The EU's "Readiness 2030 / ReArm Europe" plan, in turn, aims to mobilize up to 800 billion euros, including 150 billion euros in the form of loans for joint defense projects. This formalizes a trend that the war in Ukraine has already demonstrated in practice: the lines between civilian industry, energy, logistics, digitalization, and defense are becoming increasingly blurred.

STRATEGIC SIGNIFICANCE OF CRITICAL RAW MATERIALS

is growing as they are becoming one of the key factors crucial to the success of the energy transition.

The IEA indicates in 2024 the concentration of processing activities **for critical minerals** has increased, with China leading in the refining of most of them.

P. ex. China's share of magnet rare earths refining exceeds

90%

In response, the EU has outlined in its Critical Raw Materials Act (CRMA) the objectives of diversification and development of its own inductrial capacities:

10%
(at least) of the annual strategic resources use must come from extraction activities run within the EU.

65%
is the max. participation of any third country's supply for any strategic raw material.

40%
must come from strategic raw materials reprocessing performed within the EU.



25%
must be sourced from recycling.

The European Commission estimates that **the demand for some rare earth metals may increase as much as 6-fold by 2030.**

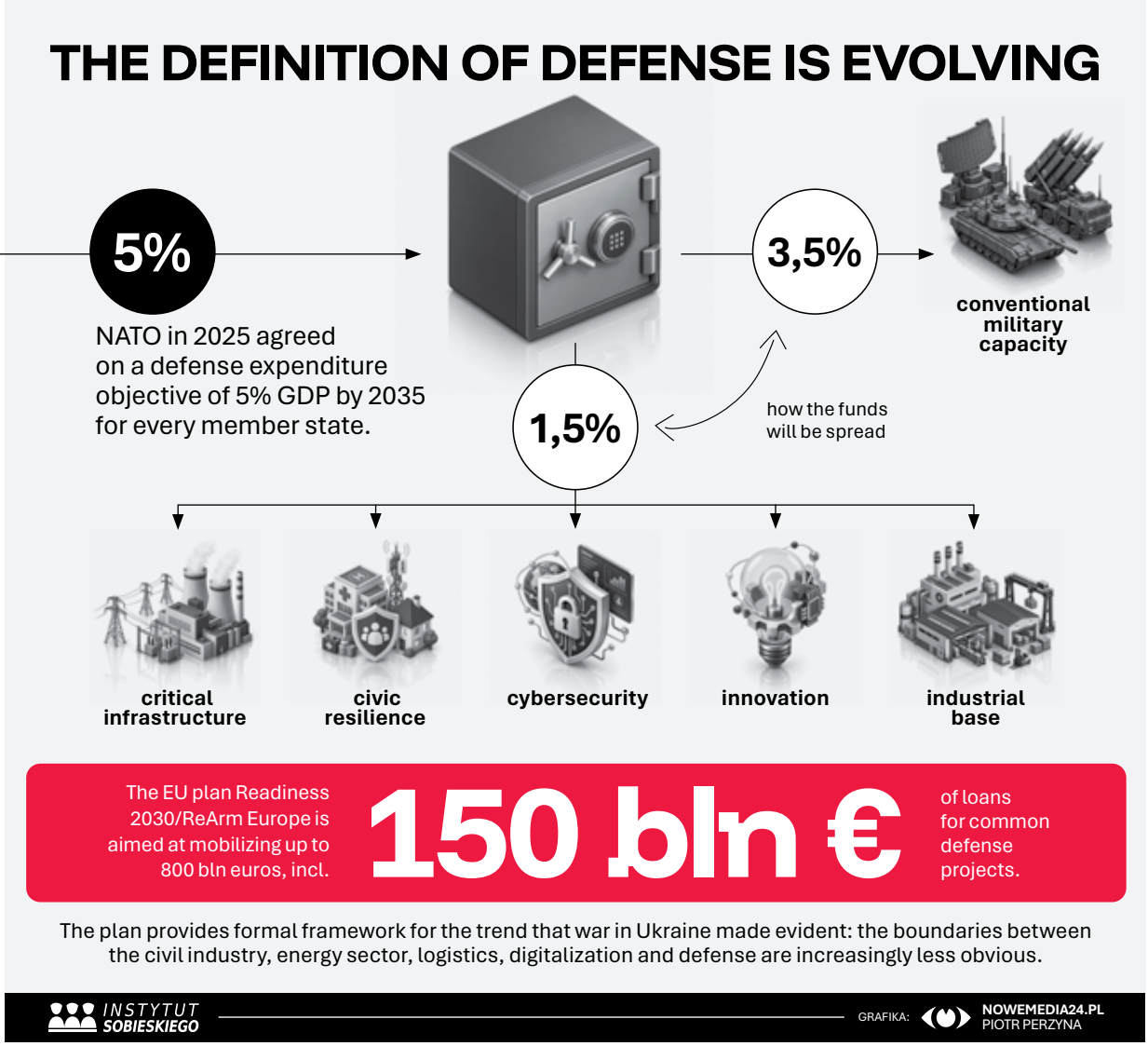
Energy transition
is increasingly about more than just decarbonization
- it is growing into a policy of raw materials sourcing, as well as industrial and security policy.

INSTYTUT SOBIESKIEGO

GRAFIKA: NOWEMEDIA24.PL PIOTR PERZYNA

This is most evident in Central and Eastern Europe. Since 2022, the region has undergone accelerated energy de-Russification, but the process has not been completed yet. Russian gas imports to the EU fell from about 40–45% before the full-scale war to about 13% by the middle of the decade, and the EU has set a course for a complete phase-out of Russian gas by 2027.

In this context, Ukraine is becoming both a front line in the energy war and a potential future hub for Europe. It has over 30 billion cubic meters of gas storage capacity, an extensive energy transmission infrastructure, potential for renewable energy deployment, biomethane, and hydrogen, as well as potential to import electricity to the EU.



However, its integration into the European energy market will not be a neutral development: it will create new opportunities for regional resilience but also new competitive, infrastructural, and political tensions.

Therefore, this section of the report is not a catalog of trends, but a map of four strategic tensions. First, the geopolitics of energy shows that the decline of fossil fuel dominance does not translate into the end of conflicts over energy, but rather their shift to new markets, resources, routes, and technologies. Second, dual-use technology demonstrates that civilian resources—industry, infrastructure, and data—can become both part of the defense system and a target of attack. Third, the energy transition indicates that decentralization, recycling, grids, and critical raw materials are shaping a new security economy. Fourth, the example of Central Europe illustrates how a frontline region moves from the peripheries of EU energy policy and is instead becoming a testing ground for the most critical challenges: resilience, solidarity, integration, and the capacity for long-term planning.

After 2022, the Central-Eastern Europe has been undergoing an intense "derussification" of its energy sector, which has not been accomplished as of yet.

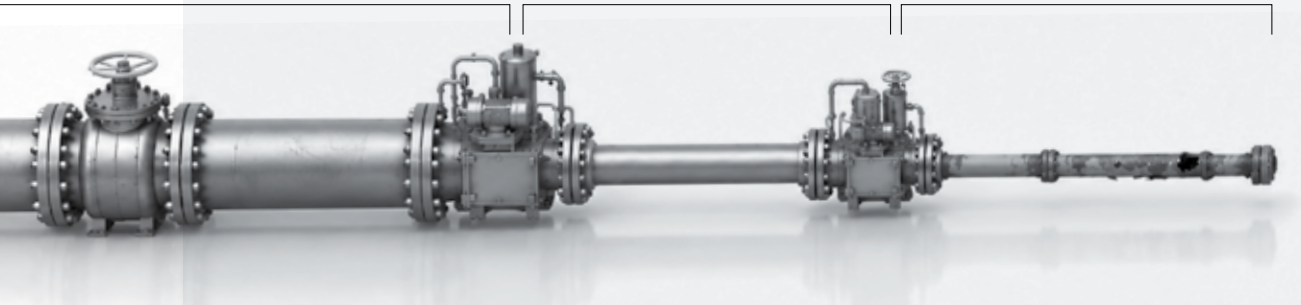
NATURAL GAS IMPORTS FROM RUSSIA ARE GOING DOWN,

with the EU deciding on putting stop to gas purchases from Moscow altogether.

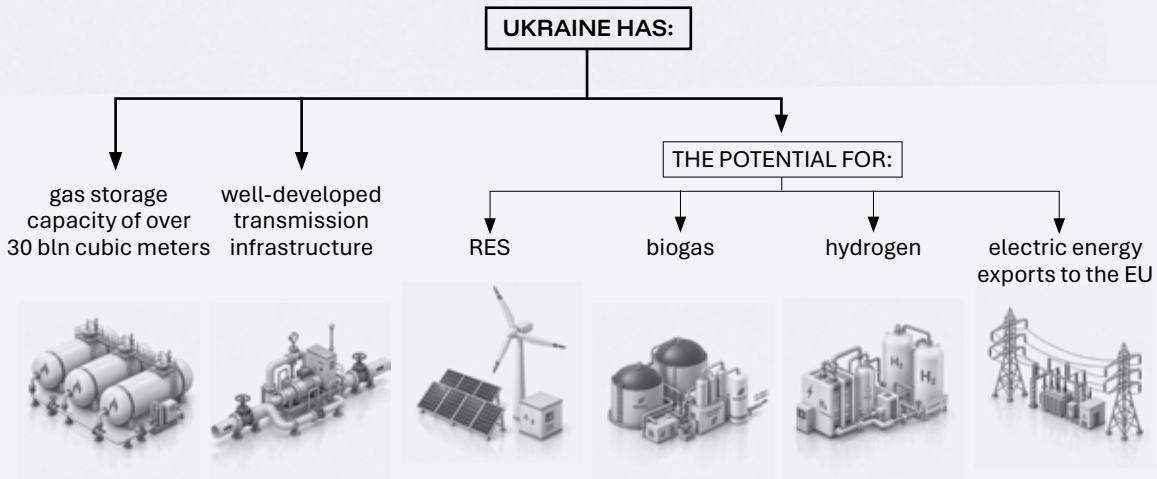
40–45%
before full-scale invasion

13%
mid-decade

0
full exit in 2027



Ukraine is becoming both: a front of an energy war as well as a potential future European hub.



Integrating Ukraine into the European energy market will not be a neutral event: it will give rise to new possibilities for the regional resilience, but also to new competition, infrastructural and political tensions.

INSTYTUT SOBIESKIEGO

GRAFIKA: NOWEMEDIA24.PL PIOTR PERZYNA

GEOPOLITICS OF ENERGY

DILEMMA 1

Thesis statement: The "declining monopoly" dilemma and the new battle for the market: Traditionally, the fossil fuel market has been a seller's market due to physically and geographically limited resources. In the face of decarbonization and electrification, we are entering a phase of structural decline and/or stagnation in demand for coal, and in the longer term, for oil and gas. Fossil fuel exporters will compete for a shrinking market. Low-cost producers, particularly the Gulf states, may increase their market share, while countries with higher extraction costs, weaker financial positions, or limited market access will be more vulnerable to declining revenues. At the same time, importing countries will gain greater bargaining power, though they will remain vulnerable to the risk of hydrocarbon supplies being used as a tool of influence.

In parallel, geopolitical competition will gradually expand from fossil fuels to technologies and value chains in the new energy sector. Control over the production of technologies for the "new" energy sector or critical raw materials will become the main source of competitive advantage. A country's standing will be increasingly determined by its industrial capabilities, control over technologies, patents, and standards, and access to processed raw materials—rather than solely by its possession of oil and gas reserves. This means that decarbonization will not have the energy geopolitics disappear—the focus of competition and the sources of strategic advantage will change.

> **IMPLICATION/DISCUSSION POINT**
> *Will the approaching "peak demand" trigger a price war among producers (competition about who will be the first to sell their reserves off at the lowest price before their value drops)? Or, on the contrary, will it lead to aggressive, desperate political and military actions by petro-autocratic states attempting to preserve their spheres of influence?*
>
> *Will competition for new raw materials and technologies increase tensions in international relations, leading to a struggle for supremacy and the imposition of new standards on others?*

DILEMMA 2

Thesis statement: Militarization and paralysis of chokepoints: Traditional maritime routes (the Strait of Hormuz, the Strait of Malacca, and Bab al-Mandab) are increasingly becoming pressure points under risk of asymmetric actions (drones, piracy, blockades).

With the energy transition, the importance of these chokepoints will not disappear but will merely change. In addition to traditional fossil fuel transport routes, routes for transporting LNG, hydrogen, ammonia, and critical raw materials used in the production of clean energy technologies will become increasingly important. Energy security will therefore depend to an ever-greater extent not only on access to resources but also on the resilience of global trade routes and transport infrastructure.

IMPLICATION/DISCUSSION POINT

Should countries invest in alternative (often more expensive) logistics routes, or rather in military forces to protect the existing routes? Where does the threshold for the cost-effectiveness of infrastructure protection lie? How great is the necessity to construct new storage infrastructure, and how great is the necessity for strategic material reserves?

DILEMMA 3

Thesis statement: Resource nationalism in resource-rich countries (e.g., Indonesia, Congo) is increasingly leading them to impose bans on the export of unprocessed raw materials and to require technology transfer, industrial investment, and the construction of refineries on their territory.

Thus, competition for raw materials now extends beyond access to deposits to include control over subsequent stages of the value chain—from refining to the production of components and finished technologies. As a result, importing countries, including the EU, must compete not only for raw materials but also for the opportunity to make investments and build long-term partnerships with countries rich in critical minerals.

IMPLICATION/DISCUSSION POINT

Should Europe view these actions as a hostile attack on free trade, or as a legitimate part of the development game with which it must engage offering new formats for economic partnership (e.g., Global Gateway)?

DILEMMA 4

Thesis statement: The twilight of the WTO and the triumph of mercantilism. The liberal doctrine—according to which free trade and economic ties prevent wars—is becoming obsolete. In the face of geopolitical tensions, states are increasingly subordinating their trade policies to security, economic resilience, and the building of strategic advantages, moving away from the principles of liberalization.

The energy sector has become one of the main areas of this shift. Subsidies, local content requirements, export restrictions, tariffs, and foreign investment control measures are being used more and more widely. Support programs show that economic competition is increasingly based on active industrial policy rather than on market mechanisms solely.

As a result, energy and clean energy technologies are becoming a factor in geopolitical competition. Countries are competing for markets but also for investment locations, the development of domestic production capacity, control over supply chains, and access to strategic technologies and raw materials. Economic security and resilience are therefore becoming increasingly important, even at the expense of the efficiency derived from global specialization and free trade.

IMPLICATION/DISCUSSION POINT

What will replace the old order? Are we facing the threat of a paralysis of international trade and the introduction of tariff barriers based on unilateral decisions by major powers or other criteria (e.g., climate-related ones, such as CBAM)? How will trade rules evolve in an era of growing protectionism?

DUAL-USE

DILEMMA 1

Thesis statement: Advantage in dual-use technology depends on the ability to rapidly shift civilian production to meet defense needs. Modern security does not rely solely on a specialized defense industry. Civilian industrial capabilities are becoming increasingly important: batteries, power electronics, electric drives, sensors, drones, software, automotive components, energy storage, and modular manufacturing. Possession of technology is not the only key, because so is the ability to rapidly scale up and convert production in a crisis situation.

IMPLICATION/DISCUSSION POINT

Should the state, even in peacetime, identify companies, production lines, and capabilities that can be quickly repurposed for defense needs? How can we create a system of incentives, procurements, and standards that does not turn civilian companies into permanent contractors for military use, but allows to tap into their potential in the event of a crisis?

DILEMMA 2

Thesis statement: Integrating civilian and military systems increases resilience but creates new risks of escalation and increases vulnerability. Dual-use technologies are attractive because they allow for the use of civilian scale, pace of innovation, and lower costs for security purposes. At the same time, the integration of civilian infrastructure with military applications may make civilian networks, platforms, data, production facilities, and supply chains a legitimate target for attack or pressure from an adversary. An example of this approach is the Central Europe Pipeline System (CEPS)—a NATO-owned fuel pipeline network that combines civilian and military infrastructure, ensuring fuel supplies for both the armed forces and selected civilian recipients. This system demonstrates that the use of dual-use infrastructure can enhance resilience and logistical efficiency, while simultaneously increasing its strategic importance as a potential target for hybrid or military operations.

IMPLICATION/DISCUSSION POINT

Where should the line between the use of civilian resources for defense and the militarization of the economy be drawn? Should civilian infrastructure and companies integrated into the defense system be subject to special security standards, emergency procedures, and compensation for increased risk?

DILEMMA 3

Thesis statement: Civilian energy infrastructure is becoming battlefield infrastructure. "Dual-use" increasingly refers to civilian assets (grids, interconnectors, subsea cables, ports, LNG terminals, offshore wind farms, energy storage facilities, substations, and control systems) whose damage can have consequences comparable to an attack on military infrastructure.

> **IMPLICATION/DISCUSSION POINT**
> Who should be responsible for protecting infrastructure that is formally civilian or private but is strategically critical to a nation's ability to survive a crisis? Should energy security be financed as a cost borne by the energy market, a cost borne by consumers, a responsibility of the state, or a component of NATO and EU common defense policy?

ENERGY TRANSITION

DILEMMA 1

Base case: The current energy transition is bringing about a fundamental shift in the economics of the energy sector. The 20th-century model of centralized energy sources (based on economies of scale) is being replaced by distributed generation from renewable energy sources (primarily rooftop photovoltaics and onshore wind power, and in the future, small modular reactors [SMRs]).

> **IMPLICATION/DISCUSSION POINT**
> *This evolution is permanently changing the role of the end user. The passive consumer is being transformed into an active prosumer and a local—and at times completely autonomous—energy producer, striving for independence from the national power grid (off-grid installations).*

DILEMMA 2

Base case: The mass deployment of distributed renewable energy (PV, onshore) is taking place amid deep dependence on foreign technology suppliers. The dynamic growth of these sources in the CEE region is creating a deferred raw materials challenge—in 10–15 years, millions of installations will reach the end of their service life. In an era of global shortages and **a supply crisis involving rare earth metals and critical raw materials**, end-of-life renewable energy infrastructure must cease to be treated as waste and instead become a strategic resource.

> **IMPLICATION/DISCUSSION POINT**
> *Implementation of advanced high-value recycling technologies, such as thermal delamination and hydrometallurgy, constitutes a breakthrough. These technologies enable the recovery of extremely pure, ready-to-reuse components at the source: silver, copper, aluminum, and high-purity silicon. The CEE region*

is faced with a choice: allow these valuable resources to be drained away (by exporting or allowing for "black boxes" storage abroad) or build a regional technology hub that will transform recycling into a profitable sector of the raw materials economy, making us partially independent of external mining markets.

Lack of support mechanisms for high-value recycling facilities: There exist no targeted legal and financial instruments (grants, technological incentives) to stimulate the construction of advanced delamination and hydrometallurgical lines, which require large initial investments but can ensure the highest raw material profitability.

Lack of domestic safeguards to prevent the escape of the waste stream: There exist no regulations to prevent the massive, uncontrolled export of used photovoltaic components from Poland to third countries before the local industry even has a chance to recover precious and strategic metals from them.

In light of the above, should the government undertake aggressive, protectionist market intervention? Should it impose strict export barriers on end-of-life renewable energy infrastructure and provide billions in subsidies for high-value recycling technologies that have not yet been commercially proven? Or—in the name of short-term economic profitability for energy companies—should it accept the free-market drain of these resources by mature, foreign recycling entities and therefore accept the permanent dependence of the Polish cleantech sector on imports of strategic components and critical elements?

DILEMMA 3

Thesis statement: The ecological and social paradox of mining: Europe wants to reduce emissions but does not want mines on its territory (public protests, stringent environmental standards).

IMPLICATION/DISCUSSION POINT

A polarization between advocates of importing raw materials from the Global South (despite humanitarian and environmental abuses there) and pragmatists who argue that energy sovereignty is impossible without opening mines in Europe.

CENTRAL EUROPE

DILEMMA 1

Thesis statement: A permanent severance from Russia—a necessity or a temporary state of emergency? The war in Ukraine has forced an accelerated de-Russification of Central Europe's energy sector, which for decades had been heavily dependent on Russian supplies of oil, gas, and nuclear fuel. Countries in the region, particularly Poland and the Baltic States, have embarked on an intensive diversification of energy sources through infrastructure development, importing raw materials from new locations, and accelerating investments in domestic renewable energy sources.

At the same time, the question arises as to whether cutting ties with Russia should be permanent or primarily a response to an exceptional geopolitical situation, and how relations should be structured once hostilities end. Energy remains a tool of political influence, and the restoration of trade ties could once again create vulnerability to energy pressure and blackmail. On the other hand, there is the question of the long-term costs of permanently excluding certain supply sources. A complete shift away from Russian raw materials limits market flexibility and increases costs. The key dilemma, therefore, is not only whether imports from Russia should be permitted, but also whether Central Europe should treat energy dependence as a security risk or solely as a matter of market efficiency. Opinions on this issue in Central Europe are divided.

IMPLICATION/DISCUSSION POINT

Should Central Europe strive for a complete and irreversible end to any possibility of imports from the East (even after the war)? Is it acceptable to resume energy relations with Russia in order to seek cost optimization?

DILEMMA 2

Thesis statement: Ukraine as a key component of the European energy system: Ukraine possesses significant underground gas storage facilities, the potential to produce green hydrogen and biomethane, and an extensive electric energy transmission network. Once the war ends, the reconstruction of Ukraine's energy sector could become one of the most important investment and modernization projects in Europe. Integrating Ukraine into the EU energy market could enhance security of supply and create new opportunities for trading electricity, natural gas, biomethane, and hydrogen. At the same time, this would require significant investments in infrastructure reconstruction, ensuring physical and cybersecurity, and full compliance with EU regulations.

IMPLICATION/DISCUSSION POINT

Ukraine's integration into the EU market presents an opportunity to improve the region's resilience, but also poses a major competitive challenge (e.g., for the Polish power generation sector or the biomethane). How should this process be managed so that integration does not provoke internal resistance in the countries of the region? Will Ukraine become merely a recipient of aid and reconstruction, or will it be one of the pillars of the future European energy system, strengthening the security and competitiveness of the entire region?

DILEMMA 3

Thesis statement: The restructuring of transmission infrastructure along the North–South axis:

The energy infrastructure in Central Europe is undergoing a profound transformation, shifting away from the historical East–West configuration—based on raw material supplies from Russia—toward connections developed along the North–South axis. The expansion of LNG terminals, gas interconnectors, and power transmission lines strengthens the integration of Central European markets and increases opportunities for supply diversification. The new infrastructure enables the use of LNG supplies and their distribution within the region, provides greater transmission capacity, increases the potential for electric energy transmission between countries in the region, reduces the risk of isolation, and enhances the capacity for solidarity measures in a crisis situation.

The infrastructure upgrade has not both - a technical dimension and also a geopolitical one. It changes the directions of energy flows, strengthens Central Europe's resilience to supply disruptions, and lays the groundwork for deeper integration of the regional energy market and the future development of energy and gas trade.

IMPLICATION/DISCUSSION POINT

Who should bear the costs of building and maintaining this infrastructure? Should it be the debt-burdened countries or the EU budget? How can we avoid overscaling this infrastructure? How can we balance short-term security (gas) with the long-term goal (net-zero emissions) in a region with lower initial capital?

8. GLOSSARY



INSTYTUT SOBIESKIEGO

INSTITUTIONS, ORGANIZATIONS, AND REGIONS

ACER	European Union Agency for the Cooperation of Energy Regulators – Agencja Unii Europejskiej ds. Współpracy Organów Regulacji Energetyki
CBOS	Centrum Badania Opinii Społecznej
CEE	Central and Eastern Europe – Europa Środkowo-Wschodnia
DOE	U.S. Department of Energy – Departament Energii Stanów Zjednoczonych
EBRD	European Bank for Reconstruction and Development – Europejski Bank Odbudowy i Rozwoju
IAEA	International Atomic Energy Agency – Międzynarodowa Agencja Energii Atomowej
IEA	International Energy Agency – Międzynarodowa Agencja Energetyczna
IMF	International Monetary Fund – Międzynarodowy Fundusz Walutowy
KHNP	Korea Hydro & Nuclear Power. Południowokoreańskie państwowe przedsiębiorstwo energetyczne rozwijające m.in. energetykę jądrową i technologie SMR
NATO	North Atlantic Treaty Organization – Organizacja Traktatu Północnoatlantyckiego
NREL	National Renewable Energy Laboratory – Narodowe Laboratorium Energii Odnawialnej USA
OECD	Organisation for Economic Co-operation and Development – Organizacja Współpracy Gospodarczej i Rozwoju
ONZ	Organizacja Narodów Zjednoczonych
OSGE	ORLEN Synthos Green Energy
PIE	Polski Instytut Ekonomiczny
PSE	Polskie Sieci Elektroenergetyczne S.A.
SSP	Spółki Skarbu Państwa
UE	Unia Europejska
URE	Urząd Regulacji Energetyki
WTO	World Trade Organization – Światowa Organizacja Handlu

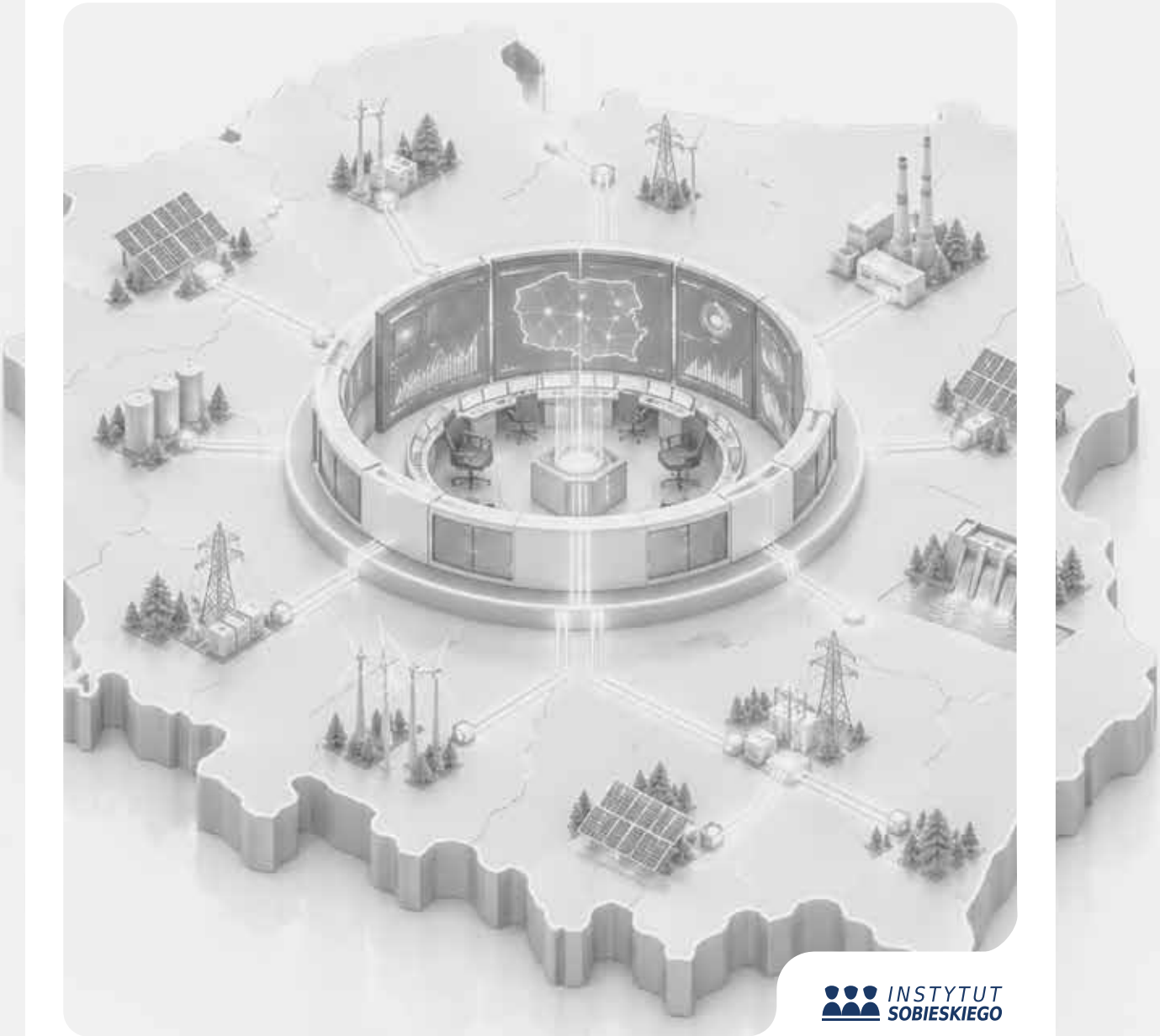
REGULATIONS

CBAM	Carbon Border Adjustment Mechanism
CfD	Contract for Difference – kontrakt różnicowy
CISAF	Clean Industrial Deal State Aid Framework
CRMA	Critical Raw Materials Act – Akt w sprawie surowców krytycznych
ETS	Emissions Trading System – system handlu uprawnieniami do emisji
IRA	Inflation Reduction Act
KPEiK	Krajowy plan w dziedzinie energii i klimatu
NZIA	Net-Zero Industry Act – Akt w sprawie przemysłu neutralnego emisyjnie
REPowerEU	Unijny plan REPowerEU.
RRF	Recovery and Resilience Facility – Instrument na rzecz Odbudowy i Zwiększania Odporności

TECHNOLOGIES

AI	Artificial Intelligence – sztuczna inteligencja
AMR	Advanced Modular Reactor – zaawansowany reaktor modułowy
BRELL	Belarus–Russia–Estonia–Latvia–Lithuania. Dawny pierścień elektroenergetyczny łączący Białoruś, Rosję, Estonię, Łotwę i Litwę
CCS	Carbon Capture and Storage – wychwytywanie i składowanie dwutlenku węgla
CEPS	Central Europe Pipeline System – Środkowoeuropejski System Rurociągów
DR	Demand Response – reakcja strony popytowej
DSR	Demand Side Response – zarządzanie popytem po stronie odbiorców
DX/GX	Digital Transformation / Green Transformation – transformacja cyfrowa / zielona transformacja. Japońskie określenia równoległej cyfryzacji gospodarki i jej dekarbonizacji.
Gen III+	Generation III+ – generacja III+ reaktorów jądrowych
HALEU	High-Assay Low-Enriched Uranium – nisko wzbogacony uran o podwyższonym stopniu wzbogacenia
HVDC	High-Voltage Direct Current – przesył prądu stałego wysokiego napięcia
ICT	Information and Communication Technologies – technologie informacyjno-komunikacyjne
IT	Information Technology – technologie informatyczne
KSE	Krajowy System Elektroenergetyczny
LNG	Liquefied Natural Gas – skroplony gaz ziemny
OZE	Odnawialne źródła energii
PV	Photovoltaics – fotowoltaika
SMR	Small Modular Reactor – mały reaktor modułowy
VPP	Virtual Power Plant – wirtualna elektrownia
WRE	Walka radioelektroniczna. Działania wykorzystujące zakłócanie, rozpoznanie i ochronę w spektrum elektromagnetycznym; w raporcie także w kontekście obrony antydronowej.

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INSTYTUT SOBIESKIEGO



Hanna Uhl

Expert in energy transition, electromobility, climate and environmental policy, and sustainable development, with extensive experience in public administration and the energy sector.

She currently serves as Clean Mobility Policy Manager at the Polish office of Transport & Environment (T&E), where she focuses on clean mobility policy, electromobility development, and transport decarbonization. She develops regulatory analyses and recommendations, and collaborates with public administration, business, and industry organizations. She has also held directorial positions at the Ministry of Development and the Ministry of Entrepreneurship and Technology, where, among others, she managed the Low-Emission Economy Department. She coordinated work on the Long-Term Renovation Strategy, the reform of wind energy investment rules (including the amendment to the so-called 10H distance rule), and amendments to the Renewable Energy Sources Act.



Maciej Jakubik

Expert in energy, industry, and EU regulation, with broad, cross-cutting experience spanning public administration, diplomacy, the energy sector, industry associations, and think tanks. He has worked at companies and organizations such as PSE, Forum Energii, and CEEP in Brussels.

He combines business, regulatory, and public perspectives, specializing in energy market regulation, industrial competitiveness, and energy transition. Graduate of political sciences from Warsaw University, European studies from the College of Europe, and holder of postgraduate degrees in the energy market from the SGH Warsaw School of Economics and the Florence School of Regulation.



Paweł Jakubowski

Energy transition expert with 18 years of experience in strategic management and infrastructure projects. He led key strategic programs, including the construction of the FSRU Terminal in Gdańsk, the expansion of the LNG Terminal in Świnoujście, and the negotiation of the Baltic Pipe framework.

He represented the Polish sector as a board member of ENTSOG in Brussels. He served as President of the Management Board at Polskie LNG and Naftoserwis. He is a graduate of the Warsaw University of Technology and the SGH Warsaw School of Economics, he also completed the High Potentials Leadership Program at Harvard Business School.

Collaboration:



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Expert with many years of experience in the energy and telecommunications sectors. She has held key executive and advisory roles, combining legal expertise with strategic skills in the regulated sectors of the economy. She serves as a social advisor to the President of the Republic of Poland, Karol Nawrocki. Previously, she was Vice President of the Management Board at PGE S.A., where she supervised regulatory affairs, ESG processes, and EU funds. As Deputy Minister of Digital Affairs, she was responsible for the development of digital infrastructure, including the rollout of the 5G network in Poland and drafting legislative amendments to remove investment barriers in telecommunications.

She graduated from the Faculty of Law and Administration at the University of Łódź, as well as from the French and European law department at the Université de Poitiers. She holds postgraduate degrees in state aid from SGH Warsaw School of Economics and in international and military relations from the War Studies University in Warsaw. She also completed the prestigious Leadership Academy for Poland program, organized in cooperation with Harvard Business School.



Krzysztof Perycz-Szczepański

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A graduate of the Faculty of Economics at the University of Gdańsk, he also studied at Karlstad University in Sweden. From 2019 to 2024, he served as Deputy Director of the Gdańsk-Gdynia-Sopot Metropolitan Area, where his responsibilities included managing a project portfolio under the Integrated Territorial Investments for Pomerania in the areas of health, energy renovation of buildings, development of transport hubs, and urban revitalization.

He is an expert in mobility and sustainable urban development.

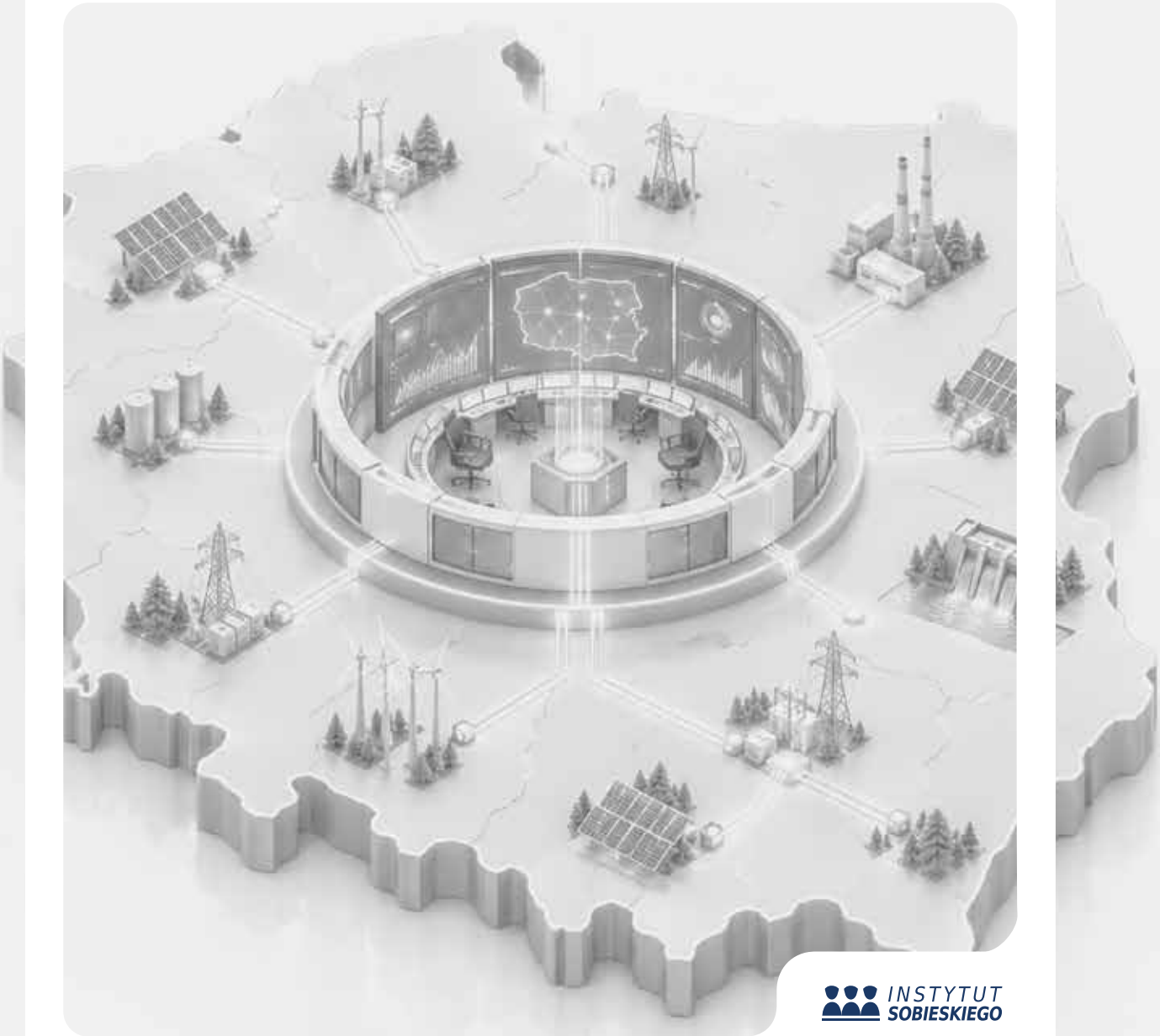


Konrad Szymański

Member of the Council of the Polish Institute of International Affairs (PISM) and the Council of the Polska z Natury Foundation. From 2004 to 2014, he was a Member of the European Parliament, sitting on the Committee on Industry, Research and Energy, as well as the Committee on Foreign Affairs.

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ABOUT THE PUBLISHERS



INSTYTUT SOBIESKIEGO

INSTYTUT ***SOBIESKIEGO***

Instytut Sobieskiego jest polskim prywatnym ośrodkiem analitycznym typu think tank, którego misją jest „Tworzenie idei dla Polski". Został zarejestrowany w 2005 r. jako fundacja, choć rozpoczął swoją działalność w 2003 r. W latach 2003–2010 Instytut wydawał kwartalnik „Międzynarodowy Przegląd Polityczny". W latach 2011–2015 był organizatorem corocznego kongresu „Polska – Wielki Projekt". W 2017 zorganizował edycję Krajowej Ligi Innowacji. Od 2017 r. Instytut kładzie duży akcent w swojej działalności na publikacje opracowań i rekomendacji, których celem jest pokazywanie w jaki sposób polska gospodarka powinna wykorzystywać szanse związane z czwartą rewolucją przemysłową, innowacyjnością i nowymi technologiami.

Instytut Sobieskiego prowadzi także działalność edukacyjną poprzez realizację projektu „Akademia Młodych Ekspertów", który wspiera młodych ludzi w rozwijaniu kompetencji przywódczych i umiejętności miękkich. Każda edycja programu koncentruje się na innym istotnym zagadnieniu, odpowiadając na aktualne potrzeby młodego pokolenia. Obecnie, podczas 6. edycji, projekt koncentruje się na tematyce Unii Europejskiej, przekazując wiedzę oraz przygotowując uczestników do udziału w konkursach Europejskiego Urzędu Doboru Kadr (EPSO). Program otwiera uczestnikom drzwi do międzynarodowej kariery w instytucjach unijnych. To wyjątkowa okazja do zdobycia praktycznych umiejętności i rozwoju zawodowego na najwyższym poziomie.

Jednym z najnowszych projektów Instytutu Sobieskiego jest „Kanał Sobieski", do którego subskrypcji zapraszamy na YouTube. Kanał został stworzony z myślą o inspirujących rozmowach na ważne tematy dla Polski. Spotykamy się z tam ciekawymi osobowościami, by wspólnie kształtować przestrzeń do merytorycznej debaty.

W swojej działalności Instytut Sobieskiego współpracował z wieloma podmiotami. Do tej pory były to m.in.:

- organizacje pozarządowe: Forum Automatyki i Robotyki Polskiej, Fundacja Wspierania Ubezpieczeń Wzajemnych, Fundacja Republikańska, Instytut Jagielloński, Nowa Konfederacja, Ambitna Polska, Młodzi dla Polski, Studenci dla Rzeczypospolitej, Fundacja Konrada Adenauera, Central European Energy Partners, Fundacja im. Sławomira Skrzypka, Fundacja im. Wacława Felczaka, Institute for Foreign Affairs and Trade (Külügyi és Külgazdasági Intézet), Institute for Politics and Society (Institut pro politiku a společnost), The F. A. Hayek Foundation Bratislava;

- firmy komercyjne: Aiut, Assay Group, Rohde&Schwarz, WB Electronics, Asseco, Samsung, Lotos, Google, Procter and Gable, PWC, Cisco, EY, Phoenix Systems, Uber, USP Zdrowie, Fortum, Orange, Energa, Zysk i Ska, Collegium Wratislaviense, 4CF;

- instytucje państwowe/ponadnarodowe: Ministerstwo Spraw Zagranicznych, Przedstawicielstwo Komisji Europejskiej w Polsce, Ministerstwo Klimatu i Środowiska, Fundacją Platforma Przemysłu Przyszłości, Agencja Rozwoju i Przemysłu, Giełda Papierów Wartościowych, Bank Gospodarki Krajowego, Kancelaria Prezesa Rady Ministrów, Ministerstwo Cyfryzacji, Prawo i Sprawiedliwość, Ambasada Węgier, Senat RP, Europejska Partia Konserwatystów i Reformatorów, Biuro Parlamentu Europejskiego w Polsce.

Pełną listę raportów i publikacji oraz informacje o działalności Instytutu można znaleźć na stronie **www.sobieski.org.pl**.

Zapraszamy także do subskrybowania Kanału Sobieski na platformie **youtube.com/kanalSobieski**. Dołączcie do nas – warto!

Polska z natury

Polska z Natury Foundation operates at the intersection of environmental protection, local development, and public policy. Its mission is to build broad support for nature conservation and responsible energy transition, particularly among residents of small towns, rural areas, and groups historically underrepresented in the mainstream environmental debate.

The Foundation combines its orientation on environmental conservation with security, responsibility, intergenerational solidarity, and commitment to local communities. By collaborating with experts, public institutions, social organizations, and local leaders, it creates a space for non-partisan dialogue and discussion on the future directions of the Polish energy policy—taking into account state security, economic resilience, and local community needs.

The Polska z Natury Foundation is the initiator and co-organizer of the Energy & Resilience in Poland and Central and Eastern Europe project, which explores the role of energy as a pillar of state security and resilience, as well as the pathways for a responsible energy transition in Poland and Central and Eastern Europe.

OPENING REPORT (2026)

ENERGY AND RESILIENCE

IN POLAND AND CENTRAL AND EASTERN EUROPE

Invitation to Debate

The opening report, Energy and Resilience in Poland and Central and Eastern Europe, does not offer answers to the questions it raises. Its starting point is the conviction that durable energy policy requires moving away from the simplified division into supporters and opponents of energy transition. Today, the real debate centers on the pace of change, costs, technology, acceptable risk levels, the role of the state, and dependencies that Poland considers admissible.

Future work should neither aim to validate a predetermined energy transition path nor advocate a simple return to an energy model built for different economic and geopolitical conditions. What is needed is an assessment of available options based on their real consequences. A domestic energy source is not automatically safe and competitive, just as a low-emission technology is not automatically cheap, resilient, and beneficial to the Polish economy.

In this sense, the report serves as an opening, rather than a conclusion, of the discussion. It does not determine the target energy mix or the optimal pace of change; instead, it attempts to create a shared framework within which costs, benefits, and risks can be deliberately weighed against one another. What is at stake in this debate is not just the structure of the energy sector, but an answer to a broader question: what kind of energy system does Poland need to remain a secure, competitive, and self-reliant state amidst growing uncertainties?

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