

# Energy Reform in Russia and the Implications for European Energy Security

ROBERT F. PRICE

**Abstract:** Gazprom's long-term production capacity has been a source of concern both domestically and internationally. It has resisted major development projects out of concern for their high marginal costs and uncertainty over future domestic and international prices. Now the Russian natural gas and power industries are undergoing reform that has potentially far-reaching consequences for European gas supply and energy security. Given the scale of domestic sales and losses, the future profitability of the domestic market will be the determining factor in Gazprom's decisions for investment in future production. Subsidized domestic prices will not allow Gazprom to cover the high marginal costs involved in developing the new major fields that will guarantee domestic and export supplies. Therefore the program of domestic gas price deregulation, long advocated by Gazprom and newly accepted by the Russian government, will help guarantee EU energy security by encouraging new development through protection against guaranteed losses on the domestic market and also by driving down domestic demand through greater conservation, industrial efficiency, and fuel substitutions, which will increase the supplies available for export.

**Keywords:** deregulation, energy, export, Gazprom, natural gas, power industry, subsidy

The Russian natural gas and power industries are currently undergoing a reform that has potentially far-reaching consequences for Europe's gas supply and energy security. After fifteen years of subsidizing domestic industry through the regulation of natural gas and electricity prices, the Russian government has embarked on an ambitious program of price deregulation that will result in free market pricing for domestic industrial consumers by 2011. This program has involved many politically difficult decisions about the best use of Russia's comparative advantage in indigenous energy resources and the state's responsibility for the support of the national economy through the subsidy of domestic industry. It has also highlighted a complex identity within Gazprom and revealed that its relationship with the Kremlin is not as harmonious as one might expect.

Conceived as a national champion company by the Russian government, which holds a majority of its stock, Gazprom has been expected not only to provide cheap supplies of natural gas to support the development of Russian industry but to secure Russian govern-

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Robert F. Price graduated from Harvard University in 2007 with a master's degree in government. He is a contributor to Radio Free Europe/Radio Liberty. Copyright © 2007 Heldref Publications

ment interests in international business. However, despite their close relationship to President Putin, Gazprom's CEO, Aleksei Miller, and Chairman, Dmitry Medvedev, have been showing greater concern for Gazprom's profitability and survival and have been giving greater consideration to how macroeconomic factors influence the profitability of industry and the sustainability of economic development. Arguing that cheap electricity, and the need for an abundance of cheap natural gas to supply cheap electricity, was actually a hindrance to healthy domestic development, Gazprom has successfully persuaded the government to abandon price regulation in favor of a free energy market. Although domestic price reform was a key recommendation of the World Trade Organization for Russia's admittance, the final program won by Gazprom is far more ambitious. Furthermore, Russia's entry still faces many hurdles and is far from imminent. It may even be delayed until after 2008 and may be deprioritized by Putin's successor. Therefore, Russia has demonstrated a great sense of responsibility in addressing its energy-wasteful practices immediately, and has demonstrated responsible recognition of its best long-term interests.

Gazprom's long-term production capacity has been a source of concern both domestically and internationally. Output at Gazprom's main producing fields in the Nadym Par Taz (NPT) region—including the supergiant fields of Urengoy, Yamburg, and Medvezhe—has been in steep decline since the early 2000s. By 2015, production at these fields will be half their peak output. To replace this diminishing output, Gazprom has been developing shallow fields in the Ob and Taz Bays on the Yamal Peninsula. While these shallow fields can complement output from NPT, adequate future supplies can only be guaranteed through the development of major new fields, a move that Gazprom has been reluctant to undertake. The Shtokman project has been continuously delayed and development of the giant Yamal Peninsula fields is still in the discussion stages. Despite pressure from the Russian government and expression of deep concern from European customers, Gazprom has resisted these major development projects because of their high marginal costs and uncertainty over future domestic and international prices.

The domestic market has traditionally been a financial liability for Gazprom. Despite absorbing approximately 60 percent of Gazprom's output, the company has never realized a profit from sales within Russia. Instead, Gazprom relies on exports to European markets for its entire profit margin. Recently, Gazprom has lost more than \$1 billion per year. While this has been somewhat sustainable over the past twenty years, as no new significant development has been necessary, the growing shortfall and the high marginal costs necessary to guarantee future supply to both domestic and foreign markets have caused Gazprom to rebel against its continued subsidization of the domestic market. Fearing that the attempt to finance expensive new development with subsidized domestic rates will lead to bankruptcy, Gazprom is resisting its role as national patron of domestic industry and guarantor of cheap fuel.

Gazprom's concern for its financial health implies good things for European energy security. The EU energy supply is in greater danger from a cash-strapped Gazprom that is subservient to the energy needs of the larger Russian domestic market than from a Gazprom that is financially solvent and confident of its future revenues through sound pricing policies. Given the scale of domestic sales and losses, the future profitability of the domestic market will be the determining factor in Gazprom's decisions for investment in future production. Subsidized domestic prices will not allow Gazprom to cover the high marginal costs involved in developing the new major fields that will guarantee

domestic and export supplies. Therefore the program of domestic gas price deregulation, long advocated by Gazprom and recently accepted by the Russian government, will help guarantee EU energy security by encouraging new development through protection against guaranteed losses on the domestic market and also by driving down domestic demand through greater conservation, industrial efficiency, and fuel substitutions—all of which will increase the supplies available for export.

### **Gazprom and the Kremlin: Conceiving a Champion**

Under President Vladimir Putin, the Russian government has moved to reassert central control over Russia's energy resources. Oil and natural gas are particular targets. The Kremlin administration has taken aggressive measures to renationalize previously privatized extraction and production industries and their associated distribution systems, as well as claim the right of ownership of the country's deposits of mineral resources. The Putin administration argues that these energy resources are essential to the national security of Russia and must constitute the basis of Russia's economic and social recovery following both the collapse of communism and the resulting turmoil of the experiment with industrial privatization under his predecessor President Boris Yeltsin. Therefore, Putin supports the creation of "national champion" industries, which will guarantee that Russia's most potentially profitable resources and lucrative industries will benefit the general welfare of society as a whole rather than the interests of private individuals, as was grossly evident during the Yeltsin years.

Putin's rationale for the creation of national champions in the energy industry is described in his 1999 article "Mineral Natural Resources in the Strategy for Development of the Russian Economy," published in the journal of the St. Petersburg Mining Institute. Putin argues that the effective use of natural resources will be key to Russia's economy for at least the next fifty years and will provide for its long-term economic revival and security in both the foreign and domestic spheres. As evidence, Putin asserts that the raw materials sector already accounts for 50 percent of Russia's GDP and 70 percent of all export revenues. Moreover, the stability of the energy sector is crucial for supporting the development of other areas of the economy by "forming a solid industrial base that is capable of meeting the requirements of both industry and agriculture."<sup>1</sup> Putin also cites its critical role in the strength of Russia's armed forces and in modernizing Russia's military-industrial complex. Therefore, because the raw materials sector must support all other areas of the national economy, it is critical to maintaining social stability. Putin writes, "In the near term, the strategic factor in Russia's economic growth must be restructuring the national economy on the basis of the available mineral raw materials resources with the goal of significantly increasing its effectiveness."<sup>2</sup>

To facilitate this national economic growth, Putin writes, "The process of restructuring the national economy must have the goal of creating the most effective and competitive companies on both the domestic and world markets."<sup>3</sup> Putin continues, "Considering Russia's enormous raw materials potential, restoration of national manufacturing industries must be carried out on the basis of its complete integration with the extractive branches."<sup>4</sup> Putin then argues that given the paramount role that the raw materials sector must play, it is too important to be entrusted merely to market mechanisms and private ownership. Instead, Putin advocates state support and sponsorship "for the creation of large financial-industrial groups—corporations with an interbranch profile that will be able to compete

with Western transnational corporations.”<sup>5</sup> Putin identifies “gas, oil, energy, aluminum, and others” as the primary candidates for these new state-sponsored financial-industrial groups, or national champions.<sup>6</sup>

While the article deals primarily with the significance of the rational use of natural resources for domestic economic recovery and development, Putin does not overlook the foreign policy advantages of state control of the natural resource sector. In his conclusion he also expresses the desire to reclaim for Russia its previous status of power. Putin recognizes the potential for Russia’s natural wealth to create a new power paradigm through which Russia can reassert its global importance. Putin writes, “It follows that . . . the strategy for Russia’s exit from its deep crisis and restoration of its former might on a qualitatively new basis demonstrate that the condition of the natural resource complex remains the most important factor in the state’s development in the near term.”<sup>7</sup>

Putin’s vision of a national champion implies a close synchronicity and symbiosis between the national champion and the Kremlin. However, this vision fails to recognize the potential conflict between the state’s needs and a commercial enterprise’s needs. It also fails to recognize that individuals with various motivations formulate the policies of the state and business, and that conflict between individuals can often eclipse the national mission. Unfortunately for Gazprom, the role of national champion is not always compatible with the role of a normal commercial organization.

### **It Is Not Easy Being a National Champion**

The appetite for cheap gas supplies in Russia—and the requirement by law to satisfy that appetite—has long been the primary handicap to Gazprom’s development as a healthy, profit-making company. In 2005, Gazprom accounted for 85 percent of Russia’s natural gas production and 75 percent of all domestic sales. However as a quasigovernmental agency, where the Kremlin and Kremlin-associated agencies are the main shareholders, Gazprom is required to sell to the domestic market at government-regulated prices with extremely limited discretion to withhold deliveries for nonpayment. The nonpayment crisis of the 1990s has significantly abated, and although Gazprom has even managed to collect on a large portion of past debt, sales to the domestic market continue to result in a loss. Gazprom’s nontransparent operations make it difficult to identify exactly the size of these losses. According to Gazprom, the company lost approximately \$25 billion in the domestic market from 1999–2003, which is probably not overly exaggerated.<sup>8</sup> In 2005, losses on the domestic market were estimated at \$279 million and losses in 2006 were estimated at \$415 million.<sup>9</sup> High export profits have sustained Gazprom, but as domestic demand has outpaced all recent projections, it has been understandably reluctant to commit to expensive new field development given the threat to its profits. The Russian Energy Strategy of 2003 (when domestic demand was 327 bcm) projected that domestic demand would reach 418–46 bcm in 2010, but according to the International Energy Agency (IEA) data, Russian demand already reached 422 bcm in 2004 and was projected to reach 425 bcm in 2005.<sup>10</sup>

This sharp increase in demand is attributable to Russia’s remarkable economic recovery since 1998 and the accompanying demand for electricity. Natural gas accounts for approximately 69 percent of power generation in Russia, and Gazprom accounts for more than 45 percent of all the fuel that is used by the power sector.<sup>11</sup> Furthermore, the power sector is Gazprom’s largest customer (or liability), absorbing 38 percent of Gazprom’s natural gas

output.<sup>12</sup> The utility sector absorbs another 10 percent of output. With Russia's economic acceleration of the past six years, the demand for electricity has skyrocketed. Unified Energy System (UES) reports that in 2006 energy consumption grew by 4.2 percent.<sup>13</sup> To meet this demand, the power sector has relied increasingly on natural gas for fuel. As the only fuel stuff with a regulated price, natural gas is less expensive than fuel alternatives such as oil or coal.

An important factor in the growing demand for electricity has been the artificially low price of electricity. The government regulates the price of electricity as it does the price of natural gas for Gazprom. Cheap and plentiful supplies of fuel and power have been a key component in the government's strategy for economic growth. Cheap energy in particular has been responsible for the growth of energy-intensive industries such as the steel industry. And because the power generation sector relies so heavily on natural gas, the Kremlin has been unwilling to allow the price of gas to increase. That would necessitate a corresponding increase in the price of electricity. Fearing the burden that this would place on developing domestic manufacturing, which Putin is keen to promote, and the population at large, which is still overwhelmingly poor, the price of both gas and electricity has been totally regulated.

This has led to enormously wasteful practices. Cheap energy has served as a deterrent to industrial conservation and modernization by discouraging plant owners from investing in new, energy-efficient machinery and power-generation equipment. In the housing sector, it has discouraged investment in modern boilers and furnaces. Plant owners have found it cheaper to simply keep feeding their Soviet-era machinery, designed and built at a time when energy supplies were abundant and guaranteed, and market principles of input costs were irrelevant to production quotas. Today, as in the past, Russia uses at least twice as much energy per unit of GNP than most other industrialized nations.

Although Gazprom is majority owned by the Russian government, and both its chairman and CEO have close ties to the Putin administration, relations between the two entities have often been contentious over company strategy and the role of the company in the development of the Russian economy. Given the dependence of the power sector on natural gas and Gazprom's preeminent role in natural gas production, the Kremlin has habitually pressured Gazprom to be a donor to the economy. Having lost control of many of the natural resource industries—including power-generating natural resources—during the privatization program of the 1990s, the government could ill afford to lose its stake in natural gas as well. Following the 1998 financial collapse, when the economy was most fragile, subsidizing heat and power through regulation of natural gas prices helped encourage and sustain economic recovery, sustained government services, and mollified an impoverished and desperate population. However, as the economy improved, price regulation was retained as much for political patronage as for economic necessity. Industry, which was enjoying low energy-procurement prices, often used its lobbying power to keep the gas subsidy in place. The government found itself with a conflict of interests: As public caretaker and administrator, it had an interest in supporting economic recovery through the advantage that Russia enjoyed with its immense natural gas reserves and in providing relief to a still overwhelmingly poor population. However, it also had an interest in maximizing its stock value and dividends to increase the state's budget revenue, which would also prove a boon to the state and population. (Notably, this is a problem also shared by utility regulators in the West.)

### **Gas Company by Day, Ambassador by Night**

The Kremlin's use of Gazprom as national champion has both international and domestic dimensions. Gazprom serves the government's domestic agenda by aiding industry and has also been a useful tool in helping the Kremlin assert its international agenda, especially in CIS countries, which are almost entirely dependent on Russia for their natural gas supplies. Gazprom's business practices are perceived to be influenced by the Kremlin's political goals. The case of Ukraine, which receives around 60 percent of its gas from Russia or through Russian-owned pipelines, is particularly instructive. In August 2004 Gazprom promised Ukraine a low gas price of \$50 per 1000 m<sup>3</sup>. This was perceived as a diktat by the Kremlin to boost the chances of the pro-Moscow Viktor Yanukovich over the Western-leaning Viktor Yushchenko in the December 2004 presidential election.<sup>14</sup> After Yushchenko was swept to power in the Orange Revolution—which the Kremlin suspected was instigated by Western interests—Ukraine began to pursue closer ties with the West and even began investigating the possibility of joining NATO. Gazprom subsequently raised the price of gas to \$230 in December 2005 in the midst of winter and threatened to cut Ukraine off completely if it did not agree to the price. The price was eventually negotiated down to \$95 through an agreement that included gas supplements from Turkmenistan, Uzbekistan, and Kazakhstan and an agreement for a five-year guarantee of lower Russian transit fees for its gas deliveries to Europe through Ukraine's pipelines. However, the price for 2007 has been raised to \$130. During negotiations, Russia and Gazprom threatened to raise the price even higher, and in return for the \$130 agreement, Ukraine must offer Russia a stake in its domestic energy and aviation industries.<sup>15</sup> (Ukraine has so far resisted Gazprom's attempts to gain control of its gas transit pipelines.) Furthermore, Ukraine must not attempt to intrude on Russia's monopoly on the purchase of Turkmen gas. The deal reportedly also includes a promise by Ukraine to forget about joining NATO and to extend the lease on the Russian naval base in the Crimea until at least 2017.<sup>16</sup>

Georgia, which receives 75 percent of its gas supplies from Russia, presents a similar case. Relations between Georgia and the Kremlin have deteriorated since Georgia's Rose Revolution in 2003, which the Kremlin also suspects was spurred by Western interests. The new government of President Mikheil Saakashvili embarked on a pro-Western orientation including an interest in NATO membership. The price of gas from Russia was subsequently raised from \$60 to \$110 per 1000 m<sup>3</sup>. In 2006, relations between Russia and Georgia deteriorated further over the status of the Georgian breakaway republics of Abkhazia and South Ossetia. In September 2006, Georgia detained and expelled four Russian military officers on charges of spying, prompting Russia to sever all air, sea, and postal links and to crackdown on Georgian businesses and migrants within Russia. On November 2, 2006, Gazprom announced that price of gas to Georgia would rise to \$230.

Belarus and Armenia provide further examples of how Gazprom may have manipulated gas prices for the Kremlin's political goals. Both countries are politically friendly with Russia. However, Gazprom desires their gas pipelines as strategic assets to deliver gas to Europe without transit fees. Furthermore, Belarus had been in a quarrel with Russia regarding stalled plans to integrate Belarus politically and economically with Russia, and also over Russia's plan to end duty-free oil shipments to Belarus. In December 2006, Belarus was threatened with a fourfold increase in its gas prices, from \$47 per 1000 m<sup>3</sup> to more than \$200 unless it agreed to give Gazprom a 50 percent controlling stake in its gas export pipeline, which supplies Poland and Germany.<sup>17</sup> Eventually Belarus surrendered the

stake for a gas price of \$100, which will increase to world rates over a five-year period. Similarly, Armenia was forced to surrender key energy assets to Russia, including its gas pipeline from Iran, to avoid higher rates for Russian gas.<sup>18</sup>

In each case, Gazprom insists that politics played no role in its decisions. To the contrary, Gazprom argues that its actions are meant to establish a purely nonpolitical, market relationship between itself and its customers. Furthermore, if Gazprom's actions were in fact politically motivated, it is impossible to know the degree of collusion between the company and the Kremlin, and whether the two collaborated in the plans. As a profit-minded company, Gazprom certainly gained by the price hikes in these cases. However, as a national champion, although Gazprom may be rewarded when the Kremlin wishes to punish a politically errant customer, it will also suffer when the Kremlin decides to reward a politically friendly or desirable regime. Without autonomy in its decision making, Gazprom's interests will always be secondary to those of the Kremlin; Gazprom's international business relations will be influenced first by the Kremlin's goals rather than its own bottom line.

Gazprom's usefulness as a national champion in the international sphere is not just limited to the Kremlin's political leverage. Through duties and taxes, the government claims approximately 65 percent of Gazprom's export revenues. The currency earned through exports is critical to Russia's economic health and has been one of the main factors in Russia's economic recovery since 2001. Oil and gas exports together account for 64 percent of export revenue and about 60 percent of federal budget revenue.<sup>19</sup> This export revenue has allowed Russia to amass \$356 billion in foreign currency reserves, the third largest behind Japan and China. It has also allowed Russia to create a stabilization fund worth about \$100 billion and helped the country pay off its international debts.

### **You Can Only Push a National Champion So Far: Gazprom Fights Back**

Around 2000, Gazprom began thinking more like a profit-minded company and less like a social servant. Wary of the effect that cheap regulated electricity prices would have on demand for electricity, and the corresponding demand this would place on its natural gas, Gazprom began lobbying the government to begin a program of price deregulation for natural gas. Unregulated trading in natural gas actually began in 1998 when the government exempted independent gas producers from regulatory requirements. However, there was no hint at Gazprom's exclusion until December 2000 when the government decreed that the regulation of gas wholesale prices was only temporary. The government envisioned that regulated transportation tariffs for Gazprom would eventually replace regulated gas prices, as was already the case with gas independents. Apparently this was meant to give Gazprom time to determine the pricing methodologies it would use to promote its gas in a market environment that it would still dominate. However, it was also likely a ploy by which the government could delay that which they understood was necessary and inevitable to a more politically expedient time, or perhaps indefinitely.

Because of widespread bankruptcy following the 1998 financial crisis, domestic demand for gas fell, but so did the price that Gazprom was allowed to charge. In 1999 the price fell to \$10 mcm from \$23 in 1998. Demand steadily increased with the economic recovery until 2003, when Gazprom was allowed a price of \$29.7 mcm. But by this time Gazprom asserted that it had already lost \$25 billion through domestic sales. Gazprom then began to lobby the government for price reform, but the government was largely reluctant to jeopardize the still

fragile recovery or disrupt the prevailing status quo that had come to rely on cheap energy supplies. Gazprom did, however, succeed with its proposal to reform the zoning price structure by increasing the number of zones from seven to fourteen to better reflect its operating and transportation costs farther from the wellhead. However, other proposals, such as the institution of variance in seasonal prices, went unheeded by the government.

The centerpiece of Gazprom's reform proposals was the ultimate deregulation of prices for industrial consumers. Lobbying for this goal began in earnest in 2002 with the proposal to create a gas exchange through which Gazprom could sell a portion of its output at unregulated prices. This was proposed as an experiment to ascertain a correct

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pricing mechanism for the day when gas prices would indeed be unregulated. The company proposed to sell up to 10 percent of its production this way to gain clues for market pricing, but the government refused. In 2004, Gazprom proposed a new three-stage reform program by which (1) the average regulated price would equal Gazprom's average costs to cease its losses; (2) increasing portions of the market would be deregulated; and (3) complete deregulation with choice of suppliers would be achieved.<sup>20</sup>

The Russian government, however, proposed a different solution to the approaching energy supply problem, which was essentially the usual solution. They preferred that Gazprom increase production through new field development to keep up with domestic demand and cover operating costs through exports. This solution, however, was fundamentally at odds with Gazprom's view that increased supply would lead merely to increased demand, greater waste, and larger losses. Given the expense involved in new field production (especially in the difficult environment of the Yamal Peninsula where the Kremlin most favors new production) Gazprom has exhibited great caution, as evidenced by Chairman Miller's oft-repeated assertion that no gas will be developed until it is sold.

By 2006, the Russian government began to acknowledge the wisdom in Gazprom's reasoning and began to consider more seriously its recommendations for price reform. Power consumption in twenty-four Russian regions, including Moscow and St. Petersburg, has increased an average of 5.8 percent a year since 2000.<sup>21</sup> In the winter of 2005–6, three regions, including Moscow, experienced energy shortages, forcing the authorities to place consumption limits on 604 businesses and warn another 1,300 that they might face cutoffs. In May 2005, Moscow experienced a citywide blackout. As consumption grew another 4.4 percent in 2006—and as high as 6.4 percent in Moscow—power authorities projected that as many as sixteen regions, including Moscow, would experience shortages in the winter of 2006–7. Given that most power plants were already operating at maximum capacity, further supplies of cheap natural gas were irrelevant to a solution. The government was therefore forced to choose between two unattractive options: reform the energy sector to reduce demand in the short run by encouraging conservation and efficiency, or institute power rationing.

Sensibly, the government chose the former option and instituted a plan for price reform in the power and natural gas industries that exceeded even Gazprom's recommendations from two years earlier. Their reasoning was in line with Putin's declaration in his 2006 State of the Nation address in which he argued that the time had come for Russia to wean itself from its dependence on natural resource exports and begin to develop a modern manufacturing sector to produce high value-added products that could compete domestically and internationally and sustain the economy in the long run. This could not be done as long as the economy required twice as much energy per unit of GNP as other industrialized nations. It certainly could not be accomplished if industry was faced with chronic power shortages. Critics of the government's plan countered that it could also not be done if domestic industry was confronted with a twofold increase in energy prices. However, the government ultimately decided that the perpetuation of wasteful practices posed a greater long-term danger to the domestic economy than the short-term impact of price increases.

The government, therefore, began to recognize how years of cheap power had led to a serious situation, which, if not checked, could lead to an actual crisis. Anatoly Chubais, CEO of UES, warned that even with immediate reform, major energy deficits over the next few winters were likely, and that Russia might even face an "unprecedented" emergency. Industry and Energy Minister Viktor Khristenko labeled the country's energy habits as "barbaric" and asserted that the power and gas industries were "the main factor restricting the growth of the Russian economy."<sup>22</sup> In June 2006, he announced that the authorities would be forced to deny 90 percent of applications from new businesses seeking a power connection. When it seemed that economic growth had reached its limit because of the overtaxed power system, the government announced a reform program for the natural gas and power industries.

However, the decision to raise the domestic price of energy was not only attributable to the looming domestic energy crisis. Putin viewed Russia's ascension to the World Trade Organization (WTO) as a crucial component of his plan for Russian industry. A central EU requirement for Russia's acceptance into the WTO was an end to its regulated gas prices for domestic industry, which amounted to an illegal subsidy. Negotiations in 2004 produced an agreement that domestic gas prices would rise to \$37–42 mcm by 2006 and \$49–57 by 2010. Ironically, the figure for 2010 was below the price target recommended by Russia's own Energy Strategy of 2003, which identified a 2010 price of \$59–64 mcm. This suggests that because the Energy Strategy target is not legally binding, the EU had little faith at the time that Russia would have the political courage to enforce that goal without external prodding.

In November 2006, the cabinet approved a plan for an increase in regulated natural gas and electricity prices leading to complete deregulation by 2011. Under the plan, the price of gas for industrial consumers would increase 15 percent in 2007, from \$44 mcm to \$50.60. This would be followed by a 25 percent increase in 2008, a 26 percent increase in 2009 and a 25 percent increase in 2010. In 2011, the price would be completely unregulated and governed instead by market principles, reaching parity with world rates. This will probably be achieved by basing the domestic price on export netbacks: the domestic price will equal the average European price minus export tax and transportation fees back to the domestic zone in which the gas is being sold. There was considerable doubt both inside and outside Russia that it would abide by these increases, especially in the election year of 2008. However, the seriousness of the government's intentions was reinforced by

Economic Development and Trade Minister German Gref's announcement on March 2, 2007, that the planned increase in 2009 and 2010 would be raised to 27.1 percent in both years (see table 1). (While this perhaps suggests that the government will opt for a smaller increase in 2008 to help Kremlin-favored candidates in the election, it also suggests that the government intends to make up for the shortfall.)

The corresponding plan for reform of the electricity market dictates price increases for industrial consumers of 10 percent in 2007, 9 percent in 2008, and 8 percent in 2009, after which the price will be unregulated. As impetus for the construction of new power plants, the government decreed that plants commissioned after January 1, 2007, would be free to set their own prices immediately, while older plants must follow the regulated pricing schedule. In addition to conserving gas through end-user conservation and the introduction of new energy-efficient power plant and industrial machinery, Putin also intends to decrease the share of natural gas in the overall balance of power-plant fuel. In his April 2006 State of the Nation speech, Putin promised heavy government investment in energy infrastructure. The government plans to build forty-five new nuclear reactors, fifteen coal-fired plants, and several hydropower plants. But the plans for the energy sector are actually far more ambitious. UES is being dismantled through a breakup of its generation, distribution, and sales networks in a plan to raise \$80–90 billion, which will finance new plant and power distribution infrastructure. While this will at least decrease the burden on natural gas, the long-term effects are questionable. Breakup of the monopoly was meant to initiate a market environment in which demand, cost of fuel, and fuel parity prices would interplay. However, Gazprom's recent announcement that it would merge its electricity assets with SUEK, the country's largest coal supplier, threatens to create a new monopoly. Coal is expected to compose 35 percent of fuel for power generation by 2020, up from 15 percent today.

The disparity between the projected rate of increase in gas prices and the projected rate of increase in electricity prices raises doubt concerning the feasibility of the plan. It is difficult to see how the power generation sector in particular can offset the large increases in gas prices with the comparatively small increases in electricity prices that it will be allowed to institute. This may be intended as shock therapy for the power generation sector, to force them to immediately replace their Soviet-era generators with modern, energy-efficient machinery. Regardless of the government's rationale, the plan clearly places the burden of energy-sector reform on the power generation industry, which is arguably the right place for it. This burden will compel power plant owners to switch to alternative fuel sources, leaving the additional natural gas supply available for profitable export, and should spur the development of nuclear, hydro, and geothermal power plants.

The government's liberalized attitude toward gas and power sector reform also reenergized Gazprom's proposal for a gas exchange experiment with market-determined prices. Under the direction of Mezhhregiongaz, Gazprom's wholly owned distributor, Gazprom was allowed to sell 5 bcm of its output. Included in the exchange were also 5 bcm of gas from independent companies. This November 2006 experiment was deemed so successful that the allowance for 2007 was increased to 15 bcm (plus 15 bcm from the independents). After January 2007, Russia's Ministry of Industry and Energy agreed to increase the frequency of trading to ten days rather than once a month. The customers at these exchanges are industrial operators whose gas allowance from the state is insufficient to cover their needs. Traditionally they have bought gas from independent companies, which are allowed

TABLE 1. Russian Domestic Gas and Electricity Price Increases, 2007–10

	2006		2007		2008		2009		2010		2011	
	Price	44	Price	% increase								
Gas			50.6	15	63.6	25	80.8	27.1	102.6	27.1		
Electricity				10		9		8				unregulated

Note: Prices are in U.S. dollars, per mcm.

to sell at unregulated prices. The gas exchange experiment was meant to introduce Gazprom to the world of free market pricing by making a sufficient amount of gas available to deem the experiment meaningful, while the independent companies were included to introduce a modicum of free market competition. However, Gazprom's monopoly control of Russia's pipeline network trumps the experiment in competition. Gazprom sets the transportation costs for carrying third-party gas. Therefore, regardless of the price that a customer may receive from an independent, the distance that the gas must travel from the wellhead may make it unaffordable. Conversely, Gazprom charges itself about one-third of the rate for third-party companies. Electricity producers who have attended the gas exchanges have accused Gazprom of manipulating the market in this way.

### **More Than One Game in Town**

Frustration with Gazprom's reluctance to invest in major new field development and concern for reliable domestic energy supplies has also caused the government to advocate more actively for independent gas producers. Independent gas companies presently account for around 25 percent of the domestic market. In 2006, they produced 95 bcm of gas. Soyuzgaz, Russia's independent gas producer's union, predicts that it will increase production to 180 bcm in 2010, and Khristenko believes that by then independents will account for 45 percent of the domestic market. Novatek Chairman Leonid Mikhelson claims that the gas independents account for 23 percent of Russia's explored reserves, approximately 11 tcm. The independents have always been profitable, however modestly, because of the fact that they have not been subject to regulated price controls, as has Gazprom. However, they have been mostly limited to markets close to their wellheads, as they have been either unable to get access to Gazprom's pipelines or unable or unwilling to pay the transportation costs charged by Gazprom. Nevertheless, recognition of their importance to domestic supply was a great consideration in the government's decision to liberalize the gas market. The government expects that the higher profits that will be realized through price deregulation will stir the independents to increase production and begin new field development, which Gazprom has neglected.

Federal law allows pipeline operators (i.e., Gazprom) absolute control over the use of their pipelines. Gazprom claims to apportion pipeline access according to spare capacity. However, without independent oversight, only Gazprom can determine the amount of spare capacity. Moreover, Gazprom has often discriminated against independent suppliers to suppress competition in prospective markets. Gazprom nearly bankrupted Itera to blunt its access to Central Asian gas supplies coveted by Gazprom and to keep it from bidding up the price. Without access to the pipelines, some gas independents, such as oil companies that produce gas as a by-product, are forced to flare their gas. Estimates on the amount of gas flared in Russia by the independent oil companies range from 11 bcm to as high as 60 bcm.<sup>23</sup>

A bill presently under consideration in the cabinet comprises a third component of Russia's new energy strategy. This bill aims to provide the independents with more equitable access to Gazprom's pipelines by requiring Gazprom to transport independent gas proportionately to the requests filed by independents. This should make it more difficult for Gazprom to discriminate between producers for ulterior motives, but the bill still allows Gazprom the discretion to judge the amount of spare pipeline capacity available for handling these requests. Significantly, however, the bill would also allow independents

to form joint ventures with Gazprom to cofinance the construction of new pipelines that would connect with Gazprom pipelines. Such pipelines would be majority controlled by Gazprom. This will discourage flaring by expanding capacity, thereby making it easier for Gazprom to absorb more of the output from oil independents. Theoretically it will also give the independents greater access to more distant customers. However, if Gazprom retains control over transport pricing, the independents may still find it more profitable to sell directly to Gazprom.

Given the size of the losses that Gazprom claims to incur in the domestic market, it should favor expanded production and market access for the independents. By retaining its monopoly on exports, Gazprom is free to transfer gas saved in the domestic market to more lucrative foreign markets, where gas commands a price as much as five times higher. In 2006 Gazprom renewed its contracts with its German, French, Italian, and Austrian customers to supply gas for up to twenty-five years. Gazprom realizes that without developing major new fields, by 2015 it may be unable to meet both its domestic and international commitments. The Russian government may be reluctant to allow Gazprom to interrupt domestic supplies, but defaulting on its international obligations could imply billions of dollars in penalties.

### **What Is Good for Gazprom Is Good for the World**

The Russian program of price liberalization in the natural gas and power industries has significant implications for the European gas supply and energy security. In the short term, domestic reform will likely ensure the security of supply for EU, CIS, and Baltic countries that are paying world rates largely because depressed Russian demand due to higher prices will force conservation, industrial plant modernization, and transitions to alternative fuel sources. Gas savings at home translates into greater supply for the export market. Moreover, higher domestic sales returns and the promise of higher profits when gas prices are completely unregulated for industrial consumers after 2010 will encourage Gazprom to invest in new production now in consideration of the long lead times necessary to bring new fields on line. Large domestic losses have long discouraged Gazprom from investing in major new field developments, such as Yamal. However, the promise of profitable markets will encourage not only that large-scale development, which could begin producing by 2015, but will also encourage more immediate development of smaller fields that promise high marginal returns, such as the smaller untapped fields of the Nadym Pur Taz region.

Gazprom's reluctance to invest in new development arises not only from fear of domestic losses, but also from wariness of EU programs to diversify natural gas suppliers and liberalize distribution networks. Imports from outside the OECD account for around 47 percent of Europe's gas consumption. Russia presently supplies about 48 percent of total European imports, or about 23 percent of total European consumption.<sup>24</sup> The rate of increase in demand has slowed somewhat since 2005: 1.8 percent in 2005 and 2006 compared to 3 percent in most years since 2000. This is at least partly in reaction to prices as high as \$240 mcm. Regardless, consumption is projected to increase significantly in the future. By 2020, total imports are estimated between 400–500 bcm. This represents a potentially great opportunity for Russia and Gazprom. However, Europe's anxiety of over-reliance on Russia for its energy needs has led to concern within Russia and Gazprom over the reliability of pricing and demand in the European market. The EU wishes to liberalize its natural gas market with the hope that this will result in lower end-user prices. The EU

also talks much about diversifying its suppliers. Although both Russia and the EU undoubtedly understand that neither of these two goals is likely, the EU's willingness to make the threat is alarming to Gazprom and Russia. Given Russia's reliance on oil and gas exports, it is understandable that they would react seriously to any threat to their lifeline.

In consideration of its growing reliance on natural gas, the EU issued the Gas Directives of 1998 and 2003, which were aimed at liberalizing, or demonopolizing, the market by providing for greater access to transmission and distribution networks. The objective was to abolish the exclusive rights of national power companies and allow end users a choice of suppliers. This would theoretically drive down prices by introducing greater competition. However, it was also seen as an assault on long-term gas supply contracts, which power companies had traditionally negotiated with their suppliers, such as Gazprom. In place of these contracts, it was hoped that a spot market would develop. At the least, short-term contracts would prevail, which would be more susceptible to price fluctuations (although the huge fixed costs of physical resources such as gas processing plants would severely limit the potential of downward pressure on prices). These measures were opposed not only by Gazprom but by the European gas companies who understood the relation between guaranteed prices and guaranteed supply. Gazprom argued that it could not undertake expensive new development projects if it was not guaranteed a sufficient rate of return, while the European gas companies argued that without Gazprom's production they would have no gas to sell. The Gas Directives assumed an excess of supply over demand, despite the fact that Europe's potential supply is small and quantifiable, and its places of origin are few. To address this problem, however partially, Europe introduced the Energy Charter Treaty, which aimed to compel Gazprom to abandon its export monopoly and open its pipelines to Central Asian deliveries. However, Gazprom and Russia refused to sacrifice their natural advantage.

These measures unnerved Gazprom enough to further delay any new large-scale development projects. Although the Gas Directives ultimately reaffirmed the importance of long-term contracts to the gas industry, Gazprom fears that position may change. By the time Yamal, for instance, would begin producing gas, the prevailing price in Europe might not be sufficient to recover its expenditures in development. For this reason, Gazprom has begun to hedge against price volatility in the European market by buying up distribution companies in Europe. National resellers sell gas to consumers at twice the price they pay Gazprom. Therefore Gazprom hopes to gain a greater share of end user profits. In the United Kingdom, Gazprom purchased Pennine Natural Gas in 2006 and in July 2007 purchased its sister company, Natural Gas Shipping Services. That gives Gazprom 4 percent of the British market, which Gazprom expects will expand to 10 percent.<sup>25</sup> Also in 2006, Gazprom expressed an interest in Centrica. Gazprom's sales to the United Kingdom increased from 3.8 billion m<sup>3</sup> in 2005 to 8.7 billion m<sup>3</sup> in 2006.<sup>26</sup> In 2008, Gazprom will supply gas directly to consumers in Italy and France. Russian Economic Minister German Gref claims that direct sales to Italian end users could reach 3 bcm by 2010 and sales to French end users could reach 1.5 bcm.<sup>27</sup> Gazprom is also pursuing cooperation with Algeria, Europe's second-largest gas supplier, most likely with the intention of coordinating production, and has been exploring opportunities in Asia, with Japan, China, and Korea. They are eager to enter the liquefied natural gas market, which may account for 20 percent of all natural gas sales by 2010. They have also raised the prospect of a gas OPEC, which would coordinate pricing policies among gas-producing nations.

In this way, Europe's efforts to increase its energy security may have had the opposite effect. The Shtokman and Yamal projects have been repeatedly delayed because of concern over the cost of development and fear over likely returns. Development of Shtokman, which is estimated at \$20 billion, has only just begun. Production may begin in 2011 with amounts of 14 bcm per year but may not hit peak production of 70 bcm until 2020. Development of the Yamal Peninsula, which is Europe's greatest hope for sustained supplies, is still in discussion. That project is expected to cost approximately \$57 billion. With such a high price tag, Gazprom has been extremely reluctant to proceed.

Lack of profitability in the domestic market and uncertainty over European export prices are not the only impediments to Gazprom's pursuit of new field development. Gazprom has dedicated large sums to the development of export infrastructure that some critics view as unnecessary at best and a tool for foreign policy leverage at worst. The Nord Stream pipeline will effectively sideline Ukraine, Belarus, and Poland in the transit of gas to Germany, which is Gazprom's largest European customer. By freeing Gazprom from transit dependency, the project will allow much tougher pricing policies toward those countries and will allow the Kremlin greater diplomatic leverage in its actions. (Poland, particularly, is engaged in a complicated trade spat with Russia at present. Without its role as a transit country, Poland's bargaining position will be substantially diminished.) But the price of this freedom to Gazprom will be approximately \$6 billion. The German companies E.ON, Ruhrgas, and Wintershall combined have a 49 percent stake in the project, though the exact financial obligations have yet to be meted out. This will lessen Gazprom's financial outlay, but for a company that is facing expensive new development projects, it may have been wiser to pursue a more constructive and less costly solution to Russia's problems with its CIS and former satellite neighbors.

The new South Stream project is a similar attempt to be free of third-party interference, namely Turkey. This project will bring gas across the Black Sea to Bulgaria, after which one line will go through Bulgaria and Romania to the transport hubs of Hungary and Austria. The second line will go to Italy, Gazprom's second-largest European customer. The project will be a 50-50 venture between Gazprom and Eni, the Italian counterpart. But regardless of the shared expense, the project still constitutes a huge financial obligation for Gazprom. Cost estimates for the project are as high as \$13.5 billion.<sup>28</sup>

Gazprom's reluctance to take on foreign partners also contributes to the company's shortage of capital. In October 2006, Gazprom announced that it would develop the Shtokman field without international partners, to the consternation of several hopeful participants. Gazprom decided that it could simply purchase the services and expertise it needed from international firms and retain all profits from the 3.7 tcm supergiant field for itself. However, ultimately fearful of incurring the entire \$20 billion risk, Gazprom recently announced that the French company Total will be offered a 25 percent stake in the company that will design, finance, and build the infrastructure at the field. The deal is likely to include extra options for Total, but Gazprom is certain to retain at least 51 percent of the controlling venture.

Furthermore, each of these projects will increase EU dependence on Russian gas. Proposed Central Asian pipeline projects that bypass Russia, such as Nabucco, will be rendered superfluous and will therefore have considerable trouble attracting financing. As European dependency on Russian gas grows, so will the Kremlin's potential leverage over its customers.

### The Well-Ordered House . . .

While fear of EU intentions has certainly been a factor in Gazprom's development investment decisions, lack of domestic market profitability has been the primary obstacle to new large-scale projects. Much depends on the Russian government's courage to abide by the price targets and timelines that they have decreed. This is questionable. Although Putin has made a goal of weaning the economy from its reliance on natural resource production and concentrating more heavily on manufacturing, the spike in energy prices could strangle the industrial sector while it is still in its nascent stage. The government may be reluctant to enforce price targets in the midst of an election cycle, despite the fact that the Kremlin parties have no serious opposition. Much will also depend on the priorities of Putin's successor. There will undoubtedly be strong opposition from the powerful oligarchs who own interests in manufacturing industries, although the Yukos affair and the example made of Mikhail Khodorkovsky will temper those who might otherwise protest too loudly against the Kremlin's wishes. Furthermore, there is no discussion of gas price reform for the private household sector.

Nevertheless, there are healthy signs that Gazprom is successfully rebelling against its subservient national champion role and asserting itself as an autonomous, profit-making, and profit-conscious company. For fifteen years Gazprom has supported Russian economic development through its patronage of the power and industrial sectors. The depletion of the traditional producing fields and the high marginal costs of new development have given Gazprom leverage against the government's desire to continue using the company as a national donor. Gazprom is successfully exploiting that leverage for its profitability and survival as a functional enterprise.

Reform of Russia's domestic natural gas and power industries is long overdue for the healthy development of the Russian economy. Price deregulation of electricity and natural gas for industrial consumers will lead to more rational use of energy and help Russian businesses compete domestically and internationally. This program will also lead to greater energy security for the EU. Gazprom's failure so far to proceed significantly with development of the new supergiant Shtokman and Yamal fields is the most imminent threat to security of supply to the European market. The Russian program of energy price deregulation will mitigate this threat. In the short-term, as higher domestic gas prices reduce the demand for gas, greater supplies will be available for the export market. In the long-term, domestic profitability will guarantee that Gazprom can meet its marginal development costs, thereby encouraging the scale of development necessary to meet both domestic and international demand.

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