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## European Strategies for Energy Security in the Natural Gas Market

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# European Strategies for Energy Security in the Natural Gas Market

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## Introduction

*Natural gas is poised for a bright yet complex future, also for geopolitical reasons. The global gas market, very young at present, will expand significantly, aided by climate worries, growing power demands, and new LNG technology. Yet [...] ...geopolitical difficulties will exist regardless.<sup>1</sup>*

The global energy trade stands at the intersection of business and politics. Access to natural resources is a matter of national security affecting all vital economic, defense, infrastructural, and social systems of the state. Following the pattern of industrial development in the 20th century, which relied primarily on oil and resulted in a recurrent rush for the "black gold," the turn of the 21st century marked the rush for "blue energy," that is natural gas. A base product for many applications across industry, transport, and consumption, natural gas has reached global relevance. Cleaner and more efficient than oil and coal, it has important advantages in terms of cost-effectiveness and environmental sustainability. However, natural gas is not substantively a more secure and reliable energy resource, despite its economic and technological qualities. The uneven distribution of the sources of natural gas globally, inflexible and cost-intensive means of delivery, and high concentrations of consumption due to geographic and population patterns create multiple asymmetric dependencies between producers and consumers. Trade in natural gas is not based on comparative advantage only. As most observers note, it lacks some of the important features of conventional markets. Natural gas often involves non-market price formation for end users. Prices for spot and long-term contracts differ widely, regional concentrations of suppliers and consumers are a source of interdependence and vulnerability and, in the absence of good relations between exporters and importers, trade in natural gas may be brought to a halt regardless of the underlying economic benefits it offers.<sup>2</sup> As most international deliveries rely on pipelines, the participation of transit countries complicates the relationship between suppliers and consumers with a potential for significant political ramifications.<sup>3</sup>

The enmeshing of cost-benefit, reliability, affordability, and sustainability concerns in the provision of natural gas is captured by the concept of energy security. The latter represents a shorthand expression for objectives that require policy action, simultaneously reducing import dependence without compromising economic growth, addressing climate change issues, securing effective supply routes, and minimizing risks of political destabilization.<sup>4</sup> The European Union (EU) is an example of an energy market that promotes such broadened understanding of energy

security to address more than the problem of dependence on a sole source of deliveries, the security of transportation, and the sustainability of supply in view of changes in the structure of demand. Issues of environmental sustainability and the de-carbonization of the energy system form an integral component of the European conception of energy security.<sup>5</sup> While the practical implementation of such policy ideas is understandably multi-dimensional, it is also inherently contradictory and politically contested. The policy mix includes often mutually exclusive approaches to dealing with energy issues in the EU's internal market, including the availability and reliability of supply, energy independence and cooperation, and economic efficiency and environmental sustainability.

The multiplicity of policy actions is often criticized for lacking common conceptual foundations and value added in terms of energy security.<sup>6</sup> There is a widely shared assumption that the EU needs to take a more effective position on the international stage in order to secure its energy needs.<sup>7</sup> Some observers emphasize the need for a common energy policy based on the diversification of sources and suppliers, which would reduce Europe's external energy dependence. Others propose the decoupling of the political from the technical and economic dimensions of energy policy, in an effort to boost efficiency, market integration, and environmental sustainability.

This article examines the EU's approaches to energy security on the example of its natural gas imports from Russia, the largest supplier of gas to European markets, and therefore a source of energy dependence. The prevalent EU policy mix vis-à-vis Russia is an effort to reconcile the diverse interests and often mutually exclusive strategies of public and private actors, member states and EU institutions, which simultaneously depend on and exclude Russia as a reliable supply source. The launch of two major initiatives, Nord Stream and The Southern Gas Corridor (Nabucco), demonstrates such opposing strategies, seemingly at odds with the objective of achieving energy independence from Russia. Both projects are visionary, designed to cover the long-term needs of the EU member states.

Nord Stream increases European energy supply by diversifying the routes which carry natural gas to Western Europe. While nominally the pipeline removes transit states, increases the efficiency of supply, and lowers the opportunities for politicization of deliveries, it also increases the EU's dependence on Russian gas by increasing the volume of imports into Western Europe without diversifying the sources of supply.<sup>8</sup>

Objectives of enhancing energy security in the south of Europe have implemented the opposite strategy. The Nabucco pipeline was designed to diversify supply by excluding deliveries of Russian gas. The project relies on a large number of sources in the Caspian Sea region, Northern Iraq, and possibly Iran, none of which guarantees long-term supply, and includes several transit states. These conflicting strategies are pursued against the background of an EU-wide consensus on common principles of energy security. The lack of consistency in the case of the northern and the southern route is at odds with the common objectives of affordability, reliability, and sustainability of natural gas imports into the EU. The question arises: Are these strategies sustainable? How can they be reconciled and pursued under a common policy? Is there a common denominator between the increase in gas imports from Russia through Nord Stream and the diversification of suppliers through Nabucco without guaranteed resource availability for the Southern Gas Corridor?

The main argument of this article is that the value added of such conflicting policy approaches should not be considered as a trade-off between their individual cost-benefit calculation of gains, risks, and energy independence. Sub-regional solutions may not be amenable to a one-size-fits-all EU energy security policy but they benefit from progressive realignment in order to contribute to common security objectives. In order to demonstrate the value of this seemingly piecemeal adjustment, the article examines the Nord Stream and Nabucco pipelines in the context of the Third Energy Package, a set of policy instruments for the creation of an EU-wide internal energy market, in force since March 2011. The evidence shows that the diverse sub-regional and national strategies in the natural gas sector are reconciled and gradually adjusted through the logic of the internal market through premises of competition, networks, and external partnerships with neighboring states and suppliers. It concludes that, despite an underlying rationale of minimizing dependence on imports from Russia, energy security in the EU natural gas market should be derived from market integration, investment in infrastructure, and policy convergence, beyond measures of the physical security of supply and demand and/or supplier diversification.

## **The Sub-Regional View of Energy Security in the EU in the Context of Imports from Russia: North vs. South, East-West, and Offshore/Onshore**

The EU-Russia energy relationship does not conform to a clear-cut policy model. Western Europe has pursued a strategy of limiting its energy

dependence on Russia since the 1980s. The debate has sought to determine whether the focus should be on diversifying energy supplies; that is, reducing Russia's share as a source of energy imports, or on diversifying the routes of supply while relying on Russia as a key supplier.<sup>9</sup> The enmeshing of political and economic factors has prevented the EU member states individually and multilaterally to develop a common long-term approach to managing their trade relations with Russia in the natural gas sector.

Unequal production, consumption, and import patterns among the EU member states make joint decision-making in the area of energy difficult. There are systematic or tightly organized sub-regional markets. For the last 20 years, EU-based consumption of natural gas has almost doubled. The EU imports over 60 percent of the quantities of natural gas it needs. Imports reached 391.2 million tons of oil equivalent (TOE) in 2011, of which 302.8 million TOE to the Eurozone.<sup>10</sup> The Russian Federation is the country of origin for around one-third of natural gas imports (intra-EU trade excluded).<sup>11</sup> Despite a long-standing commitment to energy security, natural gas dependence in the EU stood at 60 percent in 2011. It rose 2.3 percent in the Eurozone to 74.6 percent.<sup>12</sup>

The rise in world energy prices, instability in the Middle East, and the challenge of reducing the environmental impact of energy production and consumption have led the EU member states to include the diversification of energy supply among their main priorities.<sup>13</sup> Such trends are coterminous with estimates that Russia will remain an important global supplier of natural gas. Despite an old transit system, Russia has significant assets to transport natural gas to a large number of European markets. The northern route includes both onshore and offshore pipelines. The central route connects Southern Russia to Europe via the Ukraine. The southern route carries natural gas from Southern Russia to a number of adjacent countries. This route permits to expand Russia's links to suppliers in Central Asia with transport of natural gas from Turkmenistan, Uzbekistan, and Kazakhstan and exports to Ukraine and Turkey (via the Blue Stream pipeline).<sup>14</sup>

The significant share of the EU-Russia energy trade in global flows historically suggests that the objective of minimizing the EU's energy dependence on Russia is amenable to market-based approaches which would balance existing demand by means of trade diversification. At the same time, typical of the nature of the gas market, the EU's imports from Russia are affected by the quality of their political relations. The EU-Russia Energy Dialogue, launched in 2000 as a framework for addressing trade policy issues, is an example of energy diplomacy, whose main objective is

to maintain stability in the bilateral relationship, while promoting the process of regional integration within the EU. At the same time, the EU-Russia relationship is subject also to the geopolitical premises of energy security, which include vulnerability, competition, resource conflicts, and instability.

The enmeshing of market-based and geopolitical approaches to energy security in Europe are reflected in the strategies, which private and public actors across the EU pursue on a bilateral and multilateral basis to secure their energy needs. Although demand for natural gas in Europe is growing slowly as a result of stagnant economic conditions, import dependence is expected to increase due to falling production from local sources of supply. The European Commission foresees an annual import gap of 200 billion cubic meters (BCM) natural gas by 2025 as a result of increased reliance on gas consumption, as opposed to other fossil fuels, and limited natural reserves.<sup>15</sup>

The level of dependence on imports from Russia varies widely, in view of differences in terms of size and growth potential of national energy and natural gas markets. The common preference of securing a reliable long-term supply of natural gas, therefore, imposes different priorities for the EU member states. Ensuring the availability and sustainability of supply to meet a growing demand is the main objective in the large Western European markets, such as Germany, France, and Italy. The large number of smaller markets in Central and Eastern Europe are characterized by fragmentation and high dependence on energy imports from Russia. The primary objective of these countries is to minimize the vulnerability of their gas imports by means of diversification of sources of supply and delivery systems through access to EU-based infrastructure and resources. Furthermore, given the pronounced commitment of the European countries to environmental protection, all EU member states share the view that energy security is accomplished through environmentally sustainable sources of energy production.<sup>16</sup> Environmental concerns add an additional layer of requirements for the reliability and efficiency of gas supply.

While most European countries are apprehensive about increasing imports from Russia given its quasi-monopolistic position in the European gas markets, growing reliance on import and established transit routes make the objective of diversification of supply less than automatic or intuitive. Even though energy security is a shared EU objective, it is implemented through a matrix of diverse country-specific priorities, not necessarily amenable to compatibility, synergy, or complementarities. The two principal natural gas projects, Nord Stream and Nabucco, are



aimed at meeting demand for natural gas at the sub-regional level in the EU, and demonstrate significant differences in terms of actors, strategies, and commitment to reducing import dependence on Russia.

### *Nord Stream*

In 2000, the Nord Stream project for the delivery of natural gas from Russia to Germany (then called the North European Gas Pipeline) was included in the Trans-European Network-Energy (TEN-E) due to its importance for European energy security.<sup>17</sup> The Nord Stream consortium was created in 2001 as a joint venture between Russia's principal gas company Gazprom, whose majority shareholder is the Russian state, and Wintershall and Ruhrgas, whose parent companies are BASF and E.ON, respectively. The Dutch gas infrastructure company N.V. Nederlandse Gasunie joined the consortium in 2008. Gazprom acquired 51 percent of the company, BASF 20 percent, E.ON 20 percent, and Gasunie nine percent.<sup>18</sup> The project was recognized as a project of European interest by the European Parliament and the EU Council of Ministers in 2006.<sup>19</sup> Nord Stream has been designed as two parallel pipelines, each with an annual gas transport capacity of 27.5 BCM. By 2030, 11 percent of Europe's natural gas will be transported through the new route.<sup>20</sup>

The construction of Nord Stream began in April 2010. The pipeline links Russia's gas deposits to Germany and the European energy market directly, bypassing transit countries. It advances energy security needs on a commercial, investment, and efficiency basis. Even though the EU institutions publicly support the Nord Stream pipeline as a means of increasing the energy resources available to European economies, it fails to resolve concerns about the common European energy policy and security. The project depends exclusively on deliveries by Gazprom. The company already supplies a quarter of Europe's natural gas. With growing import volumes, Gazprom will increase its leverage on the European economy.<sup>21</sup> Although the pipeline is a strategic step toward enhancing energy security, it also increases Europe's dependence on Russia. Furthermore, it affects the distribution of benefits among participating actors and results in repositioning between consumers and transit states.<sup>22</sup>

States that foresee a loss of national influence or security as a result of Russia's move into the Baltic region voice a variety of specific concerns, collectively undermining the contribution of the pipeline to the security of supply. Countries bordering the Baltic Sea are sensitive to Russian presence in their territorial waters or Exclusive Economic Zones (EEZs). The Nord Stream passes through the EEZs of Denmark, Finland, Germany, Russia, and Sweden, while bypassing those of Estonia, Latvia, Lithuania,

and Poland. Such selective inclusion made the project controversial.<sup>23</sup> Key transit states for Russian gas imports into Europe face another type of security problem. As Nord Stream approaches its full capacity to transport 55 BCM of gas through the Baltic Sea, the importance of the onshore Yamal-Europe pipeline is expected to diminish. The Yamal-Europe gas pipeline has the capacity to transport 33 BCM of Russian gas per year. Its route passes through Belarus and branches off into Yamal I, going through Poland to Germany, and Yamal II, which transits through Ukraine and Slovakia to reach Austria. Thanks to Nord Stream, Russia no longer relies exclusively on territorial pipelines for gas exports to Western European markets, giving less consideration to transit states in Central and Eastern Europe.

The security implications of Nord Stream are complicated by an array of environmental concerns regarding the construction and operation of the project, which collectively have introduced uncertainty about its overall ecological impact.<sup>24</sup> Parallel proposals for the construction of alternative onshore pipelines made by Estonia, Latvia, Lithuania, and Poland suggest that the strategy of eliminating transit states through inter-firm cooperation and market-based approaches is insufficient to improve energy security for all actors individually, despite aggregate efficiency gains.<sup>25</sup>

The further expansion of Nord Stream is likely to increase overall dependence on Russia, and not only in absolute terms. Gazprom's growing influence as a producer increases its leverage in determining the scope of supply, which could lead to unpredictability, price volatility, poor resource management, and ultimately, political instability. From the perspective of security of supply, diversifying the delivery routes through pipelines, such as Nord Stream, without diversifying the supplier does not alleviate such risks.

### *Southern Gas Corridor*

The Southern Gas Corridor is an initiative for the supply of natural gas from the Caspian and Middle Eastern regions to Europe, which follows the opposite strategy, that of diversification of suppliers to exclude Russia. Nabucco is the most important project for gas supply encompassed by the Corridor, which includes also the Trans Adriatic Pipeline (TAP), designed to connect Greece, Albania and Italy. Together, the projects of the Southern Corridor will provide the necessary transportation capacity to deliver 60 to 120 BCM per year of Caspian and Central Asian natural gas.

The Nabucco pipeline started as a political initiative between Turkey, Bulgaria, Romania, Hungary and Austria in 2002. The project is designed to transport up to 31 BCM of gas over a distance of 3900 km from the Caspian region (Azerbaijan and Turkmenistan) to Baumgarten, a European gas hub in Austria. The pipeline will meet the growing needs of the region of Southern and South-Eastern Europe for natural gas and is expected to increase the level of predictability of supply by means of diversification of the source.

The Nabucco project has been the object of a number of modifications. The original shareholders: The Hungarian MOL oil and gas company, the Bulgarian Energy Holding (BEH), the Turkish Botas company, Austrian OMV, German RWE, and Romanian Transgaz each acquired a 16.67 percent stake. MOL's relationship with OMV, the de facto leader of the Nabucco project, was strained as a result of OMV's decision to sell its 21.2 percent stake in MOL to the Russian energy company Surgutneftegas for \$1.9 billion in March 2009. RWE threatened to abandon the project in 2011. In May 2012, BP—the company developing the Shah Deniz II natural gas field in Azerbaijan, which alone was expected to provide Nabucco with around 10 BCM natural gas—also announced that it would leave the project. The initial estimate of the cost of Nabucco of around €8 billion has been repeatedly increased. The start of the construction was delayed, and is envisaged for 2013 instead of 2011. With deliveries originally expected to begin in 2017 and now postponed until 2018, the overall scale of the project has diminished. While the European Commission has worked to establish a productive multilateral framework for the Nabucco pipeline by building a consensus among the transit and supplier states, it has yet to resolve issues related to the availability of supply. A reduced version of the project, Nabucco West, constructed over a distance of 1,300 km, will use either existing infrastructure on the territory of Turkey or the projected Trans-Anatolian Pipeline (TANAP), in order to simplify construction and avoid duplication in view of the lack of supply. The transfer of shares between shareholders and changing preferences for participation demonstrate that there is a continuing search for the optimization of the project, and for re-negotiation of the distribution of benefits among suppliers, consumers, and transit countries. Nabucco has not resolved the issue about the complementarity between suppliers, access to the resources of the Caspian Sea region, and the potential participation of Russia and Iran as suppliers on a competitive basis.<sup>26</sup>

Russia's practical exclusion as a supply source for Nabucco, despite its importance as an exporter of natural gas from Central Asia, led to a Russian counter proposal for the South Stream project, a direct competitor of Nabucco and of the entire Southern Gas Corridor. South Stream, expected

to become operational by the end of 2015, will carry annually up to 63 BCM of natural gas from Russia to Southern and Central Europe. The pipeline will connect Russia with Bulgaria via the Black Sea and then split into a northern leg, going through Serbia, Croatia, Hungary, and Slovenia to Austria and Northern Italy, and a southern leg going to Southern Italy through Greece. Similarly to Nord Stream, South Stream is based on the concept of diversification of routes by eliminating transit countries. South Stream bypasses the Ukraine, currently a route for 80 percent of Russia's deliveries of natural gas to Europe. The European Commission has responded with determination to pursue energy independence from Russia by prioritizing Nabucco as the most significant project under the Southern Gas Corridor and pointing out that the technical requirements for security are a condition for EU support for South Stream. Furthermore, while the Commission views South Stream as an alternative route of supply, it also points out to the commitment to reducing the EU's overall dependence on natural gas through de-carbonization of the energy system and development of new and renewable sources of energy.<sup>27</sup>

The politics of increasing dependence on supplies from Russia through Nord Stream and the search for independence from Russia through Nabucco reveal the complexity of achieving energy security as a combination of market-based and geopolitical approaches. A political approach to energy security by means of balancing and international bargaining may be inadequate to correct for the deficiencies of the two pipelines, as both Nord Stream and Nabucco represent suboptimal solutions for energy security. A market-based approach in the case of Nord Stream is limited to the physical security of supply, and does not preclude asymmetrical relationships between suppliers and consumers in the energy market. Increasing energy independence may not increase energy security. By contrast, arrangements such as Nabucco, which pursue geopolitical balancing and energy independence, are less likely to achieve the security of physical supply. They are exposed to the risk of multiple dependencies and overinvestment in infrastructure, thus compromising the efficiency and affordability objectives of energy security.

Viewed through the lens of the policy framework governing the EU's internal energy market, the strategies of increasing the volume of imports from Russia into the largest markets of Western Europe and excluding it from deliveries to Central and Southern Europe are not necessarily a compromise and a trade-off of energy security. Despite their mutually opposing premises, the market-based and geopolitical strategies pursued in the Nord Stream and Nabucco projects are compatible with the premises of the EU internal energy market. As the following section demonstrates, the application of policy instruments ensuring competition, interconnectivity,

solidarity, and cooperation in the natural gas market provides a corrective ensuring the progressive alignment of the two projects with the objectives of energy security in the EU.

## The Policy Mix for Upgrading the EU's Energy Security: Market Efficiency, Solidarity, and Energy Cooperation

The role of energy in the politics of European integration cannot be overstated. The formulation of a common energy policy is one of the historical objectives that go back to the EU's roots as a common market and a system of joint decision-making. The energy system was placed at the center of the peace narrative of regional integration in Europe in the 1950s, embedded in the creation of the European Coal and Steel Community (1951). A common energy policy was one of the founding themes of the European Economic Community, reflected in the objective of securing "more abundant energy at a cheaper price for the European economies."<sup>28</sup> The EU's energy market and geopolitical status have changed significantly since then. Despite policy innovation in the 1980s when cooperation with Russia increased access to sources of natural gas for the EU member states, most studies identify the Europe's rising dependency on imports from Russia as a source of economic and political risk. Concerns for energy security, defined as quasi-synonymous to energy independence from Russia, became even more prominent in the wake of the 2004–2007 East-European enlargement. A statement on energy policy in the Treaty for the Functioning of the European Union (Lisbon Treaty, TFEU) reflects the shared preference of the EU member states for a common energy policy, implemented by means of an internal market, the security of energy supply, efficiency and energy savings, and the development of new and renewable forms of energy.<sup>29</sup>

### *The Third Package*

Building upon treaty commitments and the long-term strategy of creating an internal market for energy, the so-called Third Package of EU legislation on the energy market (2009) formulates a set of rules for the creation of a truly competitive energy market to be completed by 2014.<sup>30</sup> The Package posits a link between safe, secure, sustainable, and affordable energy and economic competitiveness, as well as between the internal and external aspects of the energy market. This policy innovation marks a shift from an approach to energy security based on energy diplomacy and individual high-efficiency projects to market integration and policy cohe-

siveness.<sup>31</sup> The new rules for the organization of the sector encourage integration of the national energy markets by minimizing market fragmentation while seeking to guarantee competition by unbundling generation, production, and supply interests.

The twin propositions of market decoupling and solidarity bind together the two principal dimensions of energy security: Diversification of suppliers and diversification of routes, which had remained separate in prior policy approaches to energy security, including Nord Stream and Nabucco. The separation of production, supply, and delivery interests prevents vertical integration in the gas market and limits the opportunities for monopolistic dominance. The principle of decoupling has affected Gazprom's position in Nord Stream by requiring the separation of gas sales from transportation and ensuring access to transportation grids for third parties. The instruments of energy policy now correct for the suboptimal effects of Nord Stream in the area of market concentration and dependence, which conventional political approaches, such as rebalancing and linkage politics may be unable to resolve.

Russia and Gazprom have opposed the Third Package and its retrospective effect. Gazprom has argued that the new rules of decoupling and third-party access will divert investment away from the planned expansion of Nord Stream through the construction of a second pipe.<sup>32</sup> In reality, the separation of interests between export sales, delivery, and infrastructure prevents Gazprom from acquiring a monopolistic position in the market through vertical integration, maintains a competitive market environment, and limits the extent of Europe's dependence on Gazprom for investment in its transportation grid.

The proposition that a fully integrated energy market requires a developed external dimension has added new policy instruments for the diversification of supply sources and routes. The emphasis is on coordination, network integration, overcoming the energy isolation of specific regions in the EU, investment in infrastructure, and strengthening external partnerships.<sup>33</sup> The external dimension of the EU's internal energy market relies on the economics of market competition, the politics of market access, and energy efficiency.<sup>34</sup> The Third Package thus permits reformulation of the objective to reduce EU energy dependence on Russia into a more complex policy mix. Besides conventional methods based on political choices for the diversification of suppliers, the Third Package promotes networks and investment projects within the EU internal energy market. Competition in the area of investment in infrastructure promotes the diversity of sources, suppliers, transport routes, and transport methods. Despite the fact that Nabucco and South Stream compete directly for

the same pool of natural gas resources, the security of supply is considerably improved through investment in alternative supply/transit routes and reverse-flow projects, thereby allowing natural gas to flow freely across borders within the internal market.<sup>35</sup> Such measures enhance the effects of diversification of supply, anticipated through Nabucco, by integrating existing networks in the internal market based on interconnections, solidarity, and integration. The gradual rebalancing between the internal and external dimensions of the market thus acts to correct for the deficiencies of individual projects while improving policy cohesiveness.

## Conclusion

The seemingly conflicting objectives of Nabucco and Nord Stream and the piecemeal approach with which they have been implemented demonstrates that, outside rhetoric, there is no single strategy of accomplishing energy security in Western and East-Central Europe. The northern strategy relies on market-based economic mechanisms of inter-firm cooperation and bilateral energy diplomacy, and achieves diversification of gas transit routes by eliminating transit states and separating the political from economic aspects of the gas trade. In the south, the EU endorsed a strategy of diversifying the sources of supply by eliminating Russia as a supplier under the Nabucco project. This article has argued that such diverse policy approaches are compatible within the policy frameworks of the EU internal natural gas market. Neither a system of balancing, nor market efficiency per se is fully adequate to the needs of energy security. The security of the EU's internal energy market may be pursued in practice by applying different formulas.

Whether pipelines adopt alternative transit routes and increase market efficiency by reducing transit fees and third-party influence, or opt for supplier diversification, potential risks remain. Such risks are systemic in a global energy market in which long-term demand exceeds current projections of supply. Neither the EU, nor Russia can isolate themselves from market trends. The key challenge for the EU is to resolve the efficiency and availability aspect of energy security. For Russia, it is to abandon monopoly through decoupling and cooperation. More complex measures, such as growing economic interdependence binding together a multiplicity of actors and projects in the EU internal energy market, may be better positioned to address the geopolitical vulnerabilities of Europe's natural gas imports.

This conclusion fits well with a common EU policy paradigm of energy security defined as an increasingly comprehensive (multidimensional, integrating across sources and routes of supply) and cooperative concept, exceeding the format of an energy dialogue between suppliers and consumers to instead rely on networks, partnerships, and market integration with non-members. That there is no single policy blueprint for achieving energy security but rather a piecemeal, network approach of gradual integration of measures and actors is reflected in the selective application of energy diplomacy, geopolitical, and market-based approaches reconciling and upgrading the preferences of private and public actors, importers and exports, consumers and transit states. The process is one of progressive alignment to the modalities of market competition and efficiency.

## About the Author

Boyka Stefanova is an Associate Professor of Political Science in the Department of Political Science & Geography at the University of Texas at San Antonio. She specializes in European politics, European Union studies, and foreign policy. Dr. Stefanova earned her Ph.D. in Political Science at the University of Delaware, and a Doctorate in Economics at the University of National and World Economy in Bulgaria. Her research interests focus on political conflict, European governance, territoriality and politics in the context of European integration, and security issues in Europe. Her publications examine a variety of topics in these research areas. Dr. Stefanova has published two books: "The War on Terror in Comparative Perspective" (co-edited with Mark J. Miller) with Palgrave (2007) and "The Europeanization of Conflict Resolution: Regional Integration and Conflicts in Europe from the 1950s to the 21st century" with Manchester University Press (2011).

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