

Final Report

Bilateral Workshop on U.S.-Russian Greenhouse Gas Emissions Trading

Mir Hotel, Moscow, July 1-2, 1998

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**Harvard Institute for International Development
14 Story Street
Cambridge, MA 02138 USA
Tel (617) 495-5664, Fax (617) 496-8040**

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Bilateral Workshop on U.S.-Russian Greenhouse Gas Emissions Trading

FINAL REPORT

I. Summary

The Bilateral Workshop on U.S.-Russian Greenhouse Gas Emissions Trading, held July 1-2, 1998 at the Mir Hotel in Moscow, provided a forum for discussions on the economic, technical, and institutional issues involved in designing and implementing greenhouse gas (GHG) emissions trading systems at the international, bilateral, and national levels. The U.S. Agency for International Development (USAID) sponsored the workshop, and the Russian Federation State Committee on Environmental Protection, the Russian government's lead agency in coordinating climate change activities, served as cohost. The Harvard Institute for International Development and the Russian Higher School of Economics provided organizational support.

Approximately 100 individuals from a variety of U.S. and Russian government agencies, nongovernmental organizations (NGOs), and academic and research institutions participated in the workshop. Dr. V.I. Danilov-Danilyan, Chairman of the Russian Federation State Committee on Environmental Protection, and Ms. Melinda Kimble, Acting Assistant U.S. Secretary of State for Oceans and International Environmental and Scientific Affairs, headed their countries' delegations.

After reviewing and discussing a broad range of background materials and studies, the participants recommended that the U.S. and Russia form five ad hoc working groups to continue joint efforts related to:

- designing systems for recording trades of assigned amount units (AAUs)¹ and monitoring and verifying compliance with national emissions reduction commitments
- identifying the minimum elements required for GHG emissions trading systems
- developing channels and mechanisms for early trading
- analyzing legal mechanisms for creating trading opportunities and removing barriers to trading
- improving long-term forecasts from integrated macroeconomic-GHG models

The participants agreed that these working groups should produce certain documents for governmental consideration in advance of key upcoming meetings, including the July 24 informal Gore-Kiriyenko meeting, the "Umbrella Group" meeting to be held in Wellington in early September, the September 17-18 Environment Ministers meeting in Tokyo, and the Fourth Conference of the Parties to the UN Framework Convention on Climate Change (FCCC), to be held November 2-13, 1998, in Buenos Aires. Workshop participants recommended that the

¹ The assigned right to emit 1 tonne of carbon or equivalent global warming potential in other gases covered by the Kyoto Protocol.

working groups utilize an existing intergovernmental structure such as the Gore-Kiriyenko Climate Change Policy Group as a coordinating entity for their work.

II. Context for the Workshop

The July 1-2, 1998 Bilateral Workshop on U.S.-Russian Greenhouse Gas Emissions Trading occurred in the context of heightened national and international interest in emissions trading as a cost-effective means of achieving global reductions in emissions of GHGs. U.S. and Russian counterparts had already discussed the possibility of joint efforts to address the risks of global climate change several times between the 1992 U.N. Conference on Environment and Development, where the U.N. Framework Convention on Climate Change was signed, and the December, 1997 Third Conference of the Parties, which yielded the Kyoto Protocol. These discussions, which were undertaken under the auspices of the FCCC, the Gore-Kiriyenko (formerly Gore-Chernomyrdin) Commission, and other multilateral and bilateral initiatives, considered a number of policy issues related to market-based approaches for reducing GHG emissions.

The adoption of the Kyoto Protocol, with its express inclusion of legally binding limits on GHG emissions as well as four different “flexibility mechanisms” to achieve those limits in a least-cost manner, has focused governmental attention at the highest levels on the opportunities—and challenges—associated with emissions trading and the other Kyoto Protocol market mechanisms. The adoption of the Kyoto Protocol has also accelerated private-sector interest in exploring emissions trading, and this has reinforced government interest in developing the mechanisms for emissions trading. The announcement by the world’s third largest oil company, British Petroleum, that it will develop in cooperation with the Environmental Defense Fund a pilot GHG emissions cap-and-trade system at ten of its ninety business units around the world attracted considerable international attention. The March 5, 1998 announcement of a sale of up to 10 million tons of GHG reductions by a U.S. electric utility, Niagara Mohawk, to a Canadian oil company, Suncor, with a U.S. NGO (the Environmental Resources Trust) tracking the reductions, and the subsequent announcement by the Canadian government of its commitment to develop a domestic program of emissions trading with credits for early action, have sparked interest in mechanisms to provide incentives for early action.

The decision by the Group of Eight Industrialized Nations (G-8)² to initiate a Climate Change Working Group in preparation for the Buenos Aires Conference of the Parties, together with the decision by the Russian Federation to participate in the “Umbrella Group” of nations undertaking informal coordination on international policy positions related to emissions trading,³ have further raised the profile of emissions trading, particularly in Russia and the United States. Umbrella Group meetings in Washington and Iceland provided important for a for discussions on trading.

The Bilateral Workshop on U.S.-Russian Greenhouse Gas Emissions Trading was intended to build on these post-Kyoto developments. It provided an additional forum for U.S. and Russian

² The G-8 Nations are Canada, France, Germany, Italy, Japan, the Russian Federation, the United Kingdom, and the United States.

³ As of July 1, 1998, nine nations are participating in the Umbrella Group: Australia, Canada, Iceland, Japan, New Zealand, Norway, the Russian Federation, the United States, and Ukraine. Their informal coordination occurs in the context of FCCC negotiations.

government representatives to discuss their views on key elements of an international GHG emissions trading system, with particular attention paid to issues that arise in the specific context of trading between the Russian Federation and the U.S.

III. Participants in the Workshop

Both the United States and the Russian Federation sent high-level, multi-agency delegations to the workshop. Government representatives attended in their personal capacity as climate change experts, as the meeting was not a formal diplomatic affair. Ms. Melinda Kimble, Acting Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs, headed the U.S. delegation. U.S. government participants included experts from the Department of State, the Department of Energy, the Department of Commerce, the Environmental Protection Agency, and USAID.

Dr. V.I. Danilov-Danilyan, Chairman of the Russian Federation State Committee on Environmental Protection, headed the Russian delegation. Russian participants included experts from the State Committee on Environmental Protection, the Ministry of Finance, the Ministry of Economy (including the Bureau of Economic Analysis), the Ministry of Foreign Affairs, the Ministry of Fuel and Energy (including the Energy Strategy Institute), the Ministry of Transport, the Ministry of Science, the State Hydrometeorological Committee, the State Committee on Statistics, the Federal Forest Service, the International Forest Institute, and the National Pollution Abatement Fund.

A small number of additional experts from U.S. and Russian NGOs and academic and research institutions also participated. On the U.S. side, this included participants from Harvard Institute for International Development, the Environmental Defense Fund, and the Center for Clean Air Policy. On the Russian side, it included participants from the Higher School of Economics, the Academy of Sciences (including the Institute of Global Climate and Environment, Institute of Geography, and Center for Forest Protection), and the Institute of Global Energy Efficiency.

A complete list of participants is included as an annex to this report.

IV. Highlights of Plenary Sessions

The workshop was organized into two parts: one and a half days of plenary sessions, and a half day of breakout groups and plenary discussion of the breakout groups' recommendations for next steps. The plenary sessions were structured so that the initial presentations addressed more general and more purely international issues, while later presentations dealt with more detailed aspects of GHG emissions trading systems, including domestic aspects. The intention was to provide all participants a common understanding of the issues involved, to set the stage for the breakout groups' consideration of specific design and implementation issues.

The agenda for the meeting and copies of principal presentation materials are attached. The descriptions in the following paragraphs provide a sense of the key issues presented and discussed. They do not represent a complete transcript of every individual comment or question made by the participants, nor should they be regarded as conveying the official positions of the agencies represented at the workshop.

Day One: morning sessions

PLENARY SESSION I—The workshop was formally opened by Dr. Danilov-Danilyan, who welcomed the participants and expressed the State Committee on Environmental Protection's pleasure in co-hosting the workshop with USAID. The second speaker, Mr. John Tefft, Deputy Chief of Mission of the U.S. Embassy to the Russian Federation, noted that the United States is encouraging broad participation by industrialized and developing nations in the Kyoto Protocol's market mechanisms. He emphasized the importance of establishing a transparent, robust, and unfettered emissions trading system that will harness market forces to obtain maximum environmental benefits at the lowest cost and will stimulate investment flows to selling parties. He stressed the need for system integrity and suggested that lessons might be learned from the U.S. experience with its domestic emissions trading programs, especially the SO₂ allowance trading program. He noted that various U.S.-Russian initiatives related to these matters are already underway and should continue.

Dr. Janet Ballantyne, Director of the USAID Mission in Russia, spoke next. She informed the participants that USAID has earmarked \$1 billion for global assistance in the general area of climate change and expects to provide \$5 million per year over the next five years for cooperative activities in Russia. She noted the impacts of energy and forestry policies on Russia's net emissions and underscored the importance of bilateral assistance and cooperation in developing the infrastructure for emissions trading.

PLENARY SESSION II—Dr. Danilov-Danilyan and Ms. Kimble offered their perspectives on the key achievements of the Kyoto Conference of the Parties, important events and developments in the six months since Kyoto, and priority issues for the Buenos Aires Conference of the Parties. Dr. Danilov-Danilyan framed his comments by highlighting the scientific urgency of the climate change problem. He noted that, due to anthropogenic causes, GHG concentrations are projected to rise to levels unprecedented in human history. He identified emissions trading as the only viable mechanism for addressing this global problem in an ecologically and economically sound manner in the long run. He observed that trading is particularly well-suited for GHG emissions, as the global impact of actions to reduce GHG emissions or increase sequestration is independent of where the actions occur. He advised nations not to delay in adopting legally binding targets and developing economic approaches for channeling investment toward achieving those targets, noting that under a well-designed trading system the market will allocate financial resources efficiently and will provide measurable results in terms of GHG emissions reductions. He emphasized the willingness of the Russian side to agree to use revenues from trading only for investments in GHG reductions and related administrative functions.

Dr. Danilov-Danilyan also pointed out current uncertainties that nations must resolve to establish this promising new market. First, they need to clarify that participation in trading will be as broad as possible, with “legal entities” (private enterprises, NGOs, and individuals), as well as governments (“Parties”), able to participate as buyers and sellers. Second, he underscored the importance of minimizing constraints on trading. Freely operating markets will be more effective in reducing emissions quickly and cost-effectively, he pointed out, and will create a continuous incentive to identify and realize maximum emissions reductions at minimum cost. He emphasized the importance of getting the market going quickly, for example with an initial grouping of two, or five, or fifteen states, while waiting for a broader consensus to develop.

Dr. Danilov-Danilyan suggested that a useful step would be a bilateral agreement, to be signed at the next Gore-Kiriyenko meeting, that would provide a streamlined process for developing a pilot early trading system between the U.S. and Russia and provide direction for resolving legal, financial, and institutional issues related to it.

Ms. Kimble placed her remarks in the setting of the intense and ongoing international diplomatic efforts on climate change. She credited much of the unexpected progress in Kyoto to the U.S.-Russian partnership and emphasized that the two countries will need to continue to play lead roles in tackling the climate change problem, given their economic importance, physical size, international influence, and great technical potential. But she cautioned that the work started in Kyoto is unfinished and that the two countries face difficult challenges in realizing an open, transparent, and efficient emissions trading market, initially throughout Annex I and ultimately across the entire world. She noted the importance of eventually ensuring overall emissions limits for key developing nations. Many nations do not understand emissions trading well, she said, and they remain skeptical about it. In addition to working together to raise the level of awareness about the environmental and economic advantages of emissions trading, she called on the U.S. and Russia to develop recording, monitoring, and compliance systems that create and maintain international confidence in the system.

Ms. Kimble noted that the U.S. and Russia are not alone in this effort. The Umbrella Group includes seven other nations too and is playing the lead multilateral role in promoting the Kyoto Protocol’s market mechanisms. She referred to the Umbrella Group’s paper on the minimum elements for emissions trading, which it presented at the June 1998 session of the FCCC Subsidiary Bodies in Bonn. The Group will meet again in Wellington in September to consider next steps. Ms. Kimble also reminded the participants of an upcoming meeting of the G-8 Climate Change Working Group on July 17 in London.

Ms. Kimble underscored the necessity of getting the design elements for the Kyoto Protocol’s market mechanisms in place as quickly as possible. She stressed that this requires a continued interagency approach. She agreed with Dr. Danilov-Danilyan on the importance of not limiting the market. And she stated the U.S. view, based on its experience with SO₂ allowance trading program, that the principal participants in the GHG emissions trading market should be private sector actors, rather than governments. Harnessing the innovative capabilities, expertise, and competitive energy of the private sector is essential, she said. She also spoke of the importance of

sinks, drawing attention to two international workshops that are slated to be held on the topic, one prior to and one following the Buenos Aires Conference of the Parties.

In response to a comment from the floor that Dr. Danilov-Danilyan's suggestion of a pilot early trading system between the U.S. and Russia had already been discussed at the fifth session of the Climate Policy Group of the Gore-Kiriyenko Commission in March, 1998, Ms. Kimble confirmed that the United States supports the development of a pilot trading system but faces domestic political obstacles in moving the issue along. She noted that the Niagara Mohawk-Suncor deal indicates that an early trading market has already begun to emerge in North America. She agreed to take Dr. Danilov-Danilyan's suggestion back to her colleagues in Washington for further consideration.

PLENARY SESSION III—Jennifer Macedonia from the U.S. Environmental Protection Agency and three Russian government experts—L.M. Grigorjev (Ministry of Economy), V.H. Berdin (Hydrometeorological Committee), and O.B. Ploujnikov (Ministry of Fuels and Energy)—made brief presentations on projections of their countries' GHG emissions. The projections presented by Ms. Macedonia for the U.S. were projections of gross emissions, as conclusive measurements of changes in carbon stocks in forests and other sinks are not yet available. They also did not reflect direct action to meet the country's obligations under the Kyoto Protocol. That is, they reflected a "business as usual" scenario, under the assumption that funding for the country's Climate Change Action Plan would be proportional to 1993 funding levels.

The projections presented by Ms. Macedonia showed an increase of U.S. GHG emissions from 1.583 billion tons of carbon equivalents in 1990 to 1.946 billion tons in 2010. She noted, however, a number of sources of uncertainty in these projections: the rate of economic growth, the rate of growth in electricity demand, the trend in real energy prices, the level of government funding for GHG emissions reduction activities, the pace of technological advance, the efficacy of voluntary programs, and weather conditions. She observed that improved data and analysis at a more disaggregated level and improved estimates could reduce the level of uncertainty in the estimates for both the baseline and projected periods.

All three Russian experts emphasized the great uncertainty in projecting the economic variables that will influence Russia's future GHG emissions. Mr. Grigorjev, for example, commented that the Ministry of Economy has based its forecasts on an expected oil price of \$20 per barrel, while the price in June was less than \$8 per barrel. Mr. Ploujnikov reported that the Ministry of Fuels and Energy has simply assumed that Russian GDP in 2010 will match its 1990 level. Mr. Grigorjev pointed out that this implies a 4 percent annual growth rate, which might be optimistic in view of the current financial crisis. He also noted the important impact of changes in the structure of the Russian economy (generally speaking, away from commodities and toward services) and the negative impact of the country's financial difficulties and incomplete economic reforms on the replacement of its old, GHG-intensive capital stock. On this last point, Mr. Ploujnikov pointed out that the energy intensity of Russian industrial production was actually *higher* in 1996 than in 1990.

The presentations by the Russian experts suggested that in the absence of investments in GHG emissions reduction projects, Russia might have few surplus Assigned Amount Units (AAUs) to trade during the initial 2008-2012 trading period. Although Mr. Berdin estimated that Russia's emissions fell by 30 percent during 1990-94, and sequestration in its forests increased by more than a third, the projections he presented indicated that emissions in 2010 would indeed be close to 1990 levels, ranging from 4 percent above the 1990 baseline to 8 percent below.

The discussant for the session, Dr. Daniel J. Dudek of the Environmental Defense Fund, reiterated the numerous uncertainties in projecting GHG emissions. The uncertainties are even greater than in forecasting supply and demand conditions in well-established commodity markets, where the primary lesson has been humility. He noted that despite the millions of dollars spent by the U.S. government on research related to the SO₂ allowance trading program, emissions reductions have been far greater, and trading prices far lower, than any study predicted. And that trading program is far simpler in scope than a prospective international GHG emissions trading program.

PLENARY SESSION IV—With the foregoing presentations as background, Dr. Peter Karpoff of the U.S. Department of Energy described the essential elements of an international greenhouse gas emissions trading system and the main policy issues related to them. He highlighted several benefits of trading: it reduces GHG emissions reduction costs, by equalizing marginal compliance costs internationally; it stimulates flows of capital and technology to sellers of AAUs; and it improves the chances of ratification of the Kyoto Protocol. He summarized key design features listed in the Umbrella Group paper presented in Bonn: participation in trading should be voluntary, participants should include Parties to the FCCC and/or legal entities, the trading system must be transparent (through public disclosure) and flexible (to accommodate future uncertainties), and the system will require effective monitoring, reporting, and enforcement mechanisms to ensure accountability. On this last point, he noted the need for international assessment of compliance at the end of the commitment period.

Dr. Karpoff addressed several criticisms of trading that have been levied by the EU, and he drew attention to several unresolved issues. The EU has expressed concern that some Annex B assignments are too big, that some selling parties might not comply with their emissions limits, that buyers might neglect domestic GHG reductions, and that AAU sellers might exert market power. In response, he observed that Annex B commitments are a settled matter, unless the EU wishes to renegotiate the Kyoto Protocol; that maintaining eligibility to trade will create a powerful incentive for compliance; that trading in fact creates financial incentives for buyers to make domestic GHG reductions; and that a voluntary system open to all interested trading parties will minimize the threat of monopoly behavior. Regarding unresolved issues, he pointed to the need to overcome continuing criticism of Kyoto baselines and Annex B assigned amounts, to determine GHG monitoring procedures and guidelines, to establish the freedom to trade under Kyoto Article 17 and to settle the interpretation of the clause that trading should be “supplemental” to domestic action, and to establish liability and “risk of loss” rules for allowances issued by sellers who fail to meet their emission reduction commitments. As important next steps, he emphasized the determination of compliance and enforcement processes and liability rules, as well as the encouragement of early trading activities.

The discussant for the session, Dr. Alexander Golub of the Higher School of Economics, agreed with the main points of Dr. Karpoff's presentation and emphasized the importance of focusing on the most essential elements of trading, to increase the probability that trading will start sooner rather than later.

Day One: afternoon sessions

PLENARY SESSION V—This session was originally intended to focus on international legal aspects of GHG trading. Because the invited U.S. and Russian legal experts were unable to attend, however, it was recast as a discussion of institutional aspects of trading and other market mechanisms in the Kyoto Protocol. There were two presentations, one by A.P. Metalnikov of the Russian Federation Hydrometeorological Committee and the other by V.K. Teplyakov of the Russian Federation Federal Forest Service, with comments by Annie Petsonk of the Environmental Defense Fund.

Mr. Metalnikov outlined the international negotiating context in the run-up to the Buenos Aires Conference of the Parties. He noted that both the Umbrella Group and the European Union (and countries associating themselves with the EU's views) had put forward “non-papers” in Bonn. Comparing the two papers, he noted many similarities on a number of key issues, including several pertaining to the infrastructure needed for a transparent trading market at the international level. He also noted differences on several important issues, the most central of which was that the European Union had proposed a cap or limit on the ability of nations to use trading to meet their Annex B commitments. He pointed out that this proposal was being put forward by the EU as a means of addressing what in some international quarters has been described as “hot air.”

Mr. Metalnikov described essentially two categories of emissions that have been characterized as “hot air.” The first is the difference between Russia's emissions in 1994 and its emissions in 1997, which were much lower. He pointed out that this was a difference that the Russian people had paid for with a reduction in their living standards. However, the political decision embodied in the Kyoto Protocol is that this difference is not transactable under Article 17. The second category is the difference, in 2008-2012, between Russia's assigned amount (which is set at 100 percent of its 1990 levels) and Russia's actual emissions during that period. Some have argued that Russia's actual emissions during the 2008-2012 period are likely to be lower than its assigned amount, and that therefore Russia should not be allowed to sell such tons. However, Russia negotiated a target of 100 percent of 1990 levels for that time period; that amount is transactable under Article 17 of the Protocol; and it cannot be known today with certainty what Russia's actual emissions will be during that time period.

Mr. Metalnikov suggested that a small group of attorneys should examine the legal context in both nations to ensure that the legal environment would be a supportive and transparent one that would maintain the integrity and environmental and economic credibility of the trading market.

Mr. Teplyakov presented a number of the issues of concern domestically and internationally related to sinks. He discussed the total amount of forested lands in the Russian Federation, including lands in natural forest, lands in plantation, and lands that could be afforested. He

emphasized the importance of creating incentives for capital flows to protect existing forests and reforest degraded lands.

Ms. Petsonk sketched examples of the kinds of institutional infrastructure that could support the development of an emissions trading market, whether internationally, bilaterally, or domestically, and in a comprehensive manner, covering all kinds of transactions, including those involving sinks. In particular she identified the importance of traceability or “vintaging”: identifying traded AAUs by nation and year of origin, and, for CDM transactions, by project of origin as well. To operate effectively, such a “ledger” system would need a legal and institutional context akin to that for land title registries. Transparency would also be needed with regard to the use of funds provided for emissions transactions. She noted that putting these elements in place, and matching them with clarification of ownership interests under federal and subnational law, would enhance the transparency of the system and would provide a framework for robust operation of emissions trading markets and the capital flows those markets could stimulate.

PLENARY SESSION VI—The workshop was preceded on June 29-30 by a two-day business roundtable, titled “Investing in Russia, Investing in Global Climate,” cosponsored by the U.S. Environmental Protection Agency, the U.S. Country Studies Program in the Department of Energy, and the Russian Federation Ministry of Fuels and Energy, State Committee on the Environment, and Hydrometeorological Service. In this plenary session, Mr. Ken Andrasko of the U.S. Environmental Protection Agency summarized the objectives and results of the roundtable. Mr. Robert Wolcott, also of the U.S. Environmental Protection Agency, and Mr. Ploujnikov and Mr. Alexei Kokorin of the Russian Global Climate Change Institute made brief presentations as well.

Mr. Andrasko listed four objectives of the business roundtable: to brief businesses on the implications of the Kyoto Protocol (in particular, Annex I joint implementation and emissions trading) for investors; to hear business concerns about joint implementation and trading in Russia; to review climate-related investment opportunities and priorities in Russia; and to review how projects in Russia do, and do not, get financed. Roundtable participants reported that there are many good projects in Russia. The problem is financing them. Overcoming this problem requires developing creative financing mechanisms and reducing the high risks that U.S. firms currently face when they invest in Russia. As long as these risks remain high, Russia will lose potential investments to other countries.

The participants offered several recommendations to improve the near-term prospects for climate-related investments in Russia, including: taking modest but effective steps first (as opposed to promoting grand, overly optimistic initiatives that are likely to fail); obtaining a statement of political support for early action from the Gore-Kiriyenko Commission; forming a U.S./Russian, interagency, public/private sector technical working group to develop the institutional arrangements required for early action and monitoring and compliance systems; and developing a better understanding of these institutional arrangements by working with a small portfolio of the most promising projects.

PLENARY SESSION VII—The final plenary session of the first day was a presentation on lessons for international GHG trading from the U.S. SO₂ allowance trading program, by Mr. Brian McLean of the U.S. Environmental Protection Agency. Mr. McLean listed three reasons why this domestic trading program is relevant to discussions about international GHG trading: it provides an example of the steps required to develop an allowance trading program; it offers several years of operational experience with such a program; and the resulting infrastructure and design decisions might facilitate the development of a trading system for GHGs.

The SO₂ allowance program developed through five stages: setting the national target for emissions reductions, assigning responsibility for meeting the target (deciding which sources, mainly power plants, would be included), writing the rules of the program, setting up tracking systems, and operating the program. Although the government role has been vital at all stages, writing the rules of the program and setting up tracking systems required the most work. Essential rules included trading rules (who must hold allowances, who may trade allowances, what trading forms and procedures are needed), monitoring and reporting rules (performance specifications, quality assurance testing, standardization of data and reporting), and compliance rules (reconciliation of allowances and emissions; penalties, offsets, appeals). Regarding tracking systems, the program required the establishment of a national registry for recording allowance transfers and a national system for collecting and verifying emissions data.

While remaining essential, the government's role became relatively modest once the system became operational. It is limited to collecting, verifying, and publishing emissions data; recording official allowance transfers and account balances; conducting annual compliance checks to reconcile emissions and allowances; and enforcing penalties for noncompliance. The government does not approve individual trades, nor does it engage in trading itself. Sources are responsible for monitoring and reporting emissions, developing compliance strategies to ensure that their emissions remain within the amount of allowances they hold, and deciding whether or not to trade.

Experience with the program has confirmed that emissions trading can greatly reduce the industry-wide costs of achieving emissions reductions. Under a traditional regulatory approach of mandatory, uniform emissions standards, the power sector would have spent some \$5 billion per year to achieve the same level of reductions. In 1994, thanks to trading, the sector spent only \$2 billion on compliance costs. Competition, continuous market-driven incentives for innovation, and the flexibility provided by "banking" (saving allowances for future use) and other provisions explain the great cost savings. The costs to the government of administering the program have also been lower than expected.

The SO₂ allowance program offers several lessons for GHG trading. First, it indicates that trading can provide significant benefits in the form of reduced compliance and administrative costs, high accountability for emissions, and the creation of marketable assets. Second, it indicates that trading systems should be kept as simple as possible, with the government limiting its role to the ensuring the environmental and economy integrity of the system. Third, it indicates that trading works best when markets are allowed to work in an unfettered fashion. Government should not restrict trades by parties that are in compliance, nor should it limit the ability of market actors

(brokers, traders, exchanges) to facilitate transactions, provide liquidity, reduce risk, and build the market infrastructure.

Mr. McLean concluded by noting two aspects of GHG trading that are significantly more complex than SO₂ trading. First, monitoring and reporting in the case of GHG trading are complicated by the existence of multiple GHGs, numerous source sectors, and the existence of sinks. Second, compliance is complicated by the participation of numerous countries with diverse economic, political, and legal systems.

Reception

After the conclusion of the plenary sessions on the first day, the Deputy Chief of Mission of the U.S. Embassy, Mr. John Tefft, kindly hosted a reception at his residence.

Day Two: morning sessions

The plenary sessions on the morning of the second day picked up on the domestic themes that began to be raised during the sessions of the previous afternoon. Specifically, they addressed the issue of the domestic allocation of AAUs and issues related to recording trades, monitoring emissions, and verifying compliance.

PLENARY SESSION I— The Russian presentation was delivered jointly by Mr. S.N. Kuraev and Mr. S.V. Markin of the State Committee on Environmental Protection and Dr. Elena B. Strukova of the Commission for Natural Resources. This presentation highlighted the opportunity to take advantage of the existing Russian pollution management system, which assigns to each individual pollution source an emissions permit that potentially could be made tradeable. During the discussion, Dr. Golub noted that the city of Almaty in Kazakstan has in fact taken this step under a pilot emissions trading program for non-GHGs that HIID and USAID helped it develop.

The second presentation in the session was by Mr. David Festa of the Center for Clean Air Policy. Mr. Festa's presentation covered two topics. First, it summarized different systems for domestic allocation of AAUs to private parties. Second, it outlined the issue of "early reduction" credits. It made three main points:

1. The method of allocation has limited impact on long-run economic outcomes, as long as there is a robust trading market. No matter who receives the AAUs initially, the subsequent buying and selling activities will redistribute the AAUs to the entities whose cost of control is greater than or equal to the market price of AAUs. This end point represents the most efficient distribution of AAUs. Mr. Festa suggested that since there is no "perfect" or "right" way to allocate AAUs in advance of actual trading, what is most important is to focus on designing an allocation system that is simple, easy to administer, and politically acceptable.
2. Allocation mechanisms (and the necessary monitoring systems) should build on environmental management systems that are already in place. "Piggybacking" on existing systems or planned

improvements to existing systems can save time and money. Mr. Festa suggested that, as the Russian presentation suggested, “ecological passports” in Russia could be adapted for allocation and monitoring purposes. The same is true of the efforts to improve the monitoring of fuel use that is being done for tax and commercial purposes. Mr. Festa noted that several Russian municipalities’ investments in new energy monitoring equipment had a demonstrated payoff period of just a few months. The data from that equipment could be relatively easily adapted for use in monitoring greenhouse gas emissions.

3. Russia’s involvement in an international GHG trading system is important for the overall success of the Kyoto Protocol but needs to be handled carefully. Many parties have concerns about trading in general and “hot air” in specific. One way to help deal with these concerns is to develop a well-designed “early reduction” program. Mr. Festa noted that there were many acceptable ways to design early reduction programs. Such programs can encourage early trading during the period when a more complete trading system is being developed. These early trades can encourage new investment in clean technologies, highlight important design elements for the full-scale trading program, and help build confidence in a trading system and Russia’s approach to trading.

Mr. Festa outlined two types of allocation system: administrative assignment and auctions. Administrative assignment gives AAUs to entities based on a formula. This is the most common approach in non-GHG emissions trading programs. Since it grants AAUs at no cost, decisions about who receives the AAUs has political significance.

Administrative assignment can be based on a percentage of historical emissions. It can also be based on a performance or quality standard, such as emissions per ruble of sales or ton of product. Combinations of the two approaches are possible—the allocation of SO₂ allowances in the U.S. provides an example of a mixed approach.

In an auction system, entities must purchase AAUs from the government. If the revenue from these sales is used to reduce other taxes, it is possible to increase gross domestic product while decreasing greenhouse gas emissions. For this reason, economists prefer auctions. The New Zealand government uses auctions to allocate fishing quotas and the US government used auctions to allocate the radio spectrum to commercial users.

Mr. Festa then turned to the discussion of early reductions. As outlined under the Kyoto Protocol, emission trades between the US and Russia would not count until 2008. This is a big barrier to trading. To overcome this barrier, the two countries could adopt “early reduction” programs. In an early reduction program, the Russian government would “deduct” a certain number of tons from its 2008 budget and allocate them to selected entities for trading starting now.

Mr. Festa closed by saying that in other countries where the Center for Clean Air Policy has helped facilitate emission trades, the main motivation on behalf of the host countries was for reduced conventional pollutants (SO₂, dust, etc.) in the city where the project would take place. A difficulty has been to work through bureaucratic procedures at the national level. Mr. Festa

suggested that Russia might consider developing an early reduction credit program and assigning a small portion of the early credits to cities and oblasts for their own use. This could streamline the trading process and help increase the pace of technology transfer and investment in clean development.

PLENARY SESSION II—The second and final plenary session of the morning addressed issues related to recording, monitoring, and verifying compliance. Jennifer Macedonia delivered the presentation on the U.S. side. She defined recording as the recording of AAUs issued by FCCC Parties and the tracking of transfers by Parties and their legal entities. The purpose of recording is two-fold: to create the information needed to determine the proper assigned amount, as adjusted for trading and other activities under Article 3, when checking compliance at the end of the commitment period; and to provide information to the market that will facilitate and maintain the integrity of trading and minimize compliance costs. Article 7 of the Kyoto Protocol requires annual reporting of supplementary information necessary for ensuring compliance, (e.g., international transfers of AAUs and a Party's aggregate AAU balance, as adjusted for activities under Article 3, including trading). Ms. Macedonia observed that more frequent reporting might be advantageous, as it would reveal discrepancies sooner and, in that and other ways, would lower transaction costs by reducing uncertainty and risk. She stated that the creation of electronic databases of compatible design would minimize the cost of recording and reporting transfers and would be less susceptible to fraud than a system based on paper certificates.

Ms. Macedonia listed three purposes of monitoring and reporting emissions: to determine compliance at the end of the commitment period, to facilitate compliance by enabling a Party to check that emissions are within its assigned amount at interim points before the end of the commitment period, and to allow the market to properly value AAUs throughout the period. Article 5.2 of the Kyoto Protocol prescribes the use of IPCC guidelines in determining emissions. A range of options exist within those guidelines, with tradeoffs between accuracy and data requirements.

Compliance demonstration ascertains whether a Party's emissions are less than or equal to its adjusted assigned amount. It involves comparing the adjusted assigned amount, which requires information from the recording system, to net emissions, which requires information from the monitoring system. If net emissions exceed the adjusted assigned amount, the Party will have a grace period to achieve compliance; on the other hand, if the adjusted assigned amount exceeds net emissions, the Party can sell the extra AAUs, or it can bank them for use in subsequent commitment periods.

Ms. Macedonia concluded by summarizing that systems for recording transfers, monitoring emissions, and demonstrating compliance must account for all transfers and emissions, must be accurate, transparent, public, and easily accessible, must be administered efficiently, and must meet international guidelines to ensure consistency across Parties.

The Russian presentation was made by Alexei Kokorin of the Global Climate Change Institute and G.N. Korovin of the International Forest Institute, with contributions by V.A. Rodin of the State Committee on Statistics and A.C. Isaev of the International Forest Institute. On the issue of

recording (registration), the Russian presenters suggested the creation of a national registration body. They identified several unresolved issues related to it: how it should be financed, how different financing options would or would not create incentives for effective functioning of the body, and whether it would have control functions other than recording and reporting trades. In particular, they raised the issue of its authority to levy sanctions on domestic trading parties that are out of compliance.

Most of the Russian presentation concerned monitoring issues. The presenters observed that the IPCC “Inventory Workbook” was not published in Russian until the current year. Few copies are available, and many agencies do not have a copy. Those that do have a copy generally have not yet had time to review it carefully. Nevertheless, it appears that Russia is already collecting all the necessary data to comply with IPCC guidelines for calculating CO₂ emissions from fuel consumption statistics. The State Committee on Statistics collects most of the data, with the Ministry of Fuels and Energy, the Ministry of Transportation, RAO “EES Rossii,” and other agencies collecting additional sector-specific data. Better use of the available data is currently hindered by insufficient funds for detailed analysis and, in certain cases, the need to protect confidential data. The Russian presenters suggested establishing a special monitoring center to perform the calculations and ensure data control.

The IPCC methodology suggests instrumental measurement of GHGs other than CO₂. The presenters reported that Russia’s existing air emissions monitoring system does not include most of these other GHGs, and that adding them to the system would be very expensive. They recommended limiting the monitoring effort to selected enterprises (e.g., only those allocated AAUs) or selected gases.

Carbon sequestration is especially important in Russia, given its vast forest area. The presenters reported that, as in most countries, forest inventory data in Russia involve significant uncertainties. They suggested, however, that monitoring carbon sequestration due to reforestation and afforestation activities should be possible.

On the issue of compliance verification, the Russian presenters recommended that it should occur only at the end of the commitment period. They felt that annual, preliminary estimates of compliance would be excessively expensive and might send inaccurate and misleading signals to the market.

V. Recommendations for Next Steps

In the afternoon of the second day of the workshop, the participants formed two breakout groups to formulate recommendations for next steps. One breakout group, working with discussion facilitators Vladimir Berdin and Brian McLean, focused on issues related to recording and reporting emissions trades and monitoring and verifying compliance with GHG emissions limits. The other, working with discussion facilitators Elena Strukova and Daniel J. Dudek, focused on market design issues.

The two groups presented their conclusions and recommendations in a consolidated set of proposals that suggest the formation of five ad hoc working groups. The purpose of the working groups will be to develop clear and practical recommendations for the two governments to consider. The groups will include both governmental and nongovernmental representatives, with the latter including representatives of enterprises, NGOs, and academic and research institutions.

The proposed working groups, their principal coordinators, and their principal activities are as follows:

Working Group #1: Recording and Monitoring

Coordinators: To be determined.

This working group divided its recommendations into actions before and after the Buenos Aires Conference. Before Buenos Aires, it recommended the provision of additional information to Russian counterparts on systems for recording and reporting trades in the case of U.S. domestic emissions trading programs like the SO₂ allowance trading program. It also recommended beginning an assessment of alternative methods for monitoring CO₂ emissions from energy use, taking into account the strengths and weaknesses of official statistics, and clarification of monitoring issues related to carbon sequestration by forests (in particular, clarifying terms like “af-,” “re-“ and “deforestation”).

The group noted that U.S. and Russian counterparts will be attending several upcoming workshops related to these issues, including the FCCC workshop on sinks, the Umbrella Group meeting in Wellington in September, and CPG-6 in the fall. It emphasized the importance of discussions before, as well as during, these meetings.

After Buenos Aires, the group recommended convening workshops to “play” simulated GHG emissions trading games, to learn more about critical recording and monitoring issues. It also suggested that after Buenos Aires greater attention would need to be paid to monitoring issues for GHGs other than CO₂, and CO₂ from sources other than energy and forests.

Working Group #2: Minimum Elements for GHG Emissions Trading Systems

Coordinators: A.A. Golub, Daniel J. Dudek.

The principal near-term task of this working group will be to prepare a white paper on emissions trading. This paper, to be presented to the next Gore-Kiriyenko meeting, possibly on July 24, 1998, will elaborate upon the “non-paper” presented by the Umbrella Group in Bonn. It will articulate a simple, clear framework of principles and prerequisites for securing the environmental and economic effectiveness of emissions trading.

A longer-term task will be to develop a paper sharing information on existing market-based environmental protection programs in various nations around the world.

Working Group #3: Channels and Mechanisms for Early Trading

Coordinators: A. Averchenkov, S. Simon.

This working group will elaborate a proposed set of mechanisms and incentives for early reduction and trading actions, to facilitate the development of the institutional system for GHG emissions trading and to create additional incentives for participants in the growing market for climate-friendly production systems. The breakout group identified three possible variations on early trading mechanisms—the creation of an advance allowance reserve, the forward sale of allowances, and the creation of early reduction credits—and it recommended that these and other mechanisms be considered by the working group. It also emphasized the need for the working group to identify options in a concrete and practical manner that will engage the private sector at the earliest possible opportunity and in the most transparent manner and will lead to pilot transactions.

Working Group #4: Legal Mechanisms for Creating Opportunities and Removing Barriers

Coordinators: O. Orlova, A. Petsonk

This working group will focus on the development of legal procedures for transactions, including early reduction transactions. It will emphasize procedures that provide a secure and transparent framework that allows market participants to move quickly and on a sure legal footing. A high priority for the group's work in the immediate term will be to identify and develop legal mechanisms for defining and securing ownership of GHG emissions reductions, including issues at both the federal and subnational levels. The group will endeavor to frame its work with a view to the possible future participation of the Russian Federation in the World Trade Organization, including, for example, by developing procedures that provide for the participation of both residents and nonresidents in early reduction transactions. The working group will, as appropriate, seek input from the range of agencies concerned with these issues on both the Russian and the U.S. sides. Over the longer term, the group should consider legal issues pertaining to the settlement of disputes.

Working Group #5: Long-Term Forecasts from Integrated Macroeconomic-GHG Models

Coordinators: Russian Federation Bureau of Economic Analysis, U.S. coordinator TBD

This working group will focus on the reliability of GHG emissions forecasts, with particular attention paid to the implications of those forecasts for domestic climate change management strategies and participation in GHG emissions trading markets. Different approaches to the development of macroeconomic and sectoral forecasts, and different scenarios, will be analyzed, emphasizing the characteristics of particular sectors, including among others the energy and forestry sectors.

During the plenary discussion following the presentations by the breakout groups, workshop participants emphasized that the working groups will need to coordinate their activities with upcoming international meetings on climate change, both to ensure coordination with official

activities and, as unofficial and presumably unfunded or at best modestly funded bodies, to take logistical advantage of “piggybacking” opportunities. Several participants at the workshop also advised that the working groups utilize the Gore-Kiriyenko Climate Change Policy Group as a coordinating structure for their work.

Participants also emphasized that for the working groups’ recommendations to be of value, they will need to deliver them in advance of key meetings, including the July 24 informal Gore-Kiriyenko meeting, the Umbrella Group meeting in Wellington in early September, the September 17-18 Environment Ministers meeting in Tokyo, and the Buenos Aires Conference of the Parties. The working groups will need to conclude a significant portion of their work prior to the Buenos Aires Conference. To meet this ambitious schedule, they need to commence work immediately and to draft and circulate, as soon as possible, electronic tables of contents for documents they intend to produce.

In their closing remarks for the workshop, Dr. Danilov-Danilyan and Mr. Gene George, Director of the Economic and Environment Office of the USAID Mission in Russia, accepted the recommendations of the breakout groups and thanked the breakout groups and their facilitators, workshop participants, presenters, and discussants, participating U.S. and Russian agencies and organizations, and the workshop organizers for the efforts to make the workshop a success.