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ISSUEBRIEF

Franklin D. Kramer, John R. Lyman, and Mihaela C. Carstei

Central Europe and the Geopolitics of Energy

Energy security presents quintessential geopolitical challenges. In Central Europe, achieving energy security can be a critical element for a continent seeking to resolve vestigial Cold War complexities with Russia and toward meeting 21st century challenges including balanced economic development, energy diversity and climate change. Central Europe, utilizing both European Union support and Western European national assistance and enhanced by United States technical assistance, can take five key steps that will go far toward resolving energy security challenges and help to reframe the geopolitics of the continent. Those steps are:

- **Create a formal regional cooperation mechanism**
- **Transform regional gas markets and infrastructure**
- **Develop balanced and cooperative nuclear power generation capacity**
- **Increase energy efficiency – the hidden source of energy in the region**
- **Explore alternative coal technologies**

Such actions can be a transformative set of events not only for energy security but for the continued building of a Europe whole, free and effective.

Central and Eastern Europe Energy Security Series

In 2010, the Atlantic Council initiated a dialogue of government, industry and non-governmental policy experts to examine current efforts to transform the supply and consumption of energy to create a sustainable energy future for Central Europe that addresses an integrated goal of energy security, environmental responsibility and economic prosperity. This initiative seeks to further the understanding on how to transform the existing regional alliance with realistic and balanced policies that will integrate the energy sector in the Visegrad 4 countries and expand interconnections with Eastern and Western neighbors, such as Germany.

Key events included a conference on "*US - EU Dialogue on Sustainable Energy Security: Ensuring Physical Security of Supply, Environmental Responsibility and Economic Prosperity in Central Europe* " co-hosted with the Clingendael International Energy Program at the Netherlands Institute for International Relations and the Prague Securities Studies Institute (http://www.acus.org/event/us-eu-dialogue-sustainable-energy-security).

Franklin D. Kramer *is Vice Chairman of the Atlantic Council Board of Directors and is a member of the Atlantic Council Strategic Advisors Group. He served as Assistant Secretary of Defense for International Security Affairs during the Clinton Administration.* ***John R. Lyman*** *is the Director of the Energy and Environment Program, with 28 years of experience in the oil and gas industry.* ***Mihaela C. Carstei*** *is Associate Director of the Energy and Environment Program.*

The Need for Regional Cooperation

None of the countries of Central Europe are large enough to be considered as an energy market by itself, but regional cooperation has only just begun—and, so far, is more at the rhetorical than at the practical level. But if the countries in Central Europe are to achieve sustainable energy security, they will find it necessary to consider similar policies and to cooperate in utilizing available technologies to evolve their energy sectors in a world with tightening resources, growing environmental concerns and a strong desire to economically prosper.

The relative small size of Central European use of energy strongly suggests in and of itself the value of regional cooperation. While the energy consumption in each CE country has been steadily growing, taken individually, the markets in each country are considerably smaller than any of those found in Western European countries. By way of example, the energy consumption for the CE region[1] only amounts to a little over 50% of the energy consumed in Germany. As a result, the small size adds to the market influence of large suppliers, such as Russia.

The desirability of regional cooperation is further underscored because obtaining security of energy is one of region's highest priorities, and because the main regional concern is the very high reliance on Russia for gas, oil and electricity imports. In the Visegrad 4 countries, Russia is the source of all gas for Slovakia, and accounts for over half the gas going to the Czech Republic, Poland, and Hungary. Joining the European Union should have lessened concerns over energy security in Central Europe. Yet, to date, these countries have found the EU to be focused more on energy market liberalization and climate change rather than investments in new infrastructure that would enable the region to diversify away from their energy dependence on a single supplier.

Moreover, even more broadly, a European Union and Western European national effort to support CE energy security fits ideally into a strategy to incorporate Russia into the market economy of Europe without giving it undue economic power that provides unwarranted geopolitical leverage. The natural gas disputes of 2006 and 2009 (as well as the recent rare earth export disruptions from China) make clear that market dominance is not a happy prospect for any balanced producer-consumer relationship. A Russia that sells sensibly in the market can be a valuable partner; a Russia that dominates the market is not a partner but rather a continued source of concern. All consumers are, of course, dependent on producers, but in an open market context, producers generally want to meet consumer demand. Thus, enhancing the market's effectiveness is not only a critical element of energy security for the Central European countries, but also an important geopolitical strategy for balanced European relations with Russia.

Given the nature of the individual CE countries, regional sustainable energy security will only be achieved if the Central European countries cooperate and develop an integrated energy market. A united Central European policy will increase the region's competitiveness and improve the security of supply through the establishment of a stronger, more resilient market. The countries in the region can benefit from mutual inter-dependencies as a more cohesive regional energy market will foster and encourage stronger economic ties with neighboring countries to the West, East and South East. Further, cooperation that integrates the region's national markets will enable the development of more economic energy sectors by reducing investments in projects based on locally protected markets that are uncompetitive versus neighboring regions.

CE Energy Strategy and the European Union

The critical elements of CE energy security will, as developed more fully below, be enhanced diversity of supply especially for natural gas, expanded nuclear energy as a source for electricity, and much greater efficiencies, especially in the housing arena. But it should be absolutely clear that such an effort must be undertaken within the overall approach that Europe has designed. Or to put it another way, to be effective, while a CE strategy should be focused on regional issues, it must be developed in parallel to and supportive of the overall European Action Plan for energy and climate .

Clarity on the commonality of objectives between a regional approach and the EU requirements is critical for political, economic and financial, and geopolitical consequences. The CE countries are part of the EU. They cannot act in opposition—but what they can do is utilize their appropriate voting power to support their efforts within the EU overall construct. The V4 countries have 58 votes currently in the Council of the European Union, equivalent to the combined voting power of France and Germany. Those votes should be utilized to ensure that when the new energy policy that

[1] Czech Republic, Hungary, Poland. Slovakia

the EU is expected to approve in the spring of 2011 is being implemented, sufficient support will be behind efforts to create energy security for these countries.

A critical element will be financing. The CE countries do not have the resources to accomplish an effective energy security approach. That can only be done with EU support. Thus, the absolute need for commonality of approach toward achieving overall EU goals. But, in order to obtain sufficient support for the financing needed to strengthen the stability of energy markets in the region - for example, for the infrastructure projects discussed below - Central Europe will also need to integrate the multiple national efforts in order to enhance its regional stance within the EU.

The CE countries have already taken some steps toward regional efforts. In February 2010, the CE countries met in Budapest and committed to cooperation in the areas of energy security, regional pipelines and creating alternative energy routes. A wide and strong partnership has been created with the initiation of Visegrad 4 countries along with co-signatories such as Austria, Slovenia and Romania. The meeting created a new supply triangle in Central-East Europe through new investments, projects that would allow gas to reach this region through alternative routes, or even in alternative forms. In addition, numerous bilateral discussions, informal consultations, and conferences and dialogues have been held. A need exists to formalize these efforts and to create a small secretariat to ensure continuity of approach.

A secretariat, however, is only as good as the plan it seeks to implement and the support such a plan will have. The elements of a plan are described below. On the support side, the CE countries should recognize the value of engaging crucial neighbors in their efforts. There would be two parts to such an approach. First, it would be invaluable to have German support for both the general concept of a regional approach within the EU framework and also for certain specific elements such as interconnectors and financing. Germany has close relations with all the CE countries and can also act as a bridge to and mentor within the EU context. Second, the CE region is, as noted, quite small, and so the regional approach should functionally be expanded as it makes sense for efficiency, financing and other reasons to other Eastern European countries—for example, perhaps the Baltic nations as nuclear efforts are sought to be rationalized.

Central Europe Energy Security Critical Elements

The proposed increased cooperation at the regional level has the potential to create more viable and competitive energy markets. The critical elements will focus on natural gas, nuclear, efficiencies particularly in the housing arena, and clean coal technologies.

Natural Gas

As noted above, the goal for the region with respect to natural gas is to create a more efficient market. This means that Russia will continue to be a significant supplier but also that the region should change the dynamics of its current gas supply relationship by diversifying the supply sources. Significant changes in the international natural gas market in recent years have made this entirely possible both functionally and economically. The United States development of unconventional gas(shale gas, tight gas, and coal bed methane) has meant much lesser American demand on the world market, while the continued development of LNG has meant significantly greater flexibility of supply.

To take advantage of these changes, infrastructure development is a key element. Most importantly, new interconnectors should be built between and among the countries in the region. A North-South corridor, connections with new developments in South Eastern Europe, and/or the use of appropriate interconnectors could bring LNG from the planned terminals in the north and south, as well as from new interconnections to Central Asian supplies. In addition, interconnections with Western Europe should be established that would enable gas flows to be reversed into Central Europe in case of serious shortfalls in normal east-west supply flows. Insuring the flexibility of such a pipeline network will require the establishment of new trading relationships with major Western European gas users. Germany can be a key factor in ensuring the development of such back-up capabilities, including also supporting the development of sufficient pipeline capacity to provide for energy security in event of disruption from the east. Such major undertakings almost certainly need to be financed through government investments and/or support—and EU financing and regulatory regimes are appropriate mechanisms that can be directed toward such ends. The benefits are plain—such development of regional infrastructure and greater inter-regional trade will reduce the exposure to either physical or political disruptions.

Unconventional gas reserves could provide additional supplies and be very helpful in the region's attempts to diversify its supplies. To be sure, the commercial potential has yet to be proven in the region. Potential for shale gas is seen as primarily a possibility for Poland and Germany, with limited geological potential for Hungary. But there is a real prospect for unconventional gas to enhance the supply capacity so that the greater elasticity of supply affects both market price and geopolitical considerations.[2] While enhancing security of supply, these measures will also have positive economic effects. Currently, gas in Central Europe is more expensive than in Western Europe because of a lack of competition. The expansion of supply sources will increase market competitiveness and should thereby lower prices with an overall positive impact on the economies of the CE countries.

Nuclear

Currently around one-third of the electricity consumed in the EU is generated by nuclear power plants, which is one of the largest sources of CO2 free energy in Europe. Nuclear power is seen by many as one of the ways of limiting CO2 emissions within the EU and, for those member states that wish, is also likely to form an important part of their energy plan. In CE countries nuclear power currently accounts for nearly 19% percent of electricity generated across the region. Although expanding nuclear generation is a controversial issue for some countries of the EU, most of the CE region does not face the strong public opposition to nuclear generation seen in some Western European countries.

A revitalization and expansion of the nuclear industry will provide Central Europe its biggest potential to provide clean electric power and meet EU lower carbon targets. Given that nuclear power, if sensibly acquired, can be reasonably competitive with various types of carbon-generated electricity on a levelized life cycle cost basis, its use can reduce concerns related to the possible impact of increasing energy prices on economic growth in the region. This is particularly true when one of the key issues facing the region is to avoid a market dominant position—and therefore, pricing power—for Russian gas. Accordingly, in all of the geopolitical, market, and climate contexts, nuclear power is a valuable contributor to reducing dependency on hydrocarbons.

Nuclear power is not cheap in its initial capital costs. A new 1,200 MWe nuclear reactor probably costs about $4.5 billion[3] . Accordingly, it is important to make economically sensible decisions regarding nuclear generation capacity, and for this reason, such decisions should be made in a regional context. Currently, there are 8 nuclear plants in some planning stages in the CE countries and 5 others also being considered in countries in near proximity. Any rapid expansion of nuclear plant construction is highly dependent on establishing a strong manufacturing sector in a broad number of areas related to plant construction and operations and on the availability of skilled laborers to expand and run the nuclear industry. But a regional approach to building nuclear plants, combined with appropriate contractual and/or regulatory arrangements, could ensure security of supply even for countries physically without such a plant. Again, this underscores the importance of an appropriate regional strategy for the CE countries.

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Energy Efficiency

Over the past 20 years, Central Europe has, overall, done well in wasting less energy and in cutting CO2 emissions. This has been an overall trend in Europe as without the savings from improved energy efficiency since 1973, energy use in OECD Europe countries would now be 61% higher. Across the CE region, the general trend in energy efficiency for electric power has been one of considerable improvement in industry, but much more modest progress for households. This pattern is particularly marked in the new member states, where the industrial structure has been altered by demise of old and inefficient industrial complexes and the presence of international companies that brought more efficient equipment and practices.

The housing stock holds the largest potential for energy efficiency gains as it was constructed decades ago without much consideration for energy usage. The region can do far better, and there is still abundant low-hanging fruit, in terms of potential efficiency improvements.

The region has taken some steps already: The Czech Republic's Eko-Energy program is aimed to stimulate entrepreneurs to reduce energy demand for their produc-

[2] While recent activities by Exxon-Mobil in Hungary have been abandoned based on initial test wells, the company is optimistic about the potential for shale gas in CE and has acquired unconventional gas leases in Poland and Germany. In Poland, Conoco-Phillips has drilled several exploratory wells and Lane Energy and Chevron are active in planning initial test wells., These companies aim to develop the country's shale gas reserves for commercialization in less than a decade.

[3] It is generally accepted that nuclear power plant construction cost estimates are very uncertain

tion; Poland has a Thermal Modernization Fund; and Hungary provides incentives through an Energy Efficiency Guarantee Program. However, much more extensive programs focused on housing could receive invaluable financing from the EU, and would be an important regional contribution to the goal of reducing greenhouse gas emissions by 20%. For the region, it is very important to focus on efficiency measures to achieve this goal since, as noted below, the region has neither the wind nor solar natural resources to make expansive use of such renewable energy sources economically feasible.

Renewables

The development of renewable energy supplies has limited potential in the region and varies widely depending upon the level of local natural resources and the country's implementation of policies to support renewable generation. The region views the EU 20/20/20 objective as a set of political goals that will be difficult to support without economic action plans. The renewable electricity directive has been a major driving force as the region has limited ability to economically utilize renewable energy sources. Some countries have rich hydro potential, such as Slovakia, and as a result, their renewable generation goals have been set higher. Other member states, such as Hungary, must rely on more expensive technology, such as wind and biomass. In the overall, however, a substantial increase in the utilization of renewables like wind and solar will require establishing linkages outside the region, such as connecting to the North Sea wind grid and or tapping the North African solar power potential. The region's ability to obtain competitively priced supplies through the increased interconnections will also enable individual countries to support a broader array of renewable energies and encourage the more efficient use of energy.

Coal

Many Central and Eastern European countries have significant coal reserves, including three Visegrad countries: Poland, Czech Republic, and Hungary. Currently, coal generation provides the energy for 30% percent of the total CE installed electric generation capacity. In some countries in the region—including Poland, and Czech Republic—coal is the primary energy source for electric power generation, accounting for more than 90% of the total electricity produced in Poland. For these countries continuing the significant use of coal is highly likely, certainly in the medium term, for among other reasons existing market arrangements, jobs, costs, and geopolitical concerns.

Coal, of course, raises important environmental and climate challenges. Since coal fired power plants will continue to play an important role in the CE region's power generation structure, the region needs to adopt clean coal technologies to reduce CO2 emissions. Clean-burning technologies are already available which can reduce emissions although with higher cost implications. Fully reaching EU climate goals, assuming coal continues to be utilized, will require some form of carbon capture and storage. Significant technological efforts are being undertaken with respect to CSS, but as of yet, there are limited market solutions. Accordingly, countries that will maintain reliance on coal will also need to have significant other efforts such as nuclear and efficiencies in order to achieve EU objectives.[4]

Conclusion

Energy security policy for the CE countries can be a highly leveraged, high impact effort with significant economic and geopolitical consequences. A regional approach that establishes a coordinated policy both, among the countries of the region, and in concert with the EU's 20/20/20 energy and climate goals will be the most effective way to accomplish such effects. Hungary, and then Poland, which will hold the presidency of the EU for the next 12 months will be in a position to shape the agenda. Addionally, Germany, as the region's most significant neighbor should play a large role in helping effectuate such an effort, and the United States can support the goals with appropriate technical and political assistance.

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[4] Currently, low carbon prices are continuing to hurt the ability of the industry to adopt CCS. However, while a firm, predictable carbon price is an important international priority, it alone will not deliver the technology revolution that is needed during the next decade. The IEA analysis shows that a CO2 price is unlikely to be sufficient on its own to drive investment in the more costly technologies, such as CCS, that have longer-term emission reduction benefits. A truly global carbon market is likely to be many years away, and there is a need to ramp up technologies as soon as possible.

The Atlantic Council promotes constructive U.S. leadership and engagement in international affairs based on the central role of the Atlantic community in meeting the international challenges of the 21st century. The Council embodies a non-partisan network of leaders who aim to bring ideas to power and to give power to ideas by stimulating dialogue and discussion about critical international issues with a view to enriching public debate and promoting consensus on appropriate responses in the Administration, the Congress, the corporate and nonprofit sectors, and the media in the United States and among leaders in Europe, Asia, and the Americas. The Council is also among the few forums conducting educational and exchange programs for successor generations of U.S. leaders so that they will come to value U.S. international engagement and have the knowledge and understanding necessary to develop effective policies.

Through its diverse networks, the Council builds broad constituencies to support constructive U.S. leadership and policies. Its program offices publish informational analyses, convene conferences among current and/or future leaders, and contribute to the public debate in order to integrate the views of knowledgeable individuals from a wide variety of backgrounds, interests and experiences.

The Energy and Environment Program explores the economic and political aspects of energy security and supply, as well as international environmental issues. Major shifts in policies, behavior, and expectations are increasingly required throughout the world to meet the challenges of maintaining secure and sustainable energy supplies and protecting the environment while maintaining economic competitiveness. The Energy and Environment Program facilitates international cooperation on developing strategies, policies, and regulations to address the energy security, environmental and economic challenges posed by increasing energy demands and climate change.

For more information, contact the Director of the Energy and Environment Program John R Lyman (**jrlyman@acus.org**) or Associate Director Mihaela Carstei (**mcarstei@acus.org**).

1101 15th Street NW • 11th Floor • Washington, DC 20005 • (202) 778-4968 • www.acus.org