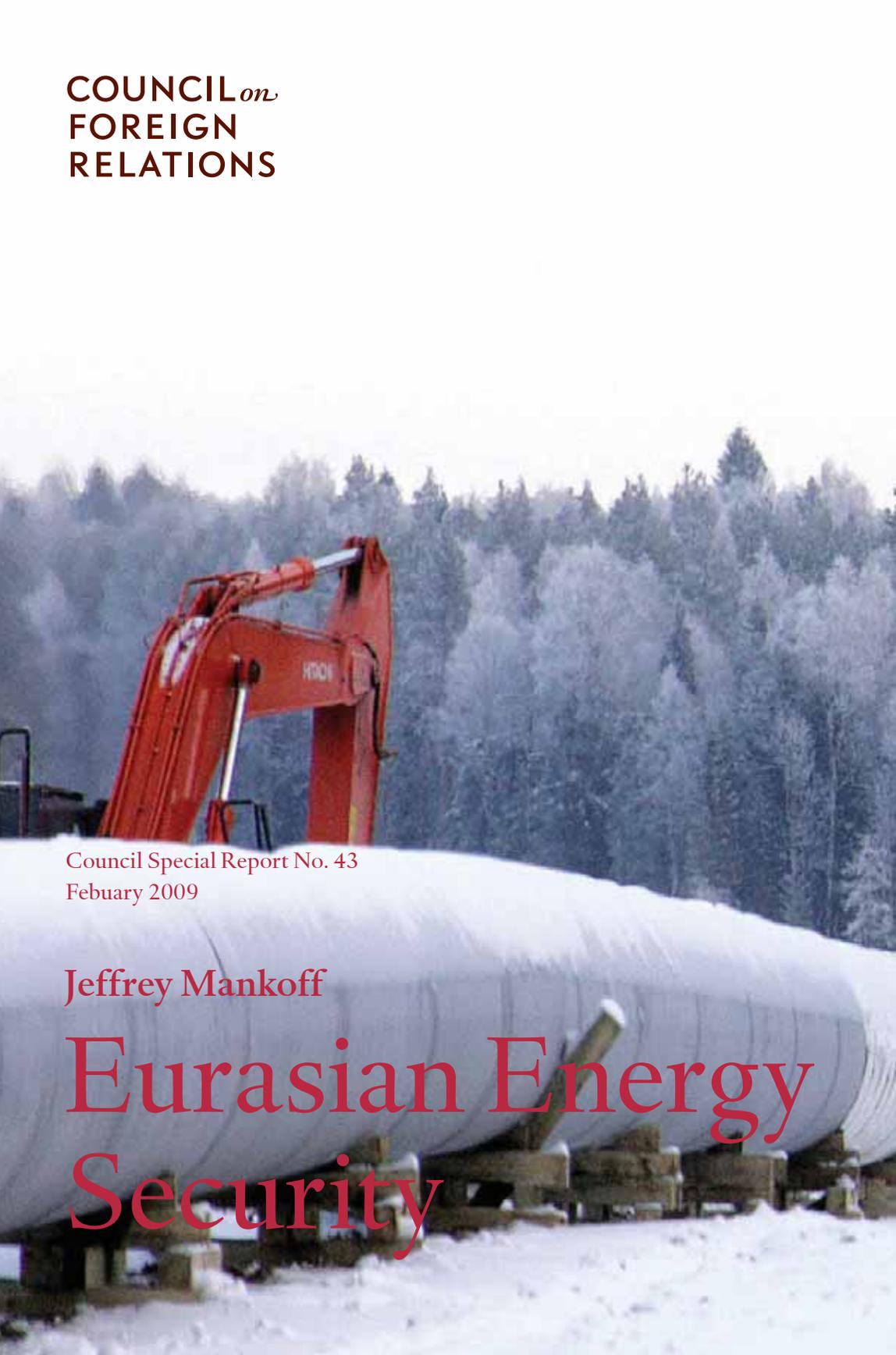


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Council Special Report No. 43
February 2009

Jeffrey Mankoff

Eurasian Energy Security



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Cover Photo: Special lifting cranes hold the Baltic Sea gas pipeline near the town of Babayevo in the Vologda region some 650 km northeast of Moscow (Alexander Miridonov/AFP/Getty Images).

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Foreword

This January brought a stark reminder of the perils of European dependence on Russian natural gas. A cutoff of supplies connected in part to a pricing dispute between Russia and Ukraine, the crucial transit country for much of Russia's gas, left millions of Europeans without heat and forced factories to close. The crisis not only underscored the challenges of managing U.S. and European relations with Russia, a country whose geopolitical reach rises and falls to some extent with the price of oil and gas. It also highlighted the difficulty for America's European allies of breaking their dependence on a single energy supplier, one whose willingness and ability to provide sufficient gas over time is uncertain.

This Council Special Report, authored by Jeffrey Mankoff, explores the challenges faced by consumer and supplier alike in Europe and Eurasia. It looks at Russia's rise as an energy power, analyzing its control of supplies and delivery systems and its investments in energy infrastructure across Europe, as well as questions about the potential of its production. The report also examines Europe's difficulties in forging a common policy on energy supply and recommends a two-pronged strategy of integration and diversification. It urges Europe to integrate both internally—developing a single EU gas market—and externally—tying Russia's energy sector to Europe and its more transparent regulations. It also recommends that Europe seek new sources of energy from both non-Russian suppliers and non-fossil fuels.

Eurasian Energy Security is a thoughtful work that illustrates the need for a coherent European energy policy and argues that the ongoing financial crisis provides a unique opportunity to tackle the issue. At the same time, it recognizes that European dependence on Russian energy will be a reality well into the future and that Europe can

increase its energy security only by working with—not against—Russia. The report is a sophisticated contribution to the debate on an issue that can at any moment hit home for millions.

Richard N. Haass

President

Council on Foreign Relations

February 2009

Acknowledgments

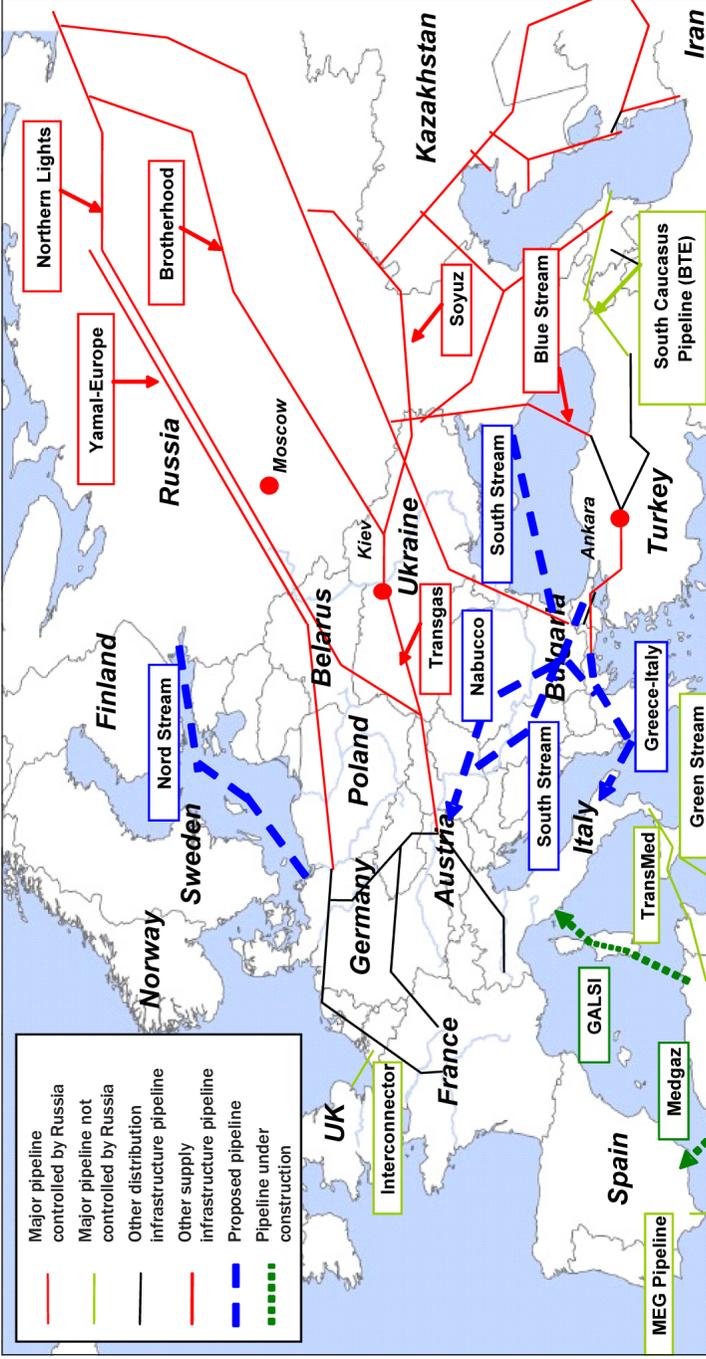
I am grateful to the Council on Foreign Relations for giving me the opportunity to write on such a timely and important project. Thanks are due to CFR President Richard N. Haass and to Vice President and Director of Studies Gary Samore for their support of this project and for their comments. I also would like to thank CFR's Publications team of Patricia Dorff and Lia Norton and the Communications team headed by Lisa Shields and Anya Schmemann for their work in production and dissemination.

I benefited greatly from the comments and suggestions of the advisory group convened to discuss an early draft of the report. The members of the advisory group, whose names are listed at the end, were very gracious with their time and suggestions, and I am grateful to each of them. Their comments helped me clarify the arguments and saved me from errors of both fact and interpretation. It goes without saying that they bear no responsibility for any remaining shortcomings. So, too, am I grateful to the numerous specialists, in the United States and Russia, who gave freely of their time and knowledge in the course of many interviews.

Special thanks are due to the George F. Kennan senior fellow for Russia and Eurasia studies, Ambassador Stephen Sestanovich, who chaired the advisory group and whose encouragement, knowledge, and patience were crucial in guiding me through this project, and to indefatigable research associate John Elliott, without whose labors the report could never have been produced. Finally I would like to acknowledge BP p.l.c., whose financial support made this report possible. The statements made and views expressed herein are solely my own.

Jeffrey Mankoff

Map of Eurasia



Source: JBC Energy GmbH.

Acronyms

ACER	Agency for the Cooperation of Energy Regulators
bbl/d	barrels per day
bcm	billion cubic meters
BTC	Baku-Tbilisi-Ceyhan
BTE	Baku-Tbilisi-Erzurum
CIS	Commonwealth of Independent States
ECT	Energy Charter Treaty
ENTSO-G	European Network of Transmission System Operators for Gas
EU	European Union
FDI	foreign direct investment
GDP	gross domestic product
ISO	independent system operator
LNG	liquified natural gas
NETS	New European Transmission System
OPEC	Organization of Petroleum Exporting Countries
tcm	thousand cubic meters
TCP	Trans-Caspian pipeline
WTO	World Trade Organization

Council Special Report

Introduction

For two weeks in the freezing January of 2009, homes and businesses across Europe were left without heat, the result of a murky dispute over gas prices between Russia and Ukraine. When Moscow and Kiev failed to agree on a formula for calculating price and transit fees for the coming year, the gas simply stopped flowing. Europe, which gets a significant proportion of its gas through pipelines that transit both Russia and Ukraine, bore the brunt of this confrontation between the two feuding post-Soviet neighbors.

Blessed with enormous deposits of oil and natural gas as well as a location at the strategic crossroads between the major consuming countries of western Europe and East Asia, Eurasia (that is, Russia and its one-time satellites in the Caspian Basin—primarily Azerbaijan, Kazakhstan, and Turkmenistan)—will be a vital source of Europe’s energy in the foreseeable future. Ensuring reliable access to Eurasia’s energy at a reasonable price is therefore among the most crucial strategic imperatives for Europe and, by extension, for Europe’s allies in the United States.

The emergence of Russia as the dominant player in Eurasia has made the European Union’s (EU) dependence on the former Soviet states for its energy security increasingly problematic, a reality highlighted all too clearly by the Russia-Ukraine gas crisis of January 2009.

Russia’s resurgence, largely fueled by sales of its oil and gas abroad, has greatly complicated Europe’s quest to obtain direct access to the energy riches of the Caspian. Russia’s stronghold on the transit corridor bringing Caspian energy, especially natural gas, to the West has increased Europe’s dependence on Russia as a supplier. This dependence has a range of consequences for Europe and for transatlantic relations, increasing Russian political leverage and leaving Europe to face the threat of shortfalls from both technical and political causes. As a result, European energy security has become intimately linked with both Russian foreign policy objectives and the interests of a small

number of nontransparent, often state-run corporations such as Gazprom, Rosneft, and RosUkrEnergo that promote corruption and distort the functioning of markets. This situation is further complicated by the fact that European countries do not depend equally on Russia. Addressing the sources of Europe's vulnerability will require much greater coordination among EU member states. Their strategy, to be effective, should initially focus on building an integrated European gas market with an agreed framework governing Russian participation; in the long run, the EU needs to diversify the sources of its energy, reducing the overall role of Russian oil and, especially, gas.

Russia's official energy strategy observes that "energy security is the most important element in Russia's national security" and calls for the state to take an active role in the energy sector so as to protect Russia from both internal and external threats.¹ Given, then, that energy is a central component of Russia's foreign policy, how the EU and its American allies shape their priorities in this field will to a large extent shape the West's strategy for dealing with Moscow. A commitment to further integrate Russia into Europe's energy security framework in a way that is mutually beneficial can be part of the West's approach to gaining Russia's cooperation on other issues, especially in the Middle East.² Getting Eurasia right will help U.S. foreign policy objectives in other ways as well. Apart from the former Soviet Union, the most promising source of new gas supplies for Europe is Iran. Of course, turning to Iran would dramatically undermine U.S.-led attempts to isolate and contain Tehran. If Europe can address its needs in the Commonwealth of Independent States (CIS), it will have no incentive to weaken the isolation of Iran. Additionally, energy security is inseparable from other aspects of energy policy, including sustainability and innovation. Part of the solution to Europe's energy insecurity thus lies in seeking new, carbon-neutral sources of energy, including nuclear power.

Maximizing Eurasia's contribution to European energy security in turn requires addressing a series of distinct yet interconnected challenges. First, as Europe has grown increasingly dependent on Russian energy, Russia's own oil and gas production has leveled off, largely because the state's role in the energy sector has grown and the state's tax regime discourages investment in new production. This development raises the prospect of supply shortfalls, should Russian production not keep up with contracted demand. The economic downturn that began in mid-2008 threatens to exacerbate this problem in the long term because Moscow now has less available capital to invest in new production.

Second, Russia's role as Europe's largest supplier, coupled with the Kremlin's control over Russian pipelines, has generated concerns that Moscow could decide to withhold contracted deliveries, a form of economic-political blackmail, as some observers argue was done to Ukraine in January 2006 and again in January 2009. Third, Russia could isolate upstream countries from Europe by maintaining its near-monopolistic control of pipelines between the Caspian and Europe. Europe would thus be unable to access oil and gas from the Caspian countries except on the basis of agreements with Moscow. Finally, systemic corruption in the Russian energy sector reduces Russia's capacity to follow through with planned projects and injects corruption into European politics in ways that undermine the EU's capacity to pursue a common energy policy.

Although the global economic downturn and the accompanying fall in energy prices have made energy security appear a less urgent problem, the structural factors underpinning Europe's vulnerability remain. By weakening for a time Russia's ability to leverage its control of energy, the economic crisis also creates an opportunity for the Western powers to seize the initiative and address the sources of their vulnerability. Moreover, that Europe fell victim to the arcane gas transit dispute between Moscow and Kiev has undermined support for the status quo even in countries, such as Germany, that have in the past opposed bold steps. For these reasons, it is particularly important to get the policy right, and to seize the opportunity to do so while circumstances remain favorable. Dealing with the consequences of Russia's energy-fueled resurgence should be among the top priorities for European leaders. Although the United States is not itself a major consumer of Russian energy, it too has an important role to play in fostering European solidarity and enhancing EU leverage with Moscow. A successful strategy for the new reality of energy in Eurasia should aim to do the following:

- limit Russia's ability to derive unilateral political advantage from its oil and gas reserves;
- ensure secure access to energy for all members of the EU;
- promote reciprocity between Russia and its neighbors on rules for investment and ownership in the energy sector;
- ensure adequate investment in the Russian energy sector in order to maintain high levels of production while bringing new oil and gas fields online.

An effective strategy for promoting European energy security vis-à-vis Eurasia would acknowledge the reality of EU-Russia interdependence while seeking to both enmesh Russia in Europe's institutional and regulatory web and develop, to the extent possible, long-term alternatives to reliance on Russia, including sources of energy not based on carbon. The centerpiece must be a concerted effort on the part of the EU and its members to integrate Europe's gas market, which will limit the geopolitical consequences of dependence on Russia and smooth the way for Russian investment. Achieving gas market integration will require treating energy security increasingly as a common European concern. An overall strategy based on integration and diversification thus offers the best chance of both promoting Russia's transformation into a fully dependable participant in Europe's energy market and insulating Europe against potential disruptions.

Integrating Europe's gas markets while laying the groundwork for diversification will allow the EU to address a range of challenges stemming from its dependence on Russia. The Russian state's growing hold on the energy sector threatens to exacerbate the problem of declining production from existing oil and gas fields, even as demand is projected to continue growing both at home and abroad. At the same time, Russia is Europe's largest supplier of both oil and gas. As the disruption of gas supplies to Europe in January 2009 during the dispute between Russia and Ukraine clearly demonstrated, such dependence leaves Europe vulnerable to political uncertainty in Russia and Ukraine. Meanwhile, Russia and the Western powers have also been engaged in a long struggle for control of the transport corridor bringing oil and gas from the Caspian Basin to Europe. Thanks to its expanding influence in the region, Russia is increasingly winning this struggle, leaving Europe to face the prospect of still greater dependence in the future. Only if the EU can overcome its own internal divisions (a process that focused U.S. involvement can promote) and commit to both building an integrated market and diversifying its energy supplies will it be able to cope effectively with these challenges.

Russia's Resurgence

Although the geopolitics of energy were an element in relations between the West and Eurasia during the 1990s, oil and gas became truly central during Vladimir Putin's presidency of Russia (2000–2008). In part, this development stems from changes under way within the Russian energy sector—particularly, Russia's emergence as the world's largest producer of natural gas, with output totaling 607.4 billion cubic meters (bcm) in 2007, and as the number two oil producer after Saudi Arabia, with 9.98 million barrels per day (bbl/d) of output.³ Russia's massive oil and gas reserves, moreover, are increasingly under the direct control of the state, a circumstance that has fed European fears about the strategic manipulation of energy supplies. While energy prices remained high, Russia's energy-fueled resurgence allowed Moscow to assert its influence more broadly throughout Eurasia, moving aggressively to control the transit of oil and gas from east to west and blocking attempts by outside powers to build pipelines beyond its control.⁴ Hard power, the kind Moscow deployed against Georgia in August 2008, has only reinforced Russian dominance in the energy sphere, raising the stakes for countries in the region that would seek to escape its grip. Europe's response to the war, the recent collapse of energy prices, and the damage to Russian prestige in the aftermath of its decision to cut deliveries through Ukraine have temporarily checked Russia's ability to expand its geopolitical reach; the Western powers thus have a window of opportunity to address some of the fundamental imbalances in their energy relations with Moscow.

The emergence of Russia has different consequences for the various groups of states that depend in one way or another on Eurasia's energy riches. For the European Union, growing dependence on energy supplied by a single company that is at times indistinguishable from a foreign government raises problems related to supply security, transparency, and potential political manipulation. For the United

States, Russian energy policy is a matter of concern, primarily insofar as it affects the pivotal states of Central Asia and Washington's European allies.

RUSSIAN ENERGY PRODUCTION: HOW RELIABLE?

Europe's dependence on Russia for energy creates serious security concerns, in part because of uncertainty about Russia's long-term ability to produce enough oil and gas to meet contracted demand at home and abroad. Russian energy production remains imperiled by inefficiency, underinvestment, politicization, high taxes, and falling prices—not to mention the increasingly urgent search for ways of moving beyond a carbon-based economy. Concern about Russian production shortfalls stems from the reality of declining output from existing sources of oil and gas and the difficulty of developing new fields in primarily inhospitable areas, especially the Yamal Peninsula, as well as eastern Siberia and the Barents Sea. Moreover, the consolidation of state control over both the oil and the gas sectors in Russia since the start of the twenty-first century exacerbates the problem, in that national champions, particularly Gazprom and Rosneft, have proven less capable of channeling investment to either new projects or increased production than the private firms—Russian and foreign—that the Kremlin's consolidation of ownership has pushed out of the energy sector.⁵

Although the state has been the largest shareholder in Gazprom since the company was spun off from the Soviet Ministry of Gas in 1992, the Kremlin dramatically increased its control during the Putin years. In the oil sector, the privatization of the early 1990s has been reversed as well, at the expense of private firms. This state-led consolidation has fed worries about the Kremlin's ability to use access to oil and gas as tools of its foreign policy.

During Putin's second term, the Kremlin dramatically stepped up the process of bringing both oil and gas production under the control of the national champions Gazprom and Rosneft, which became two of the world's largest and most valuable companies, though both have taken a beating during the recent economic downturn.⁶ Oligarch-owned firms were swallowed up, such as Mikhail Khodorkovsky's Yukos, by Rosneft, and Roman Abramovich's Sibneft, by Gazprom. The joint

venture TNK-BP has been in the government's sights as well. As a result of this consolidation, Gazprom produces 84 percent of Russia's gas, with the remainder split between independent firms (9 percent) and oil companies that produce gas as a by-product (7 percent).⁷ Since it acquired Yugansneftegaz from Yukos, Rosneft has been responsible for 21.56 percent of Russian oil production, and state firms' (including Rosneft) total share of Russian oil production has increased from just 6 percent in 2000 (when Putin became president) to 44 percent in 2008.⁸ The remaining private oil companies, moreover, are also closely connected with the state. These include LUKoil, whose chairman Vagit Alekperov long maintained close relations with Putin's Kremlin, and Surgutneftegaz, in which several leading Kremlin figures are rumored to be shareholders.⁹

The consolidation of national champions did not spare foreign firms operating in Russia either. For the most part, the affected companies were operating on the basis of production-sharing agreements, which Moscow reluctantly signed in the early 1990s in a desperate bid for foreign investment. The major foreign victims included Royal Dutch Shell, which was forced to cede its position in the Sakhalin-2 project; BP, whose concession in the Kovykta field was bought out by Gazprom after BP had its license threatened by the Kremlin; and a consortium of foreign owners whose stake in the Vankor field in East Siberia was bought out by Rosneft in 2003. Where foreign firms have been allowed to stay, the Kremlin has increasingly denied them an equity share in projects, preferring to employ them on a contract basis. Gazprom is pursuing such an arrangement for the development of the massive offshore Shtokman gas field, retaining ownership of all the gas eventually produced but relying on Total and Norway's Statoil-Hydro to provide technical expertise.

Despite the state's growing hold over the gas sector in particular, independent firms have carved out a niche for themselves, though their influence on the market remains limited by fixed domestic prices and Gazprom's control of export pipelines. They work primarily on producing from smaller, postpeak, and otherwise less profitable fields that Gazprom could not or would not take on. Without access to Gazprom's pipelines, the independent gas firms (especially Novatek and, previously, Itera) and oil companies focus on supplying neighboring CIS states and the Russian domestic market, even though Kremlin-imposed price ceilings for both residential and commercial customers limit profitability.¹⁰

The independent gas producers have continually increased their total production despite their built-in disadvantages, doubling output in the period from 1999 to 2004. Private oil producers' output, meanwhile, grew by 55 percent between 2000 and 2005. Gazprom's production stagnated during the same period, despite rising international prices, as the monopoly squandered most of its financial windfall on rising operating costs rather than investing in new production.

The move toward greater state control thus heightens the risk that Russia will face production shortfalls. In 2007, Gazprom's gas production declined by 1.35 percent, and though the company expected output to grow slightly in 2008, long-term projections for Gazprom's production are essentially flat, and could be in even worse shape if energy prices remain low for a sustained period.¹¹ Production is projected to stagnate or fall largely because output from Russia's workhorse gas fields in West Siberia, most of which were developed during the Soviet era, seems to have largely leveled off. Gazprom's major fields in West Siberia—Medvezhye, Urengoy, and Yamburg—are all in decline. Without significant investment in bringing new fields in the Yamal Peninsula, Barents Sea (Shtokman), and Sakhalin online in the near future, Gazprom faces an accelerating decline in production. Former deputy energy minister Vladimir Milov suggests that Gazprom's production will slide from 545.1 bcm in 2004 to an estimated 530 bcm in 2010, and to only 340 bcm in 2020.¹² Meanwhile, Gazprom's commitment to building expensive new pipelines like Nord and South Stream eats into the capital available for modernizing its production or bringing new fields online.

Even as production has stagnated, demand for Russia's gas has grown. Russia's economic recovery following the 1998 financial collapse drove a rise in domestic energy demand, and Gazprom in particular has been eager to expand exports, to Europe as well as Asia and (with liquefaction technology) to overseas markets like the United States. Under pressure from Gazprom's directors, the Kremlin is moving to raise domestic prices in order to promote more efficient consumption. Nonetheless, Russia's energy intensity (the amount of energy required to produce a given amount of gross domestic product, or GDP) remains among the highest in the developed world, and—at least until the financial crisis of autumn 2008—domestic demand was growing faster than projected by the Russian Energy Strategy. Meanwhile, Gazprom is aggressively seeking the gasification of Russian homes, connecting more and more apartments to the country's gas grid and increasing demand further.

Of course, if the recession that began in autumn 2008 is both long and deep, projections of continually increasing demand will have to be revised downward, which would reduce the immediate pressure on supplies and further diminish Gazprom's incentive to invest scarce capital in exploration and production.

Similarly, in the oil sector, the rapid production growth that started around 1999 appears to have ended. As with gas, production from existing, easily accessible fields is declining and new production sources are all in remote, difficult-to-access locations. Russia's total crude output for 2007 reached 9.4 million bbl/d, an increase of 200,000 bbl/d from 2006. This increase was down from 220,000 bbl/d the previous year, and barely a third of the average annual increase from 2002 to 2004.¹³ Economists' forecasts estimate that, after reaching a peak level of around 10 million bbl/d, Russian oil output will rapidly decline to around 6 million bbl/d as early as the middle of the coming decade; persistent low prices and a deep recession could make the decline even steeper.¹⁴ Additionally, transport bottlenecks resulting from a lack of infrastructure and the pipeline monopoly maintained by state-owned Transneft continue to limit expansion of production, as private companies lobby, so far without effect, for additional pipeline capacity. A tax structure that heavily penalizes oil companies for windfall profits also discourages energy companies from producing additional oil.

Overcoming these barriers to higher production will require substantially greater investment, yet neither Gazprom nor Rosneft has shown much inclination to invest themselves or a willingness to create space for independent producers to pick up the slack. Although the inefficiency of Russia's state-controlled energy companies no doubt bears part of the blame for the lack of investment in new production, some officials question whether boosting output is in Russia's interest. When prices were high, Russia swam in a sea of petro-rubles that it could not spend without further stoking inflation; with oil prices now below \$50/bbl, Russia is discussing output cuts (in conjunction with the Organization of Petroleum Exporting Countries, or OPEC) to prevent further declines. In the long run, Gazprom officials believe that oil prices (on the basis of which gas prices are set) will trend toward \$100/bbl, but price uncertainty makes it even more unlikely that Moscow will support increased output in the immediate future.¹⁵ In any case, the collapse of prices over the past six months will delay investment in new production (on the part of both state and private firms), which could

contribute to shortages down the road once demand rebounds. For the West, such uncertainty suggests a need to both look for alternative suppliers of energy, especially gas, and to help overcome some of the systemic barriers to increasing production within Russia.

RUSSIA THE MONOPOLIST

A second concern for Europe has been Russia's ability to use its direct control of oil and (especially) gas, as well as the networks to distribute them, to exert pressure on its current and potential customers. This ability to gain political leverage, which is largely the result of scarcity, is the most potentially problematic aspect of Russian energy policy from the perspective of the United States and its allies. For the time being, the United States itself buys relatively little Russian oil (approximately 400,000 bbl/d) and no gas.¹⁶ Yet the dependence of major U.S. partners in both Europe and the former Soviet Union leaves them in a position where resisting Russian political demands could have serious economic and political consequences.

Europe's dependence on Russia as a source of oil and gas has increased since the end of the Cold War. In 1990, the twenty-seven current EU members imported 44.6 percent of their energy from outside the EU, a figure projected to reach 54 percent by 2010.¹⁷ Europe's increased dependence on imports is largely a result of production declines affecting indigenous sources of oil and gas—principally Dutch, Norwegian, and British North Sea—as well as increased demand. The EU currently imports around 33 percent of its oil from Russia and 36 percent of its gas (a figure that the European Commission predicts will rise to over 60 percent by 2030).¹⁸ In the gas sector, the picture is complicated not only by EU members' uneven dependence on Russia but also by the lack of an integrated market mechanism allowing gas to move economically between different regions of the continent. Central Europe and eastern Europe in particular rely heavily on Russia for their gas supplies (see table 1).¹⁹

Europe depends not merely on Russia but also on a small number of pipeline channels moving oil and gas from east to west. Nearly 80 percent of Russian gas sold to Europe passes through Ukraine; the remainder passes through either Belarus or Turkey. As the January 2009 crisis demonstrated, Europe remains hostage to the

TABLE 1. MAJOR RECIPIENTS OF RUSSIAN NATURAL GAS (NG) EXPORTS, 2006–2007

Rank	Country	2006 Exports (bcf/y)	2007 Exports (bcf/y)	2006 Percent of Domestic NG Consumption
1	Germany	1,300	1,378	36%
2	Turkey	703	827	64%
3	Italy	756	742	25%
4	France	353	346	20%
5	Czech Republic	261	247	79%
6	Poland	272	247	47%
7	Hungary	272	226	54%
8	Slovakia	240	223	100%
9	Austria	233	191	74%
10	Finland	173	166	100%
11	Romania	180	138	28%
12	Bulgaria	113	120	96%
13	Greece	95	113	82%
14	Serbia and Montenegro	74	74	87%
15	Croatia	35	35	37%
16	Slovenia	25	18	64%
17	Switzerland	14	11	12%
18	Macedonia	4	4	100%

Sales to Baltic and CIS States

1	Ukraine	2,085	2,240	66%
2	Belarus	724	763	98%
3	Baltic States	173	243	78%
4	Azerbaijan	141	0	35%
5	Georgia	67	36	100%

Source: Energy Information Administration, <http://www.eia.doe.gov/emeu/cabs/Russia/pdf.pdf>.

unpredictability of Russia-Ukraine relations, the vagaries of Ukrainian politics, and the possibility of deliberate supply manipulation by Russia. The uneven distribution of vulnerability also has foreign policy implications, insofar as it inhibits the development of an agreed strategy for dealing with Moscow.

To some degree, Russia's so-called energy weapon is a two-edged sword, in that Russia needs the revenues it generates from energy sales to develop its economy and to fuel its international resurgence. As the 2009 crisis with Ukraine demonstrated, however, Russia is both willing and able to endure significant short-term financial damage to secure long-term advantage. Because constructing alternatives to the existing pipeline network tying Russia to Europe would be slow and expensive, Russia for the time being has little alternative but to sell to the Europeans. In the long run, of course, the construction of new pipelines to East Asia or of liquefaction terminals allowing Russia to ship its gas worldwide would undermine Europe's position as the dominant consumer and would increase European vulnerability, unless Europe too succeeds in diversifying. Russia also derives leverage from its ability to play one European customer against another by signing preferential deals with favored partners, undermining EU cohesion in the process. Only if Europe can build an integrated gas market can it equalize the consequences of interdependence.

The energy weapon could conceivably become more potent with the construction of Gazprom's new offshore bypass pipelines, Nord Stream (under the Baltic Sea) and South Stream (beneath the Black Sea). When built, these pipelines will increase the proportion of Russian gas consumed in countries along their routes, including Germany (Nord Stream), as well as Bulgaria, Serbia, Hungary, Slovenia, and Austria (South Stream). Moreover, by bypassing current transit countries Ukraine, Belarus, and Poland, the new pipelines will allow Gazprom to cut supplies to those countries entirely without repeating the experience of the two January gas crises, when Kiev responded by siphoning other countries' gas from the Russian pipeline for its own use and, in 2009, Russia countered by halting all shipments through Ukraine until a new deal had been signed.

Despite these strategic concerns and the projected high price of construction, Gazprom has a strong economic case to make for the bypass pipelines, especially Nord Stream. They will allow Moscow to sell more of its gas to reliable customers, such as Germany and Italy, even at the cost of reduced sales to problematic countries, such as Ukraine or even

Poland. Moreover, even if the initial cost of building undersea pipelines is higher than building overland, with Nord and South Stream Gazprom would be freed from having to pay transit fees, which are the largest single operating expense. It will also avoid the costs associated with the political risk of doing business with Ukraine, Belarus, and Poland. The 2009 gas crisis has boosted political support for Nord Stream in particular, which would ensure Europe against a repeat occurrence of its own supplies being halted by a renewed Russia-Ukraine quarrel.

Despite their potential to increase Russian leverage over transit countries in eastern Europe, Nord and South Stream have the potential, if carefully handled by the EU, to enhance Europe's energy security. Together the two pipelines could deliver an additional 85 bcm of gas (30 bcm from South Stream plus 55 bcm from Nord Stream) to a Europe worried about rising demand and limited supplies. Moreover, if and when the pipelines are built, Germany and other consumers in western and central Europe would be insulated from future Russia-Ukraine or Russia-Belarus gas disputes. Largely for this reason, the European Commission has officially endorsed Nord Stream and has not opposed South Stream.

To be sure, Europe and the United States are concerned about the potential of pipelines like Nord and South Stream to strengthen Russian influence in Europe. These fears are compounded by unease at Russian business practices and allegations of serious corruption in the Kremlin, specifically its lobbying of states slated to host pieces of the bypass pipelines. The solution to these problems lies in improving the operation of Europe's energy market (above all, through market integration) and seeking in the long run to boost alternative supplies, rather than in blocking the construction of pipelines that would bring more Russian energy to European consumers and deepen Russia-EU economic interdependence.

RUSSIAN INVESTMENT IN EUROPEAN INFRASTRUCTURE

A third concern stems from Russian participation in European energy markets, particularly through purchases of equity in European utilities such as refineries and pipeline operators. European fear is connected both to the nontransparent nature of most Russian energy companies and to worries that these companies are in fact proxies for the Kremlin

and its foreign policy agenda. The Belarusian gas crisis of 2007, which ended with Gazprom taking a controlling stake in the Belarusian pipeline monopoly BelTransGaz in exchange for agreeing to a price of \$100/thousand cubic meters (tcm) for gas deliveries, rising to market prices by 2011, further raised European hackles about Moscow's aggressive drive to control distribution infrastructure—though Russian aims in the CIS (where economic reintegration is an explicit aim, stated in Russia's energy strategy) and EU differ.

Cross-border investment is generally in the interest of both the EU and Russia. It promotes interdependence and has the potential to increase competition. For a Europe worried about Russian attempts at strategic manipulation, promoting such investment is among the best ways of ensuring that Russian and European interests are aligned. Making it work, though, requires both addressing EU concerns about transparency and corruption, and ensuring that EU regulation is consistent and predictable so that Russian concerns about security of demand, which the EU agreed to take up at the 2006 St. Petersburg summit, are adequately addressed.

Allowing Russian companies access to the European market is broadly in line with the EU's desire to promote competition and market liberalization, yet disputes over how liberalization will be done in practice have created significant obstacles. Like energy monopolies in Germany, France, and elsewhere, Gazprom has resisted European Commission attempts to require that it unbundle its transportation and refining operations. Faced with opposition from Germany, France, and others, the commission has been unable to force European utilities to completely unbundle their operations but continues to insist that non-EU companies—namely, Gazprom—do so.²⁰ Moscow complains, not unreasonably, of a double standard and of European attempts to interfere in its internal affairs by dictating how its gas industry should be structured. In the face of EU opposition to Gazprom's purchasing transit infrastructure inside Europe, Moscow has found it preferable to deal with individual European countries and companies, signing bilateral deals in Romania, Bulgaria, Ukraine, Germany, Hungary, Austria, and Finland. Such deals make it harder for Europe to coordinate its members' energy policies.

More genuinely problematic is the endemic corruption afflicting the Russian energy industry. This results in part from the close linkage between the energy industry and the upper echelons of Russia's

government, and in part from the poorly developed natural gas market, which allows Gazprom to negotiate differential prices with its customers on a nontransparent basis. Because Gazprom's books are not open for scrutiny, the company is able to channel payoffs to selected politicians in downstream countries to encourage them to adopt a favorable attitude toward Russian investment and pipeline plans.

Apart from the moral and legal costs it imposes, such corruption complicates attempts to craft a common European energy policy, since Gazprom can use payoffs to political allies to sow dissension within Europe. It also interferes with long-term energy security, contributing to the perpetual delays and problems afflicting Russian plans to build new pipelines. Pipeline projects, which typically cost several billion dollars, have been a prime mechanism for large-scale embezzlement. Such corruption can prevent, or at least significantly delay, construction of the pipelines, as appears to have happened already with the Far Eastern Oil Pipeline, now years behind schedule.²¹

This kind of corruption also reaches into Russia's post-Soviet neighbors—above all, Ukraine. Shady intermediaries such as RosUkrEnergopro have been a principal conduit for payoffs and embezzlement, a source of political instability in Ukraine, and a contributing factor to the repeated conflicts between Moscow and Kiev over gas. Until 2008, Gazprom purchased Turkmen gas for around \$130/tcm prior to selling it to Ukraine for more than double that amount, with much of the difference vanishing as payoffs to various Russian officials, partially in exchange for continuing to obstruct Western companies seeking access to Russian gas.²² Meanwhile, the difference between the price RosUkrEnergopro paid to buy gas from Gazprom and the end-user price paid by consumers was a major source of revenue for Ukrainian politicians. Much of Ukraine's political maneuvering is based on securing the profits of the energy trade for one bureaucratic clan or another. The resulting political uncertainty in Kiev has compounded the problem of relying on Ukraine as a transit state and strengthens the case for diversification. The decision to pay Central Asian producers "European" prices for their gas and the January 2009 agreement between Moscow and Kiev to cut RosUkrEnergopro out of the gas trade are positive steps, but greater transparency is still required.

The solution to corruption in the Russian energy industry is not to exclude or limit Russian participation in the European market but to develop clear and enforceable EU rules regulating transit and ownership.

The presence of Russian firms inside the EU subjects their operations to both regulatory and judicial oversight—indeed, Gazprom may soon find itself facing lawsuits in Europe over its decision to cut off supplies to European customers as part of its confrontation with Kiev—but the EU needs greater clarity about the rules of the game, and a nondiscriminatory regulatory regime. Here too, greater intra-EU coordination is important, a process that targeted U.S. intervention can help promote.

Connecting Europe and Asia

Washington and its EU allies differ sharply about Russia's role in European energy security. Many EU states are eager to get as much gas as they can from whatever source is available. This stance frequently puts them at odds with the United States, whose approach has focused on reducing Europe's dependence on Russia as a supplier, rather than overall supply maximization.

Washington's strategy centers on establishing an east-west energy corridor from the Caspian to Europe, bypassing both Russia and Iran. The EU also backs what it calls the Southern Gas Corridor as one element in its campaign to diversify supplies. The Baku-Tbilisi-Ceyhan (BTC) oil pipeline, which came online in 2006 and was followed shortly by the Baku-Tbilisi-Erzurum (BTE, or South Caucasus) gas pipeline, was a critical and very successful piece of this strategy. Eventually encompassing Kazakhstan, Azerbaijan, Georgia, and Turkey, as well as the United States, BTC established a channel to bring 1 million bbl/d of crude from Azerbaijan and Kazakhstan to Turkey, from which it can be shipped by tanker to the EU. The roughly parallel BTE brings 8.8 bcm per year of Kazakh and Azeri gas to Turkey.

Washington would like to greatly expand the amount of Caspian gas making its way to Europe and has ambitious plans to get new supplies of gas from Azerbaijan and Central Asia, primarily Kazakhstan and Turkmenistan, and transport it to Turkey through a new pipeline beneath the Caspian Sea (dubbed the Trans-Caspian pipeline, or TCP). Once the gas has reached Turkey, it would be sent on to Europe through another newly built pipeline known as Nabucco. Designed to run from Erzurum in Turkey (the terminus of BTE) through Bulgaria, Romania, and Hungary before terminating in Baumgarten, Austria, Nabucco if built will ultimately carry 31 bcm of gas per year to the European market. Unfortunately, even after the crisis of January 2009, Nabucco is not practical in the near or medium term—it is too expensive and politically

complex. Most important, no one has yet determined the source of the gas it is meant to supply.

Unlike its attempts to derail BTC in the 1990s, Russia has developed in advance its own project to counter the appeal of Nabucco to potential customers and transit states: South Stream. With a projected volume of 30 bcm, approximately the same as Nabucco's, South Stream will be constructed by Gazprom and the Italian energy firm Eni, and will run from Russia's terminal at Novorossiysk under the Black Sea to Bulgaria, where it will split into a southern branch, through Greece to Italy, and a northern branch, through Serbia, Hungary, and Slovenia to Austria.

Nabucco and South Stream are in some ways competing projects, not least in that they are designed to provide essentially the same gas to the same markets, though some analysts do point out that the two projects could prove complementary—and could help keep end-use prices lower by fostering competition. South Stream is certain to be more expensive to build, possibly twice as expensive. Because it relies heavily on the Kremlin for financing, immediate profitability is less of an impediment, though the ongoing economic crisis means that the project's financing is in jeopardy. Nord Stream, which is further along and more likely to turn a profit, is in better shape.

The hurdles Nabucco faces are even higher, however. For now, a perception of high political and economic risk following the summer 2008 war in Georgia has given many firms second thoughts about participating.²³ More broadly, the war fed the impression that Western influence along Russia's periphery remains weak, making the leaders of many Caspian states reluctant to commit to the project.

The most serious problem Nabucco faces is locating and locking up gas. At various times, countries including Kazakhstan, Turkmenistan, Azerbaijan, Egypt, and Iraq have been suggested as possible sources of gas for Nabucco. Yet none of these states, apart from Azerbaijan, has shown any sustained interest in committing large volumes of gas to European markets. The Bush administration believed that Azerbaijan, with a little help from Iraq, could provide enough gas to fill the pipeline.²⁴ Many geologists and energy executives are less sanguine, and potential consumers worry about overreliance on a troubled hereditary dictatorship like Azerbaijan. And though Baku is strongly behind Nabucco, its leadership is also against the idea of relying entirely on one export route and has been negotiating with Russia, as well as with outside powers like Turkey, Iran, and Israel, on additional possibilities.²⁵

Russia has also been lobbying Baku hard to export more of its gas via Russian pipelines.

Consequently, securing gas from Central Asia or, less likely, the Arab Middle East appears critical to Nabucco's success. Three Central Asian states—Kazakhstan, Turkmenistan, and Uzbekistan—have substantial gas reserves that could be used to provide the volumes necessary to fill Nabucco, but only if they receive a high enough price and viable, well-financed pipeline projects. The challenge lies in convincing them to participate, and in moving their gas across or around the Caspian Sea to Turkey. U.S. attempts to enroll Kazakhstan and Turkmenistan in the Nabucco/TCP project have so far not been successful.

Apart from a small Turkmenistan-Iran pipeline, all Central Asian gas is currently exported through Russia, and Moscow has moved aggressively to maintain its position. In May 2007, Gazprom reached a deal with Ashgabat and Astana to construct a pre-Caspian (*prikaspiiskii*) pipeline along the sea's coast. More recently, Gazprom agreed to pay European prices for Central Asian gas (around \$340/bcm), which both preempts Western companies from gaining a foothold and limits the ability of countries like Ukraine to continue demanding price subsidies. The West's inability to protect Georgia from Russia during the summer 2008 war also deepened Central Asian leaders' wariness about relying on Western support against Russia.

If Nabucco cannot secure gas from Central Asia, the obvious alternative is Iran, which controls the world's third-largest supply of natural gas, after Russia and Qatar. Yet Iran remains anathema to the United States because of its nuclear program and role in fostering instability in the Middle East. Some European leaders have suggested that opening Nabucco to Iranian gas is the only way to make the project viable.

Absent a fundamental breakthrough in relations between Washington and Tehran, Iranian participation would represent a major defeat for U.S. foreign policy, and Washington might well prefer not building the pipeline in the first place.²⁶ Nabucco's managers are courting not only Iran but also Russia as a supplier. Indeed, Russia has sought to join the Nabucco project in various capacities, even while continuing to build political support for South Stream. Gazprom chairman Aleksei Miller has hinted that the company would be interested in becoming a partner in the Nabucco consortium, a prospect that some European analysts have welcomed but that could fatally undermine support for the project in Washington.²⁷

A final problem with Nabucco is Turkey. Although Turkey does not produce its own gas, it is a crucial part of the transit corridor for both the Nabucco project and BTC/BTE, and is a stakeholder in Nabucco through its state-run energy company Botaş, which holds a 16.7 percent share in the consortium. But Turkey continues to block progress on negotiations for a common legal framework that would allow the pipeline to move forward. Meanwhile, many southeastern European states are wary of Ankara's pivotal role. In essence, their complaints about Turkey echo those of Ukraine and Belarus about Russia: their larger neighbor has been willing to cut energy supplies to extract political concessions. Countries like Greece, Bulgaria, and Hungary fear increasing their reliance on Turkey and see South Stream, which would run beneath the Black Sea before coming ashore at Varna, Bulgaria, as a way of diversifying *their* gas supplies by reducing dependence on Ankara.

Although Nabucco could contribute to European energy security, its utility as a tool of U.S. foreign policy is more limited by doubts about its viability without Russian or Iranian gas and by the seemingly incompatible goals of Washington and the Nabucco consortium, not to mention an uncertain time frame. For all these reasons, Nabucco is not a realistic solution to Europe's energy security concerns in the next decade-plus, even after the Russia-Ukraine gas crisis imparted new urgency to Europe's quest for new sources of gas. Rather, a single-minded focus on Nabucco has diverted attention from other, more readily feasible options.

THE CASPIAN REGION

The Caspian region is central to any discussion of diversifying Europe's energy supplies. The Caspian littoral states apart from Russia and Iran—Azerbaijan, Kazakhstan, and Turkmenistan—are important as the most promising non-Russian source of oil and gas for Europe. Unfortunately, the Western states have had little success in the region, apart from Azerbaijan, largely because they have been unable to put together projects that the region's leaders see as beneficial. Much of the problem is simple geography. Russia is closer, and because the region's existing pipeline infrastructure dates mostly from the Soviet period, it is much easier for Turkmenistan and Kazakhstan to export their

hydrocarbons through Russia. Western governments and Western companies need a more concerted effort to access upstream resources, particularly in Turkmenistan.

Azerbaijan is a major oil producer, with output of 860,000 bbl/d in 2007, and an increasingly important source of natural gas thanks to deposits off its coast in the Caspian Sea.²⁸ With the construction of the BTC and BTE pipelines earlier this decade, Baku has broken out of its economic and strategic dependence on Russia. Azerbaijan is already exporting gas to Georgia and Turkey, and with the further development of the giant Shah Deniz field and the construction in the medium-term future of planned pipeline connectors to Greece and Italy, Azeri gas will enter EU markets in the next decade.

With output of about 1.4 million bbl/d, Kazakhstan is the largest oil producer in the Caspian region, and the country's economy depends heavily on the sale of its oil abroad. It also produces a substantial amount of natural gas (though little is currently exported), principally from the offshore Tengiz and Karachaganak fields, which are operated by international consortia.²⁹ The United States has long sought to recruit Kazakhstan as a supplier for the BTC pipeline and continues to discuss ways of bringing Kazakhstan into the Nabucco project, though Astana remains noncommittal.³⁰ Kazakhstan's participation in Nabucco would likely require the construction of the dubious trans-Caspian gas pipeline connecting Kazakhstan's offshore gas fields to the existing export terminus at Baku.

Turkmenistan has less oil but more gas (72.3 bcm in 2007), and for much of the past decade it has been something of a wild card because of the erratic governance of former president-for-life Saparmurat Niyazov and Russia's success in bottling up Turkmenistan's gas in Russian-controlled pipelines.³¹ Thanks to its control of export routes out of Turkmenistan, Russia was long able to buy Turkmen gas at a discount, which it could then sell abroad for a substantial profit. With Niyazov's death in December 2006, Turkmenistan again became a critical factor in Caspian energy diplomacy, as the new regime in Ashgabat has sought to emulate the Kazakhs in balancing between Russia and outside powers.

New president Gurbanguly Berdymukhammedov appears ambivalent about Russia's dominant position in Turkmenistan. Though financing remains problematic, he is exploring new pipelines to Iran, South Asia, and China. In April 2008, the Turkmen president told a high-level EU delegation that he was committed to developing

a mechanism for sending Turkmen gas directly to Europe, and he offered to supply 10 bcm as early as 2009.³² Privately, many officials are skeptical that either the volumes or the political commitment will materialize in such a short time.

Despite his attempts at courting Europe, the new Turkmen leader has also recognized that for economic as well as political reasons Turkmenistan will continue to need Russia. In May 2007, Berdymukhammedov signed an agreement with Putin and Kazakh president Nursultan Nazarbaev to build the new pre-Caspian pipeline around the northern shore of the Caspian Sea, bringing an additional 30 bcm per year of Turkmen gas to Russia (and thence to Europe) by way of Kazakhstan. Although Berdymukhammedov insists that he remains open to the idea of participating in Nabucco and an east-west gas corridor, the shorter lead time and proximity of the Russian market appear to have made the pre-Caspian pipeline a higher priority. Most analysts also doubt that Turkmenistan can produce enough gas in the near future to accommodate both the pre-Caspian route and TCP/Nabucco.

The agreement to build the pre-Caspian pipeline and Ashgabat's hesitancy on Nabucco reflect the West's inability to provide Turkmenistan with attractive alternatives. In particular, doubts about the viability of TCP and Nabucco have made Ashgabat wary of allowing Western firms into the country's upstream. If the West is to gain unfettered access to Turkmen gas, it will have to provide a credible proposal for moving the gas to markets, as well as guaranteed financing to ensure that the pipelines will be built. The difficult financial climate obviously limits the availability of investment capital, but its effects on Russia are even more severe. Doubts about Russia's ability to move quickly on the pre-Caspian pipeline potentially create a window of opportunity for Western governments to promote their alternatives in Ashgabat.

Conclusions and Recommendations

For the West, Russia's emergence as a dominant force in Eurasian energy politics is both a challenge and an opportunity. Although Russia is in many ways a problematic partner, it could contribute to improving energy security both for Washington's European allies and, more speculatively, for the post-Soviet states of the Caucasus and Central Asia. Given the growing political instability in the Middle East, the United States would do well to think about ways of leveraging Russia's vast holdings of oil and gas to expand the supply of available energy. Doing so will require establishing a framework for Russia to be a constructive participant in European oil and gas markets, and insulating against the danger that Russian supply will fall short, for either political or technical reasons.

The West should consequently adopt a two-pronged strategy based on the principles of integration and diversification. Adopted in tandem, these principles can be mutually reinforcing: integration will lessen diversification's impact on relations with Russia, and diversification will ensure that integrating Russia does not thereby increase European dependence on it. Diversification, which will require new infrastructure such as pipelines, liquified natural gas (LNG) terminals, and nuclear power plants, will take more time. A credible, realistic plan for diversification can, however, decrease the potential short-term difficulties of further integrating Russia into European markets, a process whose first stage merely requires changing the rules of the game, and the obstacles to which are more political than physical.

The starting point for integration is for European governments to recognize, one, that energy security is a common concern that can be addressed adequately only at the EU level (the recent gas crisis has done much to strengthen the case for common action) and, two, that for the foreseeable future interdependence with Russia is an inescapable reality. In cooperation with European governments, Brussels should promote

the creation of a pan-European regulatory framework and an integrated network of interconnector gas pipelines. Brussels is already moving in the right direction but needs more cooperation from EU member states, especially the big western European powers, and better financial incentives for building interconnectors. Europe also needs to focus on integrating Russia into European energy markets by establishing a set of consistent and enforceable rules governing Russia's market participation.

Creating a new east-west energy corridor should be part of a diversification strategy, but not all of it. Although Washington and Brussels are right to continue pressing for Nabucco in the long term, especially if they can secure the gas from North Africa and the Middle East (TCP appears increasingly chimerical), they need to take additional steps in the short to medium term to lessen the possible negative consequences of competing Russian initiatives such as Nord and South Stream. In particular, that means pursuing integration in the near term while the technically more difficult process of diversification moves forward.

Of course, Russian energy is of less immediate importance to the United States than to Europe, which limits opportunities for direct U.S. engagement with Russia on energy issues. Moscow has shown little interest in sustaining a dialogue with Washington, because Washington has little to offer it. Nonetheless, the United States can work more closely with Europe to promote coordination in dealing with Russia. It can also improve the chances of getting pipelines such as Nabucco built by lobbying countries along the pipeline route to cooperate and by helping companies assemble attractive project proposals that can help them gain a foothold in the non-Russian Caspian states.

INTEGRATION

Integration must work on two levels: creating a common European framework for energy, especially in the gas sector, while binding the Russian energy sector more closely to Europe. Integrating Russia successfully demands above all that Europe address the structural factors that allow dependence on Russia to be not just an economic challenge but also a strategic liability. Central to European strategic vulnerability is that EU members' levels of exposure to Russia differ radically and that, to a great extent, national governments rather than Brussels set energy policy. This fragmentation means that different governments

view the Russian challenge differently, and pursue national strategies that are at best uncoordinated and at worst mutually exclusive. Building a single market for gas is imperative if the EU is to further integrate Russia. Without a single market, Russia will remain able to pursue a divide-and-rule strategy inside Europe. A unified European market would help equalize dependence between Russia and Europe and align the interests of the European states at the same time.

For the past decade, several larger states that enjoy close relations with Moscow—Germany, France, and Italy, in particular—have blocked steps toward real integration. Yet circumstances are converging in 2009 in a way that makes concerted action an increasingly realistic possibility. The Czech government, which holds the EU presidency during the first half of 2009, favors greater gas market integration and supports plans to build a network of gas interconnectors to overcome Europe's uneven dependence on Russia. A short-term fall in demand resulting from the onset of a severe recession in 2008 also works in Europe's favor, because it creates a buyer's market for gas and weakens Gazprom's market position. Even if Gazprom faces long-run production constraints, its immediate problem is excess supply in the face of falling demand. The fallout from the crisis between Russia and Ukraine in January 2009 also appears to have changed the political landscape, with EU leaders insisting on a common response and even the German government indicating it would be open to greater intra-EU coordination.³³ This favorable convergence of circumstances will not last forever; it is vital, therefore, that the EU and its members take advantage of the opportunity while it exists.

SUPPORT AN INTEGRATED GAS MARKET IN EUROPE

To effectively integrate Russia into a European energy market, the EU first must construct an integrated market for natural gas, an enormously complicated undertaking and one it has pursued for close to fifteen years. Lack of coordination within Europe is especially problematic in the gas sector, where individual countries often compete against one another to seek favorable deals with Russia. This fragmentation of interests will only be exacerbated in the event that the Nord and South Stream pipelines—strongly supported by countries such as Germany and Italy—are built and current transit states such as Poland are isolated from the flow of Russian gas to Europe.

For now, Brussels' approach to energy prioritizes competition over security, which allows countries opposed to the idea of market integration to continue throwing up barriers. Some European governments (particularly but not exclusively France and Germany) have resisted giving up control over gas market regulation, unbundling, and establishing an integrated supply grid. The problem, as all acknowledge, is political—gaining French and German support for unbundling and pan-European regulation.³⁴ Treating market integration as primarily a security issue—strengthening the connection at the EU level between the competition and foreign policy bureaucracies—would help lay the groundwork for a more proactive approach that includes the five main policy objectives outlined below.

CREATE A COMMON REGULATORY FRAMEWORK

Perpetuating national regulatory approaches inhibits the ability to insulate countries that depend heavily on Russia from supply shocks. A common regulatory framework would allow coordination at the EU level and create a more liquid market to enable gas supplies to be moved and swapped between member states. Establishing the European Network of Transmission System Operators for Gas (ENTSOG) and the Agency for the Cooperation of Energy Regulators (ACER) are steps in the right direction, but their roles remain too vague. ENTSOG requires voluntary assent from national operators, many of which oppose market integration, to implement its rules, and it has no authority to address legal, as opposed to regulatory, inconsistencies.

These weaknesses can be addressed only by the European Commission, which should—in the context of its heightened focus on security of supply issues—work with ENTSOG and the various national authorities to develop and monitor the implementation of new rules. The focus should be on security of supply, rather than on growth or sustainability. ENTSOG, which is charged with coordinating investment on the part of operators, should prioritize investment in interconnector pipelines in vulnerable parts of the continent. ACER, meanwhile, ought to be given a strengthened mandate to establish gas market regulations, including the power to overrule national regulators on issues connected with security of supply and the operation of cross-border transmission systems.

CONSTRUCT A NETWORK OF GAS INTERCONNECTOR PIPELINES, STARTING IN SOUTHEASTERN EUROPE

Insulating countries that depend heavily on the existing Russian-Belarusian-Ukrainian corridor from supply disruptions requires being able to move gas quickly and efficiently among the European states, which in turn requires interconnector pipelines that can be activated in times of crisis. Gazprom has already conceded on one of the major impediments, namely, the existence of restrictive destination clauses in its delivery contracts, which allows for the resale of its gas inside Europe.³⁵ Once the pipelines are in place, the gas itself can move freely.

Yet because the construction of such pipelines is expensive and politically difficult, Brussels will have to throw its political and financial support behind them. One important example is a Hungarian initiative known as the New European Transmission System, or NETS, to set up a regional network in southeastern Europe. If NETS succeeds, Brussels (and Budapest) can use it as a framework for further expansion.³⁶

NETS would create a single operator for pipelines covering most of southeastern Europe. This entity would enhance the bargaining power of states in the region in their negotiations with Gazprom (especially over the construction of South Stream) and create a larger regional market more effective at attracting investment capital than the existing, smaller national markets. So far, Hungary, Romania, and Croatia have agreed to participate in NETS, and Bosnia-Herzegovina, Bulgaria, Slovenia, and Serbia have indicated interest—though Austria has ruled out participation for the time being.

The European Commission already supports NETS but needs to do more both to smooth the legal and regulatory barriers and to secure financing for the initial stages of pipeline construction. As the regulatory and financial hurdles to NETS have become apparent, the target date for its completion has been repeatedly moved back. Leadership from Brussels is needed to deal with these obstacles. The European Commission could start by exempting it, and similar regional integration schemes, from unbundling schemes imposed on national-level operators. It should then begin working with regional authorities and ENTSOG to develop a timeline to complete the various stages of implementing NETS, and conduct regular consultations with the

regional operators to ensure that deadlines are met. Furthermore, it should appoint a single official responsible for NETS with a triple mandate that

- establishes legal and regulatory harmony among the participating states, including non-EU member Serbia;
- conducts an intensive dialogue with the Yugoslav successor states, whose mutual distrust continues to limit their appetite for cooperation; and
- seeks to overcome Austrian, German, and Greek opposition to participation in the project (Greece has an LNG re-gasification terminal that could be used to supply NETS).

Financially, the EU needs to derive insurance mechanisms to ensure that pipelines designed to operate only in the event of supply disruptions remain profitable when supplies are normal. It should promote coordination among the regional operators to plan investment decisions. With credit increasingly tight, the EU itself should also be willing to help with loan guarantees and other kinds of financial assistance through the European Bank for Reconstruction and Development (EBRD). The EU summit scheduled for March 2009 will press member governments for financial commitments to build pipeline interconnectors. With the memory of January 2009 still fresh, European leaders need to finally answer the call.

PURSUE FULL OWNERSHIP UNBUNDLING

If the first phase of an EU integration strategy must focus on intra-EU harmonization and the creation of transnational infrastructure, the second phase should focus on Russia's role in European energy markets. Although the EU and the United States support greater diversification away from Russia, the reality is that for the foreseeable future Russia (and Gazprom) will be indispensable to the European economy. Consequently, Brussels should seek ways of binding Moscow more firmly to the EU legal and regulatory framework, above all in the gas sector. Treating Moscow as a special case by imposing special regulations on Russia (the "Gazprom clause") is less effective

than having an agreed set of rules that applies equally to Russia and to EU member states.

Real competition means ensuring that Gazprom does not operate with an unfair advantage based on its monopolistic structure. For this reason, the EU must adopt a clear and consistent position in favor of competition, above all by insisting that Gazprom's operations in the EU are unbundled. However, as long as Brussels seeks to impose this by the special Gazprom clause rather than as part of a comprehensive package of energy market reform applying equally to EU utilities, it will have little leverage in Moscow. The European Commission therefore needs to overcome the opposition from French, German, and other energy monopolies and impose across-the-board unbundling, rather than focusing on the Gazprom clause as a compromise position.

The EU's Third Gas Directive, tabled in September 2007, initially called for complete ownership unbundling. In the face of opposition from France, Germany, and a handful of smaller states, the European Commission was forced to fall back on the creation of independent system operators (ISOs), which allow the big European energy firms to maintain ownership of transmission infrastructure but leave management decisions to the ISOs.³⁷ At the national level, the ISO option is suboptimal from the point of view of encouraging competition, but more important, it does nothing to address the security challenges posed by Russian participation in the European market. As part of the EU's increased focus on security, it should continue to insist on the necessity of full ownership unbundling, apart from new transnational operators such as the one to be set up in the context of NETS.

ADOPT AND ADHERE TO FIXED RULES FOR TRANSPARENCY

The EU can ensure transparency only as part of a collective effort, and it will need to adopt and enforce the necessary rules at the European Commission. In terms of Russia, the temporarily postponed negotiations to enter the World Trade Organization (WTO) and to secure a new partnership and cooperation agreement with the EU are important levers. The EU should make transparency a central issue in these negotiations. With regard to Ukraine and other transit states, the EU should welcome the gradual transition to market prices agreed to as part of the deal to

end the January 2009 dispute, and hold forth the prospect of eventually integrating Ukraine into a common EU energy market to mitigate the consequences of future clashes with Russia—but only if Kiev can clean up the gas-linked corruption afflicting its political system.

Additionally, the EU should keep alive negotiations with Moscow on the Energy Charter Treaty (ECT), which Russia signed in 1994 but did not ratify. Russian objections stem from Gazprom's unwillingness to accept the treaty's Transit Protocol, which would establish and define the principle of freedom of transit, threatening Gazprom's revenues from its pipeline monopoly.³⁸ The ECT and the protocol require adherents both to practice transparency and nondiscrimination, and to provide a mechanism for settling interstate disputes. Russian objections stem from a variety of sources, including opposition to allowing foreign access to its pipelines and a definition of transit that differs from the EU's. Although Moscow has given conflicting signals about its willingness to sign an amended version of the ECT, especially while oil prices remained above \$100/bbl, it is worthwhile to keep the process going, especially given that oil prices are now lower. Even if agreement proves impossible, continuing negotiations gives Russia a reason to continue abiding by many ECT principles in the breach, and potentially subjects it to legal consequences for violations.

OFFICIALLY AFFIRM EUROPEAN WILLINGNESS TO ENTER INTO LONG-TERM CONTRACTS FOR GAS

Russia's interest in buying European infrastructure has much to do with uncertainty regarding the EU's appetite for long-term supply contracts, an additional component of the security of demand on which Moscow insists. Such contracts, which ensure suppliers a guaranteed price on the principle of take-or-pay, give suppliers an incentive to invest in pipelines and other elements of expensive infrastructure that take many years to turn a profit. In the face of pressure to abandon long-term contracts as well as its export pipeline monopoly, Gazprom sought to hedge against price volatility in Europe by buying up distribution infrastructure, which gives it the ability to secure a greater percentage of the end-user price.

Part of the EU's strategy for gas market liberalization has involved attempts at creating a spot market based on short-term contracts designed to give end-users greater choice, but at the expense of

guaranteed returns to suppliers. For this reason, Gazprom and EU gas utilities have opposed much of the EU's liberalization agenda—even though spot markets and liberalization more generally are not incompatible with long-term contracts. Given concerns about production shortfalls, long-term contracts also benefit Europe in that they make it more difficult for Russian companies to shift sales to the domestic market, should supplies tighten. To address these concerns, the EU will have to both enforce clear rules on investment and signal unambiguously its acceptance of long-term supply contracts as a way to reduce risk for Russian companies.

DIVERSIFICATION

Regardless of Russia's geopolitical aims, that Europe derives so much of its energy from a single source is problematic. If only because of Europe's real concerns about Russia's ability to meet its contracted obligations, the continent needs to diversify its energy supplies both geographically and by type. At the same time, Europe—not to mention the United States—needs to reduce its overall energy demand to contain the effects of climate change and to minimize the potential problems associated with overdependence on a single source. No magic bullet will rescue Europe from its dependence on Russia for the foreseeable future. For that reason, diversification must be a long-term strategy involving several components: boosting Russian output; building new pipelines; increasing supplies from Scandinavia, North Africa, and the Middle East; developing new types of energy; and improving efforts at conservation. Diversification will not be an immediate fix; it is not practicable in the near or medium term for both political and technical reasons. Despite this caveat, a credible commitment to diversification signals to Russia that the EU is serious about reducing its dependence, thereby giving Moscow an incentive to act responsibly.

BOOST RUSSIAN OUTPUT

An effective strategy of diversification should consider what role Russia can play. The danger that long-term Russian production will not keep up with demand is real, and as principal consumers, the Europeans should actively promote increased production of Russian oil and gas.

The solution lies in getting Russia to allow greater competition, especially on the production side, which would allow for increased investment and efficiency without having to take the money from government revenues. Gazprom and the Kremlin both recognize the potential for future shortfalls and the potentially disastrous consequences they could have.³⁹ Allowing independent producers to increase their market share within Russia would benefit Gazprom too, because it would free up more of Gazprom's output for sale to non-CIS customers, who pay higher prices.

A concerted effort by the Western states for access to gas production from the Caspian, which would be beneficial for other reasons as well, could also contribute to boosting output inside Russia. A successful campaign to promote European-American investment in the Caspian would lessen the percentage of the region's gas being sold to Russia. Access to Central Asian gas remains a major impediment to greater domestic investment and production inside Russia, because it is more cost effective for Gazprom to resell large volumes of gas from Turkmenistan and Kazakhstan than to invest in new production at home. Deprived of its dominant position in much of Central Asia, Russia would have a real incentive to allow more competition in the domestic upstream to meet its contracted obligations.

OBTAIN ENERGY FROM NEW SOURCES

Even with increased Russian production and efforts at conservation inside the EU, it will remain necessary in the long term for Europe to have access to greater amounts of non-Russian gas—though Russia will remain Europe's major source of energy for the next decade-plus, no matter what. Obtaining significant amounts of gas from alternative suppliers will require both locating the necessary gas and moving it to European markets. As it has been since the 1990s, the West's strategy for promoting energy security is focused on the construction of new pipelines, like Nabucco, that skirt Russian and Iranian territory. The changing geopolitics of Eurasia, however, have made this strategy more problematic than it was ten or fifteen years ago.

Consequently, the EU needs a more broadly based approach to diversification that focuses on more immediately realistic gas suppliers, such as Norway, Qatar, Iraq, and Egypt. Even the United States is a possible source of additional gas, given that it has a substantial number

of LNG storage facilities that remain underused because of too little domestic demand and that could conceivably serve as the basis of a strategic reserve.⁴⁰ The EU and its member states will also have to make a concerted push for new infrastructure construction, focusing on assets such as storage facilities, LNG terminals, and nuclear plants in countries where politically possible. Financing from the European Bank for Reconstruction and Development or the U.S. Overseas Private Investment Corporation could be directed to projects inside Europe that would promote conservation and diversification, such as building gas storage facilities and laying intra-EU pipelines from Scandinavia to Poland and other east European countries that depend heavily on Russia.⁴¹

Additionally, the EU should focus on a variety of solutions to the issue of transit. Alongside Nabucco, one more immediately viable possibility in the gas sphere is the 10-bcm-per-year Turkey-Greece-Italy (TGI) pipeline that would mostly use existing pipeline infrastructure and gas from Azerbaijan. LNG can also be part of the mix, though in an increasingly global market, LNG from Qatar and other major producers may not normally be competitive on a commercial basis with gas piped from Russia. NETS in particular could benefit from having a secure supply of LNG, which Greek participation in the project would bring.

Pursuing these steps would require Brussels and, particularly, Washington to pursue a variety of options at once. Successfully diversifying Europe's energy supplies would require a much more concerted effort on the part of European governments and companies, especially in Central Asia, where they have been continually outmaneuvered by not only Russia but also China for access to oil and gas. Especially if it can be supplied with non-Caspian gas, Nabucco should be one piece of that strategy, but not at the expense of other projects that, given sufficient attention, have a higher probability of success and shorter time frames.

Of course, the EU also needs to make a bigger push for conservation and the development of alternative energy. Although the large-scale use of wind, solar, and other renewables is many years in the future, the EU would benefit from a program to reduce its overall dependence on fossil fuels. Part of a conservation strategy could also focus on moving from gas to electricity for powering factories and other industrial operations, especially given that a third or more of Europe's gas consumption is for power generation, where using other types of fuel is already possible.

PROMOTE WESTERN INVESTMENT IN CENTRAL ASIA

Although Russia and Russian companies have gotten something of a head start in the race for Central Asia's resources, continued U.S. and European investment remains crucial to the region's development. Regardless of whether (or when) Nabucco proves viable, upstream opportunities will exist for Western companies in Kazakhstan, Turkmenistan, and potentially Uzbekistan that Washington and Brussels should promote. The EU's 2007 Central Asia Strategy laid the foundation for an enhanced energy dialogue with the Central Asian states.⁴² However, concrete proposals—and money—are still lacking.

Western companies have consistently failed to gain a foothold in these countries, most notably Turkmenistan, which is at the center of the current scramble for Caspian energy. Much of the problem has to do with the inability of Western firms to match their Russian (and Chinese) competitors, whose close state connections allow them to move in with complex, expensive projects with guaranteed financing. Even though investment by Western firms creates a variety of social and economic benefits for Central Asian states (such as job training for local employees), Central Asian leaders have been reluctant to approve Western-led deals because U.S. and European firms have not been able to propose investment schemes that combine both production and transit; without guarantees that pipelines to world markets will be built, new production is worthless.

For that reason, getting Western firms into Turkmenistan will require Western governments to be clear about their commitment to getting their companies, which are often reluctant to take on the associated financial risk, to invest in the region. Specifically, Western governments will need to step up with concrete backing in the form of loan guarantees, political risk insurance, and other kinds of support for projects that promote their broader energy security aims—specifically, projects that combine investment in production and pipelines. Such support will be especially important in the aftermath of the autumn 2008 financial crisis and the associated withering of private credit. Western governments will also have to help sell these projects to skeptical leaders in the region, in part by offering support in areas not directly connected to energy.

In the oil sector, Western leaders have less to worry about from Russian competition. The growth of Turkmenistan's oil industry, which

has not been locked up by Russian companies, creates an opportunity to build a trans-Caspian oil pipeline linked to BTC. Such a pipeline, which U.S. policymakers and energy companies have begun discussing more seriously since the death of president-for-life Niyazov in 2006, would help Turkmenistan reduce its economic dependence on Russia, improve BTC's financial position, and increase the volume of oil making its way to European markets.

FOCUS ON TURKMENISTAN

Of the Caspian states, Turkmenistan presents the most immediate opportunity for Western gains. Turkmenistan's political evolution since Niyazov's death has rapidly opened the country to Western businessmen, even as President Berdymukhammedov continues to seek security through close cooperation with Russia. Although the investment climate in Turkmenistan is still murky, the country has been energetically pursuing foreign direct investment (FDI), particularly in developing its energy sector. Given Ashgabat's existing deals with Moscow, U.S. investment strategy should focus, first, on Turkmenistan's upstream, and second, on the trans-Caspian oil pipeline.

It will be up to companies to sign production-sharing agreements, but Washington can play a role in getting this pipeline built. It should do so not by mandating the route but instead by easing political complications. It could, for example, encourage Ashgabat and Baku to resolve their territorial dispute in the Caspian, which remains a significant obstacle to extending the East-West energy corridor. Promoting broader political reconciliation between the two countries would help as well. In the longer run, once the violence in Afghanistan is contained, Washington could play a similar role in reviving the idea of a South Asian pipeline bringing Turkmen gas to Pakistan and India.

CONCLUSION

Addressing Russia's emergence as the pivot of Eurasian energy relations continues to bedevil the West. The multiplicity of players has been a principal reason behind the West's failure to develop a coherent, strategic approach to the reality of Europe's growing dependence on Russia for its energy. By leaving energy policy to individual governments, the

EU has struggled to cope with the fact that the interests of its members often diverge quite sharply from one another, and from those of Brussels. The most fundamental challenge facing the EU is thus to ensure greater solidarity between eastern and western Europe, and between countries that rely on Russian gas and those that do not. Unification of Europe's gas markets, which would be the single most effective way of decreasing the geopolitical risk of dependence on Russia, can occur only if the diverging interests of countries in positions as different as Germany, Poland, Hungary, and Spain can somehow be reconciled. Never easy, achieving such solidarity will be even more difficult in the aftermath of a global financial crisis that has forced countries to put their own interests first. Yet the effort remains worthwhile, because a common position on energy security remains critical to the viability of the EU as a political force.

However, Europe can address the consequences of its dependence on Russia only in close partnership with the United States. Because it does not depend on Russia itself, the United States is well positioned to play the role of a disinterested consensus-builder among the Europeans. Washington is the only player able to look out for the best interests of the West as a whole; it needs to use the opportunity to forge greater consensus among the European powers and between itself and the European Union. U.S. credibility with the Europeans will remain low as long as Washington treats European dependence primarily as a threat that can be circumvented by new pipelines—and as long as it remains a profligate user of energy itself. Diversification as a long-term strategy is important, but Europe's dependence on Russia and its energy monopolies is a reality that cannot be wished away.

If it can accept that Russia must be part of the solution to Europe's energy security challenges as well as part of the problem, Washington can begin pressing its European allies to take the steps necessary to make interdependence work in their favor. Doing so will require genuine engagement between the United States and not only Brussels but individual European governments as well, which Washington understands perfectly.⁴³ In the short term, the impact of the financial crisis, the transition to a new administration, and the host of other challenges dogging relations with Russia may hinder the United States' ability to focus sufficient, sustained attention on promoting European solidarity in the face of Russia's position dominating the route bringing energy from East to West. Yet sustained U.S. engagement with Europe

is the sole way to ensure a common EU strategy that addresses not only dependence on Russia but also, and more important, the factors within and among the EU member states that make this dependence a strategic liability.

Although the global financial downturn (accompanied by a dramatic fall in energy prices) has to some degree reduced the sense of urgency among Western governments for addressing the problem of energy security, it also has removed some of the obstacles to moving forward. Russia's market position in Europe has been much weakened, at least for a time, as a result of falling demand. The EU's bargaining position, on the question of unbundling for instance, is consequently much stronger. Meanwhile, South Stream in particular is in trouble. Its start-up date has now been moved back to 2015, which still appears optimistic; given its lower cost structure, the United States and European Union have an opportunity to rally support for their own projects, including but not limited to Nabucco, among the Caspian states. The consequences of the most serious Russia-Ukraine gas dispute to date have focused minds on the seriousness of EU dependence and created momentum for taking bold steps.

More than anything, the economic crisis has created uncertainty. Such uncertainty merely strengthens the case for countries vulnerable to supply disruptions to insulate themselves against future difficulties. With the prospects for new pipelines increasingly in doubt, gas market integration remains the best way for the EU countries to protect themselves from disruptions in the short term. In the longer term, only a serious effort at diversification can limit Russian leverage and ensure Europe's protection against shortfalls resulting either from political manipulation or from supply shortages in Russia. Because these challenges affect Europe as a whole, Europe (in partnership with the United States) must rise to the occasion and address them as a whole.

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