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Conclusion

“Will Europe Come to Depend on Russian Natural Gas?” read a headline in the *Oil and Gas Journal's* August 28, 1961 issue. It was a radical suggestion at the time, and few analysts—to the extent that they took notice of it at all—believed that imports of red gas, let alone any dependence on it, would ever come about. A number of factors seemed to speak against it.

Most fundamentally, natural gas was for most Europeans still a largely unknown energy source that did not play more than a negligible role in the energy debate. This made it far-fetched to think of it as a dependence-generating fuel. To the extent that energy dependence was an issue in the early 1960s, it centered on oil imports, and it was precisely for the purpose of countering oil dependence that some European countries had taken an interest in natural gas in the first place.

Moreover, to the extent that gas imports had started to be considered, Algeria was eyed as the logical supplier. Regarding the Soviet Union, it was far from certain that it would have any gas to export and, if so, that it would be willing to do so. Siberia's vast gas Eldorado still remained to be discovered, and Ukraine's gas was piped in eastern rather than western directions.

Furthermore, factors of a more political nature spoke against a future European dependence on Soviet gas. Through the erection of the Berlin wall in mid-August 1961, the Cold War had reached a new height. A year later, the Cuban missile crisis followed, bringing the world to the brink of nuclear war. Such geopolitical tensions, in the eyes of most observers, made it highly improbable that Western Europe would choose to make itself dependent on piped energy from the East. The recent discovery of vast natural gas resources in the Netherlands, large enough to cover West European gas demand for the foreseeable future, added to this perceived improbability and nonnecessity of gas imports from the Soviet Union.

Yet a few years later, Europe had chosen precisely that path, opting for imports of Soviet natural gas large enough to make several Western countries highly dependent on it. In the period from 1968, when small volumes of Soviet gas for the first time started flowing into Austria, through 2011, when the controversial Nord Stream pipeline was inaugurated, Russian natural gas rose to become one of Western Europe's most important energy sources. In absolute terms, imports grew from a modest 1.5 bcm per year in the early 1970s to 29 bcm at the time of

the "Yamal" pipeline controversy in the early 1980s, to 63 bcm when the Soviet Union was dissolved in 1991, and 107 bcm in 2004. Currently, apart from most ex-Soviet republics, 15 West European and eight Central European countries depend on Russian natural gas via regular, long-term contracts. A few additional countries such as Belgium and the United Kingdom import Russian natural gas on a spot market basis. Through the planned addition of new pipeline capacity, the gas flow from the East is scheduled for continued growth.

This book set out to explain why Western Europe, in the midst of the Cold War, chose to make itself dependent on Russian natural gas, and why it was prepared to successively scale up these imports so massively. It also sought to understand how the involved actors, during the Cold War period and beyond, learnt to live with—and profit from—its dependence on piped energy from the East. This chapter summarizes and synthesizes the findings.

Dependence in Retrospect: Four Phases

The making of the East-West gas system can be divided into several more or less distinct phases. The *first phase* started in the late 1950s, at which time it was still uncertain whether natural gas, though already widely used in North America, would ever become a fuel of any significance in Europe. This was because the known intra-European gas resources were very limited. It was precisely this internal scarcity that inspired a number of visionary actors to consider the idea of longhaul imports. The main interest was in French Algeria's large gas fields. The possibility of Soviet gas imports was largely formulated in analogy with the Algerian visions. For the time being, however, none of the prospective system-builders managed to mobilize sufficiently strong support for any of the proposed projects. In the early 1960s it then gradually became clear that the Netherlands rested on huge natural gas reserves. On the short term, this tended to lower the interest in possible gas imports from far away. On the long term, an important effect of the Dutch finds was that they convinced Europeans of natural gas' potential as a fuel of the future. As a result, overall demand for natural gas started growing in earnest and long-distance pipeline construction took off.

By 1964 the Soviet Union had made up its mind to become a gas exporter, aiming for market shares in both Central and Western Europe. A first export agreement with Czechoslovakia inspired several governments and gas companies in Western Europe to seriously consider the possibility of linking up with the Soviet grid. Concrete negotiations were initiated in 1966 and 1967 with Italy, France, Austria, Finland, and Sweden, as well as with Japan. But the actual outcome was meager, being limited to a contract with Austria, signed in June 1968. Three months later, Soviet natural gas was for the first time piped across the Iron Curtain.

The *second phase* in the making of Europe's dependence started with the Warsaw Pact's invasion of Czechoslovakia in August 1968, just as Austria was preparing for its first imports. As it turned out, this critical event did not disturb the emerging gas trade, but rather helped to boost it. This was because most Western governments reasoned that Soviet-style totalitarianism could be more effectively managed—and ultimately eliminated—"through rapprochement," as Willy Brandt and Egon Bahr put it, than through confrontation and

isolation. Natural gas was in this context identified as an important vehicle for strengthening West European-Soviet relations, and as a result a new wave of gas negotiations were initiated in early 1969. The prospective importing countries were the same as in 1966–1967, with the important addition of West Germany. Pioneering contracts were eventually signed with Italy in December 1969, with Germany in February 1970, with Finland in December 1971, and with France in July 1972, whereas analogous talks with Sweden failed.

The new contracts firmly established the Soviet Union as a major contractual partner for several of Europe's largest gas companies. Whereas the pioneering imports to Austria had been realized through a minor extension of an already existing pipeline from the Soviet Union to Czechoslovakia, the new contracts, foreseeing a ten times larger gas flow, necessitated construction of a much more complex and costly transmission system. The Soviet Union faced enormous difficulties to complete its part of the system on schedule, but from winter and spring 1973–1974 the new pipelines could eventually be taken into use. Germany, Italy, and Finland now received their first Soviet gas deliveries, followed by France in 1976.

In the *third phase*, those countries that had already negotiated Soviet gas contracts sought access to additional volumes of red gas. In parallel, several new prospective importers signaled their interest in linking up with the emerging East-West system. Expensive pipelines had now already been built, transgressing the Iron Curtain, and red gas already reached customers in many parts of Western Europe. The challenge eyed was to further scale up the system. Western Europe was shocked by the 1973/1974 Arab oil embargo and the radical increase—and growing unpredictability—of world oil prices. This stimulated attempts to diversify energy supply both in terms of fuel and geography. Environmental concerns also contributed to boosting the popularity of natural gas. Fears were raised that the Soviet Union might turn out an equally unreliable partner as the OPEC, but most actors judged that Soviet natural gas was part of the solution rather than part of the problem.

For those countries that already had experience of negotiating gas import contracts with the Soviets, and of importing red gas in practice, the talks were now much easier to conduct than in the 1960s. The trust that had been established through earlier cooperation turned out to be a valuable asset in the new, more turbulent energy era. New prospective importers—notably Sweden, Switzerland, Belgium, and Spain, but also the Netherlands and the United States—failed to come to agreement with Moscow, a strong interest in Soviet gas notwithstanding. Apart from imports of red gas proper, supplies from Iran, to be transited through the Soviet Union, were hailed as a major opportunity for Western Europe. Germany, Austria, and France in 1975 agreed with Moscow and Tehran on a major tripartite "switch," in which Iran was to pipe large volumes of gas to the Soviet Union, which in turn would transmit a corresponding volume to Western Europe. This was followed by the much-debated Yamal negotiations, which started in 1978 and resulted in a series of bilateral contracts, most of which were signed in 1981–1982. Whereas implementation of the tripartite deal was ultimately jeopardized by the Iranian revolution, the Yamal project materialized as planned, paving the way for more than a doubling of previously contracted imports. However, the resurgence of Cold War in the early 1980s made the Yamal deals highly controversial. The United States, which up to then had

not objected to European imports from the East, vigorously opposed the ambitious project and actively sought to prevent or at least delay it—though in vain.

In the *fourth and last phase*, European gas importers had to cope with the radical fact that East European communism had collapsed and the Soviet Union ceased to exist. A period of organizational and institutional chaos followed. The sudden emergence of new transit countries—Ukraine, Belarus, and Moldova—generated new vulnerabilities in the overall system. Rather than trying to *reduce* its dependence on Russian gas, however, Western Europe opted to do what it could to *manage* it. At the same time proposals for a further scaling up of imports were developed. The West Europeans believed that the post-Soviet political and economic crisis was of a temporary nature. In reality it turned out to be chronic. Importers sought to actively contribute to the crisis' solution, but in vain. Failure to establish a stable contractual regime for the gas trade between former union republics was a key factor behind a series of intentional Russian supply cutoffs to the new transit countries. Western Europe was indirectly affected by these events. Seeking a way around the problem, Russia and its Western customers increasingly channeled their efforts to create new transit routes, of which the most controversial was a direct pipeline from Russia to Germany, laid on the bottom of the Baltic Sea.

Remarkably, neither the resurgence of Cold War in the 1980s nor the collapse of the Soviet Union in 1991 had any notable impact, quantitatively speaking, on the overall system's continued expansion and growth. The Iranian revolution, the second oil price shock, the Soviet Union's invasion of Afghanistan, the Polish crisis of 1981–1982, and Reagan's new confrontative policy toward Moscow—none of these international crises were able to stop the West Europeans from radically scaling up their imports of red gas in the 1980s. Similarly, the fall of the Berlin Wall, the division of the Soviet Union into 15 independent states, and the extreme institutional and economic disorder in the former red empire were unable to bring about any slowdown in East-West system-building. Imports continued to grow and additional pipelines were constructed. This sustained expansion is especially remarkable if seen in relation to mounting opposition in the West, starting in the 1980s, to dependence on the Soviet Union and Russia as voiced by powerful actors in Europe and elsewhere. In LTS terms, the East-West gas system had by the 1980s acquired considerable "momentum."

From where, then, did this momentum come? Why did Soviet and West European stakeholders in the first place decide to establish a transnational gas system? What compelled them to take the first steps into this unknown and obviously risky realm? Why did they not follow in the footsteps of, for example, Europe's electricity system-builders, who for political and military reasons had created separate East and West European grids, with only minimal interaction across the Iron Curtain? Based on the stories told in this book, the following sections explore this intriguing issue first from a Soviet, then from a West European perspective.

Energy Weapons: Real and Imagined

Whether Russia, through its natural gas exports, possesses an "energy weapon" and the extent to which it, if so, makes use of it in actual practice, has been

subject to fierce debate in the wake of repeated post-Soviet gas crises. The wide range of conclusions arrived at by different analysts is striking, suggesting that energy weapons do not (always) objectively exist, but that we are more likely to grasp their nature if we treat them as social constructs. In other words, it may be useful to think of an energy weapon as existing only to the extent that it is believed to exist, and to place perception rather than objective reality at the center. Whether or not Soviet/Russian natural gas has "actually" constituted an energy weapon, the involved actors have been forced to relate themselves to such a weapon's perceived existence. Importantly, Russia's energy weapon, whether or not "real" or "imagined," has thereby had a very concrete influence on system-building activities such as the dimensioning of Western Europe's underground gas storage facilities, its efforts to build interconnecting pipelines with alternative gas suppliers, and its overall ambitions to diversify supply.

Moreover, the material presented in this book suggests that the usual understanding of Russian gas exports to Western Europe as a "threat" needs to be broadened. The debate so far has focused almost exclusively on the fear of *politically motivated supply disruptions* and, accordingly, Russia's alleged ability to influence West European politics through the mere potentiality of such cutoffs. The available material does not support the thesis that Moscow, during the Cold War, contemplated the use of natural gas exports for this purpose. Particularly in the early phase of the trade, the Soviets were well aware that it would be pointless to try and use it for political blackmail, simply because the imported volumes were much too insignificant in relation to total European energy use. Later on, the Kremlin was able to observe how the importing companies developed advanced mechanisms that would enable them to respond effectively to any supply crisis, irrespective of the causes of such an event. Importantly, the Soviets were not disappointed by such developments, but, on the contrary, felt encouraged, since these measures indicated that the Europeans were interested in a further scaling up of imports from the East.

There are at least three alternative ways in which Soviet natural gas exports may be—and have been—viewed as a potential weapon. First, the perceived danger of importing Soviet gas was historically discussed in terms of *potential dumping of Soviet gas on West European markets*. In 1967, for example, as the Germans started discussing possible imports of Soviet natural gas, their main fear was not so much the possibility that the Soviets might deliberately disrupt supplies, but rather that the Kremlin might seek to disturb the Ruhr's politically sensitive coal industry, which at the time was facing severe difficulties, by flooding the Federal Republic with cheap red gas. This interpretation of the Soviet energy weapon was rooted in a previous debate that had taken off in the 1950s following an aggressive Soviet oil export strategy. These fears may have been warranted, yet the available sources, while showing that this was a major concern in the West, do not support the idea that it was actually a major purpose of the Soviet Union's attempts to sell natural gas to West Germany, nor to any other country. On the contrary, in the actual negotiations the Soviets quickly earned a reputation for being extremely tough concerning their demands for a high gas price, and several prospective deals failed precisely because of reluctance from the Soviet side to lower its bids.

Second, there was the possibility of using gas exports as a more *indirect* weapon in the Cold War struggle. A main Soviet foreign policy strategy was for a long time to encourage cooperation with some countries though not all. The purpose was to *divide the capitalist world and the NATO*. The available material suggests that the Soviet gas export strategy indeed was molded to fit this overarching foreign policy goal. The Soviet-Austrian gas negotiations of 1966–1968, for example, must clearly be analyzed in relation to Austria's attempts at the time to associate itself more closely with the European Economic Community (EEC). The Soviets vehemently opposed any such association, and natural gas became a brick in the wider political struggle about Austria's future. Moreover, while the Soviets in 1966 and 1967 initiated gas negotiations with Austria, Italy, France, Finland, and Sweden, they deliberately refused to do the same with West Germany. This was well in line with the Kremlin's dominant policy at the time of politically isolating the Federal Republic. When the Yamal pipeline was negotiated in 1980–1982, the Soviets similarly used the East-West gas trade to exploit and encourage intra-Western (and more specifically transatlantic) political tensions.

Third, natural gas exports were used in the Cold War ideological struggle between capitalism and communism for the purpose of strengthening the Soviet Union's *international prestige*. This was emphasized by Gas Minister Alexei Kortunov in his attempts to persuade the Soviet leadership of the importance of bringing about an East-West gas trade in the first place. Soviet media also referred repeatedly to the country's growing natural gas exports with great pride, pointing to the fact that the West Europeans had turned to the communist world's reliable suppliers to solve their energy problems.

Broadening the interpretation of what may constitute an "energy weapon" to the possible ways in which a country may use energy to deliberately hurt or weaken another country or region, directly or indirectly, it may thus be argued that the Soviet Union did possess an energy weapon and that it did make use of it. It was clearly used by the Kremlin as a tool for dividing the capitalist world and for increasing the Soviet Union's international prestige. Yet it was not used for political blackmail, nor for deliberately disturbing West European fuel markets.

In general, the evidence presented in this book indicates that many analysts have exaggerated the role of Soviet and Russian natural gas as an energy weapon. Importantly, even the "softer" political functions of Soviet natural gas exports—that is, its potential to divide the capitalist world and boost the Soviet Union's prestige—were only secondary motives for the Soviets to embark on the gas trade. Regarding the primary motives, these were interpreted differently by different actors. For the Soviet Union's political leadership, the main purpose of gas exports was clearly to generate hard currency, which in turn could be used to cover trade deficits that would otherwise loom large vis-à-vis the capitalist world. This motive grew increasingly important as global fuel prices increased, a trend that was much discussed around the world precisely at the time when the first East-West gas contracts started to be negotiated. The economic dimension of gas exports grew even more important from the mid-1970s, when the Kremlin was forced to acknowledge that it would not be able to continue increasing its oil exports to the West. Scaled-up

exports of natural gas, which at the time still accounted for only a small share of overall export income, was identified as the only way forward.

Mingazprom, for its part, had a different primary motive for advocating exports of natural gas. It was Mingazprom, under Alexei Kortunov, that played the main role in bringing up the idea of transnational system-building as a real possibility. Yet the ministry was not first and foremost interested in strengthening the Soviet Union's foreign trade balance, but rather in boosting the role of natural gas in relation to other branches of the Soviet energy and fuel complex. Kortunov had three major motives: first, to use gas exports to the West as a way of mobilizing resources and political support for his ministry's ambitious but controversial plan for a radically expanded domestic pipeline system. Second, to strengthen the domestic legitimacy and prestige of the Soviet gas industry, at the time a young branch of the Soviet economy whose future was still contested. Third, to combine gas exports with the import of high-quality Western steel pipe and advanced equipment, access to which was considered crucial in view of chronic technical problems and coordination failures in the domestic pipe and equipment industries.

Notably, some Soviet actors also argued *against* exporting gas to the West. This was because they considered such a trade riskier than the export of crude and refined oil products. Natural gas demanded a dedicated export infrastructure that would have little alternative use, should the West suddenly decide to withdraw from the project. Gas exports were bound to be inflexible: they would have to take place on a long-term basis, making it difficult to quickly increase or decrease the flow so as to optimize the foreign trade balance—a characteristic Soviet technique in the case of oil exports.

The ways in which the Soviet Union has and has not used or intended to use its gas exports as an "energy weapon" does not necessarily tell us whether Russia might do so in the future. It is one of the salient characteristics of large technical systems that they may be built for one purpose and later on be exploited for another. For the time being (hard currency) revenues clearly remains the primary motive for both the Kremlin and the gas industry. Notably, Russian export earnings are nowadays often interpreted as a political weapon in their own right. In an age of huge state budget deficits and accelerating indebtedness in large parts of the Western world, natural gas export revenues contribute decisively to Russia's overbalanced state budget, and thereby strengthens Russia's power and independence on the international arena. Moreover, the contribution of gas exports to Russia's international prestige remains an important factor. Having lost its previous status as one of the world's two superpowers, Russia's global leadership in gas exports constitutes a more important source of national pride than ever before.

If we turn to Russia's relations with other former Soviet republics, the situation looks different and new motives have appeared since the collapse of communism. Russia's gas exports to the Baltics, Belarus, Ukraine, Moldova, and the Caucasian republics have been plagued by repeated intentional supply disruptions and contractual controversies. For Gazprom, these cutoffs have as a rule followed as a result of nonpayment from the side of the importers. For the government, however, potential and actual supply disruptions have come to form an integral component of the Kremlin's foreign policy. This was apparent already under Yeltsin in the 1990s, and it has become an even more

salient feature under Putin and Medvedev. The ambiguous nature of intra-CIS supply disruptions, which are likely to continue plaguing post-Soviet gas supply for the foreseeable future, is at the heart of the overall debate about Russia's present-day reliability as a supplier. Even so, the CIS experience is of little value for understanding Western Europe's evolving dependence, which is of a very different nature.

Understanding Europe's Enthusiasm

Western Europe feared, from the very outset, possible negative consequences of the East-West gas trade. Actors discerned a number of risks, including the abuse of natural gas as a political and economic "weapon," but also technical and organizational risks related to unwanted disturbances in the pipeline system and Soviet failure to make the contracted gas volumes available. Why, then, did West European countries, in the midst of the Cold War, eventually accept these risks? Why did they voluntarily choose to embark on a journey that was bound to make them highly dependent on their main ideological and military enemy?

The stories told in this book provide several complementary answers. First of all it should be emphasized that West European actors, while aware of the risks, identified far-reaching *opportunities* in gas imports from the Soviet Union. In the most fundamental sense, Soviet gas offered a major *supply opportunity*. It was considered a way of getting access to a fuel that was not (sufficiently) available domestically and, as in the case of Finland and Austria, might not have been available from any other supplier on acceptable terms. This is to say that without imports from the Soviet Union, natural gas might have had to play a much less prominent role in Western Europe's primary energy supply. The Soviet contracts were typically negotiated at a time when additional gas supplies were direly needed, usually because domestic gas resources were about to be depleted while demand continued growing exponentially. This was obvious in the case of Austria and Bavaria, which were, therefore, the ones most in a hurry to negotiate Soviet contracts, whereas it was a less salient feature for Ruhrgas and Gaz de France. ÖMV, in particular, was extremely relieved having concluded its first Soviet contract, emphasizing that it prevented the domestic situation from becoming critical.

But there were also *economic opportunities* in linking up with the East. Clearly, countries such as Germany, Italy, and France would have been able to cover their gas demand for the foreseeable future through imports from elsewhere. However, they might have had to accept substantially higher prices. Importantly, this does not mean that Soviet gas was (much) cheaper than Dutch, Libyan, Algerian, or Norwegian gas. Although this was sometimes perceived to be the case—notably for Austria and Bavaria, both of which were located near the Iron Curtain and at considerable distance from other suppliers—the Soviets closely monitored the prices West European gas companies paid for gas from elsewhere, and skilled negotiators such as Nikolai Osipov earned a reputation for being extremely tough in demanding prices at roughly the same level. Failure to agree on the gas price appears to have been the main reason for the initial failure of the Soviet-Italian negotiations in 1966–1968, and the harsh price dispute in Ruhrgas' pioneering negotiations in 1969 was

close to killing Germany's prospects for imports from the East. ÖMV, for its part, was severely criticized domestically for having agreed on a too high price for its Soviet supplies. The Soviets changed their pricing strategy only in the 1980s, lowering their bids in order to make maximal use of the newly constructed Urengoi-Uzhgorod export pipeline. By that time, however, the overall East-West gas regime had already been firmly established. In the preceding, formative period of the 1960s and 1970s the Soviets were *not* prepared to go significantly below the price of competing exporters.

To a much greater extent, the economic opportunity lay in the potential of Soviet natural gas to *stimulate the overall competitive dynamics* of the West European gas market. Importers wanted Soviet gas because it would offset the economically unfavorable reliance on what were perceived to be monopolistic suppliers, notably the Esso-Shell group, which was in control of Dutch gas exports, and Algeria's state-owned oil and gas company Sonatrach. In practice, importers such as ÖMV, ENI, Ruhrgas, and GdF tried to make use of this competitive dynamics by negotiating in parallel with several prospective exporters. ENI thus negotiated at the same time with the Soviet Union and the Netherlands, playing them off against each other. Ruhrgas negotiated its first Soviet contracts while simultaneously renegotiating the terms of its earlier Dutch supplies and seeking access to Algerian gas. GdF, for its part, negotiated in parallel with the Soviet Union and Algeria. This behavior often had the desired effect, and there is no doubt about the fact that the Soviet Union played an important role in increasing the overall competitiveness of natural gas vis-à-vis other fuels in Western Europe, and thus in boosting the overall popularity of natural gas in this part of the world. But the strategy of parallel negotiations was also perceived as risky in the sensitive formative phase of East-West system-building, as it threatened to destroy the positive atmosphere that was being built up between the negotiating parties. Moscow initially suspected that the Western companies were not truly interested in imports of red gas, but merely used the East-West talks as a lever in their negotiations with other prospective suppliers. In the German case, the federal government had to intervene in Ruhrgas' negotiations with the Soviet side, reassuring the Soviet delegation of the sincere German interest in actually coming to agreement.

Another reason for Western Europe's interest in Soviet gas was that it offered *environmental opportunities*. This aspect was significant already from the outset, but it grew more important with time. Soviet gas was used for replacing coal and oil on environmental grounds, and it also played a role in replacing nuclear power. Neither Austria, which in 1978 decided to abandon its nuclear program at a time when its first reactor had just been completed, nor Italy, which in the aftermath of the Chernobyl disaster decided to quickly decommission its reactors, might have been able to do so, had Soviet gas not been available in large quantities. After the 2011 Fukushima disaster, Russian natural gas can be seen to play a similar antinuclear role in Germany. All in all, gas imports from the East have been perceived as a way of solving environmental problems throughout Western Europe.

Finally, actors saw significant *political opportunities* in the prospective import of Soviet natural gas. Austria hoped that by linking up with the Soviet gas system the Kremlin would be less irritated at the country's attempts to associate itself more closely with the EEC. Italy's communists favored an East-West

gas deal hoping that it would strengthen the country's relations, in a general sense, with the world's leading communist power. For Willy Brandt and Egon Bahr in West Germany, Soviet gas was used as an instrument in implementing the Social Democrats' New Eastern Policy. Brandt and Bahr deliberately aimed to make Germany dependent on the Soviet Union, anticipating that this would convince the Kremlin of Bonn's sincere intentions to embark on a new, reconciliatory political path in Soviet-German relations. France also appears to have regarded natural gas pipelines as an effective way of strengthening overall French-Soviet ties. Needless to say, speeches by government representatives pointing to the benefits of Soviet gas for international understanding were given ample room at the inauguration ceremonies of practically all new East-West pipelines.

Because different actors supported (and opposed) imports for different reasons, it is not possible to specify any primary or most important Western purpose of importing Soviet gas. Actors had different agendas and different opportunities in mind, although they were typically eager to rhetorically make use of all the above opportunities when seeking to convince others and mobilize actor networks. Otto Schedl, for example, was primarily interested in supply and economic opportunities (in the regional Bavarian context). Egon Bahr in Bonn became a supporter of Schedl's ambitions, but for completely different reasons, stressing the political opportunities (for the Federal Republic, not for Bavaria). Supporters of the project referred to each other's arguments, and Bahr prepared a long list of seemingly unrelated advantages that a Soviet deal would offer and which could then be used for convincing others. This made it possible for Bahr to enroll supporters from throughout the political spectrum as well as from the business elite, while the number of opponents were reduced. In this way a strong coalition of actors could be built.

A Gradual Learning Process

Prospective system-builders in Western Europe needed to convince themselves and others that the risks linked to red gas were manageable and, therefore, worth taking. A first necessary step in this context was to *learn to trust the intentions of their Soviet partners*. This was easier in some cases than in others. A factor that influenced the degree of difficulty turned out to be whether or not the prospective importing country already had well-developed relations with the Soviet Union, that is, in general political and economic terms. Austria, Italy, and France—as well as Finland and Sweden—here turned out to be in favorable positions. Despite their location on the Western side of the Iron Curtain, they had opted for an overall path of cooperation rather than confrontation with Moscow. Although this did not mean that relations were friction-free, a certain level of basic trust was already in place at the time when possible gas imports started to be discussed. From this perspective, it is hardly surprising that the above five countries became the first to initiate serious negotiations.

In a much more difficult position were those actors in Germany who wished to import Soviet gas. At the time when Bavaria started working for a gas import from the East, general Soviet-German relations were characterized by fear, hostility, and suspicion. The former wartime enemies sought to

mutually isolate each other on the foreign policy arena. Bonn was extremely suspicious about the true intentions of the Soviets, and this became a major reason for Bavaria's initial failure to gain support from the federal government for its plans—an absolutely necessary condition for Schedl's vision to have any chance of being realized.

An important facilitating factor in learning to trust Moscow's intentions took the form of experience of importing other Soviet energy sources, notably oil. The East-West oil trade had a long history and for the actors involved the gas trade was regarded as its logical extension. This became obvious especially when the main oil and gas actors in a prospective importing country coincided. Both ÖMV and ENI—the Austrian and Italian state-owned oil and gas companies, respectively—had already developed close links with Soyuznefteexport and the Soviet Ministry of Foreign Trade in connection with large-scale oil imports. The prospective partners of the gas trade thus already knew each other, and above all they knew that contracts signed for imports of red oil had been fulfilled. To judge from the oil trade, there was no reason to distrust the Soviets regarding their sincere intentions to live up to a contract once it had been signed. In the case of Germany, in contrast, imports of red oil had mainly been handled by a private Hamburg-based company with no connections to the gas industry. This possibly contributed to the late start of the German-Soviet gas negotiations.

But it was also necessary to learn to *trust the Soviet Union's technical and organizational ability* to carry out gas exports in practice. This was arguably more difficult. Exporting natural gas was technically and organizationally much more challenging than exporting oil, and no one had ever attempted to build a large-scale pipeline infrastructure that transgressed the Iron Curtain. No one knew if it would work in a technical sense, nor to what extent unanticipated and perhaps unsolvable problems would appear on the way. Against this background, it was not surprising that Austria became the first capitalist country to import Soviet gas—five years before Germany and six years before Italy and Finland. Soviet exports to Austria were crucially facilitated by the fact that already existing pipelines offered a highly convenient interconnection possibility. Only five kilometers of new pipelines had to be built to interconnect the existing national systems of Austria, Czechoslovakia, and the Soviet Union! All other West European importers would have to commit themselves to much more far-reaching investments in transit pipelines and domestic infrastructure. Austria's import of Soviet gas was further facilitated by this country's internal gas geography, as its main gas fields were located next to the Czechoslovak border. This made it possible, from an Austrian point of view, to treat imports from the east as just another gas field that fed natural gas into the domestic pipeline grid, while in case of supply disruptions domestic production could easily be accelerated so as to compensate for the loss. No expensive additional investments were needed, at least not on the short term.

The key role of Austria's imports of Soviet gas as a test-case for Europe as a whole can hardly be exaggerated, and it is far from certain that Western Europe would have come to import Soviet gas at all, had Austria not opted to do so. The Soviet Union did its utmost to live up to its contractual obligations

vis-à-vis ÖMV during the initial delivery years, to the point that domestic gas needs were sacrificed and Ukrainian, Belarusian, Lithuanian, and Latvian consumers were left to freeze in the middle of the winter. When Mingazprom still failed to live up to what it had promised, so that ÖMV received much less gas than promised and at a much more irregular pace, the Soviets tried to hide its failure through innovative bookkeeping. With hindsight it is easy to understand why the Soviets were so keen to make a good impression in terms of its reliability as an exporter: a good Austrian track record was a prerequisite for other, larger European customers to join in during the second phase.

Apart from some unconfirmed reports hinting at the chaos of Soviet system-building, Western gas companies and governments in this early period remained unaware of the Soviet difficulties to bring about gas exports in practice. Despite the technical problems, Austria's imports were interpreted as functioning satisfactorily, and its allegedly positive experience became an argument for other countries to downplay the technical risks involved. This in turn paved the way for export contracts to be signed with Italy in 1969, with Finland in 1971, and with France in 1972. Even the West German Ministry of Economy, which had earlier been extremely suspicious about the Soviet Union, changed its mind regarding the red empire's trustworthiness as a gas exporter, championing a first German contract that could eventually be signed in 1970 and a second one in 1972. The second contract was notable because it was finalized before the exports that had been agreed upon in the first contract had even commenced! It is difficult to imagine that this would have been possible, had Austria not offered a seemingly positive example.

The negotiations themselves were also important arenas for building trust and creating "resonance." Soviet negotiators got the opportunity to explain in detail how their gas system functioned, what the main problems and challenges were, and how the new export flows to Western Europe would be brought about. When held in the Soviet Union, the talks often included field trips to major gas fields, pipeline construction sites, research institutes, and the like. Even so, Western gas industry representatives failed to get a realistic view of Mingazprom's undertakings, which were in a more or less constant state of crisis. Ruhrgas' top managers, in particular, repeatedly testified to the Soviet gas ministry's organizational skills and high technological level. They failed to grasp the harsh Soviet realities.

At the same time, Western gas companies, in their negotiations with the Soviet side, were forced to spend much effort trying to explain how the gas markets in their own countries worked. While the technical aspects of the West European gas system were easily explained, this was not the case regarding key market phenomena such as competition and pricing. The Soviets treated the gas system as a technical construct and were suspicious about Ruhrgas', ÖMV's, and others' insistence that it was absolutely decisive that the gas price was set in such a way that it would be competitive vis-à-vis gas from elsewhere and in relation to other primary fuels such as oil. Failure to agree on this repeatedly threatened to stall the talks. Eventually, however, the Soviets learned the trade and accepted the West European market price as a point of departure. Moreover, when contracts were extended and renegotiated from around 1971, and in particular after the first oil price shock in 1973/1974,

they skillfully exploited the logic of the market, paving the way for a dramatic increase in the profitability of gas exports.

The perceived trustworthiness of the Soviet Union, both regarding its intentions and its technical ability, increased gradually through positive feedback: the more the Soviet Union proved able to export, the more convinced were Western governments and gas companies that additional imports from the East would be safe. By 1969, in the case of Germany, an import of red gas corresponding to up to 10 percent of total German demand was considered acceptable from a security perspective. Three years later, the perceived vulnerability had decreased so that a level of 14 percent was not considered problematic. By 1975, a 22 percent dependence on the Soviet Union was seen acceptable, and in connection with the Yamal negotiations a few years later the share had increased to 30 percent. By the early twenty-first century, Russian gas covered around 35 percent of total German gas demand.¹ Positive feedback over a period of several decades thus constitutes an important explanatory factor behind Europe's current dependence on Russian natural gas.

The Evolution of a Transnational System

The perception of opportunities and risks in the East-West gas trade explains why Soviet and West European actors opted to engage in dependence-generating system-building with the Cold War enemy in the first place. However, to fully grasp the internal dynamics and long-term evolution of the East-West gas system, including its ability to resist radical shocks from the geopolitical environment, we need to scrutinize the system's complexity and intricate socio-technical character.

To the system's key technical or material components belonged transnational pipelines, underground gas storage facilities, compressor stations, control technology, and a wide range of additional equipment, whereas the social part of the system centered on national and regional governments, gas transmission and distribution enterprises as well as pipe and equipment manufacturers. International organizations such as NATO, the International Gas Union (IGU), and the European Union (and its forerunners) were also part of the system, though not at all to the same extent as national and regional actors. Apart from the organizations and individuals involved, the exports depended on innovative contractual arrangements and a variety of informal institutions for enabling communication and cooperation across military and ideological divides.

The system as a whole could come into existence and grow only when all components—technical and social—were in place and were allowed to interact in a meaningful way, mutually supporting and reinforcing each other. Enabling and managing this interaction was a prime task for system-builders. Given the system's transnational extent and, in particular, the need to overcome the Iron Curtain, no one could tell whether or not they would succeed. System-building organizations such as Mingazprom, Ruhrgas, ÖMV, and ENI had earlier been in charge of national or subnational gas grids over which they had far-reaching control, and they were used to operate in fairly homogeneous regional and national settings. When embarking on transnational projects, they faced the very different challenge of extending their pipeline networks to

territories where others were in charge, and of linking up with systems whose character and style differed radically from that of "their" system.

In particular, systems in East and West differed from each other in terms of the reverse salients with which system-builders had to cope. From the perspective of transnational interlinking, this was not necessarily a problem—on the contrary, much of the dynamics of East-West integration in natural gas stemmed from the successful exploitation of Soviet and West European reverse salients that were largely complementary and could be resolved precisely through integrative efforts. In the Soviet Union, it was pipelaying that for a long time lagged behind. Throughout the first and second phases outlined in the beginning of this chapter, Mingazprom identified the shortage and low quality of domestically produced steel pipes as its overarching critical problem. Domestic manufacturers were not able to keep pace with Mingazprom's rapidly growing need for more and ever wider steel pipes, and this became one of Mingazprom's key motivations for probing the possibilities of cooperation with the West.

By contrast, Western Europe's main problem was a structural lack of gas resources. Access to high-quality steel pipes was not a problem. Not surprisingly, then, the first major East-West contractual arrangements took the form of countertrade deals in which Soviet natural gas was traded for West European steel pipe. In this way the most critical problems of the Soviet and West European gas systems, respectively, could largely be solved. Complementary reverse salients turned into drivers of transnational expansion.

Another problem, particularly evident in the first but also in the second phase of East-West system-building, was uncertainty on the Western side as to who would be the main system-builders. At one point international organizations such as the United Nations' Economic Committee for Europe (UNECE) aspired to a coordinating role in interlinking Western and Eastern Europe's natural gas systems. Regional actors also aimed to take a leading role, whereby they identified transnationalization as a tool in the domestic struggle against more dominant actors on the national scene. This was the case, for example, with Austria Ferngas, a joint venture formed by three regional gas companies, in its attempt to outmaneuver Austria's state-owned oil and gas company ÖMV, and with Bavaria, whose regional government under Otto Schedl's lead joined forces with the regional gas company Bayerngas in a struggle against Ruhrgas' dominance on the German gas market. In the end, however, UNECE proved too weak for the task, and the regional actors were found unsuitable to handle relations with Soviet system-builders. "Resonance," in social systems terms, was more easily established between the Soviet Union's powerful state agencies and Western Europe's state-owned gas companies—such as ÖMV, ENI, and GdF—and the German de facto national monopolist Ruhrgas.

In the third phase, organizational responsibilities had been defined, and the system-building process became more stable. The character of reverse salients and critical problems identified by Soviet and West European actors now changed. In the importing countries, the arrival of red gas shifted the focus from dealing with structural gas shortages and building actor networks to guaranteeing short- and mid-term supply security. Western Europe's gas companies approached this challenge by developing plans for new domestic

or intra-West European pipelines that would enable emergency supplies in case of crisis, for conditioning facilities that would assure harmonization of emergency gas with Soviet gas, and for the construction of strategic gas storage facilities that for shorter or longer periods of time would be able to come to rescue in case of disrupted supplies from the East.

On the Soviet side, the main critical problem shifted from pipelaying to construction of powerful compressor stations. In the countertrade deals concluded from the mid-1970s onward, it were, therefore, compressors rather than pipes that were at focus on the equipment side. From the mid-1980s, then, the main reverse salient shifted again. With ample access to both pipes and compressors from Western manufacturers and the existence of several high-capacity export pipelines, the new challenge was to raise the load factor in the East-West system. Lagging Western demand in the wake of growing world energy prices and slow economic development was increasingly perceived of as a major obstacle for continued expansion of the export regime. The new Urengoi-Uzhgorod export pipeline, completed in 1983, proved difficult to fill. The Soviets identified the gas price as the critical problem and responded by lowering the price.

The result was that the Soviet Union for the first time emerged as the clear price leader on the West European gas market and that exports continued growing. Several new countries were now added to Moscow's list of customers. However, the growing imports created a new problem: lack of sufficient gas from elsewhere. Only through such deliveries, which were deemed necessary in order to diversify and balance overall supply, was a further scaling-up of the East-West system considered acceptable. Back in the 1960s and 1970s, this had not been as pressing a problem as it became in the 1980s, because most importers had still been in the possession of domestic gas reserves that were fairly large in relation to the level of imports from the East. Although these domestic reserves had not necessarily been depleted by the 1980s, the vast expansion of imports from the East had made them much more insignificant. In this situation, imports from elsewhere was seen as the only way to balance Soviet supplies. In what followed, West European customers of red gas set out to negotiate very large imports of gas from Norway, Algeria, and elsewhere.

One important aspect of the emerging East-West infrastructure was that the new transnational links were not added onto an already existing West European gas system. The first Soviet export pipelines were built at a time when Western Europe was not yet internally integrated. Indeed, intra-European connections were to a great extent created precisely for the purpose of handling growing imports from the East. Austria and Germany were linked up with each other thanks to the transit of Soviet gas along the Danube, and Germany and France were similarly interconnected as a result of the construction of transit pipelines for Soviet gas destined for France. Italy and Yugoslavia became linked to Austria through completion of the Trans-Austria Pipeline designed for transit of Soviet gas. Most strikingly, Czechoslovakia, thanks to its central role in the transit system for red gas, came to host more transnational gas connections than any other European country. In other words, internal Western and Central European integration was largely a product of East-West system-building. Red gas further contributed to West European integration

through the perceived need to construct a unified EEC gas grid, "so that the balancing of our energy supply with neighbor states and allied, which is especially necessary in the case of crisis, can be carried out," as one leading German expert put it.² It was thus seen possible to reduce vulnerability through deeper integration among West European countries themselves.

It is from this perspective that we must understand the fact that the East-West gas trade survived the radical political and economic turmoil of the 1980s and 1990s. Since system-builders had designed the West European system in such a way as to be able to handle large-scale imports of red gas—including both real and imagined problems linked to this trade—it appeared irrational to scale down or phase out imports from the East. A mounting momentum pushed system-builders to identify and respond to reverse salients rather than to aim for a dismantling of the existing system or a reduction in the share of Soviet imports.

In the fourth phase of Europe's dependence, the Soviet Union had collapsed and new reverse salients were identified. The main one was the lack of a stable institutional regime for transporting gas between the former Soviet republics. The most pressing critical problem identified was the need to agree on gas prices and transit fees in the intra-CIS trade. The transit infrastructure, based as it was on a single Ukrainian-Czechoslovak pipeline route, was also identified as a problem, the solution of which was seen to lie in the creation of alternative routes. When the problems of price and nonpayment turned out to be a chronic phenomenon that could not be easily resolved, the emphasis turned increasingly to finding routes that would render transit negotiations unnecessary. The Nord Stream Pipeline, stretching directly from Russia to Germany through the Baltic Sea, made this dream come true.

The Soviet Union as a Victim

Western Europe's fear of falling victim to intentional supply disruptions from the East did not materialize during the Cold War. As for unintended delivery failures, the Soviets had difficulties living up to annual export targets during the start-up phase, but from 1974–1975 the contracts were "precisely fulfilled" and the Soviet Union earned a reputation for being a trustworthy partner—particularly in comparison to alternative suppliers such as Algeria and Libya, and from the 1980s even Norway. Short-term disturbances and irregularities continued to occur, but they were always compensated for at a later point and were not regarded as particularly troublesome. Moreover, worries among the population in the importing countries and pressure from state bureaucracies—both at the national and the EU level—forced gas companies to implement effective protection mechanisms for countering potential disturbances. These added to the perceived security of imports.

Much more vulnerable to the Soviet Union's export business were, paradoxically, gas users in the Soviet Union itself. Ukraine, Belarus, Lithuania, and Latvia were all hard hit. This was because users in these republics competed directly with Western importers for scarce Soviet gas. Failure to expand gas production fast enough and build necessary pipelines for distributing the fuel often meant that there was simply not enough gas available for everyone. In

this situation, Mingazprom and the Kremlin faced the delicate choice of either breaking their export commitments or sacrificing domestic needs. Judging that exports, particularly to Western Europe, must under no circumstances be disrupted, decision makers opted to disrupt internal supplies.

The result was devastating both for Soviet industry and the general public. Families found themselves living in ice-cold houses without cooking possibilities. Schools and municipal institutions had to close down. Industrial production was forced to a stand-still. The crisis was worsened by the fact that large gas users, for whom reserve fuels in the form of coal and oil had been allocated, was often unavailable or insufficient. Factory managers and ordinary citizens used their local communist party organizations to ventilate their anger. Desperate letters were sent to Moscow, begging the country's leaders to resolve the supply crisis. Gosplan, the powerful planning organization, in cooperation with Mingazprom responded by working out detailed lists that prescribed how much gas a certain factory or municipal distribution network might use in case of gas shortages. But the instructions were rarely followed and users located at the far end of pipelines, notably in Latvia, became defenseless victims, despite repeated attempts from Moscow to prevent upstream users from using more gas than they were entitled to.

The completion of several new, powerful pipelines from Siberia improved the situation in a structural sense. From now on, Mingazprom had to deal with the problem of too much rather than too little transmission capacity. Still, the situation was far from harmonious. The legacy of the extreme hurry in which the export system had been created in the first place lingered on in the form of low welding quality, unreliable compressors, and the like. Moreover, in the stagnating Soviet economy, investments in and maintenance of the export pipelines and compressor stations were often neglected. The results were frequent accidents, explosions, and temporary interruptions of a "technical" nature. West European countries, with their strategically diversified supplies and expensive emergency systems, were well protected against these breakdowns. In the East, however, where gas storage facilities and other emergency arrangements were often missing, industries and households were directly affected. In the post-Soviet era, the legacy of this Cold War experience has continued to play a major role in shaping Europe's vulnerability geography. The postcommunist countries of Central and Eastern Europe, and in particular the former Soviet republics, thus continue to be the most vulnerable to supply disruptions.

A Long Duration

Europe's uneven vulnerability geography, as pointed at above, can be taken as evidence of an East-West divide in the long-term evolution of Europe's natural gas system. At the same time, however, the emergence of the East-West natural gas system also constitutes a remarkable case of integration between Cold War Europe's main enemy camps. Europe's gas system-builders managed to put an infrastructure in place that spanned the continent, seemingly without regard to any "Iron Curtain," and on which industries, power plants, municipal institutions, and households in both East and West became highly

dependent for their daily activities. Remarkably, several countries and regions in capitalist Western Europe—notably Austria, Bavaria, Finland, northern Italy, and Greece, as well as western Turkey—became part of the Soviet-based natural gas system *before* linking up with any other foreign supplier, including intra-West European sources, and they became more dependent on Soviet than on Dutch and Norwegian gas.

The choice to import red gas was controversial to the extent that it challenged simplistic ideological and military conceptions of postwar Europe as neatly divided into an eastern and a western half. Yet in a longer historical perspective, Europe's hidden integration in gas does not necessarily come as a surprise. After all, natural gas was but the latest among the natural resources and agricultural products that Western Europe had long imported from the East in return for advanced industrial goods. In particular, gas system-builders could build on a century-long tradition of importing Russian oil. As we have seen, the main actors involved in the gas trade were in many instances even the same as in the oil trade.

The attempts from the side of the United States to prevent Western Europe from cooperating with the communist bloc became a major hallmark of the Cold War. During most of the Cold War period, Washington preferred a divided Europe and sought, instead, to favor a tightly integrated mini-Europe in the West, with strong links to North America. West European countries themselves were less inclined to give up their traditional Eastern relations for the sake of ideological and military considerations. To judge from the material presented in this book, most Europeans regarded a much more open Europe, with large-scale flows of energy and technology between East and West, as the natural and historically justified path.

If historical legacies of East-West interaction, in the above sense, inspired West European system-builders to form coalitions with their Soviet counterparts and create a vast East-West system for natural gas, it is also clear that this system, once in place, has had a major influence on Soviet-European and Russian-European relations. At the present time, there is hardly any aspect of Russia's relations with the EU or its member states, dependent as most of them are on Siberia's blue gold, that can be dealt with without (directly or indirectly) taking into account natural gas. This is because exporters, transiteers, and importers are all much too dependent on the system's continued operation for its demise or abandonment to be conceivable. Whereas many of the countries whose governments and gas companies were originally responsible for creating the system—the Soviet Union, Czechoslovakia, East Germany, and Yugoslavia—have ceased to exist, the system itself lives on, forcing today's actors to deal with it in one way or the other, regardless of how the geopolitical environment happens to look like at any particular moment.

To borrow a term from French historian Fernand Braudel, the East-West natural gas system can arguably be said to define a "long duration," spanning a period that may well be longer than the lifetime of countries, empires, and other political conjectures. To the extent that it is difficult to radically alter the system—that is, with predictable and acceptable consequences—the pipeline grid that crisscrosses Europe can be said to have more in common

with ecology than economy. It has almost become part of Europe's nature, superimposed on an existing European geography of seas, rivers, forests, and mountains. Like this natural geography—itsself more often than not a human construct—the infrastructured geography of natural gas can certainly be changed, though only with huge effort and at enormous cost.