Pipeline Politics between Europe and Russia: A Historical Review from the Cold War to the Post-Cold War

Jae-Seung Lee and Daniel Connolly

This paper conducts a historical survey of bilateral energy transactions during the Cold War and the early years of the post-Cold War period to uncover the origins of today's pipeline politics between Europe and Russia. Gas pipelines from Russia to Europe are doubly perceived as a symbol of Russia's status as an energy superpower and Europe's dependence on Russian supply. Fears of a Soviet/Russian 'energy weapon' date back to the beginning of East-West energy transactions, but the concept always has been of limited utility. A historical analysis of East-West energy transactions reveals that Russia's energy weapon is a complicated and multifaceted phenomenon. Cold War pipeline projects were institutions reflecting the aligned economic interests of Soviet and European policymakers, as well as their shared norms on how international energy flows should be organized and maintained. The post-Cold War period was marked by continuity as well as divergence. Western technology and capital remained a crucial factor in sustaining and expanding Russian energy infrastructure, but the new geopolitical landscape unleashed deep-rooted issues of pricing, transit, and ownership among former CMEA countries. Attempts to reprogram pipeline governance on the basis of the Energy Charter Treaty have not been successful. Pipeline politics will continue to be tumultuous but are expected to remain bounded by historically-rooted interdependencies. Both sides can profit from their ongoing relationship, even though they respectively complain about a lack of energy security or demand security. Furthermore, the mutual dependencies conferred by their historical energy relationship would restrict the maneuverability both sides have when it comes to choosing more extreme measures.

Key Words: Europe, Russia, Soviet Union, Pipeline, Energy, Cold War

Gas pipelines from Russia to Europe are doubly perceived as a symbol of Russia's status as an energy superpower as well as European dependence on Russian supplies. In early 2014, as Ukraine's precarious position between

*Jae-Seung Lee(corresponding author; jaselee@korea.ac.kr) is a professor in the Division of International Studies at Korea University. He received a Ph.D. in political science from Yale University and his recent research focuses on energy security and cooperation.

**Daniel Connolly(first author; danielconnolly78@gmail.com) is a Ph.D. candidate studying International Development and Cooperation with a focus on Peace and Security at the Graduate School of International Studies, Korea University.

This work was supported by a research grant from KU-KIEP-SBS EU Centre at Korea University, which was funded by the European Union.

Western Europe and Russia metastasized into a series of increasingly dangerous crises – the Euromaidan protests, the breakaway of the Crimea region, and a civil war with Eastern separatists – the foremost question on many Europeans' minds was whether or not Russia would use its control over natural gas and oil pipelines for political leverage (Ahmed 2014; O'Sullivan 2014; Shukman 2014). The Russian government's earlier decisions in 2006 and 2009 to temporarily halt gas shipments to the Ukraine also have been interpreted as deliberate applications of an "energy weapon" for economic and political gain (Ghaleb 2011, 90; Cohen 2006, 3; Esakova 2012, 37-38). These interruptions of supply were even described as humanitarian crises by some European analysts (Hafner 2012, 4; Hirschhausen et al. 2010, 18). Even the construction of new Russian pipelines has been perceived as a threat.¹ The fear of Russia's extensive pipeline system stems from regional energy dependencies² but also reflects the growing salience of the issue at the global level: "The threat of an energy weapon has emerged into international discourse in recent years" (Esakova 2012, 37). Yet, this alarming array of pipelines pointing at the heart of Europe did not come out of nowhere (see Figure 1). To fully understand recent as well as emerging energy politics involving Russia and its neighbors, it is necessary to take into account the embedded historical features of this relationship.

This paper conducts a historical survey of bilateral energy transactions from the Cold War to the early years of the post-Cold War period to explore the origins of today's pipeline politics between Europe and Russia. It will historicize the "energy weapon" by tracing the material diffusion of the pipeline system and highlighting key crises in the developmental process. This paper argues that there has been a persistent and inflated fear of the Soviet/Russian use of energy to manipulate Western Europe. In particular, this survey highlights the importance of long-standing technological asymmetries between the two sides. This has encouraged cooperation but technology also has been used opportunistically as a weapon. In the period covered by this study, the Soviets/Russians were the victims of several politically motivated interruptions in the supply of Western pipeline technology. This paper also compares the nature of pipeline politics between the two periods. It suggests that Cold War pipelines, rather than serving as levers or weapons in an era of ideological divergence, should be interpreted as expressions of shared

¹ In 2010, the Polish foreign minister, Radoslaw Sikorski, reacted to plans by a German-Russian consortium to build a pipeline in the Baltic by evoking memories of his country's traumatization in the Second World War. The project, he said, was a "Molotov-Ribbentrop pipeline" (As quoted in Hundley 2010).

² In 2012, for example, the European Union as a whole relied on Russia for 33.7% of its crude oil and 32% of its natural gas (Eurostat 2014).

values. As such, these material assemblages represent a peculiar kind of institution. The real problem in the post-Cold War period is not the energy, technological, and financial interdependencies created by these intercontinental assemblages but an unravelling of the shared meanings that sustained them.

Figure 1. Russia in the European Energy Sector: Pipelines

Source: East European Gas Analysis (2014)

The following section starts the inquiry by revisiting the long and tumultuous history of Soviet energy trade with Europe, the geopolitical implications of gasification, and the creation of a pipeline infrastructure linking East and West that culminated in the Urengoy-Pomary-Uzhgorod Project in the early 1980s. With the collapse of communism in the 1990s, a new geopolitical landscape was juxtaposed upon the gas and oil infrastructure of the former Soviet Union and its allies. The third section examines attempts to forge new energy infrastructures and institutions in the post-Cold War period, focusing on the Yamal-Europe Project and the Energy Charter Treaty (ECT). The fourth section reassesses the interdependence between Russia and Europe by emphasizing the deep historical roots of outstanding issues, such as pricing and transit, as well as the important role played by European finances and technology in creating and sustaining Soviet/Russian pipeline systems. The conclusion summarizes the historical survey of pipeline politics in Europe and Russia and suggests that the concept of a Russian “energy weapon” is an ambivalent one and that Russian and European

energy policies will remain contradictory, reflecting both political and economic realities.

EARLY ENERGY TRANSACTIONS DURING THE COLD WAR

THE RISE OF EAST-WEST ENERGY TRANSACTIONS

The Soviet Union inherited an energy relationship with the West that already contained the seeds of future interdependence. The petroleum industry in Tsarist Russia, one of the world's largest, owed its existence to infusions of foreign capital and know-how (Gillette 1973, 478) but its production fell precipitously as a result of the Russian Civil War and the nationalization of assets by the Bolsheviks. It was not until Soviet authorities reversed course and cultivated joint ventures with American and European oil companies, including Barnsdall Corporation, British Petroleum, and Standard Oil, that the sector started to recover (Considine and Kerr 2002, 19, 25, 36-37; Yevdoshenko 2009). European companies were especially valued as sources of hardware and technology, especially high-quality steel pipes and machinery.³ Soviet oil exports grew steadily in volume and geographical extent during the interwar period (Igolkin 2005). However, Soviet oil flows were politically controversial and faced resistance from the vertically integrated Western companies that dominated contemporary petroleum markets. Shortfalls in production and a reduced need for foreign currency contributed to Soviet exports tapering off in the late 1930s before vanishing completely as the Russian oil industry was devastated by the Second World War (Considine and Kerr 2002, 36; Heymann 1948, 315-316).

The defeat of Nazi Germany and the expansion of the Soviet Union into Eastern and Central Europe marked the next major revolution in the nature and direction of Soviet external energy flows. The creation of the Council for Mutual Economic Assistance (CMEA) in 1949 and a general growth of Communist multilateral institutions from 1955 onward, marked the beginnings of a new regional economic order (Szawłowski 1976, xxiv-xxv). Pipeline systems grew in the wake of these new institutions. Druzhba, the largest export pipeline of the era, was a joint project initiated in 1959 by the governments of the USSR, Hungary, Czechoslovakia, Poland, and the German Democratic Republic to reduce their reliance on expensive oil shipments via railway. The energy relationship within the Eastern bloc was soon marked by the high dependence of Eastern and Central

³ The Baku-Batumi pipeline, for example, used over 60,000 steel pipes from Germany, as well as pumps from Crossley, an English manufacturer (Mishin 2005).

European countries on Soviet supplies of oil and natural gas (Gustafson 1981, 66).⁴ These intra-Eastern bloc transactions were controversial due to CMEA's convoluted pricing mechanisms and the difficulty of determining actual production costs in socialist economies. In practice, this meant that the Soviet Union was providing the Eastern bloc with increasing quantities of steeply discounted energy.⁵ This entailed considerable opportunity costs for the USSR because it left less to export to Western customers in exchange for hard currency (Gustafson 1981, 73).

Meanwhile, Soviet oil returned to Western Europe in the late 1950s, triggering fresh controversies. Soviet oil was sold for as little as half the prevailing rate, leading to accusations of dumping (Gaïdar 2007, 56). The resurgence of Soviet energy flows also led to a renewed interest in extending the pipeline infrastructure to meet the needs of these new markets. This was a formidable undertaking because the Soviets suffered from steel shortages and did not possess the technical ability to build the large-diameter pipes and compressors that were required for long-distance pipelines (Considine and Kerr 2002, 143; Heinrich 2014, 21). The easiest way to overcome these technical obstacles was by forming partnerships with Western governments and companies.⁶ At least 40% of the Soviet Union's requirements of large-diameter pipes for the Seventh Five-Year Plan were purchased from West Germany and Sweden (Prybyla 1965, 158). Indeed, West Germany's economy in the 1960s depended more on the USSR as a customer for its steel pipes than it did as a source of energy (Stent 1981, 100). Soviet reliance on Western energy technology also included specialized equipment for oil tankers and sometimes whole ships.⁷

However, the United States believed that Europe's deeper involvement in energy transactions with the Soviet Union was potentially dangerous. The US Senate held a series of secret hearings on the topic in July 1962, whereupon Senator Kenneth B. Keating famously exclaimed: "The Soviets are dumping oil at bargain prices throughout the world. This is not dumping for economic reasons but for political and military reasons. They are using oil to buy valuable machinery and know-how from the West... in order to produce and distribute oil at a rapidly

⁴ By 1978, this dependency on Soviet energy ranged from 25% in the case of East Germany to 66% in the case of Bulgaria (Roosa et al. 1982, 37).

⁵ In 1980, despite persistent attempts by the USSR to retrench its energy subsidy to the Eastern bloc, it was still exporting twice as much oil to CMEA countries than to the rest of the world (Gustafson 1981, 73; Scanlan 1982, 325).

⁶ A deal struck in 1960 with the Italian state oil company ENI saw five years of Soviet crude oil deliveries in exchange for steel pipes and building materials (Spencer 1966, 99).

⁷ The Italians transferred ten oil tankers to the USSR in the late 1950s for 1.5 million tons of crude oil and 500,000 tons of fuel oil (Ward 1960, 142).

accelerating rate” (Stent 1981, 99). Opponents argued that too much dependence on Soviet oil would leave Western countries susceptible to Communist political pressure.⁸ Communist pipeline systems, particularly the Druzhba, were also perceived to have military utility because they permitted the stockpiling and rapid movement of fuel across a wide front (Prybyla 1965, 156, 158).

This tension between the United States and its European allies grew appreciably during the construction of the Druzhba pipeline. In 1962, three West German firms signed contracts to supply an estimated 163,000 tonnes of large-diameter pipe to the Soviet Union, a deal valued at \$28 million. However, the United States attempted to scuttle the Soviet project by pressuring its allies to cancel their shipments of pipes. At first, US policymakers channeled their complaints through the Coordinating Committee for Multilateral Export Controls (CoCom), a multilateral institution founded in 1949 to stop the transfer of dangerous technologies to the Communist bloc, but they were unable to create the necessary consensus to add pipes to the list of banned export items. Instead, the United States worked through the machinery of the North Atlantic Treaty Organization (NATO), where a vote was not necessary.⁹ On November 21, 1962, the NATO Council passed a secret resolution that strongly encouraged member states to immediately halt the export of large-diameter pipes to the USSR and its allies. The German government complied with the resolution but faced a political crisis at home for doing so (Hofhansel 1996, 177). However, the embargo did not last long as Britain and Italy chose to interpret the NATO resolution as a recommendation rather than an order and fulfilled their contracts with the USSR. Non-NATO members Sweden and Japan also resisted American pressure (Stent 1981, 112, 115). This incident demonstrated that although energy technologies were a source of leverage over the USSR and formed the basis of East-West cooperation, exercising it for political purposes was a challenge because it required unanimity among Western countries.

URENGOY-POMARY-UZHGOROD PROJECT (1983)

By the late 1970s, the immense Soviet oil pipeline network no longer seemed so threatening to Western Europe. Instead of worrying about oil offensives, the West had started speculating about ‘peak’ Soviet oil due to rising domestic demand in

⁸ Underscoring the threat was the case of Finland, one of the first non-CMEA countries to find itself almost completely reliant on Communist oil, and then the victim of politically motivated interruptions in supply in 1950 and 1958, the latter incident becoming known as the ‘Night Frost Crisis’ (Jensen-Eriksen 2007, 358-359).

⁹ For more detail on how the United States strategically used NATO rather than CoCom see Stent (1981).

the USSR, the burden of subsidized energy flows to the Eastern bloc, and a lack of upstream investment (Gustafson 1981; Norman 1981). However, in its place a new menace appeared – natural gas. Khrushchev's Sixth and Seventh Five-Year Plans had accelerated the gasification of the Soviet Union's economy (D. G. Victor, Jaffe, and Hayes 2006, 474).¹⁰ The emergence of this new Soviet energy pillar not only transformed regional energy flows but it also had profound political consequences. In particular, the unique technical requirements for moving natural gas was widely seen as magnifying its geopolitical importance (Chanis 2012, 330; D. Johnson 2005, 265; D. G. Victor et al. 2006, 5). Gas pipelines demanded larger initial investments and longer planning horizons than equivalent networks carrying oil.¹¹ Unlike oil, therefore, Soviet gas transactions were necessarily structured around long-term contracts that required direct pipeline connections with their Western customers. This permanent physical link between producer and supplier is often perceived as a power relationship: "[They are] physical, graphical representations of... structural links of dependency" (Balmaceda 1998, 258). Put another way, "a pipeline was much more than just a pipe" (C. Johnson and Derrick 2012, 484).

The threat of Soviet natural gas in Western Europe was preceded by an extension of pipeline infrastructure across the Eastern bloc, especially the Bratstvo pipeline, which linked the USSR to Czechoslovakia (where quantities were re-exported to Belarus and the Baltics), Poland, the German Democratic Republic, Bulgaria, Hungary, Yugoslavia, and Romania. As gas production moved eastward, the Soyuz pipeline was built from 1974 to 1978 to connect the Volga region with the Bratstvo distribution network (Heinrich 2014, 33-4; Hoffman 1985, 19). The Soviet Union took an active role in encouraging the use of natural gas across the CMEA because it was seen as an effective way to reduce domestic consumption of oil and to satisfy Eastern Europe's growing energy needs. In retrospect, however, the Soviet Union was simply exchanging one form of energy subsidy for another, and was once again institutionalizing it through an integrated pipeline network.

The first natural gas shipments from the Soviet Union reached Western Europe in 1968. Deals soon followed with Italy in 1969 and West Germany in 1970, 1972,

¹⁰ Production rose from 47.2 billion cubic meters in 1960 to 406 billion cubic meters in 1980 (Davis 2014, 365). By 1980, the USSR was the leading exporter of natural gas, accounting for 28% of world exports (Lax 1983, 64).

¹¹ Natural gas has a caloric value between that of coal and petroleum but is extremely difficult to transport. In 1982, it was estimated that moving natural gas cost three or four times more than oil (Melamid 1994, 217; Stern 1982, 29).

and 1974. These exports, however, involved relatively modest additions to the existing Bratstvo network, which was already struggling to supply its CMEA customers (Heinrich 2014, 33-34). The Trans Austria Gas (TAG) pipelines connected Czechoslovakia with Austria and Italy in 1974 and the more ambitious Mittel-Europäische-Gasleitungsgesellschaft (MEGAL) pipeline, constructed from 1974 to 1979, linked up with Austria, Germany, and France (Makholm 2010, 29-30). By the end of the 1970s, however, negotiations were underway between France, Germany, Italy, and the Soviet Union for the construction of a major natural gas pipeline known as the Urengoy-Pomary-Uzhgorod Project, which emerged as the most controversial energy project of the Cold War. It revolved around an ambitious plan to create a 4,500-km export pipeline linking Western European consumers with the newly developed Urengoy gas fields in Western Siberia. This was expected to generate a staggering 40% increase in the Soviet Union's overall upstream gas production (Merciai 1984, 2; D. G. Victor and Victor 2006, 132). Worryingly for the US government, the deal would effectively triple the Soviet Union's natural gas export capability (Hardt and Gold 1982, 1).

For Western European countries, promises of cheap energy were complemented by valuable commercial opportunities. With NATO having quietly lifted its embargo on pipes in 1966, European firms were once again active participants in Communist energy projects.¹² The Soviet pipeline required imported technology, such as large-diameter pipes and compressor stations, as well as vast quantities of steel. Occurring in the midst of a deep recession with over 25 million unemployed European workers, the Soviet projects parked keen competition between German, French, and Italian companies. Indeed, these export opportunities had an estimated value of \$5 billion (Katzman 1988, 25).

The Americans were horrified by the pipeline idea. Their criticisms revolved around the possibility that it would make Western Europe overly dependent on Communist energy – a “gas lever” – and that the Soviet Union would use the profits accruing from the sales of natural gas to increase its military power (Hardt and Gold 1982, 1). The United States first attempted to block the deal through CoCom, but the European contracts were for equipment that was not officially banned by the organization and compliance with the existing list of prohibited technology was already undermined by endemic cheating (Crawford and Lenway 1985, 389; Lebedoff and Raievski 1983, 491). American persuasion through other multilateral organizations such as the International Energy Agency (IEA), the Organisation for Economic Co-operation and Development (OECD), and NATO

¹² For example, Mannesmann, a West German firm, received orders to supply 1.2 million tons of large-diameter natural gas pipes to the USSR in 1970 (Hofhansel 1996, 177).

also was not successful (Frost and Stent 1983, 179). With Western Europeans showing no signs of halting their participation in the project, the United States took more active measures. In December 1981, President Reagan banned the export of American oil and gas technologies to the USSR. In June 1982, these sanctions were expanded to include subsidiaries and licensees of American companies, even if they were based in Europe. As with the action taken against the Druzhba pipeline in the 1960s, American policymakers continued to view Western technology as an important “lever” for sabotaging Soviet energy projects. However, this time the European response to the US measures was largely negative. On the same day that President Reagan’s expanded sanctions took effect, the foreign ministers of the European Economic Community (EEC) issued a joint statement that the American decision was illegal and later sent a formal note of protest to Washington (DeSouza 1984, 102; Lebedoff and Raievski 1983, 484). The British, French, German, and Italian governments then told their companies to go ahead with the deliveries.

In sum, the pipeline crisis grew out of a divergence of US and European attitudes towards East-West trade. The United States saw exports to the Soviet Union as buttressing the forces of evil, whereas European partners saw it as a crucial business opportunity. Stern admitted that the pipeline “dramatically improves the prospects for the chronically depressed steel and engineering industries in Western Europe” (1982, 30). For many companies targeted by US sanctions, compliance was virtually impossible because the Soviet contracts were “too important to their immediate corporate survival and long-term business success” (Nollen 1987, 5). Soviet gas was also acceptable to Western European policymakers because it allowed them to diversify away from the Organization of the Petroleum Exporting Countries (OPEC), which was perceived as a much greater threat: “Oil security clearly remains Europe’s foremost energy security problem” (Adamson 1985, 26). Likewise, Russian gas pipelines were justified because they reduced a reliance on Algerian gas, another untrustworthy supply (Adamson 1985, 20; Manne, Roland, and Stephan 1986, 53). Even if gas pipelines created dependency, this dependence was not one-sided. Energy exports were the Soviet Union’s primary source of hard currency, so the construction of natural gas pipelines meant that the USSR’s future earnings were now inexorably anchored to Western Europe’s economic well-being. Moreover, natural gas exports would not boost Soviet earnings but would only compensate for their declining oil revenues (Roosa et al. 1982, 40). The Soviet Union also needed European technology to maintain and expand these elaborate pipeline systems (Stern 1982, 26).

PIPELINE POLITICS IN THE POST-COLD WAR PERIOD

THE NEW GEOPOLITICS OF ENERGY TRANSACTIONS

In the 1990s, the success of CMEA's integrated gas and oil pipeline networks quickly became a problem as the Soviet single market and its governing institutions unravelled. Ex-Soviet economies were addicted to heavily-subsidized energy and much of their gas and oil infrastructure was antiquated, poorly maintained, and inefficient (Ahrend and Thompson 2005, 805, 810; Gaïdar 2007, 166; D. G. Victor and Victor 2006, 141). Reversing these inefficiencies and reorienting ex-Soviet networks to conform to Eastern Europe's new borders was an exceedingly difficult and fractious process. Russia's oil and gas industries also experienced severe shocks. The oil industry, already suffering in the late 1980s from the rising costs of production, a fall in prices, and inadequate exploration and development, was hit particularly hard. From 1988 to 1991, oil production plummeted by almost 20% (Gaïdar 2007, 190-191). From 1992 to 1998, production fell another 23% (D. G. Victor and Victor 2004, 13). Russia's antiquated industrial base continued to be a profligate user of energy, and domestic gas prices were highly subsidized (Liuhto 2002, 32). Gazprom, which inherited control of the Soviet gas system, was in the unenviable position of being forced to supply domestic customers as well as former allies who could not pay their bills (Ahrend and Thompson 2005, 803). The only good news was that lower gas production was more than offset by a sharp decline in domestic demand, creating a surplus natural gas "bubble" that helped maintain export flows (N. M. Victor 2007, 10).

Russia reoriented its gas and oil exports towards Western markets, a process which started as early as 1991 (Considine and Kerr 2002, 10; Smeenk 2010). The post-Cold War period, therefore, has been marked by a relative shift in Russian energy flows from Eastern Europe to Western Europe.¹³ Closely interlinked with the issues of pricing and the corresponding reorientation to Western markets was the problem of pipeline transit. In the 1990s, newly-independent Eastern European and Baltic countries were highly dependent on Russian energy flows, which they could not afford to purchase at market prices, but those countries also found themselves in a position to use their status as transit states to interfere with export routes to Western European markets. Russia responded to this challenge by attempting to reassert control of this infrastructure by either purchasing it or bypassing it entirely. The linkages between issues of prices, debts, transit, and

¹³ In 1999, for example, Russia exported a total of 174 bcm of gas, of which 68 bcm were destined for Germany, Italy, and France. By contrast, CIS countries as a whole only received 43.9 bcm (Liuhto 2002, 48).

Soviet-era dependencies were evident in the way that price hikes with former Soviet bloc countries were implemented. Transit countries that were willing to surrender, or at least share ownership of their pipeline systems with Gazprom, were given more flexible pricing arrangements than those that did not (Hafner 2012, 4; Monaghan 2007, 282; Stern 2006, 49).

YAMAL-EUROPE PIPELINE

The Soviet Union's gas export pipeline infrastructure was heavily concentrated in Ukraine, even though actual gas production had moved eastward during the 1970s and 1980s. In addition to being a key conduit for export flows, Ukraine was itself a major customer of Russian natural gas. Its economy needed vast quantities of energy but could not afford this energy at market prices. In fact, Ukraine could not even afford preferential prices, accumulating \$2 billion in debt by 1994 (Balmaceda 2007, 25). Throughout the 1990s, Ukraine and Russia were embroiled in several serious disputes over the price of gas, debt repayment, transit fees, and allegations of theft of gas meant for Western Europe (Stern 2006, 34). The political disputes between the two governments were punctuated by threats and several temporary interruptions of supply in 1993 and 1994 (C. Johnson and Derrick 2012, 491; Stern 2006, 35).

In this context of incessant feuding and transit state unreliability, a major expansion of Russian gas pipeline infrastructure took place. Started in 1994 – but only reaching full capacity in 2006 – the Yamal-Europe pipeline, a 2,000 km network of large-diameter pipes capable of transmitting approximately 32 bcm of natural gas annually, was undertaken (Gazprom n.d.).¹⁴ The route of the Yamal-Europe pipeline was noteworthy because it reached Germany by traversing Belarus and Poland instead of Ukraine, thereby breaking with the pattern of Soviet-era export pipelines. This pipeline was not an attempt to cut off Ukraine. Gazprom emphasized that it was meant as a supplement, not a replacement, to existing gas flows: “The new export corridor increased flexibility and reliability of Russian gas supply to Western Europe” (Ibid.).

The Yamal-Europe project, like previous Cold War pipelines, was a collaborative venture emerging from a diverse mix of economic and political interests. Gazprom actually hoped to reap benefits at both ends of the pipeline. On the upstream side, the Yamal peninsula, despite its rich reserves, was proving to be a highly challenging area for gas extraction because of its Arctic climate and inhospitable terrain. Outside capital investment was vital for its development

¹⁴ As initially conceived, the project intended to tap new gas fields in the Yamal peninsula and would have been accompanied by a second project, known as Yamal II.

(Balmaceda 2006, 19). On the downstream side, Gazprom wanted to play a larger role in the distribution of its gas products in European markets, especially Germany (Balmaceda 2006, 20; Liuhto 2002). A deal with a new German partner, Wintershall, gave Gazprom 13% of the German wholesale market (Finon and Locatelli 2008, 435). This suggests that commercial interests, not just a desire to bypass Ukraine, were informing Gazprom's primary impulse behind this project (D. G. Victor and Victor 2006, 151, 164). For Belarus, the pipeline was welcomed not only because of the opportunity to earn transit revenues, but also because the country's Soviet-era gas transmission network was badly in need of outside investment (Balmaceda 2006, 18). The Polish state-owned energy company PGNiG also desperately needed the revenues from transit fees (Princova 2002, 52). These diverse political and economic interests finally coalesced in 1993 when the project was approved by Russia, Belarus, and Poland in a series of intergovernmental agreements, followed by the creation of joint ventures to design, construct and operate the pipeline.¹⁵

The Yamal project plan, however, quickly faced economic and political pressures, not the least of which was the low price of oil throughout the 1990s. As a result, there was no large-scale development of the Yamal peninsula due both to a lack of investment and cascading costs (Razumkov Centre 2002, 20-21; Smeenk 2010, 160). Rather, the gas for the Yamal-Europe pipeline was rechanneled from existing production around Nadym-Pur-Taz in the Tyumen region. Second, the pipeline itself was delayed due to weak government support and lower than expected gas demand in Poland and Germany (D. G. Victor and Victor 2006, 124-125). The first strand of the pipeline became operational in 1999 but did not reach full capacity for another seven years because of disputes over the financing of additional compressor stations (Hubert and Ikonnikova 2009, 7). Third, this project did not solve the transit problem, amounting to a modest diversification at best.¹⁶ Ultimately, persistent political disputes with Poland and Belarus over the ownership of the pipeline exacerbated Russian concerns with transit.¹⁷

Although it was often a source of friction between Gazprom and its partners,

¹⁵ The German section of the pipeline was the responsibility of Wingas, a joint venture between Wintershall and Gazprom. In Belarus, Gazprom cooperated with Beltransgaz, the state-owned gas transportation company. In Poland, EuRoPolGaz S.A.'s ownership structure was divided between Gazprom (48%), PGNiG S.A. (48%), and Gas Trading S.A. (4%).

¹⁶ In 2006, when Yamal-Europe was finally running at peak capacity, Ukraine was still handling 80% of Russian gas exports to Europe (Cohen 2006, 3).

¹⁷ In the early 2000s, when faced with the choice between building Yamal II across Belarus and Poland or the tremendously expensive Nord Stream project beneath the Baltic Sea, Gazprom chose the latter.

the Yamal-Europe pipeline also demonstrated the continued importance of cooperation among the stakeholders and the persistence of the Cold War model of pipeline projects. Like its predecessors, this export line largely owed its genesis to Western financing and technical inputs (Smeenk 2010, 158). Gazprom continued to utilize Western-sourced large-diameter pipes, which were financed through loans from export banks in manufacturing countries (Korchemkin 2004, 11). In addition to foreign pipes, Russia also imported sophisticated machinery and computer equipment.¹⁸ This pattern, whereby promises of long-term Russian gas deliveries served to mobilize loans, technology, and political support from Western partners, resembled earlier Cold War pipeline projects, but there were limitations, too. The relatively modest degree of implementation of the original Yamal-Europe concept showed that Gazprom was ultimately constrained by what its European partners were willing to fund.

ENERGY CHARTER TREATY

The collapse of the Soviet Union not only entailed a major reshuffling of the energy relationships between Russia and its former satellite states, it also opened a window of opportunity for Western Europe to project its own interests and norms eastward. The primary vehicle for accomplishing this in the 1990s was the Energy Charter Treaty (ECT). Growing from the European Energy Charter declaration of 1991 aimed at jumpstarting the economic recovery of the region by encouraging energy cooperation between Europe and the former states of the Soviet Union, the ECT was a multilateral treaty on energy trade and investment signed in Lisbon in 1994 by forty-one signatories, including Russia, and entered into force in 1998. As a legally-binding document, the ECT had a number of broad objectives: protecting foreign investors from host government discrimination or expropriation; liberalizing the trade in energy products and equipment based on General Agreement on Tariffs and Trade (GATT) and World Trade Organization (WTO) rules; guaranteeing the freedom of transit through pipelines and energy grids; safeguarding the environment by promoting efficient energy use; and establishing dispute resolution mechanisms for states as well as private companies (Energy Charter Secretariat 2004, 14-16). The ECT not only elaborated new rules for East-West energy flows, it also attempted to create new institutions to oversee the process. Western European countries drove this process, imprinting

¹⁸ Siemens, for example, provided gas turbines and control equipment for the Yamal-Europe pipeline's compressor stations while ABB, a Swiss multinational, constructed the line's final compressor station as a turnkey project. The Polish section was also equipped with a Supervisory Control And Data Acquisition (SCADA) system from the French company Alstom and an Alcatel fibre optic communications system (Hydrocarbons Technology n.d.).

it with their desire to safeguard investments in Russia's upstream gas and oil production and their own energy security. At the same time, Russia initially cooperated because it wanted to be protected from politically-motivated embargos of pipeline equipment or financing as had occurred during the Cold War.¹⁹ In fact, the premise that transfers of Western capital and technology by private investors would stimulate Eastern European economies, thereby guaranteeing political stability, was one of the underlying justifications for the ECT (Axelrod 1996, 497-498).

Nevertheless, the ECT's track record was decidedly modest. For example, it had no discernable impact on the Yamal-Europe pipeline (D. G. Victor and Victor 2006, 165). The ineffectuality of the ECT seemed to have deep structural roots, not the least of which was that it was never signed by the United States and was perceived to be a "European baby" (Wilson 2014, 94). The key issue was Russia's half-hearted participation in the ECT process. Russia signed the European Energy Charter declaration in 1991 and the Energy Charter Treaty in 1994 but never ratified it. The ECT was only provisionally applied throughout the 1990s and 2000s. Transit was often a major sticking point. Article 7 of the ECT contained ambitious rules on non-discriminatory access to energy transit infrastructure. Russia, finding itself cut off from its Western export markets by the breakup of the Soviet Union, initially shared an interest in resolving the transit issue (Axelrod 1996, 498). However, Russia's position on Article 7 was complicated by the fact that it was also a transit state for Central Asian gas, a potential competitor in European markets (Harks 2006, 51; Jaffe and Manning 2001, 141-143; Kandiyoti 2008; Sagers 2007, 659). Also, persistent European efforts to push for stronger transit rules have since aggravated Russia's fears of third-party access to its pipeline systems, further imperiling ratification of the treaty (Belyi 2009, 3; Kropatcheva 2011, 557-558). Russian critics also complained that the treaty was unfair because it was negotiated and signed during a period of weakness (Feklyunina 2012, 460). As a result, instead of relying on the ECT to guarantee access to third-country pipeline systems, Russia has chosen to reassert control of ex-Soviet infrastructure by buying it, creating joint ventures, or bypassing it entirely by building new export pipelines.

Russia's relationship with the ECT has been complex. Ratification of the treaty was often a divisive issue at the domestic level, with various interest groups, pri-

¹⁹ Article 8 of the ECT stipulates that signatories "shall eliminate existing and create no new obstacles to the transfer of technology in the field of Energy Materials and Products and related equipment and services." Article 9 is concerned with non-discriminatory access to foreign capital and financing. For the full text of the treaty, see Energy Charter Secretariat (2004).

vate enterprises, and government ministries arrayed for or against the ECT (Axelrod 1996, 498; Milov, Coburn, and Danchenko 2006, 285; Pominova 2014, 1, 5-7; Raff 2001). In the end, the balance of power ended up favoring anti-ECT factions. The Russian government officially stopped applying the treaty in 2009, announced that it would not be ratified, and halted membership dues payments for the Energy Charter Conference, though it still continued to participate in the Charter process.

ASSESSING RUSSIA-EUROPE ENERGY TRANSACTIONS

A striking instance of continuity in this survey of Soviet and post-Cold War era pipeline politics was the role of Western capital and technology in creating and sustaining the Soviet/Russian oil and gas industries. Writing when the ECT still promised to usher in a new era of energy trade, Andrews-Speed emphasized what he considered a “convergence” of interests: “The countries of the West are interested in obtaining supplies of petroleum from the eastern countries, preferably through the participation of their own companies, and the eastern states need investment and technology from the West to effectively develop their petroleum resources and require markets into which to sell their petroleum” (1999, 120). On the contrary, this paper demonstrates that a symbiotic relationship has existed as far back as the Tsarist period. This is also true of the infrastructure branching across Eastern and Central Europe, which was originally constructed through intergovernmental agreements and joint ventures between CMEA countries.²⁰ Pipeline politics between Europe and Russia, despite the frequent use of metaphors like “war,” “weapons” and “levers,” actually reflect a high level of collaboration and interdependence. Ironically, this paper demonstrates that threats of an energy weapon are not a recent phenomenon – this kind of discourse has been around since the 1920s – but the actual application of a Soviet/Russian energy weapon has been rare.

This is not to say that the energy relationship between Europe and Russia has been a tranquil one. Politically-motivated interruptions have occurred repeatedly. Ironically, it was not usually Soviet energy being employed as a weapon but access to Western capital and technology that has caused problems (Seppain 1990, 52). Russia’s reliance on foreign technology and capital, which dates all the way back to the origins of their petroleum industry, continues to structure East-West energy collaboration. Guaranteed access to technology and capital played an important role in justifying the ECT in the 1990s. Technological and financial inputs were crucial for developing new production areas and export pipelines,

²⁰ For the burdens posed by these joint ventures, see Hoffman (1985, 22-23).

such as Yamal-Europe, and were also necessary for sustaining existing networks. Soviet-era energy infrastructure has deteriorated and is based on increasingly obsolete technologies, a serious long-term issue for the Russian economy (Milov, Coburn, and Danchenko 2006, 291). As gas and oil production moves to more challenging environments, access to advanced technology becomes “even more relevant” (Gilardoni 2008, 4). It was no coincidence that the European Union’s sanctions against Russia in 2014 included sensitive technologies in the oil sector, especially deep-water drilling equipment. At the same time, this historical survey has shown that using technology flows as political leverage has been an unwieldy weapon at best, as none of the attempts during the Cold War were successful.

Adopting a more expansive view of what constitutes an institution can revolutionize our view of Cold War energy transactions. Intercontinental gas and oil pipeline projects served as “institutions” between stakeholders.²¹ Despite the ideological gulf separating the Soviet Union and Western European countries, their pipeline deals proved to be remarkably stable because they were built on shared values. Although both sides worried about defection or the distribution of relative gains – and Germany’s decision to renege on the Druzhba pipeline deal was a sign that those fears were not unfounded – they shared basic assumptions about how pipeline agreements were supposed to be made and implemented. These shared habits and practices were at the root of Cold War energy flows. Thus, European state-owned energy companies, government officials, and industrial representatives negotiated directly with their Soviet counterparts as ostensible equals. The resulting daisy chain of bilateral intergovernmental agreements saw the Soviets pledge to make gas deliveries for a decade or more on the understanding that this gas would not be re-exported to third markets, along with prices indexed to the cost of oil. In exchange, European partners provided technology and financing, which had a positive knock-on effect for their own industries in the form of contracts and manufacturing orders. The resulting intergovernmental agreements were often characterized as “gas for pipe” deals (Ericson 2009, 30). These energy transactions were highly politicized in that they required diplomatic negotiations, entailed formidable transaction costs, and periodically triggered American interference, but they were also very consistent – the Soviets never cut off oil or gas supplies to their European customers (Ahrend and Tompson 2005, 816; Finon and Locatelli 2008, 432; Harks 2006, 53; Quester 2007, 446; Schmidt-Felzmann 2011, 575; D. G. Victor and Victor 2006, 163).

²¹ Hedley Bull’s definition is useful in this context: “By an institution we do not necessarily imply an organisation or administrative machinery, but rather a set of habits and practices shaped towards the realisation of common goals” (2002, 71).

As institutions, pipeline systems are unique because of their sheer physicality, a fact that helped them survive the fall of the USSR. Ironically, the main source of conflict was initially the proliferation of new actors participating in these institutions, especially transit states, rather than a deeper divergence in how they should be operated. The Yamal-Europe project in the 1990s and the Nord Stream consortium between Russia and Germany in the late 2000s were modeled on Cold War-style pipeline deals, demonstrating the persistence of shared ideas on how to structure East-West energy trade. However, this continuity exists alongside signs of growing institutional divergence. Gazprom's move into downstream distribution markets in the 1990s, exemplified by its alliance with Wintershall during the construction of the Yamal-Europe pipeline, triggered European concerns about energy encirclement (Finon and Locatelli 2008, 429). More fundamentally, the ECT was an ambitious but contentious attempt to rewrite the rules of energy flows and access rights for pipelines. Meanwhile, the European Union has launched transformative plans for a Pan-European energy market that Russia does not agree with (Romanova 2008). EU energy market liberalization began with directives in 1998, 2003, and accelerated in 2009. Key objectives of EU policies included the unbundling of production, transportation, and trading activities, ensuring third-party access to transportation facilities, and increasing the use of spot-markets instead of long-term delivery contracts. Even though the pipelines themselves remain at the core of Europe-Russia energy relations, the EU's diversification and liberalization strategies pose a direct challenge to the traditional rules that governed these physical networks. From this perspective, Russia ceases to look like an energy superpower bent on leveraging its dominance in the gas and oil sectors to rewrite the rules of regional energy transactions. Rather, Russia might try to be seen as an intensely conservative player attempting to maintain the pipeline relationships that it forged with Western Europe during the Cold War.

CONCLUSION

A historical analysis of East-West energy transactions since the Cold War reveals that Russia's "energy weapon" is a complicated and multifaceted phenomenon. The intercontinental pipelines that facilitated East-West energy transactions during the Cold War were, in fact, highly collaborative ventures. The construction of these pipelines required an array of countries to coordinate their unique technological, geographical, financial, and natural resource endowments towards a single goal – long-term energy transactions. Once they were established, these

multinational pipeline networks also needed to be maintained and regulated on a day-by-day basis. Calling them weapons, levers, or steel nooses around the neck of Europe is misleading.²²

Changes in the post-Cold War period have transformed the shared habits and practices at the heart of these energy transmission systems. Among former CMEA nations and ex-Soviet Republics, the de-integration of their gas and oil markets spawned serious disputes over the ownership of infrastructure, transit fees, pricing, and the repayments of debts. It was this kind of conflict that spilled over and affected European customers in the Ukrainian crises of 2006 and 2009. It also explains Eastern European resistance to the Nord Stream pipeline. Meanwhile, institutional divergence between Russia and Western Europe took longer to manifest itself but has arguably become a more serious source of conflict. The pipeline hardware survived the transitional period of the 1990s, but the software of energy transactions between Russia and Western Europe is currently being reprogrammed, a challenging task because neither side agrees on how to institutionalize their new forms of cooperation. The ill-fated South Stream and Nabucco pipeline projects, Russia's failure to ratify the ECT, and the EU's recent antitrust investigation of Gazprom fall into this conflict category. However, there are several hopeful signs for the continuity of bilateral energy transactions. First, both sides profit from their ongoing relationship, even though they respectively complain about a lack of energy security or demand policies that encourage greater security. Second, the mutual dependencies conferred by their historical energy relationship restrict the maneuverability both sides possess when it comes to choosing more extreme measures.

REFERENCES

- Adamson, David M. 1985. "Soviet Gas and European Security." *Energy Policy* 13(1), 13-26.
- Ahmed, Naffes. 2014. "Ukraine Crisis Is about Great Power Oil, Gas Pipeline Rivalry." *The Guardian* (July 26). Accessed at <http://www.theguardian.com/environment/earth-insight/2014/mar/06/ukraine-crisis-great-power-oil-gas-rivals-pipelines> (October 29, 2014).
- Ahrend, Rudiger, and William Thompson. 2005. "Unnatural Monopoly: The Endless Wait for Gas Sector Reform in Russia." *Europe-Asia Studies*

²² For examples of this discourse see Copulos (1982), Crovitz (1982, 413) and Lebedoff and Raievski (1983, 507).

- 57(6), 801-821.
- Andrews-Speed, Philip. 1999. "The Politics of Petroleum and the Energy Charter Treaty as an Effective Investment Regime." *Journal of Energy Finance & Development* 4(1), 117-135.
- Axelrod, Regina S. 1996. "The European Energy Charter Treaty: Reality or Illusion?" *Energy Policy* 24(6), 497-505.
- Balmaceda, Margarita M. 1998. "Gas, Oil and the Linkages between Domestic and Foreign Policies: The Case of Ukraine." *Europe-Asia Studies* 50(2), 257-286.
- _____. 2006. *Belarus: Oil, Gas, Transit Pipelines and Russian Foreign Energy Policy*. London: GMB Publishing Ltd.
- _____. 2007. *Energy Dependency, Politics and Corruption in the Former Soviet Union: Russia's Power, Oligarchs' Profits and Ukraine's Missing Energy Policy, 1995-2006*. New York: Routledge.
- Belyi, Andrei V. 2009. "A Russian Perspective on the Energy Charter Treaty." *Real Instituto Elcano (ARI)* 98, 1-6.
- Bull, Hedley. 2002. *The Anarchical Society: A Study of Order in World Politics*. New York: Columbia University Press.
- Chanis, Jonathan. 2012. "U.S. Liquefied Natural Gas Exports and America's Foreign Policy Interests." *American Foreign Policy Interests* 34(6), 329-334.
- Cohen, Ariel. 2006. *The North European Gas Pipeline Threatens Europe's Energy Security*. Washington, DC: Heritage Foundation. Accessed at <http://www.heritage.org/research/reports/2006/10/the-north-european-gas-pipeline-threatens-europes-energy-security> (July 3, 2014).
- Considine, Jennifer I., and William A. Kerr. 2002. *The Russian Oil Economy*. Cheltenham, UK: Edward Elgar.
- Copulos, Milton R. 1982. *Is the Soviet Gas Pipeline a Steel Noose?* Washington, DC: Heritage Foundation. Accessed at <http://www.heritage.org/research/reports/1982/03/is-the-soviet-gas-pipeline-a-steel-noose> (January 1, 2015).
- Crawford, Beverly, and Stefanie Lenway. 1985. "Decision Modes and International Regime Change: Western Collaboration on East-West Trade." *World Politics* 37(3), 375-402.
- Crovitz, Gordon. 1982. "The Soviet Gas Pipeline: A Bad Idea Made Worse." *World Economy* 5(4), 407-414.
- Davis, Christopher Mark. 2014. "Industrial Performance in the USSR: Influences of State Priorities, Economic System, Industrial Policies and Hidden Processes, 1945-1980." In Christian Grabas and Alexander Nützenadel

- eds., *Industrial Policy in Europe after 1945: Wealth, Power and Economic Development in the Cold War*, New York: Palgrave Macmillan, 337-371.
- DeSouza, Patrick J. 1984. "The Soviet Gas Pipeline Incident: Extension of Collective Security Responsibilities to Peacetime Commercial Trade." *Yale Journal of International Law* 10, 92-117.
- East European Gas Analysis. 2014. "Major Gas Pipelines of the Former Soviet Union and Capacity of Export Pipelines." Accessed at <http://www.eegas.com/fsu.htm> (December 30, 2015).
- Energy Charter Secretariat, 2004. *The Energy Charter Treaty and Related Documents: A Legal Framework for International Energy Cooperation*. Brussels, Belgium. Accessed at <http://www.encharter.org/index.php?id=28> (December 10, 2014).
- Ericson, Richard E. 2009. "Eurasian Natural Gas Pipelines: The Political Economy of Network Interdependence." *Eurasian Geography and Economics* 50(1), 28-57.
- Esakova, Nataliya. 2012. *European Energy Security: Analysing the EU-Russia Energy Security Regime in Terms of Interdependence Theory*. Wiesbaden: Springer.
- Eurostat. 2014. "Energy Production and Imports." Accessed at http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Energy_production_and_imports#Imports (October 29, 2014).
- Feklyunina, Valentina. 2012. "Russia's International Images and Its Energy Policy. An Unreliable Supplier?" *Europe-Asia Studies* 64(3), 449-469.
- Finon, Dominique, and Catherine Locatelli. 2008. "Russian and European Gas Interdependence: Could Contractual Trade Channel Geopolitics?" *Energy Policy* 36(1), 423-442.
- Frost, Ellen L., and Angela E. Stent. 1983. "NATO's Troubles with East-West Trade." *International Security* 8(1), 179-200.
- Gaïdar, E. T. 2007. *Collapse of an Empire: Lessons for Modern Russia*. Washington, DC: Brookings Institution Press.
- Gazprom. "Yamal-Europe." Accessed at <http://www.gazprom.com/about/production/projects/pipelines/yamal-evropa/> (December 20, 2014).
- Ghaleb, Alexander. 2011. *Natural Gas as an Instrument of Russian State Power*. Carlisle, PA: Strategic Studies Institute, U.S. Army War College.
- Gilardoni, Andrea. 2008. *The World Market for Natural Gas: Implications for Europe*. Berlin: Springer.
- Gillette, Philip S. 1973. "American Capital in the Contest for Soviet Oil, 1920-23." *Soviet Studies* 24(4), 477-490.
- Gustafson, Thane. 1981. "Energy and the Soviet Bloc." *International Security*

- 6(3), 65-89.
- Hafner, Manfred. 2012. "Russian Strategy on Infrastructure and Gas Flows to Europe." POLINARES Working paper 73. Accessed at http://www.polinares.eu/docs/d5-1/polinares_wp5_chapter5_2.pdf (December 10, 2014).
- Hardt, John, and Donna L. Gold. 1982. *Soviet Gas Pipeline: U.S. Options*. Washington, DC: Congressional Research Service.
- Harks, Enno. 2006. "The Conundrum of Energy Security Gas in Eastern and Western Europe." *The International Spectator* 41(3), 47-58.
- Heinrich, Andreas. 2014. "Introduction: Export Pipelines in Eurasia." In Andreas Heinrich, Heiko Pleines eds., *Export Pipelines from the CIS Region: Geopolitics, Securitization, and Political Decision-Making*, Stuttgart: ibidem-Verlag, 13-73.
- Heymann, Hans, Jr. 1948. "Oil in Soviet-Western Relations in the Interwar Years." *American Slavic and East European Review* 7(4), 303-316.
- Hirschhausen, Christian von, Franziska Holz, Anne Neumann, and Sophia Ruster. 2010. "Supply Security and Natural Gas." In François Lévêque et al., eds., *Security of Energy Supply in Europe Natural Gas, Nuclear and Hydrogen*, Cheltenham, UK: Edward Elgar, 3-20.
- Hoffman, George Walter. 1985. *The European Energy Challenge: East and West*. Durham, NC: Duke University Press.
- Hofhansel, Claus. 1996. *Commercial Competition and National Security: Comparing U.S. and German Export Control Policies*. Westport, CT: Greenwood Publishing Group.
- Hubert, Franz, and Svetlana Ikonnikova. 2009. "Investment Options and Bargaining Power: The Eurasian Supply Chain for Natural Gas." MPRA Paper. Accessed at <http://mpa.ub.uni-muenchen.de/id/eprint/17854> (December 22, 2014).
- Hundley, Tom. 2010. "Poles Wary of Nord Stream Pact." *Global Post*. Accessed at <http://www.globalpost.com/dispatch/poland/091221/poland-russia-nord-stream> (October 30, 2014).
- Hydrocarbons Technology. "Yamal – Europe Gas Pipeline, Russia." Accessed at <http://www.hydrocarbons-technology.com/projects/yamal-europe-gaspipel/> (December 20, 2014).
- Igolkin, Alexander. 2005. "High Price of Soviet Oil." *Oil of Russia* (1). Accessed at <http://www.oilru.com/or/22/359/> (October 31, 2014).
- Jaffe, A., and R. Manning. 2001. "Russia, Energy and the West." *Survival* 43(2), 133-152.
- Jensen-Eriksen, Niklas. 2007. "The First Wave of the Soviet Oil Offensive: The

- Anglo-American Alliance and the Flow of 'Red Oil' to Finland during the 1950s." *Business History* 49(3), 348-366.
- Johnson, Corey, and Matthew Derrick. 2012. "A Splintered Heartland: Russia, Europe, and the Geopolitics of Networked Energy Infrastructure." *Geopolitics* 17(3), 482-501.
- Johnson, Debra. 2005. "EU – Russian Energy Links: A Marriage of Convenience?" *Government and Opposition* 40(2), 256-277.
- Kandiyoti, Rafael. 2008. "What Price Access to the Open Seas? The Geopolitics of Oil and Gas Transmission from the Trans-Caspian Republics." *Central Asian Survey* 27(1), 75-93.
- Katzman, J. E. 1988. "The Euro-Siberian Gas Pipeline Row: A Study in Community Development." *Millennium-Journal of International Studies* 17(1), 25-41.
- Kropatcheva, Elena. 2011. "Playing Both Ends Against the Middle: Russia's Geopolitical Energy Games with the EU and Ukraine." *Geopolitics* 16(3), 553-573.
- Lax, H. L. 1983. *Political Risk in the International Oil and Gas Industry*. Boston: International Human Resources Development Corporation.
- Lebedoff, Geric, and Caroline Raievski. 1983. "A French Perspective on the United States Ban on the Soviet Gas Pipeline Equipment." *Texas International Law Journal* 18, 483-507.
- Liuhto, Kari. 2002. "Russian Gas and Oil Giants Conquer Markets in the West." *Journal of East-West Business* 7(3), 31-72.
- Makholm, Jeff. 2010. "Seeking Competition and Supply Security in Natural Gas: The US Experience and European Challenge." In François Lévêque et al., eds., *Security of Energy Supply in Europe Natural Gas, Nuclear and Hydrogen*, Cheltenham, UK: Edward Elgar, 21-55.
- Manne, Alan S., Kjell Roland, and Gunter Stephan. 1986. "Security of Supply in the Western European Market for Natural Gas." *Energy Policy* 14(1), 52-64.
- Melamid, Alexander. 1994. "International Trade in Natural Gas." *Geographical Review* 84(2), 216-221.
- Merciai, Patrizio. 1984. "The Euro-Siberian Gas Pipeline Dispute-A Compelling Case for the Adoption of Jurisdictional Codes of Conduct." *Maryland Journal of International Law and Trade* 8(1), 1-51.
- Mikhail Korchemkin. 2004. "Large-Diameter Pipe Demand of Gazprom." Presented at the Pipeline Opportunities and Prospects, Calgary. Accessed at <http://www.eegas.com/images/archive/2004-10-07-Calgary-Korchemkin.pps> (December 23, 2014).

- Milov, Vladimir, Leonard L. Coburn, and Igor Danchenko. 2006. "Russia's Energy Policy, 1992-2005." *Eurasian Geography and Economics* 47(3), 285-313.
- Mishin, Vladimir. 2005. "Breaking Through the Oil Blockade." *Oil of Russia* (3). Accessed at <http://www.oilru.com/or/24/415/> (October 31, 2014).
- Monaghan, Andrew. 2007. "Russia's Energy Diplomacy: A Political Idea Lacking a Strategy?" *Southeast European and Black Sea Studies* 7(2), 275-288.
- Nollen, Stanley D. 1987. "Business Costs and Business Policy for Export Controls." *Journal of International Business Studies* 18(1), 1-18.
- Norman, Colin. 1981. "Soviet Oil Projections up for Grabs." *Science* 213(4514), 1342-1343.
- O'Sullivan, Meghan L. 2014. "A Better Energy Weapon to Stop Putin." *Council on Foreign Relations*. Accessed at <http://www.cfr.org/russian-federation/better-energy-weapon-stop-putin/p32569> (October 30, 2014).
- Pominova, Irina. 2014. *Risks and Benefits for the Russian Federation from Participating in the Energy Charter: Comprehensive Analysis*. Brussels: Energy Charter Secretariat Knowledge Center. Accessed at http://www.encharter.org/fileadmin/user_upload/Knowledge_Centre/Occasional_Papers/Russia_and_the_ECT_ENG.pdf (December 28, 2014).
- Princova, Zuzana. 2002. "Poland's Gas Industry in Turmoil as New Government Acts." *National Security & Defence* 27(3), 52-56.
- Prybyla, Jan S. 1965. "Eastern Europe and Soviet Oil." *The Journal of Industrial Economics* 13(2), 154-167.
- Quester, George H. 2007. "Energy Dependence and Political Power: Some Paradoxes." *Demokratizatsiya: The Journal of Post-Soviet Democratization* 15(4), 445-454.
- Raff, Anna. 2001. "Gazprom Blocking Lucrative Energy Charter." *The Moscow Times* (April 26). Accessed at <http://www.themoscowtimes.com/sitemap/free/2001/4/article/gazprom-blocking-lucrative-energy-charter/253786.html> (December 28, 2014).
- Razumkov Centre. 2002. "The EU-Ukraine-Russia 'Gas Triangle.'" *National Security & Defence* 27(3), 2-45.
- Romanova, Tatiana. 2008. "The Russian Perspective on the Energy Dialogue." *Journal of Contemporary European Studies* 16(2), 219-230.
- Roosa, Robert V, Armin Gutowski, Michiya Matsukawa, and Trilateral Commission. 1982. *East-West Trade at a Crossroads: Economic Relations with the Soviet Union and Eastern Europe: A Task Force Report to the Trilateral Commission*. New York: New York University Press.

- Sagers, Matthew J. 2007. "Developments in Russian Gas Production Since 1998: Russia's Evolving Gas Supply Strategy." *Eurasian Geography and Economics* 48(6), 651-698.
- Scanlan, Tony. 1982. "Outlook for Soviet Oil." *Science* 217(4557), 325-330.
- Schmidt-Felzmann, Anke. 2011. "EU Member States' Energy Relations with Russia: Conflicting Approaches to Securing Natural Gas Supplies." *Geopolitics* 16(3), 574-99.
- Seppain, Hélène. 1990. "The Divided West: Contrasting German and Us Attitudes to Soviet Trade." *The Political Quarterly* 61(1), 51-65.
- Shukman, David. 2014. "How Does Europe Wean Itself off Russian Gas?" *BBC News* (May 1, 2014). Accessed at <http://www.bbc.com/news/science-environment-27239734> (October 29, 2014).
- Smeenck, Tom. 2010. "Russia's Post-Soviet Gas Export Strategy during the 1990s." In Tom Smeenck ed., *Russian Gas for Europe: Creating Access and Choice. Underpinning Russia's Gas Export Strategy with Gazprom's Infrastructure Investments*, The Hague: Clingendael International Energy Programme, 149-64. Accessed at <http://www.rug.nl/research/portal/publications/pub%28ee8fec01-395c-4852-938f-fc83ba5ad3bb%29.html> (December 22, 2014).
- Spencer, D. L. 1966. "The Role of Oil in Soviet Foreign Economic Policy." *American Journal of Economics and Sociology* 25(1), 91-107.
- Stent, Angela. 1981. *From Embargo to Ostpolitik: The Political Economy of West German-Soviet Relations, 1955-1980*. Cambridge: Cambridge University Press.
- Stern, Jonathan. 1982. "Specters and Pipe Dreams." *Foreign Policy* (48), 21-36.
- _____. 2006. "Natural Gas Security Problems in Europe: The Russian – Ukrainian Crisis of 2006." *Asia-Pacific Review* 13(1), 32-59.
- Szawlowski, Richard. 1976. *The System of the International Organizations of the Communist Countries*. Netherlands: Brill.
- Victor, David G, Amy Jaffe, and Mark H Hayes. 2006. "Conclusions." In David G. Victor, Amy M. Jaffe, and Mark H. Hayes eds., *Natural Gas and Geopolitics: From 1970 to 2040*, Cambridge: Cambridge University Press, 467-483.
- Victor, David G, Amy Jaffe, Mark H Hayes, and Joe Barnes. 2006. "Introduction to the Study." In David G. Victor, Amy M. Jaffe, and Mark H. Hayes eds., *Natural Gas and Geopolitics: From 1970 to 2040*, Cambridge: Cambridge University Press, 3-24.
- Victor, David G, and Nadejda M. Victor. 2006. "Bypassing Ukraine: Exporting Russian Gas to Poland and Germany." In David G. Victor, Amy M. Jaffe,

- and Mark H. Hayes eds., *Natural Gas and Geopolitics: From 1970 to 2040*, Cambridge: Cambridge University Press, 122-68.
- Victor, David G., and Nadejda Makarova Victor. 2004. *The Belarus Connection: Exporting Russian Gas to Germany and Poland*. Program on Energy and Sustainable Development at Stanford University and the James A. Baker III Institute for Public Policy at Rice University. Accessed at http://pubs.its.ucdavis.edu/download_pdf.php?id=1699 (November 4, 2014).
- Victor, Nadeja M. 2007. *Gazprom: Gas Giant Under Strain*. Stanford University: Freeman Spogli Institute for International Studies. Accessed at http://iis-db.stanford.edu/pubs/21984/WP64,_Nadja_Victor,_NOC_Statistics_20070926.pdf (November 4, 2014).
- Ward, Richard J. 1960. "Soviet Competition in Western Markets: A Commodity Case and Its Implications." *The Journal of Industrial Economics* 8(2), 133-150.
- Wilson, Jeffrey D. 2014. "Multilateral Organisations and the Limits to International Energy Cooperation." *New Political Economy* 20(1), 85-106.
- Yevdoshenko, Yury. 2009. "At the Origins of the Soviet-American Energy Dialogue." *Oil of Russia* (4). Accessed at <http://www.oilru.com/or/41/849/> (October 31, 2014).

[Received October 27, 2015; Revised December 14, 2015; Accepted January 5, 2016]