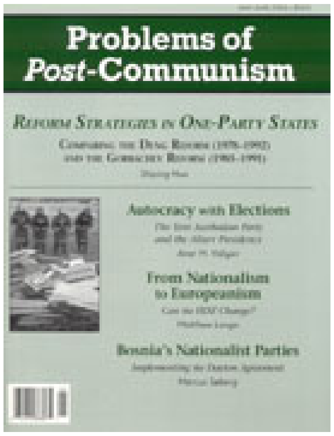

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Problems of Post-Communism
Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/mppc20

Out of Gas?: Russia, Ukraine, Europe, and the Changing Geopolitics of Natural Gas

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Published online: 16 Apr 2015.

To cite this article: Adam N. Stulberg (2015) Out of Gas?: Russia, Ukraine, Europe, and the Changing Geopolitics of Natural Gas, Problems of Post-Communism, 62:2, 112-130, DOI: 10.1080/10758216.2015.1010914

To link to this article: http://dx.doi.org/10.1080/10758216.2015.1010914

Problems of Post-Communism, vol. 62: 112–130, 2015

ISSN: 1075-8216 (print)/1557-783X (online)
DOI: 10.1080/10758216.2015.1010914

Routledge
Taylor & Francis Group

Out of Gas?

Russia, Ukraine, Europe, and the Changing Geopolitics of Natural Gas

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Curiously, a gas war was averted at the apogee of the 2013/4 Ukrainian crisis. Russia, Ukraine, and European consumer states not only refrained from precipitous shut-offs that marred conflicts in 2006 and 2009, but deepened mutual energy ties as the crisis unfolded. This article highlights shortcomings with the contemporary debate over Russia's energy weapon made evident by the mixed diplomacy and outcomes in these successive gas crises. It then probes change to the roles, postures, and relationships among key stakeholders embodied by an emerging Europe-Eurasian gas network. The latter arguably upends classic realpolitik assumptions about pipeline politics, while illustrates how Russia is down but not out amid transformation in the regional gas landscape.

What started out as peaceful demonstrations in November 2013 against the then–Ukrainian government's rejection of the Association Agreement with the European Union (EU), over the course of 2014 devolved rapidly into a full-fledged national revolution and East–West crisis over Russia's brazen intervention. Yet, amid spiraling hostility linked to the annexation of Crimea, Russian gas was delivered to Ukraine until early June 2014 and resumed later that fall. In the face of further destabilization of eastern Ukraine, Moscow's support for the insurgency, and escalation of U.S. and EU sanctions against Kremlin, Kyiv permitted Russian gas to transit freely on to cash-paying customers in Europe. What explains the restraint in averting a full-fledged gas war during this period?

It might seem odd to highlight restraint in the 2013/14 Russian–Ukrainian gas dispute. Indeed, the Russian state gas monopoly, Gazprom, issued successive threats and then stopped deliveries to Kyiv in summer 2014. Kyiv, too, arbitrarily altered the "take or pay" terms of trade as its state-owned gas company accumulated debts to Gazprom reminiscent of the 2009 dispute. By early fall 2014, both sides had failed to reach final agreement or to rule out a full rupture in their gas trade, irrespective of the costs and risks of collateral damage to each and the vulnerability of customers across Eastern and Central Europe. Moreover, the period was marked by a significant increase in provocative military encounters between Russia and NATO countries across the globe.[1] Yet, for all the clamoring about a pending energy war, none of the central players rashly provoked the other, even as they retained the motivations and capacities to do so and as the political and military dimensions to the conflict got heated. By the end of October 2014, they succeeded in stepping back from the brink by inking a temporary deal for settling Kyiv's debts and securing Russian gas deliveries through the winter months into the first quarter of 2015.

Moscow's resurgence and presumed affinity for predatory pipeline politics notwithstanding, Gazprom delayed the cut-off for months into the crisis and refrained from deploying the gas weapon to extract national equity stakes from an increasingly indebted and enfeebled leadership in Kyiv. To the extent that it betrayed neo-imperial designs on Black Sea resources off Crimea or intimated gas as a political lever, the Kremlin confined its initial energy diplomacy to offering (and then not renewing) price discounts. Following the cut-off of direct deliveries to Ukrainian consumers, it repeatedly softened ultimata issued by Gazprom and left the door open for European political and international judicial mediation.

The governments in Ukraine and downstream European customer states demonstrated similar restraint. Neither the embattled interim government in Kyiv, nor diverse non-state actors (e.g., organized criminal elements, regional

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oligarchs, corrupt officials) with opportunity to step into the power vacuum across Ukraine, disrupted transit of Russian gas for strategic or arbitrary purposes. The restraint persisted even as respective options narrowed and the stakes mounted. Although Kyiv fell deeper into arrears, unilaterally abrogated the "take-or-pay" terms of the standing contract with Gazprom, and balked at Moscow's demands for high prices and pre-payment for future deliveries, it did not openly exploit Russia's dependency on European markets by withholding throughput. Moreover, Kyiv signed the interim "winter package" at a moment when the "Minsk protocols" for halting the war in the Donbas region, sponsored by the Organization for Security and Cooperation in Europe (OSCE), began to fray in the face of unrecognized local elections and conspicuous signs of Russian troop and heavy equipment movements across Ukraine's border. By the same token, just as Western governments struggled to demonstrate resolve and tighten sanctions on Kremlin chokepoints, they purposefully avoided boycotting key Russian energy interests. They refrained from doing so at an otherwise propitious moment for ratcheting up pressure on Russia; when spring was coming, demand was decreasing, and supply options were expanding.[2]

The avoidance of an all-out gas war at the apogee of the 2013/14 Russia–Ukraine crisis is especially puzzling on several additional accounts. First, the measured steps towards escalation contrasted starkly with the precipitous and reciprocal shut-offs of Russian gas deliveries and transit that marked successive crises in 2006 and 2009. Gazprom was seemingly well poised to deal more assertively with Kyiv in 2013 than during the other periods. The drop in revenues from EU sales and emergence of alternative suppliers to Europe since 2009 both better positioned European customers to withstand Gazprom's demands and increased Moscow's free hand to extract better terms from the gas trade with Ukraine.[3] Similarly, with political survival on the line, storage facilities flush, and downstream European customers enjoying more diversified supply, Kyiv had stronger incentives to gamble on disrupting transit of Russian gas in 2013/14 than in the earlier rows. Yet, to the extent that gas was inserted early into 2013/14 competitive bargaining, it was largely as an inducement to ease tensions, rather than as a stick to bludgeon political concessions. Ironically, the parties not only avoided uncontrolled energy brinkmanship that marred earlier stand-offs, but deepened mutual energy ties as the crisis unfolded from fall 2013 through spring 2014. Whereas Russia posted historical highs of European gas supply by the end of 2013, Ukraine received temporary energy discounts and advanced payments of transit fees through 2015. European companies, too, finalized international equity swaps and joint commercial ventures with Gazprom and other Russian energy companies just as Washington and Brussels imposed targeted sanctions.

Second, the 2013/14 crisis broke out amid a changing global gas landscape. The rise of the liquefied natural gas (LNG) trade, unconventional gas boom in North America, shifting global demand and supply, and post-Fukushima recalibration in the nuclear sector, in particular, sparked debate over the future of Russia's gas weapon. For many, these changes augur well for reduced prominence of cross-border pipelines, general diversity and flexibility of supply, and uncertain demand outlook for Russian gas in established European markets. This deepening interdependence subverts Gazprom's monopoly position at home and abroad, eroding the potency of gas as an instrument of the Kremlin's foreign policy.[4] Others, however, claim that any "golden era" of gas is fleeting. Russia's persistent comparative advantages at landing gas in established markets, the continued strategic role played by transit states, diverse energy profiles among Western consumer states, feckless EU regulation, and domestic political costs of breaking up Gazprom's monopoly over piped gas to Europe, together, reinforce Moscow's determination to resist market reforms and engage in no-holds-barred gas warfare to mark its geopolitical resurgence.[5] That there has been both more and less gas conflict between Moscow and the other leaderships during this period than can be accounted for by these contending intellectual strains, however, suggests the need to reformulate this debate and reassess the resulting geostrategic implications.

The discussion that ensues offers a first cut at explicating the enigma of restraint in gas diplomacy surrounding the 2013/14 Ukraine crisis. It addresses two sets of important questions. First, what restraint? By what measure can the competitive bargaining be described as restrained in the gas crisis between the rise of tensions in November 2013 and the signing of the interim deal at the end of October 2014? Second, what motivated this restraint? What explains the gradual and limited escalation of the gas crisis during a period otherwise marred by significant and growing military tensions between Russia, Ukraine, and NATO countries?

To address the above questions, the article places the current Russia–Ukraine–Europe gas relationship into recent historical, sectoral, and analytical context. It opens by critically examining the issue of restraint in the contemporary debate over Russia's gas weapon. The second section highlights limits to this debate made evident by the contrasting character of gas diplomacy practiced during the 2006, 2009, and 2013/14 crises, and by the specific dimensions to policies pursued by Russian, Ukrainian, and European parties to the recent conflict. The third section probes key elements of the changing natural gas landscape for insight into mutual restraint at exercising the gas weapon. The real news here relates to transformation of the infrastructure for delivering gas from Russia to Europe, not simply to changes in regional energy flows or price. What distinguishes the recent from previous showdowns is that the former transpired with the simultaneous emergence of a regional gas network.

This budding Europe-Eurasian network—marked by the integration of diverse cross-border pipelines, multidirectional interconnectors, LNG terminals, gas storage facilities, and inter-organizational relations—portends the reduction in centrality of Russian gas supply, emergence of new supplier and retransfer hubs, and diffusion of strong business ties. Strategically, this is altering elements of political influence and vulnerability to tame noncommercial pressure at the national and corporate levels. The conclusion teases out practical guidelines for Western policymakers aimed at coordinating and sustaining pressure on Russia while offering possible off-ramps for future engagement in this emerging gas network.

RUSSIA'S GAS WEAPON: WHAT WE (THINK WE) KNOW

A common refrain is that a new "golden era" of natural gas—typically characterized by declining production costs, North America's energy revival, and increasingly abundant and diversified markets—is constricting Russia's capacity to exercise heavy-handed energy policies, if not driving it toward accommodation with traditional suppliers and European and Asian consumers.[6] Downward renegotiation of contracted prices and volumes, as well as steps toward import diversification across Europe and former Soviet bloc countries—especially heavily import-dependent Bulgaria, Lithuania, and Ukraine—are seen as harbingers of this power shift in Eurasian energy diplomacy. Especially conspicuous here are the agreements by Gazprom to refund $4.4 billion for adjusted contracts to European customers from 2011 to 2013, Moscow's acquiescence to international partnerships in the Arctic, and pending EU anti-trust legislation.[7] Still others attribute curbs on Moscow's influence, if not a more pervasive funk with its declining geopolitical leverage, to upheaval in the natural gas sector. As summed up by U.S. vice president Joseph Biden, the key to prompting restraint in Moscow's energy diplomacy rests with embracing these trends to develop "secure, diverse, and interconnected gas networks as the next step of European integration." [8] Accordingly, Moscow finds itself at a crossroads: it can either strengthen commercial competitiveness by embracing market pressures, playing by international rules of good governance, and liberalizing domestic upstream and export policies; or clutch onto the *status quo* at its own strategic peril.[9] The starkness of this choice apparently has not been lost on Russian officials and energy experts. They now openly acknowledge the serious challenges to Russia's power to set terms of gas exports, and champion liberalization of the domestic sector to bolster its future competitiveness both at home and abroad.[10]

Others—including President Vladimir Putin and senior Gazprom executives—regard the changing gas landscape as a boon to Russia. Although no longer dismissive of shale gas exploration as a vanishing "soap bubble," they underscore the costs and limitations to the spread of America's unconventional resurgence (especially in Europe). Touted are a combination of Russia's ingenuity, reputation as a reliable supplier, incremental supply advantages, asymmetric dependence, and prospects for diversifying exports to Asia. These factors together enable the Kremlin and Gazprom to undercut new competitors, preserve operational flexibility, and promote political ambitions vis-à-vis rival suppliers, opportunistic transit states, and vulnerable customers.[11] Favorable long-term supply deals with Serbia and Armenia, continued fragmentation and higher LNG prices across the EU, declining production in Norway and Algeria, defeat of the Nabucco bypass pipeline, prospective extension of the Nord Stream project, and wooing of Gazprom in the sell-off of the insolvent Greek national gas company, all speak to Russia's lasting stature in its most prized European gas market. Successive threats and the eventual cut-off of deliveries in response to Ukraine's persistent non-payments similarly betray Moscow's self-confidence at playing the energy card.[12] To the extent that new market challenges warrant domestic reform, the focus presumably has been on streamlining state guidance of the sector. This includes wooing Chinese investment in development and export of gas from West and East Siberia, prioritizing LNG exports, strengthening competition among politically connected producers, stimulating development of new gas output and outlets, and sustaining the indispensable role of gas for Russia's rentier political-economic system for the foreseeable future.[13] Anxiety about the lingering import dependence of allies and Moscow's success at fine-tuning its competitive price advantages in Europe and Asia, in turn, lies at the crux of new congressional legislation aimed at expediting U.S. LNG exports and calls for an assertive American posture in the new geopolitics of energy.[14]

This policy debate coincides with deep-seated controversy between realism and its critics over resource nationalism and attendant predictions of energy warfare. The former perspective, in general, roots interstate conflict in the fusion of state and company interests and disparities in relative power. States are either emboldened by energy wealth to instigate conflict and exploit market advantages and corporate profit-seeking as foreign policy tools, or prone to compete over unclaimed resources out of fear of vulnerability.[15] Other realist arguments feature impulses for conflict specific to the natural gas trade. Here fixed and heavily state-regulated gas pipelines are integral to power politics. The combination of rigid long-term contracting, absence of alternatives, "diktat" of point-to-point deliveries, and obsolescing bargains provide the fulcrum of energy coercion among lopsided supplier-, customer-, and transit-state relationships.[16] While realists may spar over who is to blame or specific causal pathways for conflict–and the degree to which domestic institutions and perceptions may filter state reactions to external challenges– they concur that power position in volatile energy markets is decisive for shaping both the propensity and success of a nation's energy warfare. To the extent that states refrain from wielding such advantages, they do so out of self-interest when the situation offers little promise for gain to either side from escalation. In this regard, the potency of Russia's gas weapon in dealings with Europe seems assured, given the preservation of its relative market power and prominence of the piped gas trade for the foreseeable future.[17]

Those who identify with neoliberal and market-based approaches take issue with a strictly zero-sum calculus of state-based competition. What matters most is supply stability—the ability to deter, mitigate, and contain threats to delivery. Market mechanisms, supply diversification, flexibility of delivering LNG, and availability of strategic reserves and storage facilities constitute shock absorbers to contain the negative effects of price volatility or discretionary national policies that may otherwise diverge from the interests of corporate stakeholders. The globalization of trade and financial markets–and attendant negative consequences of international market failure, supply disruption, and environmental externalities—exceed the capacities of states to manage individually and without due regard for commercial interests. This increases the salience of the independent preferences of energy firms and informational structures of international governance mechanisms that limit national strategies of energy coercion.[18] Similarly, the technical and stationary properties of pipelines and LNG facilities imbue exchange among commercial and political stakeholders with a sense of permanency that eases tensions; elevates the costs of conflict; and instills the logics of comparative advantage, maximization of netback value, and returns on investment to enable trust and political accommodation to take hold.[19] By extension, domestic institutions are seen as accentuating the constraints of energy interdependence, elevating the political costs associated with the breakdown of trade. The opportunities for aggressive posturing that do arise center on recouping commercial debts and improving market and transit performance; problems best redressed by clarifying the rules of the game rather than by engaging in arbitrary power plays. In this respect, multiple contacts and interdependencies reduce incentives to disrupt energy trading—if not foster an "energy détente"–by "facilitating reciprocity, enabling trust to develop, and increasing the independence of economic actors from political oversight."[20] Russia's diplomacy, therefore, is purportedly hemmed in by a series of interdependent and overlapping institutional interests that reinforce growing abundance, diversity, and flexibility of competitive gas trading in Europe.

Still others give prominence to sociological sources of energy diplomacy. Although there are many variants, these arguments converge on claims that national institutions or cultures are decisive for shaping the interests, visions, and capacities of contending stakeholders in respective policy-making processes. The aggressive pursuit of energy power is neither inevitable nor necessarily avoidable. Rather, the intensity of a nation's coercive gas diplomacy can turn on the relative strength of domestic proponents, priorities for energy security, corporate experience and conventions with cross-border engagement, reputational concerns, and/or perceived liabilities in the global energy trade.[21] Similarly, decision-makers can "securitize" pipeline politics, subjectively casting dependency on cross-border flows as an existential national security threat. Such formulations transcend international balances of power or market-based rules of the game to inform seemingly arbitrary offensives or curbs on energy statecraft.[22]

Closer scrutiny, however, reveals that these mainstream policy and scholarly discourses generally talk past each other, presenting categorical projections that are not in tune with the variable forms and outcomes of Russia's energy diplomacy. The debate typically turns on a spare view of pipeline politics. Physical gas cut-offs explicitly intended to advance Russia's foreign policy objectives have been rare, even with respect to highly vulnerable and recalcitrant customers in the Baltics, Moldova, Ukraine, and Belarus. Rather, Moscow's coercive gas diplomacy generally has been more nuanced and indirect than can be discerned from such overt gestures or showdowns. The Kremlin, too, has made choices concerning the form of its gas diplomacy. Relying on a variety of tactics—e.g. discretionary price cuts and hikes, "take-or-pay" obligations, state-supported subsidies and centralized control over the domestic sector, export tax exemptions, dumping cheap gas in foreign markets, and veiled threats of orchestrating a new gas cartel and arbitrarily switching deliveries between established import-dependent European customers and emerging markets in Asia—Moscow has repeatedly flexed Russia's tremendous natural gas endowments and diffused pipeline system against vulnerable post-Soviet customers and transit states. At times, these discretionary gestures have been pursued to the hilt, seemingly with little regard to the economic wisdom or pain inflicted upon downstream customers in Europe and Central Asian supply partners. On other occasions, the Russian gas lobby has refrained from pursuing the full range of coercive policies at its discretion, if not moderated its posture toward rivals or supplicants.[23]

Furthermore, energy policy has been neither well integrated into a coherent Russian grand strategy nor the primary driver of international cooperation or conflict. At home, structural impediments and institutional opacity have fueled divergent interests across the sector concerning investments, green-field development, pricing, taxes, distribution, access to pipelines, and corporate governance. These, in turn, have marred the Kremlin's capacity to marshal national gas resources from both state and independent companies for discretionary strategic purposes. The Russian state and Gazprom, in particular, also maintain a very special but complicated relationship. The former assigns to the latter potentially conflicting domestic, foreign, economic, and noncommercial objectives, while the company enjoys preferential treatment concerning tax, fiscal, privatization, and other administrative matters. As a state company that controls over 70 percent of domestic production, holds a monopoly over Russia's gas export pipeline system, and often serves the private interests of Kremlin insiders and murky intermediaries in foreign trading, Gazprom nonetheless has pursued independent downstream business interests and restricted the profitability and access of domestic independents. Although not necessarily at odds with the Kremlin's foreign policy, this parochialism has prompted internal political infighting and new forms of corruption across the energy sector. This has occasionally undermined Moscow's diplomatic flexibility and efficacy at leveraging the national gas infrastructure to project or withhold power.[24] Thus, in retrospect, alarmist characterizations of natural gas as a substitute for the nuclear bulwark to Russia's superpower status simply have been off the mark and a poor benchmark for measuring the character and effectiveness of Moscow's energy diplomacy.[25]

In addition, the contemporary debate overlooks that Moscow's bark often has been greater than its bite. Notwithstanding pointed attempts at manipulating the fixed and regionally defined natural gas infrastructure, success has been both more mixed and less effective than commonly presumed. To the extent that Gazprom has realized gains by playing pipeline politics, it has been more successful at wrangling preferential commercial terms for prices and volumes than at altering the politics or foreign policies of highly dependent customers.[26] Gas wars also are strategic; outcomes have been determined less by its uniform dictates than by the interaction of choices and counter-moves pursued by rival states and firms within given market and institutional settings. Physical shut-offs not only have been resisted, but escalated uncontrollably (and unintentionally) at great financial and reputational costs to Russian companies and the Kremlin, as well as to transit states and customers. That Gazprom had to follow through on threats to disrupt delivery while "codependent" on European gas revenues to fill federal coffers and offset loss-making across the sector, reveal the limited, if not double-edged, coercive potential of the gas weapon.[27] Accordingly, any talk of geopolitical chastening or empowerment brought on by a shifting gas landscape must distinguish cheap talk from the nuances, dilemmas, and variation in the track record of Russia's gas diplomacy.

WHAT RESTRAINT?

In the field of international relations, restraint typically includes adhering to desirable *ex ante* restrictions even in the face of attack, holding force in reserve, extending conciliatory gestures, and cooperating to deescalate an ongoing conflict.[28] At base is an appreciation that states choose to refrain from undertaking reciprocal or escalatory action that they otherwise have the capability, if not incentives, to carry out. In the case of the 2013/14 Russian–Ukrainian gas crisis, such restraint was exhibited, in distinction with the conditions and outcomes of preceding gas wars between the parties, by their tempered strategic interaction throughout the conflict.

Successive Russo-Ukrainian Gas Crises: A Mixed Bag

Recurrent gas crises between Russia, Ukraine, and Europe highlight different dimensions to Eurasian energy diplomacy. On the surface, there is compelling commercial logic to root trilateral cooperation. Moscow's long-standing quest to generate hard currency and cover trade deficits, for example, complements Ukraine's lack of large-scale alternative suppliers, as well as needs to cover domestic gas shortages and stimulate competitive dynamics in European markets. But these supply relations historically have been marred by politics on all sides, creating the most conspicuous and violent episodes of Eurasian pipeline politics in 2006 and 2009. The direct involvement of state companies, combined with politically negotiated gas prices and anxieties surrounding access to strategic resources, seemingly render conflict and physical disruptions inevitable, if not overdetermined. This baseline has been characterized by Kyiv's asymmetrical (up to 60–80 percent) dependence on subsidized imports from Russia, Ukraine's role as a transit state for 50–80 percent of Gazprom's deliveries to Europe, and Europe's willingness to construct new pipelines (e.g., Nord Stream) that bypass Ukraine while deepening its codependency on Russian gas.[29] As discussed elsewhere, Soviet legacy pipelines and pervasive domestic institutional and regulatory opacity, in particular, have compounded noncommercial risk-taking and aggravated credible commitment problems in strategic bargaining and contracting for all related stakeholders.[30] Yet, even a cursory review of the successive crises reveals marked contrasts that underscore the restraint in 2013/14.

First, the bargaining contexts varied considerably between the crises. In 2006 and 2009, the stakes were primarily commercial with undeniable political risk that drove the parties over the brink. Although Moscow was frustrated with different turns in Ukrainian politics that preceded both gas crises, the opportunities for extracting higher prices, exporting larger volumes, and controlling rents proved irresistible. The situation in 2006 was especially ripe for the Kremlin and Gazprom to gamble on imposing onerous terms of supply on Ukraine by precipitously increasing prices from $50 to $230 per tcm (trillion cubic meters). Gazprom, in particular, was motivated to turn up the pressure on its Ukrainian counterpart, owing to rising European prices and a 25 percent price hike on Central

Asian supply (shipped via a shadowy trans-shipper partially owned by Gazprom). This raised the costs of subsidies and nonpayments in dealings with Kyiv, while foreclosing independent deliveries to Ukraine. Moscow, too, was embittered by the results of the Orange Revolution, and inclined politically to punish the new pro-Western government for its nationalist rhetoric, intensive lobbying for membership pathways to NATO and the EU, and endorsement of other "color revolutions" that were percolating across the former Soviet space.[31] At the same time, dramatically deteriorating terms of trade with Gazprom, coupled with expectations of growing demand among both vulnerable Central European states and other large consumers of transited Russian gas (Germany and Italy), enhanced the potency of Kyiv's tacit threats to cut off supply as a bargaining chip with Russia, notwithstanding the risks to Ukraine's own energy security.[32]

Going into 2009, the incentives for risk-taking escalated. Gazprom could ill afford for Ukraine to default on its mounting gas debts while it was locked into covering expensive Central Asian supplies in the face of falling world prices, domestic production, and downstream European demand. The Kremlin, too, was emboldened to stem Russia's declining market advantages and leverage prospects for constructing pipelines directly to European customers. At the same time, both domestic political and economic conditions worsened in Ukraine. Kyiv, therefore, had less to lose by revoking successive agreements on price and debt repayment with Russia, unilaterally raising transit tariffs to the European level, exploring new avenues to deliver Central Asian gas that would bypass Russia, and altering the lineup of favored gas intermediaries and informal rent- collection arrangements. By the end of 2008, Kyiv was unable to settle its debts to Gazprom. Open conflict within the leadership and internecine links among cross-border traders, coupled with progress at redirecting gas from storage facilities and diversifying routes of supply for European customers, rendered Ukrainian officials especially prone to take risks at holding hostage the transit of Russian gas.[33] Restraint was virtually off the table.

The strategic predicament that engulfed the 2013/14 crisis arguably was even more conflict-prone. The political stakes were grave and invited escalation. What seemed to be a rerun of the 2004 public furor over the arbitrary policies of the incumbent leadership in Kyiv—this time in response to rejection of the Association Agreement with the EU rather than election vote rigging—rapidly devolved into regime change, annexation of Crimea, militant separatism among pro-Russian elements, and palpable danger of uncontrolled conflict between Ukraine, Russia, and NATO. The direct assault on Ukraine's territorial integrity and national sovereignty quickly displaced commercial energy haggling. Moscow's extension of loans and price discounts for first quarter deliveries in 2014, as well as subsequent imposition of terms for debt repayment and demands for pre-payments for new supply, effectively fell on Ukrainian deaf ears. The embattled interim government in Kyiv was simply too consumed by preserving basic solvency, preventing further dismemberment of the state, and holding legitimate presidential elections at the end of May 2014 to counter effectively the terms of Gazprom's new contractual demands. As the crisis was bookended by winter seasons that exposed Ukrainian and European downstream customers to Russia's gas leverage at their weakest moment, the bargaining conditions were especially ripe for Moscow to work its will.

In the face of the increasingly volatile strategic predicament, the second distinguishing feature of the successive gas crises was that outcomes varied significantly. The price and supply crisis in 2006 carried immediate knock-on effects for customers in Ukraine and across Europe whose service was interrupted for four days in the middle on winter. This shock and the ensuing price hikes proved decisive at undermining the Ukrainian economy going into 2009. Similarly, Russia's long coveted reputation as a reliable supplier also took a hit, prompting an internal EU policy review that identified Moscow's disregard for market rules and the lack of competition in the Russian gas sector as direct threats to Europe's future energy security.[34]

By comparison, the 2009 crisis clearly got out of control, with a protracted two-week supply disruption that imposed significant costs on all parties. Seventeen European countries were affected by the stoppage of Russian gas deliveries, with Bulgaria and Slovakia suffering complete cutoffs. Ukraine not only incurred heavy economic losses, but was forced to concede direct access to the domestic market to a Gazprom subsidiary, pay higher base prices for gas than European customers, and swallow onerous financial penalties for not meeting the new "take-or-pay" contract clause. It also was sidelined amid negotiations between European states and Russia on the Nord Stream and South Stream pipelines that stood to reduce its strategic importance as a transit state. Furthermore, the incumbent Ukrainian president, Viktor Yushchenko, paid dearly at the polls during the ensuing 2010 elections for the economic costs imposed by Russia's gas sanctions. He not only was voted out of office, but his successor, Viktor Yanukovych was rewarded for the concessions to Moscow by a sharp drop in gas import prices.[35]

Russia, too, paid dearly for the precipitous escalation of the 2009 crisis. It incurred a loss of over $1 billion in uncollected export revenues. Moscow also realized only a Pyrrhic victory with the wrangling of a controversial 25-year extension of Russia's lease of the Sevastopol naval base in April 2010. President Yanukovych extracted a 30 percent price discount on Russia's gas deliveries in April 2010, but then continued to play hardball. The latter included declaring illegal the 2009 settlement of the crisis, arresting his political rival Yulia Tymoshenko on seemingly trumped-up charges of making excessive gas concessions to

Moscow, resisting Gazprom's pressure for ownership of the national gas company, threatening to take Gazprom to international arbitration court to redress unfair pricing, and unilaterally reducing purchases by 50 percent through 2011 (with subsequent declines through 2013) in direct violation of the "take-or-pay" terms of the 2009 settlement.[36]

Furthermore, Moscow suffered more than reputational losses in its coveted European market. The protracted cessation of deliveries provoked the EU to take political action aimed at diversifying energy sources and reducing the vulnerability of its member states. This consisted of reinvigorating efforts to establish a Southern Energy Corridor to deliver gas from rival Eurasian suppliers via pipelines bypassing Russia, as well as to extend political and financial commitments to enhance third party access to Ukraine's transport system. The EU also strengthened its competition policy with approval of the "third energy package" that stipulated ownership unbundling of production and distribution assets. This also demanded access to investment in Russia's upstream in return for opening Gazprom's access to EU downstream opportunities. Over the ensuing two years, the EU gave teeth to these rulings by conducting dawn raids on Gazprom's operations and launching an anti-trust case to probe alleged denial of third-party access, unfair pricing, and restrictions on resale.[37]

In stark contrast, the gas dimension to the 2013/14 Ukrainian crisis was marked by mutual restraint. Throughout the period of escalating political tension–stemming from Ukraine's mounting gas arrears and flirtations of a trade agreement with the EU in fall of 2013 to the completion of presidential elections at the end of May 2014–there was no evidence of discretionary cut-offs of Russian supplies to and across Ukraine. In fact, the volume of gas supplied to Europe reached an historical high by the close of 2013 (30 percent of the EU market), with over 60 percent transiting Ukraine. Gazprom also paid out $3.5 billion in retroactive compensation for adjusted price terms with European consumers at this time.[38] Moreover, Kyiv doubled gas imports from Russia by the end of February through early March 2014 (as compared to the previous year), just as political tensions over Crimea's annexation and Ukraine's nonpayment reached a fever pitch.

Restraint Amid Confrontation, November 2013–November 2014

Throughout the latest confrontation, but especially when the civil crisis was seemingly spiraling out of control, all three parties made conspicuous gestures to step back from the brink.[39] For all of the brandishing of military force and media attention to Russia's gas weapon amid the violent protests leading up to the ouster of then-President Viktor Yanukovych, Moscow kept its cool; it neither shut off gas to Ukraine nor embraced a uniformly hardline policy towards Kyiv. The initial response to Kyiv's mounting gas debts, unilateral reductions in import volumes, and concerted efforts to diversify supply, was to avoid enforcing requirements for pre-payment (as stipulated in the standing 2009 accord) and to offer temporary relief. In conjunction with the December 2013 announcement to purchase Ukrainian bonds worth $15 billion as an effective loan, Putin reduced the price of gas for Ukraine from a European high of $485.50 per tcm to $268.50 per tcm through the first quarter of 2014. He subsequently released the first $3 billion loan tranche without requiring Kyiv to clear the $2.7 billion debt carried over from 2013, and promised not to review these offers should the political opposition to the Yanukovych government take power.[40] At the end of January 2014, Putin expressed empathy, noting that the loans and temporary gas price reduction were extended without specific conditions to "support the people of Ukraine, not the government. It's the ordinary people who always suffer."[41] Curiously, this contrasted with the virtual shutdown of the important cross-border truck trade during the same period.[42]

Moscow also did not initiate a gas war immediately following the impeachment of Yanukovych on February 22, 2014. As Ukraine's debt mounted and Moscow announced an intention not to renew the first quarter price discounts in early March, Gazprom offered to extend a $2–3 billion loan to help Naftogaz pay for new imports. It also prepaid $5.5 billion for the transit of gas through Ukraine to the end of 2014.[43] Again, in April 2014, Putin sent an open letter to European leaders decrying unilateralism and appealing for a mutually beneficial approach to redress Kyiv's structural economic problems at the heart of its accumulating gas debts to Russia. He chastised European officials for approving irresponsible trade imbalances that exacerbated Kyiv's growing gas debt to Russia, and warned of a pending critical situation that could warrant a future cut-off of deliveries to Europe. Yet, he called for a coordinated response among equal partners. Putin also tempered this posturing by pressing Gazprom to delay implementation of prepayments that were otherwise contractually stipulated. "We could do it today, but we will wait another month," he stated.[44]

As the political and financial situation deteriorated through the Ukrainian presidential elections, Russia sent conflicting signals on the gas front. By early May 2014, Gazprom's position hardened. The state company threatened to halt all deliveries to Ukraine if the latter did not pay the $3.5 billion gas debt by the end of the month, and demanded prepayments for future sales (as well as an extra $4–5 billion for Russian gas to be put in Ukrainian storage for the coming winter) starting June 2, 2014. This was coupled with renewed offers to avert a possible knock-on trade war with the EU by promoting the South Stream pipeline, increasing Russian LNG production and export capacity, and boosting Gazprom's deliveries and access to storage facilities across Europe–a clear swipe at Kyiv.[45]

Just as Gazprom ratcheted up the pressure, Putin and Prime Minister Medvedev extended an olive branch. While permitting maximum daily flows to Ukraine under the prevailing contract, they repeatedly stated that Kyiv did not have to repay the entire debt to avert demands for prepayment, and that Moscow was willing to explore future price discounts. The call was for Ukraine to make a firm commitment to repay at least part of the outstanding debt. As Medvedev put it, "We aren't saying they have to pay $3.5 billion all at once, but give us a timetable for paying off these debts, especially since Ukraine has just received a tranche from the IMF [International Monetary Fund], and both the Americans and Europeans have promised loans."[46] As trilateral negotiations subsequently resumed in Berlin following the Ukrainian presidential elections, Putin reiterated Moscow's "respect" for the choice of the Ukrainian people, and determination to restore cooperative gas relations. The latter included offers to defer prepayment requirements and lower future prices —upon Kyiv's agreement to immediately pay back at least $2 billion of the $5.2 billion debt otherwise claimed by Gazprom due at the beginning of June 2014.[47]

Gazprom ceased delivering gas to Ukraine on June 15, 2014. Yet, Moscow postured to soften the blow. The Kremlin was careful, in particular, to avoid imposing unconditional terms following Gazprom's transition to prepayments and the counter-suit it filed against Naftogaz for recovery of $4.45 billion in debts in the Stockholm arbitration court. From June 16 to October 21, 2014, Moscow left the door open for compromise by consistently offering future price discounts, once a partial debt repayment was received and fixed price terms were agreed for future contracts. With respect to debt recovery, the primary focus turned to identifying mutually acceptable amounts and time periods. Moscow seemed eager to receive an earnest payment from Kyiv to reassure the other terms, even without settling final prices for past and future deliveries. Gazprom, for its part, proposed to continue negotiations and relax future requirements for prepayments if it received $500 million for the deliveries between April and May 2014 that were not contested.[48] The Russian gas company followed up by proposing to apply part of Naftogaz's gas debt to pay for gas transited through Ukraine in 2015. Although potentially self-serving to ease its own tax burden in Moscow, the gesture effectively introduced a non-monetary option for gas settlement at a time when Kyiv had little money to extinguish its debts.[49]

Moscow ultimately signed a trilateral framework agreement (with Kyiv and Brussels) on October 30, 2014. This occurred notwithstanding Gazprom's last minute posturing —including an alleged temporary slowdown of deliveries to four European customers in response to their sending reverse-flow gas to Ukraine. This interim deal called for Gazprom to receive $3.1 billion of Kyiv's gas debt by the close of 2014, as well as a prepayment for up to 5 bcm (billion cubic meters) in new deliveries through March 2015. In addition to accepting a flexible installment plan for recouping partial debts from late 2013 and early 2014, Gazprom accepted discounted terms (interpreted as a withholding of export duties) for debt recovery, as well as reduced prices for deliveries during the last two months of 2014 and the first quarter of 2015. The latter enabled Ukraine to cover possible shortfalls during the worst part of the coming winter. Furthermore, Gazprom agreed to prepay transit fees for 2015. In effect, the Russian government accepted a temporary compromise–at prices that were more than 20 percent less than what Gazprom charged following Yanukovych's ouster while suffering more than $100 billion and without a long-term contract amid declining prices that were expected to last well into mid-2015. In addition, Gazprom was left to press its claims in the Stockholm court for receipt of an additional $2.2 billion debt that remained in dispute.[50]

Kyiv, too, showed restraint as the general crisis got heated. Gas transit proceeded without a glitch from summer 2013 through the end of October 2014. Even as the political row with pro-Russian separatists and Moscow escalated in the aftermath of the regime change at the end of February 2014, the interim government upheld previous commitments to ship gas to Europe on par with levels from previous years.[51] Most notably, however, both the Yanukovych and interim governments moderated their defiance of Russia's gas policies. On the one hand, by mid-summer 2013, Kyiv was not deterred by Moscow's refusal to renegotiate seemingly "unfair" contacts and control of the spigot, as it began unilaterally to shirk its "take-or-pay" obligations by reducing volumes and again to accumulate debts for gas deliveries. By November, the Yanukovych government stopped gas purchases from Russia altogether—justified by declining national consumption rates, a milder winter than expected, and brimming storage reservoirs–and threatened to boost reverse flows from Poland, Hungary, Slovakia, and Romania that had been initiated at the end of 2012.[52] With an eye toward the longer term, Kyiv initiated planning for an LNG plant on the Black Sea and engaged with China on a project to convert coal-water slurry and gasify bituminous coal. Yanukovych also sealed contracts with Chevron and Shell to explore and develop the country's large projected shale deposits. As he boasted at the time, these deals would "let Ukraine satisfy its gas needs completely and, under the optimistic scenario, export energy resources by 2020." Yanukovych then openly declared that the deal for cheaper gas with Russia signed in December 2013 would "in no way" alter the commitment to shale prospecting deals.[53] On the other hand, upon receiving the first tranche of loans from Russia in January 2014, he moderated this posture. Yanukovych authorized payment of $1.28 billion of the $3.3 billion 2013 gas debt to Gazprom, and then announced the cessation of reverse-flow gas deliveries from Europe.[54]

Notwithstanding Moscow's disregard for its political legitimacy and the ensuing rise of militant pro-Russian separatists in eastern Ukraine, the embattled interim government continued to temper its reactions on the gas front. Unable to cover its debts, it fell increasingly in arrears to Gazprom through May 2014. The government formally rejected the "high political price" imposed by Moscow with the discontinuation of the first quarter price discounts, and demanded a market-based formula for both clearing its debts and arranging future deliveries. Kyiv acknowledged that the patience with upholding transit amid Moscow's recalcitrance was "not unlimited," and continued to regard its accumulating debts as an instrument of leverage over Gazprom. The fear was that repayment would give Moscow a free hand to exploit future terms.[55] The interim government also took Gazprom to the arbitration court in Stockholm to settle the price dispute and secure compensation for the nationalization of offshore reserves. At the same time, however, it refrained from even intimating political intentions to disrupt the transit of Russian gas, even as the country convulsed from the prospects of dismemberment that was encouraged, if not facilitated, by Moscow. In addition, Kyiv redoubled efforts to protect the pipeline infrastructure from the threat of sabotage by Ukrainian nationalists.[56] Furthermore, both the interim and newly elected leaderships in Kyiv waved the carrot of being prepared to pay Gazprom $4 billion to both settle accounts and contract for future deliveries upon mutual agreement on price.[57] By the end of May, Ukraine's energy minister formally approved the transfer of $786 million to Gazprom to cover deliveries in February and March 2014. He underscored a renewed commitment to negotiate in good faith repayment of the country's outstanding debts and specification of market-credible prices for future deliveries before Gazprom's June cut-off deadline.

Ultimately, Kyiv compromised on the terms for an interim settlement at the end of October 2014. Notwithstanding the strong preference to lock in prices for future deliveries before settling the outstanding debt, the Ukrainian leadership agreed to repay $3.1 billion by the end of 2014 and to prepay for up to 5 bcm on "take-or-pay" terms through the end of March 2015 in the trilateral "winter package." It accepted an interim price that included Moscow's discretionary discount, notwithstanding lingering claims that $325 per tcm was the only fair price for summer deliveries. While Kyiv did not obtain additional financial support from Brussels to cover these obligations, it did receive permission to draw on existing EU and IMF loans to pay for winter deliveries. Kyiv prevailed both at securing European purchase of Russian gas on Ukraine's eastern border and maintaining flexibility to buy future supply at lower prices. Naftogaz also continued to press its case in the Stockholm court for $6 billion in compensation for "overpriced" gas supplied since 2010, and to withhold final debt repayment until this judgment was rendered. Yet, Prime Minster Arseniy Yatsenyuk made explicit Kyiv's determination to safeguard the transit of gas in order not "to give Russia a chance to blackmail Ukraine and Europe."[58]

Similarly, the EU Commission strived to carve out a moderate posture amid a widening political gulf among member states over fears of supply disruption. Although Russian gas imports represented only 6 percent of EU-wide energy consumption, the perception of vulnerability to short-term disruption was pervasive, especially among "price-takers" in Southeastern and Central Europe.[59] Officials from Poland and the Baltic states–joined by German chancellor Angela Merkel–pressed for tougher sanctions against Moscow as punishment for the annexation of Crimea. As stated by the Polish foreign minister, "while we have to weigh the costs of sanctions, passivity in the long term may end up costing us more." This sentiment was capped by a series of measures that included a nonbinding EU parliamentary vote to impose restrictions on Russian energy companies, a public commitment among Visegrad states to devise a "solidarity mechanism" to confront Russia's monopolistic gas policies, and threats to scuttle Gazprom's favored South Stream pipeline and the OPAL pipeline link to Nord Stream by strengthening EU regulations on ownership and third-party access.[60]

On the other hand, EU officials had to balance the concerns of Italy, Bulgaria, and Hungary about deepening ties with Russia, in order to avert a costly conflict. They championed Russia's historical reliability as a supplier, as well as the promise that the Nord Stream and South Stream pipelines hold for circumventing future Ukrainian transit troubles and ensuring that Gazprom will fulfill its contractual obligations to European consumers. Bulgarian officials, specifically, were quick to remind Brussels that "solidarity is one of the key principles on which the European Union was set up. The European Commission should take into account the negative effects for each member state of its future actions."[61]

Facing these internal political divisions and the pressure of unfolding events on the ground, the EU Commission delicately balanced political resolve with legal and technical restraint. On the political side, Brussels underscored that Gazprom had not satisfied the Commission's concerns over antitrust abuses and threatened to bring formal charges by preparing a statement of objections. Although the EU's competition policy chief complained about lingering obfuscation concerning prices, he was quick to acknowledge the progress demonstrated by Gazprom's "good comments" concerning restrictions on re-exports of imported Russian gas and the squeezing out of alternative suppliers.[62] As the crisis unfolded, the EU called upon Moscow to uphold nonbinding commitments to the updated 2011 "early warning mechanism." This obligated the parties to provide advanced notification, consultation, and monitoring of emergency measures to arrest a crescendo of potential risks to mutual energy security. This was reinforced by outlining proposals for member states to stress test emergency procedures for increasing gas stocks, reversing flows of interconnectors, reducing demand, and switching fuels in the event of a short-term disruption. The latter was capped by release of the "European Energy Security Strategy" in May 2014, which called for complementing emergency measures with long-term commitments by member states to bolster efficiency, diversify supplier countries and routes, protect critical infrastructure, and inform the Commission and speak with one voice on matters directly affecting the EU's security of supply.[63]

Finally, the EU took the lead at orchestrating trilateral talks, stressing the need for mutually acceptable compromise. The Commission, for example, endorsed talks between EU and Russian gas industry officials that reiterated both Russia's obligation to supply Europe and Kyiv's obligation to allow transit.[64] Following the Ukrainian presidential elections, the EU's energy chief, Guenther Oettinger, structured a compromise proposal that called on Gazprom to drop demands for prepayment in return for Kyiv's immediate payment of the $2 billion debt for gas delivered before April 2014 when the price was not contested. The latter was to be followed by another payment of $500 million by early June to cover half of Kyiv's debt for April–May gas supplies as a goodwill gesture to spur agreement on new prices for future deliveries. He consistently sought to strike a mutually reassuring tone, expecting "that the Russians will at last propose a market-based price. But on the other hand, I think that Ukraine is in a bad position if it doesn't make the partial payment for gas that's been delivered."[65]

Amid the fits and starts of negotiations in October 2014, Oettinger pressed both sides to reach the temporary compromise that was heralded as a "breakthrough" for de-escalating the crisis. He strived to break the endgame logjam by endorsing Moscow's concessions on temporary prices, the need for each party to meet all supply and transit obligations, and the imperative for agreement on a repayment plan for unsettled bills. The EU Commission flatly rejected a bilateral deal with Russia to guarantee Ukraine's repayment and made explicit that it would not provide a "financial bridge." However, it did promise "unprecedented" financial assistance and to allow Kyiv to draw on existing EU and IMF assistance ahead of schedule to meet to it gas obligations. Through these efforts, the Commission effectively endorsed Kyiv's payments to Russia shortly after imposing a new round of EU sanctions on Moscow for its policies in eastern Ukraine.[66] Moreover, Oettinger intimated a softer tone with Moscow by including Gazprom's use of the OPAL pipeline as part of the interim deal. He also urged both sides to press respective cases in the Stockholm court. With the price issue contested in Stockholm, Oettinger remarked, "no party would have an interest in damaging its legal position in front of the court" by undertaking further discretionary action.[67]

AN EMERGING EUROPE–EURASIAN GAS NETWORK

While it is too early to uncover the precise decision-making behind the main story line of mutual restraint in the 2013/14 gas crisis, a distinguishing feature is that it transpired amid a profoundly changing global natural gas landscape. Over the past several years, the growth of unconventional production (especially in North America), as well as the knock-on rerouting of imports originally destined for the United States and the rise of the LNG trade, have fundamentally altered the political geography of global gas supply and demand. Whereas the former is boosting production in critical North American and Asian consuming regions, the projected growth of global LNG import/regasification capacity and flexibility of delivery are generating pressures to liberalize domestic markets and introduce spot-pricing in regional markets. Together the abundance of new suppliers and export options slated to come on line over coming decades, coupled with the uncertain recovery of European gas demand, portend delivery of new volumes of competitively priced gas that are expected to stress the standing of traditional suppliers, such as Russia, in established markets.[68]

The strategic implications of this new era of gas have been receiving attention.[69] Yet, regional differentiation in mechanisms of price formation and contractual supply arrangements complicate conventional projections primarily based on changes in flows and price. The profitability of delivering new supply and scaling up LNG in Europe, for example, is influenced by different developments and trends occurring in North America and shifts in Asian demand. Such changes can pull European LNG volumes to Asia where spot-pricing is higher, thus altering investment trajectories within the European market. In 2013, for example, with the slowdown of demand, enhanced pipeline options, limited shale gas exploration, and increased coal supplies, the EU utilized only slightly more than 25 percent of existing LNG regasification capacity. It also had the lowest volumes of net LNG imports since 2004, and re-exported LNG to higher-priced Asian markets. The long-term uncertainty of competitively priced LNG effectively sustained oil-linked price indexation and the market power of traditional pipeline providers, such as Russia, notwithstanding the global expansion and diversity of supply.[70]

What is unambiguous, however, is the growing resilience in the gas infrastructure. Specifically, regional gas markets are to differing degrees becoming more integrated both with each other via multiple cross-border pipelines and construction of new LNG terminals for importing gas, and internally by links between intraregional connectors, gas supply facilities, and respective regulatory environments. These trends are creating regional gas networks that are characterized by the geographical diffusion of hubs and links. Whereas the former are defined by the convergence of large-scale supply and demand, import/export, and/or alternative transmission infrastructure; the latter consist of the delivery, and institutional and corporate ties that permit the gas to flow between hubs. These networks vary in terms of the maturity of the gas infrastructure and linkages across energy and transportation sectors within hubs, as well as with respect to the density and variety of interconnectedness of the physical and institutional linkages between hubs. Moreover, the value and resilience of a gas network increases with greater density and diversity of supply, allowing gas to be delivered to and from multiple directions.[71] At the same time, the internal resilience of the network rests on the transparency and strength of transnational social ties among government and corporate actors that share similar interests. These ties shape market and contracting relationships critical to developing delivery infrastructure, managing congestion, and determining pricing and volumes within these integrated gas systems.[72]

As social network theory tells us, this architecture of relationships determines not only the actual flows of gas but the influence of different regional stakeholders. Political advantages can accrue to hubs at the center of networks that can withstand disruptions from one component, as well as to stakeholders that enjoy tighter and trusting connections and privileged access to resources with foreign partners operating in local markets. Consequently, as regional gas networks evolve, the economic and political significance of asymmetries in point-to-point pipeline delivery wanes, giving way to new forms of power, vulnerability, and influence that emerge around the centrality of hubs and character of social relationships.[73]

These trends have been especially conspicuous in Europe since 2009. Specifically, multiple pipeline and LNG import facilities, interconnectors and reverse flow options, new gas storage facilities, and deepening of cross-border commercial ties have converged to constitute a Europe–Eurasian gas network. The interconnections of the infrastructure highlight the growing centrality of mature and new hubs, as well as cross-cutting institutional and corporate-level ties.[74] This structure has created new opportunities for managing bottlenecks and collective responses to crises. It also began to constrain Russia's market power while preserving its salience as a commercial partner; effectively dampening incentives for discretionary coercive behavior but discouraging defection from established transnational business ties. In short, the early transformation from predominantly point-to-point delivery into a regional gas network began to alter prospective roles and dimensions of dependence, accentuating both market constraints on unilateral supply disruptions and indirect opportunities for politics to come into play. Together, these features have introduced cross-cutting and restraining pressures on Russian, Ukrainian, and European stakeholders alike.

Emerging Hubs

A distinguishing structural feature of the emerging European gas network is that power is diffusing not only to interdependent stakeholders that constitute large suppliers or customers, but also to those that enjoy centrality within the network. Centrality reflects the relative importance of a particular node for linking other high-value nodes within an emergent, dense, and diverse set of overall inter-relationships that define the network, as opposed to depicting relative power within a specific dyad. This can be measured in a number of ways, including by the relative number of direct ties to other nodes within the network ("degree of separation"), number of shortest paths between nodes that go through a single node ("betweenness"), and the level of connectedness to other highly connected and high-value stakeholders both internal and external to the network ("big fish linked to other big fish"). While the different forms of centrality affect the type of influence possessed by a node—leader vs. conduit, local vs. network-wide, prestige, and so forth–in general, the strategic implications are similar: the higher the centrality of the node, the more difficult it is to substitute for the resources and links that it controls, thus the more capable the node is at coercing, bribing, rewarding, or punishing others within the network. Conversely, peripheral nodes are less able to shape exchange within the network to their advantage.[75]

The diffusion of power within the European network is marked by the arrival of satellite hubs that create opportunities for incremental competition with Russian imports. The Baltic states and Poland, for example, are emerging as a North–Central European hub with development of related LNG facilities and interconnectors. Lithuania's approval of an offshore LNG-processing facility is capable of providing up to 60 percent of its domestic needs and breaking Gazprom's monopoly grip. When coupled with the enhancement of bi-directional interconnectors with Latvia, Estonia, and Poland; modernization of storage facilities in Estonia; as well as planned development of an LNG terminal in Estonia and the prospects for a new interconnector between Poland and Croatia, this subsystem creates opportunities to bring Baltic "energy islands" into mainstream EU trading and to swap deliveries from Northern to Southern Europe.[76] As suggested by Moscow's May 2014 price concessions to Lithuania, by putting additional market-based infrastructure and regulatory policies in place to allow eventual spot-price trading, this "northern hub" will be in better position to negotiate favorable terms and defuse Gazprom's ability to manipulate asymmetrical dependencies within the broader EU market.[77]

Slovakia, too, is emerging as a complementary Central European satellite hub to blunt the political externalities of

Russia's market power. As the EU member best situated to "reverse" the flow of gas to Ukraine, plug into Hungary's gas grid, and link up to a currently constructed Polish LNG plant and interconnectors with Poland and the Czech Republic transmission systems, Slovakia is becoming a central player in efforts to alleviate pressure imposed by Gazprom. With the signing of the Poland–Slovakia interconnection project in November 2013, Bratislava is well positioned to be a major element of the EU North–South regional infrastructure, with direct links to gas potentially imported from the Caspian region via the Southern Corridor. Possessing up to 10 bcm per year of spare capacity in the existing trunk line from Russia's Siberian fields, Slovakia's pipeline system became a focal point in Kyiv's efforts to enhance its reverse- flow options during the recent crisis. By the end of April 2014, the parties agreed to a scheme whereby Slovakia will send up to 9 bcm per year (nearly 20 percent of Kyiv's import demand) from its "take-or-pay" surplus with Russia through a technically modified pipeline originally built to transport gas from Ukraine but currently unused.[78] This memorandum was widely heralded across Europe as marking the "first step to diversify Ukraine's source of gas supply and contribut[ing] to greater energy security in Eastern Europe and the EU as a whole."[79] As a sign of Slovakia's emerging centrality within the network and political assertiveness (and attendant distance from Gazprom), Bratislava both sustained its reverse-flow commitments to Ukraine in September 2014 in the face of Moscow's protest and veiled threat to slow direct supply, and pressed Kyiv to undertake reforms to reduce its gas consumption.[80]

Taken together, the expanding external and internal links within the European network bolstered energy security across both the EU and Ukraine throughout the crisis. By some accounts, the combined effects of new options for diversifying external LNG supply sources, switching from gas to coal, and coordinating management of complementary demand patterns and pipeline capacity within the European network, fundamentally enhanced prospects for intraregional resilience. In this context, replacing Russian supply remained costly but was no longer inconceivable in the near term, even for some of the most import-dependent states in Central and Southern Europe.[81] A similar situation began to take hold for Ukraine. Notwithstanding the shortfalls in domestic production and Gazprom's withholding of deliveries, Ukraine was well positioned to service the lion's share of domestic gas supply going into winter 2014/15. The commitment to receive 15 bcm in reverse flow from Slovakia, Hungary, and Poland proved critical for Kyiv to close the gap between the projected demand of 50 bcm in 2015 and available domestic measures for tapping reserves in storage, enhancing gas recovery to ramp up production in existing fields, and introducing efficient but realistic rationing plans. Consequently, Kyiv only needed to turn to Russia to lock in 5–10 bcm to make it through a mild 2015.[82]

Russia: Down but Not Out

Notwithstanding the blows to Gazprom's monopoly position, Russia is not on the ropes, especially in European gas markets, for the foreseeable future. With knife-edged differences among competitors in the global economy, European utilities, firms, and states are still acutely sensitive to fluctuations in price. The sector's history of price volatility and need to lock in stable delivery for base-load power generation make it difficult to dislodge Russia and increase investment risks for ensuing future supply diversity amid episodes of cheap gas. The deregulated U.S. gas market and attendant incentives for private and medium-sized gas-on-gas competition—so critical to spawning the shale revolution—are difficult to replicate in Europe, where national energy companies and existing contracts remain entrenched. Although the U.S. shale boom has replaced or displaced previous natural gas supply, it has not fundamentally altered the import dependency of large gas customers in Europe or Asia. Should the knock-on effects of redirected supply eventually pose a drastic challenge to Russia's deliveries to Europe, they also risk hurting the interests of key Caspian long-distance pipeline suppliers, post-Soviet transit states, and Turkey as an emerging gas hub.

This structure of the industry perpetuates Russia's competitive commercial advantages as a central supply node for Europe. Soviet legacy investment, production, and large-diameter cross-border pipelines effectively reduce actual production and delivery costs, ensuring Gazprom suitable margins for landing gas to Europe in comparison to building rival pipelines from Central Asia or covering high LNG break-even costs.[83] Although volumes and revenues may take a hit as Moscow pursues selective price advantages, Russia is nonetheless poised to preserve market share, especially in highly dependent, differential, and liberalizing local markets that move increasingly on marginal cost advantages and price signals.[84]

The latter point was evidenced most clearly in the cases of Bulgaria and Hungary throughout the latest gas crisis. Bulgaria—which remains dependent on Gazprom for 80 percent of gas imports and a prospective beneficiary of transit fees from future Russian cross-border pipelines—consistently challenged the EU's position on ownership unbundling. In a curious twist to the saga of the South Stream pipeline, the Bulgarian parliament backed Gazprom by exempting a small under-sea section of the project from EU's third energy package. By classifying the pipeline segment within Bulgarian territorial waters as part of the country's offshore "gas grid interconnection," Gazprom would not be required to open access to third parties. As underscored by the Bulgarian foreign minister, "South Stream is a very important project for Bulgaria. The whole of our parliament is in favor of it and other EU member states should not be held hostage because of the Ukraine crisis. We will do whatever possible to conclude the pipeline."[85] Hungary, too, was reluctant to challenge Gazprom's opposition to its re-export of gas to Ukraine. Confronting indirect pressure in the form of Gazprom's retarded deliveries to Poland in September 2014, the Hungarian prime minister announced that re-exports to Ukraine would be cut temporarily in order to replenish the national reserves. In so doing, he admitted, "Hungary cannot afford to get into a situation in which, due to the Russian–Ukrainian conflict, it cannot access its required supply of energy."[86]

Nevertheless, the diversity of supply, burgeoning intraregional trade, and uncertainty of EU demand dampen Moscow's ability to strong-arm downstream customers, especially as long-term supply contracting turns on future expectations. As Russia confronts daunting challenges and rising costs of opening up conventional green-fields in East Siberia to manage the decline of production in West Siberia or realizing its shale potential, it could eventually find itself priced out of these highly competitive European markets. But such difficulties again must be measured against market barriers to entry for rival pipeline suppliers and start-up costs of new LNG facilities, as well as political resistance to shale gas production across Europe, scaling up U.S. LNG exports, and tapping methane hydrates and other unconventionals in Russia and the Arctic.

Ties That Bind

In addition to the centrality of emerging national nodes, the European gas network turns increasingly on interrelationships between the top national and independent energy companies operating within the network. As described by others, these corporate relationships—reflected in joint ventures, equity stakes, investment, ownership structures, executive exchanges, geographical expansion, and vertical integration—mediate the impact of price fluctuations, geopolitical tensions, national political pressure, changes in supply and demand, and financial crises. They not only alter the distribution of power within the regional gas network, but also blur the distinction between state and private ownership. Moreover, given the underlying commercial rationale for these corporate relationships and strategies, they at minimum introduce cross-cutting incentives that confound the arbitrary intervention into the gas market of respective European and Russian national policymakers.[87]

The challenges presented by the diffusion of network hubs to Russia's market position, for example, have been partially moderated by the persistence of strong institutional ties at the national and corporate levels across the EU. On the one hand, since 2011 the EU Commission has registered significant advances in formally developing a common energy policy with the initiation of antitrust cases, as well as mandated authority to negotiate legally binding treaties with Azerbaijan and Turkey for construction of the trans-Caspian pipeline and to review agreements reached by member states and companies with third parties. On the other hand, Gazprom continued to enjoy the highest number of interstate corporate relationships across the European network.[88] The entrenched institutional ties between Gazprom and political insiders across highly dependent Eastern and Central Europe have proved resilient and potent voices for preserving gas relations with Russia amid EU-wide efforts at diversifying supply. Slovakia, for example, rejected Ukraine's proposal for a "virtual" reversal-of-flow scheme that would allow Kyiv to siphon gas from Russian-transited deliveries via a looped pipeline. Officials and private energy stakeholders in Bratislava acknowledged that the proposal was technically and legally impossible "without the consent of Gazprom." Consequently, they fended off the political pressure and frustration from Brussels and Kyiv, and settled for terms that would deliver slightly reduced volumes and redirect a projected surplus without undermining commitments to Moscow.[89]

The recent Ukrainian crisis has also illuminated the intensity of interstate corporate ties between European and Russian gas entities. Prominent energy companies across Europe—obliged to earn profits for their shareholders–have relied increasingly on long-standing and trusted business partnerships with Gazprom and their experience of reliable supply to navigate the uncertainty of the changing landscape. Accordingly, as international tensions mounted and sanctions were imposed in the recent crisis, some of the largest multinational energy stakeholders "doubled down" on gas investments and forged closer business ties with Gazprom.[90] Leading German companies not only claimed that they would always be dependent on Russia and lobbied against disrupting irreplaceable ties as punishment for the annexation of Crimea, but openly took steps to ensure that their business practices with Gazprom would not be put at risk with deeper political fallout. The chief executive of the German energy company E.ON, for example, stressed Gazprom's reliability, claiming that there had not been a single day that the Russian company used gas as a strategic weapon against European consumers. Posting its first losses since 1949, German's second largest utility company, RWE, agreed in March 2014 to sell its oil-and-gas production subsidiary to two Russian tycoons. This was endorsed by the government, and capped a major strategic realignment of the company's production in the North Sea and development in the Caspian region, strengthening Russia's foothold in these alternative supply areas. Similarly, Gazprom and Wintershall—a German subsidiary of BASF—signed a master agreement for an asset-swap deal that effectively transferred 100 percent of the company's gas-trading business, as well as a 50-percent stake in exploration and production activities in the North Sea, to its Russian partner, in return for a 25-percent share in block development of Russia's Achimov deposits in the Urengoyskoye region. This deal, approved by Brussels and Berlin, effectively put German gas storage in the hands of the Russian government and emboldened the company to pressure the EU to approve Gazprom's wider access to the OPAL pipeline that otherwise restricted the capacity of the Nord Stream pipeline.[91] Similar efforts were undertaken by France's Total SA, which affirmed its investment in Russia's Yamal LNG project, and Italy's ENI, which struck a landmark deal with Gazprom that abandoned oil-price indexing in long-term bilateral deals and effectively provided a 7-percent discount on deliveries backdated to the beginning of 2014.

CONCLUSION

Will the mutual restraint in averting a gas war hold? Much will depend on the maturity of emerging satellite hubs and the density and character of political and corporate relationships in the evolving European gas network. Although it will remain commercially significant, the political content and effectiveness of Moscow's gas diplomacy will be more circumscribed in the future, owing to the dissipation of its geographic, logistical, and social centrality within the network. Ultimately, this course will turn on game changers beyond Moscow's control, such as the future of U.S. gas exports; prospects for bringing conventional supplies on line from Iraq and Iran, offshore gas from the Arctic and Eastern Mediterranean, and unconventional exploitation across Eurasia and beyond; the fate of global climate change policy; the commercialization of gas in the transportation sector and appeal relative to cheap coal and other base-load sources; China's pursuit of energy diversity and security; and the implications of each of the above for rebalancing power between regional consumers and suppliers. Such developments will be interdependent and beyond the grasp of any one state to control.

Yet, policymakers in Europe and Washington face hard choices on gas that could affect the character of their non-commercial relations with Russia and across the Europe–Eurasian network that is taking shape. With tighter sanctions already in place, the focus for policymakers in Brussels and Washington moving forward should be on damage control that accentuates the density of the emerging European gas network. Promoting transparency and market reforms, as well as introducing targeted tax breaks and favorable lending terms and guarantees, should be the guiding principles. This could allow Western governments to accelerate investment directly in the construction and integration of the gas infrastructure and facilitate price correlation across European hubs that the ongoing recession and market itself may be slow to deliver. In the short run, this can strategically attract the Western investment redirected from the sanctions and Moscow's retaliation to bolster inter-regional flows and price efficiency for spot-market trading. Rather than confront the strong ties—both among emerging European hubs and Moscow and among Western and Russian firms—with even harsher sanctions, officials in Washington and across the EU should embrace market trends by promoting diversified and competitively priced deliveries both into and within the European gas network. Washington, in turn, could complement these initiatives by easing the transaction costs of exporting LNG, either directly or indirectly via Asian re-exports/knock-on effects. Although presenting only a modest challenge to Gazprom's market share in the short run, this would send an important signal for aligning national security and market decisions in support of the integration and institutionalization of crisis management within the Europe-Eurasian network.

With a gradual relaxation of tensions with Moscow, European customers could benefit from keeping the door open for engaging commercially competitive Russian gas interests. This could include working more closely with Russia's rising gas independents to extend reciprocal influence forged out of historical partnerships. They could invite different Russian firms and their local partners/subsidiaries to join in the development of diversity via new storage facilities, decoupled pricing, access to transmission lines, and shale exploration. This could limit Gazprom's room to maneuver while increasing the standing of new Russian stakeholders in gas-on-gas development across the continent. It also could facilitate, on the margins, the tough decisions needed in Moscow to confront the institutional legacy of arbitrary regulation in order to preserve the commercial competitiveness of Russian gas exports while escalating the political and economic costs to the Kremlin of aggressively flexing waning but residual market power across Europe. Thus, amid the bitter acrimony and scars of post-Soviet conflict—energy and otherwise—the deepening regional gas network affords opportunity to demonstrate goodwill and reground pragmatic transatlantic–Russian relations moving forward.

NOTES

1. By one account, in the fall of 2014 there were over 40 provocative incidents that occurred following Russia's annexation of Crimea, involving "violations of national airspace, emergency scrambles, narrowly avoided mid-air collisions, close encounters at sea, simulated attack runs and other danger action happening on a regular basis over a very wide geographic area." Thomas Frear, Lukaz Kulesa, and Ian Kearns, Dangerous Brinkmanship: Close Encounters Between Russia and the West in 2014," *European Leadership Network Policy Brief* (November 2014), at http://www.europeanleadershipnetwork.org/medialibrary/2014/11/09/6375e3da/Dangerous%20Brinkmanship.pdf, accessed November 15, 2014.
2. However, the United States and the European Union imposed trade restrictions on Chernomorneftegaz, the arm of Ukraine's national gas

company that was expropriated by Russia with the annexation of Crimea.

3. Karel Svoboda, "'Business as Usual?' Gazprom's Pricing Policy Towards the Commonwealth of Independent States," *Problems of Post-Communism* 58, no. 6 (November/December 2011): 21–35.
4. *The Geopolitics of Natural Gas: The Russian Gas Sector: A Political Risk Case Study* (Harvard University's Belfer Center and Rice University's Baker Institute Center for Energy Studies, January 2014); and Simon Pirani, James Henderson, Anouk Honore, Howard Rogers, and Katja Yafimava, *What the Ukraine Crisis Means for Gas Markets* (Oxford Institute for Energy Studies, Oxford Energy Comment, March 2014).
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7. Jason Bordoff and Trevor Houser, *American Gas to the Rescue?: The Impact of US LNG Exports on European Security and Russian Foreign Policy* (New York: Columbia University/SIPA Center on Global Energy Policy, September 2014), at http://energypolicy.columbia.edu/sites/default/files/energy/CGEP_ American%20Gas%20to%20the%20Rescue%3F.pdf, accessed November 15, 2014, 17.
8. "Biden Warns Russia Against Undermining Ukrainian Poll," *RFE/RL*, (May 21, 2014), at http://www.rferl.org/content/ukraine-biden-election-warning-romania/25392933.html, accessed November 15, 2014. See also discussion in Stephen Sestanovich, "Russia's Foreign Policy is Nearing Complete Failure," *Financial Times*, (November, 3 2013), and Stefan Hedlund, *Putin's Energy Agenda: The Contradictions of Russia's Resource Wealth* (Boulder: Lynne Rienner Publishers, 2014).
9. *Geopolitics of Natural Gas*.
10. See summary in Elena Kropatcheva, "He Who Has the Pipelines Call the Tune? Russia's Energy Power Against the Background of the Shale 'Revolutions'," *Energy Policy* 66 (2014): 1–10.
11. *Ibid*.
12. In this spirit, Moscow obliquely threatened to exchange Iranian oil for Russian goods. See discussion in Tatiana Mitrova, "Russia Can't Lose in Oil Deal with Iran," *AL-Monitor,* 27 January 2014, at http://www.al-monitor.com/pulse/originals/2014/01/oil-iran-russia-sanctions-relief-zarif.html, accessed November 15, 2014. On the optimism surrounding Russian foreign policy at the end of 2013, see especially discussion in Fyodor Lukyanov, "Successes and Reflections," *Russia in Global Affairs* (26 December 2013), at http://eng.globalaffairs.ru/number/Successes-and-Reflections-16278, accessed November 15, 2014
13. Tatiana Mitrova, *Russian LNG: The Long Road to Export*, (IFRI: Russie.Nei.Reports No. 16, December 2013). In 2014 alone Gazprom sealed a $400 billion deal to supply China with 38 bcm after 2018 from East Siberia via a new "Power to Siberia" pipeline. Moscow also inked a follow on non-binding framework agreement to sell an additional 30 bcm of gas to China over the ensuing 30 years via deposits in West Siberia delivered through the Altai pipeline.
14. Brittney Lenard and Yevgen Sautin, "Time for Natural Gas Diplomacy," *National Interest* (4 February 2014), at http://nationalinterest.org/commentary/time-natural-gas-diplomacy-9825, accessed November 15, 2014; and Mackubin Thomas Owens, "Using Energy for Geopolitical Leverage," *Washington Times*, (October 24, 2013)
15. Jeffrey D. Colgan, *Petro-Aggression: When Oil Causes War* (Princeton: Princeton University Press, 2013); and Michael T. Klare, *Resource Wars: The New Landscape of Global Conflict* (New York: MacMillan, 2002).
16. Brenda Shaffer, "Natural Gas Supply Stability and Foreign Policy," *Energy Policy* 56 (2013): 114–25; Mikkal E. Herberg, *Pipeline Politics in Asia: Energy Nationalism and Energy Markets;* Paul Stevens, *Transit Troubles: Pipelines as a Source of Conflict*; and Elena Kropatcheva, "He Who Has the Pipelines Call the Tune? Russia's Energy Power Against the Background of the Shale 'Revolutions.'"
17. Jason Bordoff and Trevor Houser, *American Gas to the Rescue?*
18. Steve A. Yetiv, *Crude Awakenings* (Ithaca: Cornell University Press, 2010); and Caroline Kuzemko, Andrei V. Belyi, Andreas Goldhau, and Michael F. Keating, eds., *Dynamics of Energy Governance in Europe and Russia* (New York: Palgrave Macmillan, 2012).
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20. Michael Sander, *Do Transnational Actor Networks Stabilize International Energy Relations? An Outline and Preliminary Assessment of a Theory of Economic Détente* (Siegen, Germany: Universitat Siegen FoKoS Working Paper, 2013). See also discussion in Iana Dreyer and Jonas Gratz, "After Ukraine: Enhancing Europe's Gas Security," *CSS Policy Perspectives* 2:1 (March 2014).
21. Rawi Abdelal, "The Profits of Power: Commerce and *Realpolitik* in Eurasia," *Review of International Political Economy* 20, no. 3 (2013): 421–56.
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23. On the different dimensions to Russia's energy weapon, see especially Adam N. Stulberg, *Well-Oiled Diplomacy: Strategic Manipulation and Russia's Energy Statecraft in Eurasia* (New York: SUNY Press, 2007); Shaffer, "Natural Gas Supply Stability and Foreign Policy"; Per Hogselius, *Red Gas: Russia and the Origins of European Energy Dependence* (New York: Palgrave Macmillan, 2013); and Agnia Grigas, *The Politics of Energy and Memory Between the Baltic States and Russia* (Burlington, VT: Ashgate, 2013).
24. Margarita M. Balmaceda, *The Politics of Energy Dependency: Ukraine, Belarus, Lithuania Between Domestic Oligarchs and Russian Pressure* (Toronto: University of Toronto Press, 2013), 61-80; and Stefan Hedlund, *Putin's Energy Agenda*, 93–115;
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27. Adam N. Stulberg, "Strategic Bargaining and Pipeline Politics: Confronting the Credible Commitment Problem in Eurasian Energy Transit," *Review of International Political Economy* 19, no. 5 (December 2012): 808–36; Karen Smith Stegen, "Deconstructing the 'Energy Weapon': Russia's Threat to Europe as a Case Study,": 6505–13; and Oistein Harsem and Dag Harald Claes, "The Interdependence of European-Russian Energy Relations," *Energy Policy* 59 (2013): 784–91.
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International Red Cross and the Restraint of State Violence" in *Constructing World Culture: International Nongovernmental Organizations Since 1875,* eds., John Boli and George M. Thomas (Stanford, CA: Stanford University Press, 1999), 149–65.

29. Specific levels of European dependency have shifted since 2006. However, states in South and Central Eastern Europe (especially Bulgaria, Slovakia, Austria, Czech Republic, Greece, Hungary, Slovakia, Italy, and Germany) and Turkey have been the primary recipients and most reliant on gas transited through Ukraine.
30. Stulberg, "Strategic Bargaining and Pipeline Politics"; Balmaceda, *Politics of Energy Dependency,* 93–153; and Hogselius, *Red Gas*, 220–22.
31. Andrew Wilson, *Ukraine's Orange Revolution* (New Haven: Yale University Press, 2005); and Jack Sharples and Andrew Judge, "Russian Gas Supplies to Europe: the Likelihood, and Potential Impact, of an Interruption in Gas Transit via Ukraine," *The European Geopolitical Forum* (March 20, 2014), at www.gpf-europe.com, accessed October 12, 2014.
32. Eurogas, 2007, *Natural Gas Demand and Supply: Long-term Outlook to 2030*, at www.eurogas.org/uploaded /Eurogas%20long/term%outlook%to%2030%20%-%20final.pdf, accessed November 15, 2014.
33. Balmaceda, *Politics of Energy Dependency;* and Simon Pirani, Jonathan Stern, and Katja Yafimava, *The April 2010 Russo-Ukrainian Gas Agreement and its Implications for Europe* (Oxford Institute for Energy Studies Papers, NG 42, 2010).
34. Hedlund, *Putin's Energy Agenda,* 127; Pirani et al., *April 2010 Russo-Ukrainian Gas Agreement*.
35. Newnham, "Pipeline Politics," 120–21.
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37. Ibid., 128–29, 183–85.
38. Bordoff and Houser, *America's Gas to the Rescue?* 17–18.
39. Pirani et al, *What the Ukraine Crisis Means for Gas Markets*, 2–4; and Pavel Plityuk and Dmitry Zhdannikov, "Ukraine Increases Russian Gas Imports, Braces for Price Hike," *Reuters*, (March 14, 2014), at http://www.reuters.com/article/2014/03/03/ukraine-crisis-gas-idUSL6N0M00ZR20140303, accessed November 15, 2014 Gazprom disclosed that its sales to Europe increased by 15% in 2013 compared to 2012 (representing a 13 percent since 2010), largely due to an increase in volumes exported. By contrast, net sales to the FSU declined by 22 percent owing to cuts in both prices and volumes delivered. "OAO Gazprom: IFRS Consolidated Financial Statements," (December 31, 2013), at http://www.gazprom.com/f/posts/07/271326/gazprom-ifrs-2013-12m-en.pdf.
40. Senior Russian government officials made it clear that they would be willing to write off nearly $5 billion in debts (a friendship discount) accumulated by Kyiv during 2011–13 and confine demands to recouping the "official monetized gas debt" of $2.7 billion. Alexei Anishchuk, "Russia Presses Ukraine on Gas Debts as Leaders Meet," *Reuters* (February 8, 2014), at http://uk.reuters.com/article/2014/02/08/uk-ukraine-russia-idUKBREA170HF20140208, accessed June 23, 2014.
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42. Simon Shuster, "How Russia is Fighting to Regain Control of Ukraine," *Time* (February 1, 2014), at http://world.time.com/2014/02/01/how-russia-is-fighting-to-regain-control-of-ukraine/, accessed November 15, 2014.
43. It is noteworthy that Gazprom's prepayment of transit fees was based on an assumption that 2014 deliveries to Europe would increase by 10 percent (as compared to 2013), spared of discretionary stoppages and renegotiations imposed by Ukrainian transit authorities or European customers. "Ukraine, Gazprom and Transit Issues–Gas Factsheet" (April 23, 2014), at http://www.gazpromukrainefacts.com/ukraine-natural-gas-facts/ukraine-gazprom-and-transit-issues-%E2%80%93-gas-factsheet, accessed November 15, 2014.
44. "President Vladimir Putin's Letter to Leaders of European Countries," *Itar-Tass* News Agency (April 10, 2014), at http://en.itar-tass.com/russia/727287, accessed on November 15, 2014.
45. "Gazprom to Cut Supplies to Ukraine from June if No Repayment," *Russia Today*, (May 13, 2014), at http://rt.com/business/158444-russia-ukraine-gas-supplies/comments/page-14, accessed June 23, 2014; Steven Erlanger, "Russia Ratchets Up Ukraine's Gas Bill in Shift to an Economic Battlefield," *The New York Times*, (May 10, 2014), http://www.nytimes.com/2014/05/11/world/europe/russia-ratchets-up-ukraines-gas-bills-in-shift-to-an-economic-battlefield.html, accessed June 23, 2014; and John Daly "Gazprom Threatens to Diversify Supply to Europe," *Oilprice.com* (March 5, 2014), http://oilprice.com/Energy/Natural-Gas/Gazprom-Threatens-to-Disrupt-Gas-Supplies-to-Europe.html. Accessed June 23, 2014. During this period, Gazprom claimed that Ukraine owed $18.5 billion for gas not purchased since 2009, including $11.4 billion for unused gas in 2013 alone.
46. Ryan Chilcote, Olga Tanas, and Henry Myer, "Ukraine Must Show Will to Pay Before Gas Talks," Bloomberg.com (May 20, 2014), at http://www.bloomberg.com/news/2014-05-20/ukraine-must-show-will-to-pay-before-gas-talks-medvedev-says.html, accessed November 15, 2014. This was reinforced by other senior Russian energy officials who expressed willingness to revisit price formulas going back to April 2014—effectively rescinding Gazprom's earlier 80% price hike—and to explore market friendly and flexible pricing for long-term contracts. "Russia Ready to Discuss Gas Discounts if Ukraine Pays April Debt," *RIA Novosti,* (May 19, 2014), at http://sputniknews.com/russia/20140519/189940375.html, accessed October 15, 2014; and "Russia ready to Adapt Gas Contrcts, Make Them More Flexible-Expert," *Interfax* (May 14, 2014), at http://www.interfax.com/newsinf.asp?pg=8&id=504693, accessed October 15, 2014.
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48. Sergei Aleksashenko, "Is There a Solution?" *Carnegie Moscow Center Eurasia Outlook* (July 22, 2014), at http://m.ceip.org/moscow/eurasiaoutlook/?fa=56209, accessed October 17, 2014.

49. Alexei Lossan, "Gazprom Proposes to Pay for Gas Transit With Ukrainian Debt," *Russia Beyond the Headlines* (October 6, 2014), at rbth.com/business/2014/10/06/Gazprom_proposes_to_pay_for_gas_transit_with_ukrainian_debt_40375.html, accessed November 15, 2014.
50. By early October, Prime Minister Medvedev announced that Moscow would be willing to provide 10 bcm—delivered in two separate 5 bcm auctions. The latter would not need to be delivered on a take-or-pay basis; only if needed during an especially harsh winter. "Russian PPM Tells Minister to Seek Compromise with Ukraine on Gas," Interfax (October 8, 2014), at John's Russia List, http://russialist.org/interfax-russian-pm-tells-minister-to-seek-compromise-with-ukraine-on-gas/, accessed November 15, 2014. The "winter package" called for Ukraine to repay $3.1 billion of its outstanding debt in two tranches by the end of 201. Gazprom agreed to peg the repayments at 268.5 per bcm. Moreover, by the end of 2014 the Russian Finance Minister acknowledged that the drop in oil prices over the year cost Russia more than $100 billion. "Oil Price Slide and Sanctions Cost Russia $140 billion," *BBC News Business* (November 24, 2014), at http://www.bbc.com/news/business-30174650, accessed on November 24, 2014.
51. Pirani et al, "What the Ukraine Crisis Means for Gas Markets."
52. "Ukraine Plans No Russian Gas Imports Before Year-End," *RIA Novosti*, (November 12, 2013), at http://sputniknews.com/world/20131112/184663615.html, accessed October 15, 2014; "Ukraine to resume Russian Gas Imports 'When Needed'," *Ibid*., November 13, 2013, at http://sputniknews.com/world/20131113/184682515/Ukraine-to-Resume-Russian-Gas-Imports-When-Needed–Minister.html?id=184683574?id=184683574, accessed October 15, 2014; Pirani, et al., "What the Ukraine Crisis Means for Gas Markets;" and "Ukrainian Naftogaz and RWE Sign New Agreement," PR Newswire (September 11, 2013), at http://www.prnewswire.co.uk/news-releases/ukrainian-naftogaz-and-rwe-sign-new-agreement-223300171.html, accessed on November 15, 2014. During 2013, Ukraine received 2.1 bcm in reverse flow deliveries but began exploring as much as an additional 10 bcm from Slovakia for the future (equivalent to one third of the countries imports that year). In addition, it purchased less than 30 bcm from Russia in 2013, considerably below the 41 bcm stipulated by the 2009 take-or-pay clause. According to Ukrainian sources, the demand for gas plummeted by as much as 45 percent during late fall 2013, nearly 5 times lower than during previous periods.
53. Andrew E. Kramer, "Chevron and Ukraine Set Shale Gas Deal," *The New York Times*, (November 5, 2013), at http://www.nytimes.com/2013/11/06/business/international/chevron-and-ukraine-sign-deal-on-shale-gas.html, accessed November 15, 2014. Shell signed a 50-year production sharing agreement to invest $410 million to develop Ukraine's Yuzivska shale gas in the Donetsk region (estimated at around 1.2 tcm). Chevron signed a 50-year production sharing agreement to invest $310 million (with potential to increase to $10 billion) to develop shale deposits in the Oleska region in Western Ukraine. Whereas the Shell contract was put on indefinite hold for commercial and security reasons by June 2014, Chevron continued exploration and expressed interest in taking a stake in the country's pipeline network.
54. "Ukraine No Longer Wants Reverse Gas Flows From EU," *EurActiv* (January 10, 2014), at http://www.euractiv.com/europes-eaast-ukraine-longer-wants-reverse-gas-news-532708, accessed November 15, 2014. At this point, Kyiv opted to increase purchases of discounted Russian gas rather than to pay a premium (but lower price than Russia's 2013 terms) for diversity of supply, notwithstanding the lingering acrimony over its unilateral abrogation of the take-or-pay clause and mounting debts to Gazprom.
55. "Ukraine Says Russian Gas Transit to Europe Under Threat," *RIA Novosti*, (April 8, 2014), http://sputniknews.com/world/20140408/189109557-print/Ukraine-Says-Russian-Gas-Transit-to-Europe-Under-Threat.html, accessed November 21, 2014; and Vanessa Mock and Harriet Torry, "Ukraine Prime Minister Vows Not to Pay 'Political Price of Russian Gas," *Wall Street Journal*, (May 28, 2014), at http://online.wsj.com/articles/ukraine-prime-minister-vows-not-to-pay-political-price-of-russian-gas-1401309950. Accessed November 15, 2014.
56. "Ukraine Boosts Security of Natural Gas Pipelines," *RIA Novosti,* (March 17, 2014), http://en.ria.ru/world/20140317/188511640/Ukraine-Boosts-Security-of-Natural-Gas-Pipelines.html, accessed April 30, 2014; "Ukraine Asks Russia to Pay for Lost Crimean Energy Reserves," *Russia News.Net*, (May 15, 2014), at http://www.russianews.net/index.php/sid/222031703/scat/723971d98160d438/ht/Ukraine-asks-Russia-to-pay-for-lost-Crimean-energy-reserves#sthash.NR0jykcl.dpuf, accessed November 15, 2014; and William J. Broad, "In Taking Crimea, Putin Gains a Sea of Fuel Reserves," *The New York Times*, (May 17, 2014), at http://www.nytimes.com/2014/05/18/world/europe/in-taking-crimea-putin-gains-a-sea-of-fuel-reserves.html, accessed November 3, 2014. Kyiv also did not retaliate militarily to the March 2014 seizure of the gas terminal in Strelkovoye that was conducted by the Moscow-backed "self-defense" forces of the pro-Russian government in Crimea.
57. Chilcote et al., "Ukraine Must Show Will to Pay Before Gas Talks."
58. Standard practice prior to the 2013/14 crisis was for European customers to purchase Russian gas on Ukraine's western border. In addition, Kyiv backed down from demanding $268.50 per tcm as a "fair price" for the winter package. Although Kyiv rejected Russia's interpretation of the composition of price and discounts for the debt repayment, it accepted the $368.5 per tcm base price. "Arseniy Yatsenyuk Considers the Protocol on Gas Supply Should Be Inked Only at the Tripartite Level Among the EU, Ukraine, and Russia," *Information and Communication Department of the Secretariat of the CMU*(October 30, 2014), at http://www.kmu.gov.ua/control/en/publish/article?art_id=247719335&cat_id=24431497, accessed on November 4, 2014; and Denis Pinchuk and Gabriela Baczynska, "Gazprom to Resume Gas Supply Once Ukraine Pays $2.2 Billion," *Reuters* (October 31, 2014), at www.reuters.com/assets/print?aid=USKBN0II0XQ20141031, accessed on November 4, 2014.
59. By 2013, South Eastern and Central European states depended on Russian gas for an average share of over 53 percent of total gas consumption, as compared to the 24 percent EU average. In addition, 12 percent of total EU consumption was dependent on gas transited across Ukraine. Moreover, the spare capacity in the Nord Stream and Yamal (Belarus) pipelines, combined with milder weather and improved EU interconnectors within Eastern Europe offered a cushion for short-term disruptions in Ukrainian transit that were not in place in 2009. Yet again, South Eastern and Central European states were disproportionally dependent on Russian gas transited via Ukraine. By the end of 2012, for example, they relied on imports via Ukraine to cover on average 82 percent of total import demand. Jack Sharples and Andrew Judge, "Russian Gas Supplies to Europe: the Likelihood, and Potential Impact, of an Interruption in Gas Transit via Ukraine," 5–10.
60. John Fraher, "Energy Needs Curb Eastern EU Hunger for Russian Sanctions," *Bloomberg.com*, (April 18, 2014), http://www.bloomberg.com/news/2014-04-18/putin-gas-splits-eastern-eu-over-russia-sanctions.html; and Donald Tusk, "A United Europe Can End Russia's Energy Stranglehold," *Financial Times* (April 21, 2014), at http://www.ft.com/cms/s/0/91508464-c661-11e3-ba0e-00144feabdc0.html#axzz3K5mvCr7v, accessed May 10, 2014.
61. "Bulgarian Minister Makes Passionate Case for South Stream Pipeline," *Reuters*, (April 17, 2014), http://www.reuters.com/article/2014/04/17/ukraine-crisis-southstream-idUSL6N0N93CN20140417, accessed November 2, 2014.
62. Guy Chazan and Alex Barker, "Gazprom Faces EU Antitrust Charge Threat," *Financial Times*, (February 7, 2014), at http://www.ft.com/

intl/cms/s/0/e42946bc-8fed-11e3-aee9-00144feab7de.html#axzz3K5mvCr7v, accessed March 23, 2014.

63. "Communication from the Commission to the European Parliament and the Council: European Energy Security Strategy," SWD: 330 (2014), at http://ec.europa.eu/energy/doc/20140528_energy_security_communication.pdf, accessed on October 23, 2014; and Oliver Geden and Jonas Gratz, "The EU's Policy to Secure Gas Supplies," *CSS Analyses in Security Policy* 159 (September 2014).
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