

Russia's Decisive Role in the Kyoto Protocol

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May 2003

Summary

This paper assesses the prospects for Russia's ratification and implementation of the Kyoto Protocol.¹ The Kyoto Protocol can enter into force only when countries responsible for 55 per cent of developed nations' 1990 carbon dioxide emissions ratify the agreement. With countries representing 44 percent of that total having already ratified Kyoto, and with Russia and the United States representing 17 and 36 percent of that amount, respectively, approval by either nation would bring Kyoto into force. No other nation or combination of nations can bring Kyoto into force. The current U.S. administration of President George Bush and the leadership of the Congress oppose Kyoto, leaving the future of that climate treaty to Russia's President Vladimir Putin and its parliament.²

Putin's government, despite official statements that it will ratify Kyoto, appears ambivalent about doing so. America's withdrawal from the pact greatly reduces Russia's incentive to participate by reducing demand for emissions credits that Russia could sell to other nations. The value of emissions trading to Russia could have been \$10-20 billion per year with U.S. participation, but probably amounts to no more than \$1-2 billion per year without it, and in any case has no value

¹ The United Framework Convention on Climate Change (UNFCCC) was adopted on 9 May 1992, and entered into force in March 1994. Developed countries and countries with economies in transition made a commitment to stabilize their greenhouse gas emissions in 2000 on a 1990 "base" level (UNFCCC 1992). Russia and some Eastern European nations were able to fulfill this commitment due to a combination of economic decline and economic reform. UNFCCC. 1992. *United Nations Framework Convention on Climate Change*. Geneva, Switzerland. (Also available on the Internet: <http://www.unfccc.de/resource/docs/conv/index.html>). In 1997, the third Conference of the Parties (COP-3) to the UNFCCC adopted the Kyoto Protocol. Its main goal is to extend commitments of the parties and make them more stringent. The Kyoto Protocol requires developed countries to stabilize or reduce their emissions by 6-8 percent (depending on a region) by 2008-2012 in comparison with 1990 baseline emissions. The Protocol establishes several mechanisms that allow countries to reduce emissions jointly. These mechanisms are Joint Implementation (JI), a combined target for two or more countries (bubbling), the Clean Development Mechanism (CDM), and international emission trading. 1997. *Kyoto Protocol to the United Nations Framework Convention on Climate Change*. UNFCCC, Geneva. (Also available on the Internet: <http://www.unfccc.de/resource/docs/convkp/kpeng.html>).

² Article 25 of the Kyoto Protocol states, "This Protocol shall enter into force on the ninetieth day after the date on which not less than 55 Parties to the Convention, incorporating Parties included in Annex I which accounted in total for at least 55 per cent of the total carbon dioxide emissions for 1990 of the Parties included in Annex I, have deposited their instruments of ratification, acceptance, approval or accession," *Ibid.*

before Kyoto would take effect in 2008.³ Russia's ability to comply with the Kyoto requirements also remains in doubt because the government currently lacks the institutional capacity to participate in emissions trading under the protocol.

Market and geopolitical factors weigh in the direction of Russian approval of Kyoto. Ratification would probably lead to greater European demand for Russian natural gas because gas is the least carbon intensive of the fossil fuels, Russia already ranks among Europe's largest suppliers of natural gas, and Russian gas exports could be sustained for decades at an even higher level due to its very large reserve base. Russian officials for trade and business reasons may also sense that their nation's strategic and economic future is more closely tied to Europe than the United States, a feeling that is no doubt strengthened by disagreement with the United States over war in Iraq. Because Russia's greenhouse gas emissions have already dropped by more than 30 percent since 1990 and are unlikely to exceed the 1990 level during the Kyoto implementation period of 2008-2012, ratification carries little downside risk. Even with rapid economic growth, Russia should have little trouble meeting its Kyoto target. The policy balance probably tips toward Russian ratification, but not so much so that the government feels compelled to act quickly or aggressively, at least until the time of this writing.

Russia's Requirements Under Kyoto

When the Kyoto Protocol was drafted in 1997, the principal industrial country sources of greenhouse gas emissions agreed to reduce carbon dioxide emissions during the years 2008-2012. The United States, Europe, and Japan agreed that—if they later ratified the treaty—they would reduce their emissions in 2008-2012 by 7, 8 percent, and 6 percent, respectively, compared to benchmarks set equal to 1990 emission levels. Russia's agreed-upon goal was equal to but not more than the 1990 level. Under Kyoto rules, Russia could sell the right to emit greenhouse gases up to the amount its 2008-2012 emissions fell below its 1990 emissions level.

Participation in Kyoto's "flexible mechanisms," such as emissions trading, requires countries to carefully estimate their greenhouse gas emissions and provide this information to the United Nations Framework Convention on Climate Change (UNFCCC) Secretariat. Countries willing to participate in emission trading have to set up a national system to estimate emissions of all six gases regulated by Kyoto⁴ no later than 2007, one year before the first budget period.⁵ Inventories must be created in accordance with guidelines established by the Intergovernmental Panel on Climate Change (IPCC). "Joint implementation" projects—a kind of prototype project that could lead to project-based emissions trading—must be monitored to verify that emission reductions are in addition to what might happen without a project, which requires substantial monitoring at the facility level or in one

³ Richard Baron, *International Emission Trading: From Concept to Reality* (Paris: International Energy Agency, 2001).

⁴ The Kyoto Protocol requires countries to reduce emissions of six greenhouse gases—carbon dioxide, methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).

⁵ Kyoto Protocol Articles 5.1, 7.1, 7.2. 1997. Kyoto Protocol 1997. *Kyoto Protocol to the United Nations Framework Convention on Climate Change*. UNFCCC, Geneva. (Also available on the Internet: www.unfccc.de/resource/docs/convkp/kpeng.html). The Marrakech Accords and the Marrakech Declaration. 2001. UNFCCC, Geneva. (Also available on the Internet: <http://www.unfccc.int/cop7/documents/accordsdraft.pdf>).

component of a sector (such as pipelines in the natural gas sector) before and after a project. This process requires a project baseline that considers what would happen without the project.⁶

Under the Convention and the Kyoto Protocol, Russia has several commitments which are clearly defined in Russian official documents⁷:

- Develop and implement climate change mitigation and adaptation policies to stabilize anthropogenic emissions at the baseline level of 1990 by the budget period 2008-2012 and regularly provide the UNFCCC Secretariat with information about these policies;
- Create a national monitoring system for greenhouse gas sources and sinks no later than one year before the first budget period, and create inventories of greenhouse gases for all sectors of the economy following IPCC rules and recommendations;
- Participate in international research programs on climate change.

As discussed below, Russia has done little to fulfill these commitments.

Russian Greenhouse Gas Emissions and the Energy Sector

Russia remains the world's fourth largest source of anthropogenic greenhouse gases. Its global share has, as a result of economic collapse, declined since 1990 from 10 percent to just under 6 percent. Carbon dioxide emissions fell over the period from about 650 million tons of carbon per year to about 400 million tons. The Russian economy recently resumed strong economic growth, with 1999 and 2000 GDP growth at 5.4 percent and 8.3 percent.⁸ In 2002, the rate was 4.3, down from 5.0 in 2001.⁹ The Russian government predicts steady GDP growth, averaging 4.5 percent a year for years to come.¹⁰ Russian carbon dioxide emissions from fuel combustion will nevertheless likely not exceed 1990 the level before 2015, even with higher economic growth (see Tables 2 and 3).

Fuel combustion for energy needs in all sectors is responsible for 70 per cent of the country's greenhouse gas emissions. Of that overall total, fossil fuel combustion generates 98 and 70 percent, respectively, of Russia's carbon dioxide and methane emissions (see Table 1). The largest share of energy-sector methane comes from leaks in the natural gas production and transmission system.

Much of Russia's energy supply and energy-using capital stock needs replacement or repair.¹¹ The energy sector remains inefficient and energy intensive. Energy intensity in Russia actually grew by

⁶ Popov, I. 1999. *Monitoring Greenhouse Gas Emissions in Russia: A Foundation for Climate Change Accountability*. Pacific Northwest National Laboratory, Richland, Washington. Also available on the Internet: www.pnl.gov/aisu/pubs/.

⁷ Interagency Commission on Climate Change 2002 Third National Communication of the Russian Federation under the United Nations Framework Convention on Climate Change. Moscow. In Russian. (Also available on the Internet: <http://www.unfccc.de/resource/docs/natc/rusnce3.pdf>).

⁸ International Energy Agency/OECD (Organization for Economic Cooperation and Development 2002. *Energy Policies of the Russian Federation. 2002 Survey*. Paris

⁹ "Russian preliminary GDP '02 growth slips to 4.3 pct," Reuters, 2003. <http://asia.news.yahoo.com/030206/3/r6dz.html>

¹⁰ Interagency Commission on Climate Change 2002 *Third National Communication of the Russian Federation under the United Nations Framework Convention on Climate Change*. Moscow. In Russian. (Also available on the Internet: www.unfccc.de/resource/docs/natc/rusnce3.pdf.)

¹¹ William Chandler, *Energy and Environment in the Transition Economies* (Boulder: Westview Press, 2000).

15 per cent since 1990 because of slow economic reform, which is to say that energy consumption declined more slowly than the GDP. Structural change in the Russian economy (decrease of production in energy intensive industries such as steel production, oil refining, and increase of production in less energy intensive industries such as agriculture and textile industry) was another reason for energy intensity growth. Structural change in the Russian economy did not occur as rapidly as in other formerly planned economies.¹² Restructuring of industrial sectors through increasing energy efficiency and therefore decreasing energy intensities would substantially improve

Table 1 Anthropogenic Carbon Dioxide and Methane Emissions, Russia
Million Tons of Carbon Dioxide(in Carbon units); Percent

		1990	1999	Decrease, 1999 vs. 1990 (%)
Carbon Dioxide	Total	644	412	36
	Total (%)	77	80	
	Energy Sector	633	401	
	Energy Sector (%)	98	98	
Methane	Total	150	79	41
	Total (%)	18	15	
	Energy Sector	109	54	
	Energy Sector ((%)	73	68	

Source: compiled by authors from Interagency Commission on Climate Change 2002 *Third National Communication of the Russian Federation under the United Nations Framework Convention on Climate Change*. Moscow. In Russian. (Also available on the Internet: <http://www.unfccc.de/resource/docs/natc/rusnce3.pdf>).

Note: Total greenhouse gas emissions were 832 and 512 million metric tons of carbon dioxide (in carbon units) in 1990 and 1999, respectively.

the Russian economy by making it more economically efficient and more competitive.¹³ For example, the IPCC suggests that “hundreds of technologies and practices for end-use energy efficiency in buildings, transport, and manufacturing industries account for more than half of this [emissions reduction] potential.”¹⁴ The government policy document “Russian Energy Strategy” suggests that it is possible to reduce energy consumption by 40-50 per cent through organizational and technological improvements. The only real difference among official Russian climate scenarios, other than the GDP assumption, is the assumption for the rate of energy intensity reduction, at –2.0, –2.5, and –3.7 percent per year. These relatively high rates are made plausible by the large remaining inefficiencies in the Russian economy, held over, as noted above, from years of central planning.

Russia’s fossil energy mix has become a little less carbon intensive since the collapse of the Soviet Union. Natural gas, of course, produces less carbon dioxide per unit of energy use than coal or oil, and oil produces less than coal. Oil consumption fell by 52 percent and coal consumption dropped by 37 percent in Russia in 2001 compared to the 1990 level. Natural gas use fell only 11 percent over the same period.¹⁵

¹² Ministry of Energy 2001. *Energy Strategy of the Russian Federation Till 2020*. Moscow. In Russian.

¹³ Popov, I. 2001. *Estimating Methane Emissions from the Russian Natural Gas Sector*. Pacific Northwest National Laboratory, Richland, Washington. Also available on the Internet: <http://www.pnl.gov/aisu/pubs/>.

¹⁴ IPCC (Intergovernmental Panel on Climate Change) 2002. *The Third Assessment Report*. Geneva, Switzerland.

¹⁵ “BP Statistical Review of World Energy,” British Petroleum, 18 June 2002, <http://www.bp.com/centres/energy2002/>.

The Russian government at first promoted natural gas as a more environmentally friendly fuel. The first energy strategy adopted in 1995 claimed a continuation of the so-called “gas pause,” the slower growth of other energy sources caused by the availability of abundant, low-cost gas, beginning

Table 2 Description of Scenarios

Parameters	Scenario I (Optimistic)	Scenario II (Pessimistic)	Scenario III (Probable)
GDP	+5,2%/year	+3.3%/year	+4.5%/year
Energy Intensity of GDP	-3.7%/year	-2.5%/year	-2.0%/year
Energy Consumption	+1,5%/year	+0.8%/year	+2.5%/year
CO ₂ Emissions	+1,5%/year	+0.8%/year	+2.5%

Source: Interagency Commission on Climate Change 2002 *Third National Communication of the Russian Federation under the United Nations Framework Convention on Climate Change*. Moscow. In Russian. (Also available on the Internet: <http://www.unfccc.de/resource/docs/natc/rusnce3.pdf>)

three decades ago. In contrast, Russia’s new energy strategy, promulgated in 2000 but not yet approved by the government, would promote use of coal and reduce gas consumption in favor of exporting that premium fuel.

Table 3 Projections of Carbon Dioxide Emissions from the Energy Sector

1990 emissions = 2,370 million tons of carbon dioxide = 100%

	Scenario I	Scenario II	Scenario III
2008	78.0%	73.8%	84.5%
2012	82.8%	76.2%	93.4%
2015	86.7%	78.0%	100.7%
2020	93.4%	81.2%	114.1%

Source: Interagency Commission of the Russian Federation on Climate Change 2002

Emission estimates remain very uncertain, especially for greenhouse gases other than carbon dioxide. Russia has, as required, submitted three national communications to the UNFCCC Secretariat, with all information being prepared by a small group of experts from the Institute for Global Climate and Ecology (IGCE) with cooperation from different agencies. This work was performed under the Federal Target Program “Prevention of Dangerous Climate Changes and Their Consequences.” The background information was prepared in the framework of the Country Study. The Federal Target Program was inadequately funded and, as a result, the emissions were estimated at a highly aggregated level. No standard forms from the IPCC Guidelines were filled out except two summary and overview tables.¹⁶ In addition, none of national communications provides detailed assessments of emissions data on a regional, sectoral, or enterprise level. Only the First National Communication was reviewed by an independent team of experts from International Energy Agency in 1997. The team confirmed data about carbon dioxide emissions from fossil fuel combustion in

¹⁶ Ministry for Fuel and Energy 1999. *Kyoto Protocol and Russian Energy*. Institute of Energy Strategy, Moscow. In Russian.

1990, and suggested that Russia should conduct additional studies to estimate more carefully emissions of other greenhouse gases, including methane.¹⁷

Attempts to improve this process include a 1999 effort to translate IPCC Guidelines into the Russian language. The Russian power company Unified Electric Power Systems of Russia (RAO EES) has also conducted an inventory of carbon dioxide emissions from all large and medium size plants for the electric power sector. These efforts, however, provides little information about methane emissions. For Russia to participate in Kyoto's flexible mechanisms it will have to improve its inventories capabilities substantially.

Russia's Institutions for Implementing Climate Policy

The Russian government in 1994 established the Interagency Commission of the Russian Federation on Climate Change Problems (commission) to coordinate all activities related to the development of climate change policies. The Commission advises the administration of President Putin, which makes final decisions about climate change policies. Its decisions are not legally binding, and it cannot mandate ministries to implement any climate change policies.¹⁸

The government issued a decree in 1999 revising the composition of the Commission. It now has 32 members from various ministries, research institutes, as well as two representatives from Russia's biggest natural monopolies—Gazprom and the Unified Electric Power Systems of Russia (RAO EES)—which dominate the Russian energy sector. The federal agencies that play the largest role in the commission and in implementing climate change policies are Hydromet, which leads the Commission, and the Ministry of Economy and the Ministry of Energy. Each agency sends representatives to international climate change negotiations, with the delegation headed by Hydromet. Until it was disbanded by a presidential decree, the Russian State Committee for Environmental Protection, Goscomecologia, participated in the Commission. Some of Goscomecologia's functions were transferred to the Ministry of Natural Resources, which does not take an active role in climate change. This institutional change weakened the Commission and coordination of climate change policies in Russia because Goscomecologia was actively involved in conducting inventories and had knowledgeable experts on international climate change negotiations. Goscomecologia had branches in all regions and was responsible for collecting information about air pollution from industrial facilities.

The interagency status of the commission limits its role to designing climate change mitigation programs and coordinating work among the participating agencies. For example, several ministries simultaneously work on programs such as joint implementation and monitoring. The commission made suggestions about dividing work on the UNFCCC and the Kyoto Protocol, but a formal decision about this has not been made so far. Jurisdictional issues occasionally arise on who should be responsible for implementing flexible mechanisms. Representatives from the Ministry for Energy

¹⁷ International Energy Agency, Organization for Economic Cooperation and Development, 1997. *Report on the in-depth review of the national communication of the Russian Federation*. FCCC/IDR.1/RUS. UNFCCC Secretariat, Bonn. (Also available on the Internet: <http://www.unfccc.de/resource/docs/idr/rus01.htm>.)

¹⁸ Pacific Northwest National Laboratory 1999. *Climate Change Policy and Programs in Russia: An Institutional Assessment*. Washington, DC.

and the Ministry for Economics consider their agencies to be responsible for issuing permits in a domestic or international system.¹⁹

The Commission has not formally met for several years, even though all international climate change documents require its approval and bear its stamp. In reality, the Commission functions as a part of Hydromet, which is ineffective because Hydromet has no responsibility for the economy or for the energy sector. It will be important to elevate the status of the Commission or to create a new commission at the level of the President's office. Higher status would improve coordination between agencies. Leadership would, at a minimum, be required to deal with the following tasks:

- Develop programs to mitigate the climate change consequences;
- Conduct greenhouse gas inventories in Russia. Inventories are a key point for Russia's compliance with the Convention and Kyoto protocol obligations. Without inventories Russia can not participate in any flexible mechanisms. Russia still lacks high quality national inventories, especially for gases other than carbon dioxide. The only exception is an inventory conducted by RAO EES. Russia has already produced several regional inventories but they will not be sufficient for fulfilling Russia's commitments. Sectoral inventories do not exist in Russia.²⁰
- Develop rules for emissions trading in Russia and register joint implementation projects. Such projects have not worked well in Russia. Of more than a dozen suggested, only 2 or 3 have been successfully developed. By comparison, Latvia, a small country, has 18 such projects.²¹
- Update existing legislation. Currently, all greenhouse gases with exception of carbon dioxide are covered by environmental laws as harmful pollutants, not as greenhouse gases. Environmental laws do not also currently permit market mechanisms for reducing emissions. The only economic mechanism is charges—fees—for excess discharges of pollutants. The Ecological Committee of the Russian Parliament suggested updating the Law on Atmospheric Air Protection and defining greenhouse gas emissions and property rights for the purposes of emissions reductions.²² The Ministry for Economic Development suggests updating legislation before ratification of the Kyoto Protocol. Probably, these tasks should be implemented simultaneously. The Russian government will be responsible for emission reductions as a party to the UNFCCC but companies and regions would like to get emission reduction credits because they hope to participate in emission trading programs.

One practical result of the lack of coordination among ministries has been the inability of potential investors to engage in joint implementation projects in Russia. For instance, a Russian-Dutch Memorandum of Understanding on JI projects has not been signed despite the Netherlands'

¹⁹ PNNL (Pacific Northwest National Laboratory) 1999. *Climate Change Policy and Programs in Russia: An Institutional Assessment*. Washington, DC.

²⁰ PNNL (Pacific Northwest National Laboratory) 2001. *The Multi-Regional Pilot Project to Develop Monitoring and Reporting Capacity for Greenhouse Gases in Russia*. Russian Center for Energy Efficiency (CENEF), and World Wide Fund for Nature (WWF) Russian Programme Office. Richland, WA, Washington, DC. <http://www.pnl.gov/aisu/pubs/>

²¹ Evans, M., Legro, S. and Popov, I. 2001. *The Climate for Joint Implementation: Case Studies from Russia, Ukraine and Poland*. *Mitigation and Adaptation Strategies for Global Climate Change* 5(4):319-336. Also available on the Internet: <http://www.pnl.gov/aisu/pubs/>

²² Kosarikov A. 2002 *The Kyoto Protocol in the State Duma. Interview*. *Toward Sustainable Development in Russia*, N 20, 2002. Center for Environmental Policy. Moscow. In Russian.

willingness to invest in such projects. At the seventh conference of parties of the UNFCCC in Marrakech, the Dutch delegation referred to Russia as a “problematic country” because it lacks institutions responsible for climate change.

Outlook for Russian Ratification of the Kyoto Protocol

Russian top officials have publicly committed to ratify the Kyoto Protocol three times, but it remains unclear when and if that will happen. President Putin made that commitment for the first time just prior to the seventh conference of parties of the framework convention, held in Marrakech in 2001. Putin reasserted this position in the Spring of 2002 at a European Union-Russian meeting in Moscow. And at the World Summit on Sustainable Development in Johannesburg in 2002, Russian prime minister Mikhail Kasyanov said, “Russia has signed the Kyoto Protocol and is currently preparing for its ratification which we hope would happen in the near future.”

On the other hand, Deputy Minister of Economy Muhamed Tsikanov on 25 March 2003 told reporters that there would be political value in ratification, but “no sense in it” from an economic point of view.²³ Earlier, at the World Summit on Sustainable Development, Prime Minister Kasyanov had mentioned an important issue that might delay ratification. Russia, he claimed, is an “environmental donor” and would play a “leading role in supporting global environmental balance. Russia possesses one fourth of the planet’s virgin forests and 20 percent of the world’s fresh water...Russia has reduced greenhouse gas emissions by one third.” Some observers suggested that this might mean that Russia wanted compensation for being a donor and this is a condition for Russia's ratification. Moscow deputy chairman Alexander Kosarikov told the Environmental Committee of the Duma²⁴ that Russia is an environmental donor and deserves money for such services. He asserted these ideas again at a seminar during the eighth conference of parties in Delhi in 2002. He and other members of the Russian delegation described the process of ratification and explained that the Duma would like to see some kind of compensation for the environmental services Russia provides, mentioning the figure of \$2 billion per year.

This type of bargaining has continued around the Protocol, notably in conjunction with a number of bilateral discussions between Russia and Canadian, Japanese, and European delegations. A National Report on Climate Change, commissioned in April of 2002 and prepared by several agencies under the leadership of the Ministry of Economy, was released in December. The document states that Russia will benefit from participating in climate change negotiations and implementing the Kyoto Protocol, which bring investments through flexible mechanisms. Many observers expected that in mid-December the Putin government would issue papers for the Duma to start preparing a law on ratification, but action was postponed. Ratification in Russia requires several steps. First, the government must prepare documents for ratification and send them to the State Duma. After the Duma receives documents, it prepares a law on ratification and usually considers it in three separate “readings,” though it is possible to hold these readings simultaneously. But rather than accept the report and initiate the parliamentary approval process, Victor Kristenko, the deputy prime-minister responsible for the energy sector, expressed dissatisfaction with the report, and in particular with the Ministry of Economy’s role in preparing it, and asked Hydromet to improve the report. Leading

²³ “Russia will not line its pockets from global warming,” *Vedomosti*, 24 March 2003. In Russian.

²⁴ Lower house of the Russian parliament.

Hydromet figures are known to oppose Kyoto and even to have concluded that climate change would be beneficial to Russia. Nevertheless, the head of Hydromet, Alexander Bedritsky, was most recently quoted in January as saying that Russia intends to ratify Kyoto.²⁵

Even if it ratifies Kyoto, Russian participation in the treaty's flexible mechanisms will probably require foreign assistance to create institutions and conduct emissions inventories. Internal funding is insufficient to sustain existing climate institutions, and creating new ones would be out of the question. International organizations and other countries have already provided some assistance and have offered more help. The First and Second National Communications were partially financed under the United States-Russia cooperation in the framework of the U.S. Country Studies.²⁶ The U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy (DOE) financed regional inventories. The United Nations Development Program (UNDP) plans a project to build institutions for conducting inventories and promoting joint implementation projects in 2003.²⁷ Nevertheless, many emissions-related projects financed by international institutions collapsed because of poor coordination among Russian agencies. In 1995, the Global Environmental Facility offered Russia \$3.2 million to estimate emissions of methane from the natural gas sector and to propose control measures. Conflicts among different Russian players led to failure of the project.²⁸ The European Union has stated its readiness to channel money to Russia to create infrastructure responsible for climate change, but as a condition of Russia ratifying the Kyoto Protocol.

It is not clear whether Kyoto offers enough direct economic benefit to Russia to ensure its ratification. The Russian Ministry of Energy estimates that the energy sector requires \$40-70 billion dollars of foreign investments through 2020.²⁹ Many studies have suggested that participation in the Kyoto Protocol would over its five-year implementation period bring up to \$10 billion in investments to Russia's energy sector. Kyoto provides flexible mechanisms—emissions trading, specifically—that could earn money for developers of carbon and methane-saving energy supply and energy efficiency projects. Significantly, this conclusion depends on the assumption that funds earned from emissions trading would somehow be allocated to energy users or producers. Russian interests are not inconsistent with Russia's commitments under the Kyoto Protocol. Russia needs to improve energy efficiency and the Kyoto Protocol can help do this by attracting investments through use of its flexible mechanisms. Increasing energy efficiency should increase the economic competitiveness of Russian industries.

Ratifying Kyoto would strengthen Russia's relationship with Europe, but conversely might further strain U.S.-Russian relations. The risk of the latter is diminished by the fact that official U.S. policy states that the United States does not object to other nations ratifying and implementing the Kyoto Protocol. The United States itself may not want further to strain Russian-American relations recently bruised by the Iraqi war. At the same time, the likelihood that the United States could offer bilateral

²⁵ "Russia To Ratify Kyoto Protocol," 20 January 2003, english.pravda.ru/main/2003/01/20/42258_.html

²⁶ Ministry for fuel and Energy 1999. *Kyoto Protocol and Russian Energy*. Institute of Energy Strategy, Moscow. In Russian.

²⁷ UNDP (United Nations Development Program) 2003. *Building Capacity for Green House Gases (GHG) Emission Reduction in Russia*. Available on the Internet: <http://www.undp.ru/programmes.php?id=7>.

²⁸ Popov, I. 2001. *Estimating Methane Emissions from the Russian Natural Gas Sector*. Pacific Northwest National Laboratory, Richland, Washington. Also available on the Internet: <http://www.pnl.gov/aisu/pubs/>

²⁹ Institute for Energy Strategies 2001. *The Energy Dialog "European Union-Russia."* Moscow. In Russian.

cooperation sufficient to compensate for Russia's likely losses from rejecting Kyoto is not high, given the relatively low priority placed on climate change in the face of war-related budgetary pressures, and growing competition for funding for homeland security and education.

Implications for Global Climate Policy

Russia still offers the world's largest and cheapest greenhouse gas emissions mitigation opportunities, offering large quantities of reductions for under \$10 per ton of carbon. The key question is how best to cooperate to capture those emissions reductions, and to prevent Russia's emissions from returning to previously high levels. Russian policy makers rightly question how this effort can serve global environmental needs and Russian economic development. Critics of the Kyoto Protocol are probably right that it is not aggressive enough to reduce the risk of serious climatic change, but supporters may also be right that its true value is in early action to establish mechanisms for cost-effective mitigation.

For European leaders, there is the real possibility that their support for Kyoto in the absence of U.S. involvement could end in failure. The result would be protracted uncertainty in global climate policy and the requirement to start global climate negotiations from scratch. While some stakeholders would welcome an opportunity to revisit global climate policy, the global business community is by no means monolithic. Some companies—British Petroleum and Royal Dutch Shell, for example—support the flexible mechanisms that Kyoto offers and that are attractive to Russia. These groups, along with many in the environmental community, believe that Kyoto is a vital first step, one that would establish the types of flexible mechanisms that would be needed to make affordable the inevitable tightening of emissions constraints necessary to reduce the risk of climate change.³⁰ But European leaders have not been particularly successful in communicating to Russia their case for quick ratification of Kyoto. Recently, the Ministry of Economy declined to meet with a European Union delegation of environment ministers seeking to hasten Russian ratification of Kyoto.

Russia continues to offer large opportunities for low-cost emissions mitigation, but serious obstacles hinder the development of programs to capture them. The Russian government places low priority on climate change in the near term, in part because Kyoto's flexible mechanisms offer no benefits to Russia for the next half-decade. The international community could most likely succeed in elevating this priority by offering cooperation in the form of finance for refurbishing energy-using infrastructure, particularly in the industrial and district heating sectors. Financial backing is needed to capture low-cost emissions reductions in investments that have short payback periods but high risk due to lack of credit history and collateral.

And if the Kyoto mechanisms are to work in Russia—if emissions trading is to be implemented, human and institutional capacity will have to be developed. Emissions baselines will have to be made transparent, and, for project-based emissions trading to work, verification and monitoring systems devised to ensure that reductions are real. Building Russian institutional capacity to overcome these challenges could cost millions of dollars per year, and it is not clear whether the Russian government would provide this funding with many compelling, unsatisfied needs for

³⁰ Intergovernmental Panel on Climate Change, 2002. The Third Assessment Report. Geneva, Switzerland.

government spending in pensions, utility sector reform, health care, and education. Though there has been much talk from European, Canadian, and Japanese governments about providing such technical assistance, nothing like the required sums have been identified. Such assistance is usually not available to support Russian expertise, but for citizens of the donor governments themselves.

Beyond the time frame of Kyoto, priority for international climate cooperation involving Russia might be placed on sharing fundamental research for the development of new technologies to meet the climate challenge. Cooperation in developing fuel cells, advanced turbines, and renewable technologies could be useful in the long term. Scientific collaboration could also help satisfy short-term security needs to support the struggling Russian scientific community, and to improve international relations that have been strained by economic hardships. But for Russia, Kyoto on balance probably represents the best deal on the table today. Whether it remains so will depend on the value other nations place on salvaging the Kyoto process or in creating an alternative to it.