

The Climate for Joint Implementation: Case Studies from Russia, Ukraine and Poland

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Abstract

Joint implementation (JI) can provide flexibility in meeting Kyoto Protocol commitments, and 44 nations have already participated in the pilot phase of the program. The paper surveys JI policy and projects in three countries—Russia, Ukraine, and Poland—over the past five years and examines the effects of domestic institutions, foreign policy, and investment trends on JI in each country. The institutional and economic situation in the three nations differs greatly, and these distinctions have resulted in very different circumstances for JI projects, affecting the number and scope of existing projects.

Introduction

JI is a tool for mitigating the risk of climate change. Under JI, organizations from two or more countries can collaborate on a project to reduce or sequester greenhouse gas emissions. The idea is that by combining efforts and knowledge of several countries, the nations of the world can more effectively and economically reduce the impact of climate change. JI officially began in 1995 at the first Conference of Parties to the United Nations Framework Convention on Climate Change (FCCC). The concept of JI emerged from the FCCC, which requires developed countries to take a lead in mitigating climate change while allowing them to implement mitigation policies jointly with developing countries. The FCCC also requires developed countries to provide financial and technical assistance to developing countries.

The Kyoto Protocol, which provides more specific obligations under the FCCC umbrella, requires developed countries to reduce or stabilize their greenhouse gas emissions during the years 2008-2012 with 1990 as a baseline. The Kyoto Protocol establishes several mechanisms for reducing greenhouse gas emissions that allow one country to reduce emission in another country and then count the reductions against its own domestic commitments.¹ JI is one of these mechanisms. The innovation for JI under the Kyoto Protocol is that emission reduction credits would actually change hands, so participating countries and organizations will have an economic incentive to invest in emission reductions in other countries. In the pilot phase of JI established under the FCCC, instead, provides no legal basis for transferring such credits.

Currently, 44 countries are participating in the pilot phase of JI. Central and Eastern Europe are very promising regions for emission reductions under this type of arrangement. This is particularly true in the energy sector. Central and Eastern European countries all experienced a sharp economic decline and decline in energy consumption since the collapse of their centrally-planned economies. However, they continue to use a relatively high amount of energy per unit of economic output, and energy efficiency projects are often more cost-effective than in developed countries. Most Central and Eastern European countries cannot afford to restructure their energy and industrial output sectors to improve energy efficiency. JI projects have the potential to attract new investment and new technologies to the region to take advantage of the low-cost greenhouse gas reduction opportunities that exist there.

We analyzed three countries from Central and Eastern Europe—Russia, Ukraine, and Poland—to determine the successes and difficulties in developing and implementing JI projects. We also looked at the different

¹ These mechanisms are JI, combined targets for two or more countries (commonly called “bubbling”), the Clean Development Mechanism, and international emission trading.

approaches countries have chosen in dealing with JI. All three countries had a common communist past and are now transitioning to market economies. Their current economic and political situations, however, are quite different. To understand the results of JI, it is useful to look at how the situation in each country has changed since 1995. Two particular indicators emerge as barometers of change: existing institutional infrastructure and investment climate. Table 1 below describes the international climate commitments each country has made and their progress toward meeting these commitments.

Table 1. Climate Change Indicators for Poland, Russia and Ukraine²

| Indicator | Poland | Russia | Ukraine |
|--|------------------|---------------|----------------|
| Emission reduction commitment in 2008-2012 compared to baseline year | 8 % reduction | Stabilization | Stabilization |
| Baseline year | 1988 | 1990 | 1990 |
| Baseline year CO ₂ emissions (MtC) | 118 | 635 | 182 |
| 1997 CO ₂ emissions (MtC) | 95 | 422 | 106 |
| % decrease | 19% ³ | 34% | 42% |

When pilot-phase JI emerged as a flexible mechanism for mitigating climate change, many transition economies felt that it could be a promising new source of investment and technology transfer. Over the ensuing years, some of this promise has been realized: 72 percent of JI projects registered with the FCCC through December 1998 were located in economies in transition.⁴ However, there have been big differences among countries. Russia has registered eight projects, Poland has registered three, and Ukraine has yet to register a single project.⁵

The Russian project portfolio is the broadest in scope. Its projects with the United States, Germany, and the Netherlands include two afforestation projects, three energy efficiency projects, two fugitive gas capture projects, and one fuel-switching project. Ukraine has received two Dutch project proposals, but there was no government body authorized to approve these projects and register them with the FCCC until April of this year. As a result, no Ukrainian JI projects have been registered with the FCCC. Poland has three projects currently underway: two energy efficiency projects with the Netherlands and a fuel-switching project with Norway. The fuel-switching project is the largest, with an expected project value of \$48 million for 12 sites over 17 years. Of the three countries, only Poland has complied with the FCCC uniform reporting format for reporting on its JI policies and activities. Russia has provided reports on individual JI projects, but it has not submitted a report on its national program for JI.

Institutional and Policy Infrastructure

Infrastructure for developing and managing JI projects varies as widely as the projects that have been registered. Specifically, JI infrastructure in Russia, Ukraine, and Poland differs in two ways. First, each country has developed a different institution to coordinate JI projects. These institutions are critical to success: even well-funded projects have gone unrealized because of a lack of support from coordinating institutions. Second, the three countries differ in the extent to which they have developed specific policies and programs relating to JI. Well-developed JI institutions have made it easier to identify projects and resolve issues such as allocation of credits.

² Data for 1997 emissions for all countries and 1988 emissions for Poland are from EIA 1997; data for 1990 emissions for Russia are from Interagency Commission On Climate Change 1995; data for 1990 emissions for Ukraine are from Ukraine 1998. Only CO₂ emissions from fossil fuel combustion are shown in the table.

³ Polish emissions dropped by 31% between 1988 and 1995 and then grew by 17% from 1995 to 1998.

⁴ Schwarze 1999.

⁵ Compare this with the corresponding figures for Latvia, a neighboring transition economy with 18 projects.

JI Infrastructure in Russia

The Russian government approved a statute establishing an Interagency Commission on Climate Change Problems in 1994. While there is no direct mention of JI, the statute empowers the Commission to organize participation in the FCCC and in international cooperation in climate change issues.⁶ The Interagency Commission is housed at the State Committee for Hydrometeorology and Environmental Monitoring. This agency emphasizes measurement more than policy development. However, ministries and other agencies that participate in the commission have taken the lead to identify JI projects and partners. The Interagency Commission has met on an ad hoc basis to approve projects when necessary. However, there is not an independent secretariat, and there are no members or program employees of the Interagency Commission working exclusively on JI. Investors and partners submitted documents to the Interagency Commission and its head in order to be considered for JI project status.

Different Russian ministries and governmental bodies such as the National Pollution Abatement Fund have developed their own portfolios of projects that would reduce greenhouse gas emissions. However, these projects were not geared toward a specific investor,⁷ and they have not been funded. The Interagency Commission has not worked directly on project identification; it becomes involved in the process only after projects have been presented for approval. The next step in the process--project selection--appears to have more to do with investor and partner interest than a particular plan. Projects with champions in the government or industry have been successful in the screening process. The philosophy seems to be to develop projects, and the investors will come. As a result, several projects in Russia have either gone uncertified or have failed to find investors.

In addition, there are no set guidelines on credit allocation in Russia. In a U.S.-Russian afforestation project, for example, credits were divided evenly between the U.S. and Russian investors. In a fugitive gas capture project with German Ruhrgas, however, the allocation issue has yet to be resolved even though the project has been underway for several years.

JI Infrastructure in Ukraine

The JI process was stalled completely in Ukraine until an interagency commission was established by government decree in April 1999. This decree directs the committee to "develop proposals on implementation of the mechanisms envisaged by the Kyoto Protocol to achieve the commitments..." but it does not establish a JI Secretariat.⁸ However, the committee chairman has expressed interest in taking this next step, and the existence of a committee provides a means for project approval and reporting at a bare minimum. The Interagency Committee is housed at the Ministry of Environmental Protection and Nuclear Safety, a ministry that designs and implements policies. Two proposed JI projects were discussed with partners outside of the Committee.

The Interagency Committee expressed an interest in developing program-oriented capacity and establishing a JI Secretariat. However, this action has yet to be taken. Individual ministries have developed projects that might be appropriate as JI projects, but they have had no means of obtaining international certification for them.

JI Infrastructure in Poland

The Polish Minister of Environment proposed a JI Secretariat in 1994, and the organization became operational in September 1996. The JI Secretariat is housed at the National Foundation for Environmental Protection and Water Management because of the Foundation's experience in project finance. The Foundation does not make national policy, but it funds projects that reflect national priorities. The head of the JI Secretariat works specifically on the project process; the Secretariat reviews projects and contracts, develops criteria, monitors the

⁶ Government of Russia 1994, Article 2.

⁷ The exception to this is United Energy Systems (UES), Russia's electric power monopoly, which has prepared a series of fuel-switching projects for a Japanese client.

⁸ Government of Ukraine 1999, Article 4.

projects, and reports to the FCCC Secretariat. Poland's official documents on JI describe the Secretariat as being in frequent contact with the project partners and the FCCC in order to monitor and report results from projects. In addition, investors are expected to submit documents to the Secretariat.

In Poland, one of the tasks of the Secretariat is to assist foreign investors in identifying prospective Polish partners. The JI Secretariat has adopted a set of criteria that JI projects must meet. For example, technology procurement can be considered a JI project, while technical assistance cannot. The existence of criteria seem to smooth the JI project development process.

Poland's position on allocation of credits is relatively well defined, and it differs from some of the ad hoc decisions on allocation made in other JI host countries. Poland states in its report to the FCCC Secretariat that "the credits for greenhouse gas reduction, as a consequence of Joint Implementation projects during the proposed pilot phase or in a future programme, should be awarded to **countries**, with active participation of their governments as well as all parties involved in the project."⁹ This would affect the value of the project for investors, because they would not be able to profit from buying and selling emission credits.

Importance of Foreign Institutions

Bilateral and multilateral relationships in policy-making and program funding have also influenced the number and type of JI projects approved. The governments in investor countries have expressed substantial interest in JI project development and implementation. In some cases, these governments have acted as the sole investor and simply paid for the projects. For example, the government of the Netherlands sponsored a JI project involving tomato greenhouses in Tyumen, Russia; Russia provided only in-kind assistance. Multilateral agencies such as the Global Environmental Facility have also invested directly in projects, such as the large fuel-switching project in Poland. Investor countries have also sponsored many workshops on JI project development, methodology, monitoring, and other topics. However, there has not been sustained international support for the development of JI institutions, such as secretariats. This may be shortsighted: evidence from the three countries studied indicates that no amount of project development money is sufficient when a country's administrative structure is poor.

The other element of country relations with foreign governments is that of multilateral alliances. For example, Poland currently holds the status of "accession" nation, having signed an agreement in Luxembourg in 1996 to accede to the European Union. Poland has already participated in combined submissions to the Conference of the Parties on Joint Implementation drafted by Germany, a member country.¹⁰ Harmonization with the European Union may eventually affect Poland's policies relating to JI, because member countries of the European Union have pressed for limits on emission trading. On the other hand, Russia and Ukraine are members of the group of nations (including the United States, Canada, and Japan) supporting the use of flexible mechanisms for climate change mitigation. European Union politics will not have the same influence on their decisions regarding climate programs and policies.

Investment Climate

Russia, Ukraine and Poland all have relatively similar socialist pasts, but their current economic situations are quite different. Poland is furthest along the path towards a market economy, and it has taken strong steps to build a market-based economy. Neither Russia nor Ukraine has seen sustained economic growth in this decade, though the Russian economy has declined at a lower rate than the Ukrainian economy. Russia experienced a major financial crisis in August 1998, and the effects of the crisis spilled over to Ukraine and Poland. Of the three countries, however, Russia has the largest economy and the greatest potential significance as a seller of emission reductions.

⁹ NFOSiGW 1999: 4.

¹⁰ See Government of Germany 1999.

JI was created as a mechanism to finance emission reduction projects in transition and developing economies. The general economic and investment climate in these countries, though, has a tremendous impact on whether potential investors see JI projects as attractive and successful investments. This is particularly true in the pilot phase of JI, because there are currently few direct financial benefits of investing in JI. The FCCC establishes the pilot phase of JI, which tests JI without allowing for emission reduction credit transfers. The Kyoto Protocol would actually allow countries to transfer emission reduction credits through JI projects, but the rules have not been established. Investors may be wary of considering JI projects when they do not know if they will be able to get credits from their investment.

JI projects to date can be divided roughly into two categories: projects funded by the private sector and projects funded by governments and other public bodies (like the Global Environment Facility). Private-sector projects usually design JI as an added feature to an existing project, such as energy efficiency improvements. The investment can, thus, provide a return even without the future value of the emission reduction credits. Such investments are particularly sensitive to investment climate. Public bodies too, however, want to invest their money in projects that will be successful and will provide a concrete public benefit. Since JI is young and largely untested compared with other technical assistance programs, even public investors have favored projects in countries with less risky economic climates.

Investment Climate Indicators

Economic growth, tax rates, business costs, regulation and investment incentives are some of the key macro-economic indicators that influence JI investment. Table 2 below shows some of these indicators for the countries covered in this study.

Table 2. Key Indicators for Russia, Ukraine and Poland, 1998¹¹

| Indicator | Russia | Ukraine | Poland |
|--------------------------------|---------------|----------------|--------------------|
| GDP (Bill. \$), 1997 | \$692 | \$125 | \$309 |
| Per Capita GDP, 1997 | \$4,700 | \$2,500 | \$8,000 |
| GDP Growth (%) | -5.0% | -1.7% | 3.7% |
| Inflation (%) | 84% | 20% | 15% |
| Unemployment (%) ¹² | 11.6% | 3.2% | 11.1% |
| Foreign Investment (Bill. \$) | \$7 | \$1 | \$18 ¹³ |
| Official JI Projects | 8 | 0 | 3 |

Russian Economic Performance and Investment Climate

Russia is an attractive investment partner because it could be the largest seller of emission credits in the world. JI investors want to gain experience in Russia in preparation for international emission trading that would involve internationally-certified allowances. Also, the large size of Russia's economy means that there are many potential opportunities and partners. Russia has made great strides toward privatizing its economy, which drew many foreign investors willing to assume a substantial amount of risk before the ruble devaluation in August 1998. However, most JI projects in Russia involved only state-owned entities, such as district heating companies and forest plots. Overall, Russia's economy has not performed well this decade. Industrial production has slumped while inflation has whittled away the value of the ruble and savings in Russian banks. Despite economic decline, business costs in Russia remain quite high, particularly in the major cities. While 1998 was a particularly bad year for the Russian economy because of the financial crisis, it is by no means the worst year of the decade for Russia. No new JI projects have been approved since the financial crisis.

¹¹ BISNIS 1999 (Russia and Ukraine); OECD 1999; CIA 1999; CEEBIC 1999.

¹² Russian figure is for November 1998, Polish figure is for 1997.

¹³ 1997 figure.

Russia has made improvements in its investment policy in recent years, but it still gives investors mixed signals. High taxes, ever-changing regulations, weak shareholder rights and government corruption are some of the major deterrents to investment.

Ukrainian Economic Performance and Investment Climate

The Ukrainian economy's slide this decade has taken on historic proportions: its economy is now less than half the size it was when the economic transition began a decade ago.¹⁴ Ukraine did not suffer from the 1998 financial crisis as much as Russia did, but its overall economic decline this decade has been much greater. This decline and the corresponding decline in consumption have deterred most investors. Investors want to place their money in companies with growing sales and profits, and there are few such companies in Ukraine. The rate of decline has slowed considerably in the last two to three years compared to the first part of the decade, and the Ukrainian government continues to predict positive economic growth in the upcoming year. The tremendous economic decline does have one bright side: it has resulted in tremendous carbon emission reductions. Thus Ukraine has a very large amount of carbon reductions to sell relative to the size of its economy.

Ukrainian economic policies have not boosted investment rates. The maze of regulations in Ukraine is one of the most complex in the world, taxation is high and selectively enforced, and privatization has moved forward at a comparatively slow pace compared with Russia and Poland.

Polish Economic Performance and Investment Climate

Poland has one of the fastest growing economies in the world, and is one of the top ten emerging markets for investment. The Polish government has maintained a strict fiscal policy since the early 1990s, which has contributed to investor confidence. Interest rates are significantly lower than in Russia or Ukraine, and financing options are greater. Poland even has special environmental funds such as EcoFund and the National Fund for Environmental Protection and Waste Management, which can and have been used to finance JI projects. On the negative side, unemployment has been very high this decade, although it has been declining. Also, Poland has not made much progress on privatizing its energy sector. While Polish tax and customs regulation has been inconsistent and variable, the overall regulatory system is more transparent and stable than that in either Russia or Ukraine.

Investment Climate and JI Investment

Both the size of Russia's economy and its economic performance in the mid-1990s likely have attributed to Russia's relative popularity for JI projects. Most Russian JI projects were launched between 1994 and 1997, a period when Russia's stock market was booming and Russia was one of the most popular emerging markets in the world. Russia's mediocre economic performance in the real economy may help account for the fact that only half of the official JI projects in Russia have actually been financed. Poland has attracted three projects, which is probably related to its strong economic performance, though its economy is not particularly large by global standards. Ukraine's economy is neither large nor growing, and Ukraine's record in attracting foreign investment is not excellent. It is not surprising then that Ukraine has not launched any JI projects despite its large potential for carbon reduction sales.

Financing Trends for JI Projects

Financing has been key to the success of carbon mitigation projects in all three countries. Yet financing is often difficult and costly to obtain. Generally speaking, the financial infrastructures of Russia, Ukraine and Poland are not as well developed as those found in other industrialized nations, and the amount of capital available is limited. While JI brings the promise of foreign investment for financing, in practice, most JI projects have tapped traditional financing sources used in the region. These include development banks, foreign assistance,

¹⁴ OECD 1997.

and in some cases, private finance. Table 3 provides a summary of the financing trends for the projects approved to date.

Table 3: JI Projects and Financing in Russia, Ukraine and Poland (as of July 1999)¹⁵

| Country | Approved Projects | Financed Projects | Financing Notes |
|---------|-------------------|-------------------|---|
| Russia | 8 | 4 | Half of the projects in Russia are stalled because of lack of financing. The projects that are moving ahead have been financed by the Dutch Government, Ruhrgas, a U.S. university and the U.S. Environmental Protection Agency. |
| Ukraine | 0 | 0 | The Dutch government has offered to finance two projects, but the Ukrainian government has yet to accept them. |
| Poland | 3 | 3 | The Dutch Government is financing heat supply projects in Byczyna and Szamotuly, though Polish organizations are paying for significant portions of each. The Coal-to-Gas Project is being financing primarily by Polish organizations such as environmental protection funds; the GEF and Norway combined are paying for about 16% of the project. |

Most JI project financing in these three countries has come from public bodies in both donor and host countries. Only one project, the gas pipeline project with Ruhrgas and Gasprom, is commercial in the sense that it has been financed by a donor country corporation. This is not surprising given that emission reductions from JI in these countries have not provided a single investor—public or private—with any return on investment to date.

A large number of the projects are investments that would pay for themselves even without JI. This is also consistent with the low financial value of the carbon reductions, because few investors want to pay for projects with no returns in the foreseeable future. There are several forestry projects in countries in transition, though not all of them are being implemented. Many forestry projects do not pay for themselves. Energy efficiency projects, which typically pay for themselves even without JI, are the most common type of JI projects in the three countries under study. Fuel switching and fugitive gas switching are also popular, and likewise can be very cost-effective.

Host country institutions usually pay for a significant portion of the projects. This is one more incentive to select no-regrets projects, as few host country entities would be willing to invest in JI without receiving near-term financial benefits. However, the extent of host country financing begs the question the effectiveness of JI as a mechanism for attracting foreign financing for emission reductions. Host countries could invest in energy efficiency on their own, without the hassle of searching for foreign partners, monitoring the project and reporting to the international community on the results. Host countries continue to seek foreign JI partners because they too would like to gain experience in this potentially lucrative mechanism, and foreign partners do bring extra financing. Some host country entities in Central and Eastern Europe have become wary of the process though. The Czech government, for example, is restricting the number of new JI projects it approves.

Finally, it appears that projects have a greater chance of obtaining financing if the organizations involved in the project from the start are willing to provide significant amounts of financing. Projects developed by consultants tend to have a lower rate of success. This fact may be related to the lack of direct financial value of carbon reductions: unless an organization decides to invest in JI to learn about the process, or as a component of a larger project that is already being financed, financing becomes a major barrier. In short, until carbon emission

¹⁵ FCCC 1999.

reductions have a value on the marketplace, JI will not be a significant driver behind the development of commercial projects that result in emission reductions.

Conclusions

JI can be an important mechanism for climate change mitigation. Of all the international flexibility mechanisms, JI is the most established. It is also attractive because it offers real emission reductions that count against the baselines of all countries involved in a project, a combination that no other flexibility mechanism offers.

Both a solid institutional framework in host countries and a positive investment climate are necessary ingredients for successful JI projects. Without institutions to approve and promote JI projects, JI could not go forward. The economy and investment climate, however, can also make or break projects. JI is a market-based mechanism, which means the market can influence it just as JI can influence the market for carbon-reduction projects. While these market variations can make it difficult for policymakers to plan for carbon reductions, JI as a whole can facilitate carbon reduction projects by providing a financing mechanism.

Policymakers can, however, influence domestic capability for coordinating JI, as well as investor policies more broadly. Institutions such as JI secretariats provide the structure necessary for promoting, reviewing, approving, assessing and reporting on JI projects. The fact that JI is an international mechanism that affects national treaty obligations means that such institutions are essential. Well-defined implementation policies also have a positive influence on JI projects because they help investors quickly understand the ground rules for JI in a given country, without waiting for government officials to make decisions each step of the way. Foreign assistance and policy can also play important roles in JI. The role of foreign governments will likely remain strong in the policy realm even if private investors take over the role of financing projects. Specifically, the policies of the European Union in support of a combined target for its member countries and the support of other industrialized nations for international emission trading may influence JI projects significantly in the future, particularly if the European Union captures emission reductions in Poland, the Czech Republic and Hungary when these countries become full members.

Investment climate and economic performance will also have an important impact on JI. First, economic performance has a tremendous influence on demand for energy and the resulting greenhouse gas emissions. Thus, economic performance will help determine whether countries are in compliance with international climate agreements and how much carbon they need to buy or have to sell. Second, economic performance and investment climate also affect whether public and private investors decide to put their money into JI projects in a given country or sector. The size of the economy and a country's strategic importance will probably continue to be factors in some investors' minds at least during the remainder of the pilot phase. Unique sources of financing available in some countries can also have a positive influence on projects. Often a project needs one key investor to get started, and then other investors are willing to join. Unique sources of financing such as environmental funds and energy services companies can play that catalyst role. Host country entities have often played the role not only of catalyst, but of primary project sponsor as well. This trend could cause controversy when emission reduction credits are actually transferred, particularly because there is currently little disclosure of credit sharing arrangements in JI projects.

There are still many challenges facing JI even when institutional and economic factors are addressed. For example, Poland has an independent JI secretariat and a growing economy, yet there have only been three Polish JI projects there to date. There is still much to learn about JI and its potential role as a tool in climate change mitigation. Learning about the full potential of JI will clearly be facilitated by the development of clear rules and solid institutions to administer JI projects. If these rules, particularly rules on crediting, are adopted quickly, investors will have a much greater incentive to invest in JI in the near term. This will allow us to see how JI functions in something closer to a true market.

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