DEVELOPING PERSPECTIVES ON CLIMATE CHANGE

Issues and Analysis from Developing Countries and Countries with Economies in Transition

Economies in Transition: At the Crossroads of Development

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Economies in Transition: At the Crossroads of Development

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Fourteen countries "undergoing the process of transition to a market economy" are included in Annex I of the UNFCCC and are thus eligible for international emissions trading and Joint Implementation (JI) under Kyoto Protocol.[1] Their inclusion in Annex I roughly reflected their degree of industrialization and consequently the level of their GHG emissions. In 1990, the Eastern European countries included in Annex I were responsible for about 30 per cent of all GHG emissions in Annex I countries and about 22 per cent of all global GHG emissions, with Russia, Ukraine and Poland being respectively the second, fifth, and seventh largest contributors to climate change among Annex I countries.

Thirteen of the economies in transition (EITs) assumed numerical reduction targets among 38 countries listed in Annex B to Kyoto Protocol. They are

- -8% for Bulgaria, Czech Republic, Slovakia, Estonia, Latvia, Lithuania, Romania, Slovenia;
- -6% for Hungary and Poland;
- -5% for Croatia; and
- -0% stabilization for Russia and Ukraine.

Belarus, while part of Annex I to the UNFCCC, has not assumed emission reduction obligations under Annex B.

Economies in transition are generally expected to benefit from participation in the Kyoto Protocol mechanisms, either through Joint Implementation or through emissions trading. Most of the transitional countries are likely to have a surplus in the first commitment period because their GHG emissions reduced substantially following the economic downturn that accompanied the fall of the communist regimes in the region. The amount of surplus is estimated between 696 to 1,356 Mt CO_2 equivalent.[2] Additionally, low energy efficiency levels, high carbon intensity of the energy supply and lack of renewable energy technologies make the countries with economies in transition attractive for cost-effective GHG reduction projects under JI.

Bundling transition countries into one homogeneous group, however, would be incorrect because major differences exist among them in terms of their political and economic circumstances, such as degree of their political transition, scale of their economies, level of industrialization and attractiveness for outside investment. The scope of these differences, their roots and implications for domestic climate policy and for international climate-related activities, will be the focus of this paper.

EITs – what's in a name?

International environmental law does not offer much consistency in what it implies under the economies in transition. Different international treaties contain different interpretations of the term, depending on the details of the negotiation process that preceded them. The general understanding is that these are the countries of the former socialist bloc ruled by the communist governments. There were nine socialist countries in Europe—Hungary, Czechoslovakia, Poland, the Federal Republic of Yugoslavia, the Democratic Republic of Germany, Albania, Romania, Bulgaria and the Soviet Union. The fall of the Iron Curtain and dramatic political transformation of the region resulted in the emergence of 24 economies in transition on the political map of Eurasia.

How these 24 countries are grouped varies greatly depending on the purpose and perception of those who group them. Geographically these are all the countries of Central Europe (Hungary, Czech Republic, Slovakia and Poland); Eastern Europe (Ukraine, Belarus and the Baltic States of Lithuania, Latvia and Estonia); South Eastern Europe (Bulgaria, Romania and Moldova); and the Balkan states of Albania, Bosnia-Herzegovina, Croatia, Macedonia, Serbia and Montenegro, and Slovenia); Russia; the

Map credit: USAID

Caucasus (Georgia, Azerbaijan and Armenia); and Central Asia (Kazakhstan, Uzbekistan, Turkmenistan and Kyrgyzstan).

Politically, the economies in transition fall into groups that reflect the degree of their integration with European institutions and their geopolitical affiliation with the regional powers. There is the "new" Europe, i.e., countries accepted to the EU in the first expansion round (all of Central Eastern Europe, Slovenia, and the Baltic States), the candidate countries (Bulgaria and Romania) whose accession to the EU is anticipated in 2007–08, non-candidate countries (Croatia, Albania, Macedonia, Bosnia and Herzegovina, Serbia and Montenegro) and the Newly Independent States (NIS) also referred to as the Commonwealth of Independent States (CIS), which includes Ukraine, Russia, Belarus, Moldova, the Caucasus and Central Asia.

As we can see, the division created by the Convention and the Protocol—into those that are included into Annex I to the UNFCCC as "countries undergoing transition to market economy" and those that are not —cuts across some vital political and economic affiliations. These fundamental differences were clearly manifested in the refusal of economies in transition to negotiate as a single bloc. Lured by the elusive ghost of "hot air," Russia and Ukraine—the only former Soviet Union republics represented in Annex I—negotiated as part of the Umbrella group. The Central European counties could not and did not want to be associated with the two because they were already well ahead in EU accession negotiations at the time. They eventually formed their own negotiating block, CG11, at COP-6 in The Hague.

To complicate the matter even more, from the point of view of the transition counties not included into Annex I,[3] the division created by the Convention and the Protocol sent wrong political signals. At COP-6-bis in Bonn in July 2001, Armenia, Uzbekistan and Turkmenistan, on behalf of the Central Asia, Caucasus and Moldova (CACAM) objected to the use of the term "developing countries" when referring to them. Stressing that they consider themselves to be "countries with economies in transition," CACAM countries requested the Conference of the Parties to substitute the words "developing countries" with "developing countries and other Parties not included in Annex I" in the texts of the COP decisions.

This view was further reaffirmed when Kazakhstan formally requested the Parties to add its name to the list of Parties included in Annex I to the Convention and expressed intention to be bound by Articles 4.2 (a) and (b) of the Convention. Following a decision of the Parties at COP-7 in Marrakech in 2001, Kazakhstan will become an Annex I Party for the purposes of the Protocol after its entry into force, although it will remain a non-Annex I Party under the Convention. It is expected that further negotiations will follow with a view to define a quantified emission limitation or reduction commitment for Kazakhstan under Annex B of the Protocol.

It is beyond the scope of this paper to consider all economies in transition and further discussion will, therefore, be limited to the "conventional" EIT coun-

tries in the Kyoto Protocol context, i.e., those currently eligible for JI and emissions trading. However, a side-tracked issue of CDM and other aspects of Kyoto Protocol implementation in CACAM countries is an important one and is unfortunately not often addressed since the CACAM group lies outside of the major capacity-building networks.

Political context

The political context in the former socialist block is set out mostly by the degree of their institutional and political transition. Considerable differences exist in the region with regard to the progress of the reforms, strength of democracy and level of institution development. The best reflection of these differences is the progress made by transition countries towards integrating into regional institutions, such as the EU, OECD and NATO, with EU membership being probably the strongest indicator of regional integration. The Central European countries, Baltic states and Slovenia will accede to the EU in 2004. Bulgaria and Romania are candidate countries for the second round of EU expansion. Out of the 13 countries in transition on the Annex B list, only Russia, Ukraine and Croatia are currently not formal candidates for EU membership.

For the countries of Central Europe and the Baltic states, who always viewed their annexation to the Soviet Bloc after World War II as artificial, membership in NATO and the EU has been a stated foreign policy goal. In 1991, Hungary, Poland, the Czech Republic and Slovakia (Czechoslovakia at the time) founded the Visegrad Group with the aim to provide mutual support for EU integration. All four countries have became members of the OECD (1996, 1995, and 2001 respectively). In 1999, Hungary, Poland, and the Czech Republic became the first former-Warsaw Pact countries to join NATO. Slovakia and the Baltic states were invited to join NATO in 2002 and are expected to sign relevant accession treaties in March 2003. They are thus considered to be countries that successfully transitioned to democracy and a market-based economy.

In Southeastern Europe, the process of shedding the totalitarian past has proceeded slowly. In Romania and Bulgaria political reform was protracted and as a result, former communist functionaries were able to hold on to their positions in the government, which in turn delayed much-needed economic and structural changes. The accession of the neighbouring Central European states to the EU revitalized the pace of reform, and both countries have successfully applied for EU membership. With the completion of the first round of EU expansion, the focus of EU policy is likely to shift heavier towards them, as they are expected to accede in the next round in 2007. Among all economies in transition, Slovenia enjoyed a special status. Being the most advanced and developed of all post-communist countries, it could afford a more inward focus and gradual approach to reform without jeopardizing its orientation towards European integration. The only Balkan non-candidate country on the Annex I list is Croatia, whose accession to the EU is hardly possible before political and military stability is achieved in neighbouring Bosnia and Serbia.

Unlike the majority of the countries of Central and Eastern Europe, both Ukraine and Russia, heavily battered by more than 70 years of Soviet rule, required much more profound transformation than the rest of post-communist countries, and thus have experienced deeper political and economic turmoil. Russia, whose goal has always been to re-assert itself as a global power, sought to unite the remains of the Soviet Union around itself, forming the Commonwealth of Independent States[4] in December 1991. Strained relations between some members of the group, however, prevented it from becoming an effective economic and political alliance. The new Shanghai Cooperation Organization (SCO) uniting China, Kazakhstan, Kyrgyzstan, Russia, Tajikistan and Uzbekistan, has been most recently (May 2003) formed as a military counterweight to NATO. Ukraine, after declaring independence in 1991, was playing a difficult balancing act between Europe and Russia, cherishing aspirations to integrate with the more developed West. It opted not to become the full-pledged member of the Commonwealth of Independent States (CIS) and has repeatedly sought membership in both the EU and NATO, but without much success. The rhetoric of the government was not matched by adequate reforms, while alleged arms shipments to Iraq and human rights violations did little to help Ukraine's international image. Although Ukraine attempted to avoid "orientation to Asia," regional economic alliances with its eastern neighbours were inevitable because of heavy dependence on imported oil and gas.[5]

Economic context

From the vantage point of economic development, the transition countries differ greatly depending on

the scale and strength of their economies, their level of industrialization, development of market institutions, stability of their regulatory and business environment, and volumes of trade and foreign investment, all of which is epitomized in the level of well-being of the people.

The Central European and Baltic countries found themselves much better positioned in terms of economic development and democratic transition compared to any of the former Soviet states. The pressures of the accession provided strong impetus for the development of institutions and markets in the region, while governments consistently implemented steps directed at closing the gap with the EU. The advantage of previous experience of having or existing in a developed state, as well as shorter amount of time spent under the Soviet regime, added to their capacity to move away from a centrally-planned economy. Prudent macroeconomic policies and structural reforms were undertaken in most sectors, leading to sustainable economic growth and relative institutional and political stability. Although Bulgaria and Romania have been much slower in enacting necessary structural changes, it is justified to expect that their aspirations to join the EU will be the driving force for strengthening their reform agenda and improving economic performance.

At the same time, the transformation in Ukraine and Russia, despite considerable progress, has been tardy, and can be best described as discrete and sporadic "punctuated" change, rather then a consistent transition.[6] The structural reforms were completed to only 63 per cent, compared to 89 per cent in the accession countries,[7] with their effects falling unequally throughout the economy. Ubiquitous and arbitrary state intervention resulted in the development of oligarchic economies with a few tycoons or oligarchs dominating both the economy and the politics. The position of the oligarchs was further reinforced by the delay of essential reforms, such as elimination of subsidies to old low-performing factories, anti-monopoly policy, and creation of an enabling environment for development of entrepreneurship.

Continuing prevalence of non-cash transactions (barter trade), non-formal or extra-legal transactions (the so-called "shadow economy"), a remaining and still significant degree of state ownership of assets, and a high degree of state interference in economic decisions mean that the structure and conduct of business in the country, and the legal and governmental systems that regulate it, still operate in ways that distort normal market conditions and economic efficiency. Ukraine, for example, was described by some analysts as an archetypal rent-seeking society.[8] Such disappointing results of transition can be attributed to a number of factors. Firstly, it is the larger geopolitics of the region, which created a mismatch between external and domestic pressures. Secondly, the mass of the accession countries, unlike Ukraine and Russia, are relatively small in population and manageable in size with the exception of Poland. Last but not least, Ukrainian and Russian institutions did not have the ground on which to grow as, unlike the Central European states, they lacked the advantage of having adequate historic underpinnings.

Per capita FDI, 2000
current US$

Czech Republic	446.11
Slovak Republic	379.97
Estonia	282.69
Poland	241.71
Croatia	211.42
Latvia	171.59
Hungary	165.74
Bulgaria	122.63
Lithuania	108.09
Slovenia	88.30
Kazakhstan	84.07
Romania	45.69
Russian Federation	18.65
Ukraine	12.02

Source: World Bank, 2002

Successful and consistent reforms enacted by the accession countries significantly improved the investment climate and brought high levels of foreign investment. Between 1997 and 2000, investment activity in Poland had been growing at the annual rate of 15–30 per cent, allowing it to accumulate close to US$28 billion in foreign direct investment (FDI), compared to about US$16 billion for the whole of Russia, which is about five times its size. Ukraine has obtained exceptionally low levels of investment com-

pared to the rest of transition countries, between $US 500 to 700 million a year.[9] In per capita terms, Ukraine and Russia received the lowest amounts of FDI among all economies in transition in Annex I. The true levels of FDI in Russia and Ukraine are probably even lower if adjusted for the return of domestic capital coming from off-shore countries such as Cyprus and the Bahamas.

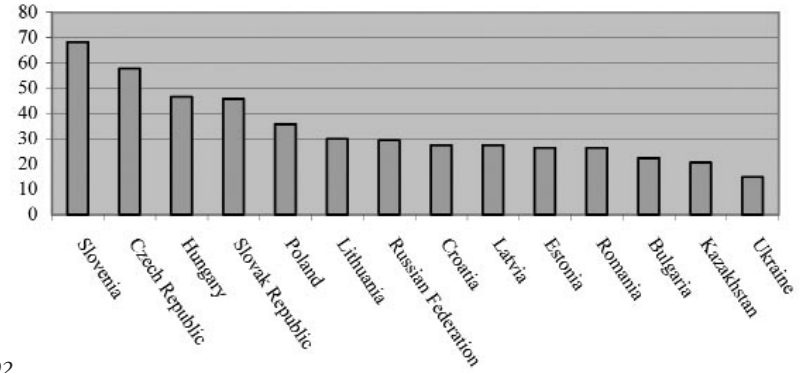
In Slovenia, reluctance toward foreign participation in key economic areas contributed to the lowest incidence of FDI among accession countries. However, it did not prevent Slovenia from achieving economic success. On the contrary, Slovenia's focus on macroeconomic stability and protection of some of its key sectors from foreign competition, supported sustained economic growth (on average 4.3 per cent over the past eight years) resulting in the highest per capita GDP rates in the region.

Thanks to strong economic performance, the income levels in the accession countries have considerably improved over the last ten years, although per capita GDP remains quite low in comparison with the EU level—only 40 per cent of the EU average in 1998 even when measured in purchasing power parities (PPP). The highest GDP growth in the last five years has been achieved in Latvia, Estonia, Hungary and Slovenia (between 4.2 and 5.4 per cent on average). Poland continues to be a more rural society then the Czech Republic or Slovenia and its income levels are the lowest among Central European states. The Baltic countries, in turn, have GDP per capita in PPP that is on average 30 per cent lower then in Central Europe, followed by Bulgaria and Romania, which have the lowest per capita GDP in Central and Eastern European accession countries.

Unexpectedly, for many analysts, Russia has made remarkable progress in recovering from its August 1998 financial crisis and currency devaluation. Since 1999, the economy—assisted by huge oil and gas export revenues—grew by more then 25 per cent, attaining on average a 5.5 per cent GDP growth. Although the growth rates are slightly declining, business confidence has clearly revived in response to the Russian government's persistent efforts to improve the investment climate in the country, in particular the new reform program introduced by the Russian government in July 2001. Thanks to natural resource revenues, per capita GDP rates in Russia are the highest among all NIS countries. However, the country remains burdened by its enormous foreign debt, which the World Bank estimated at US$154 billion at the end of 2001. Further implementation of reforms and political stability in the country will be crucial to sustain Russia's economic growth.

The economic situation in Ukraine closely reflected the scope and depth of the market reforms. Following eight consecutive years of recession, Ukraine seemed to have come out of reform deadlock in 2000, when the new reform government came to power and eliminated over 250 decrees providing unjustified privileges to concrete companies and individuals.[10] Fueled by increases in industrial production and a strong harvest, Ukraine recorded its first year of economic growth in 2001, real GDP rose by 5.8 per cent in 2000, and further improved by 8.9 per cent in 2001. Increased production in the all-important agriculture sector prompted expansion of exports, making Ukraine the fifth leading world grain exporter in 2002. However, after the change of government in 2001, the pace of reforms has slowed and the oligarchs have recovered in a way no one expected. As a

Figure 1. Per capita GDP (PPP) as percentage of EU average



Source: World Bank, 2002

result, the GDP growth rate fell to six per cent in 2002, and is predicted to continue to fall in 2003 (to a maximum 4.5 per cent and beyond), unless there are new forces to drive the economy as well as structural progress in the energy and banking sectors, the tax system and the rule of law.

Both in Ukraine and in Russia, economic growth, albeit encouraging from the macro-economic perspective, failed to make up for the shortfalls in public spending. Especially in Russia, the benefits of growth have fallen unevenly. Both countries are facing a public health catastrophe and poverty. Rural and remote areas are seeing the highest levels of unemployment and the greatest deterioration of social and communal services, with people forced to survive on subsistence agriculture, often without access to basic utilities such as hot water, electricity or reliable heat. According to World Bank estimates, at least 40 million Russians still live in poverty.[11] In Ukraine, an estimated 50 per cent of the population, or about 24 million people, live on less than US$2 per day.

Surprisingly, one of the significant factors preventing Russian and Ukrainian economies from further growth is continuing protectionism in external markets, in particular that of the EU. In a recent study of the consequences of EU enlargement or NIS countries, Aslund Anders observed strong evidence that some common EU policy towards the NIS group is responsible for a shortfall in their exports.[12] Duties imposed on exports from the NIS countries were found to be about twice as high as those levied on the same exports from other Central and Eastern European countries. Non-recognition of NIS countries as market economies also allowed the EU to maintain quotas on imports from the region. As a result, the EU share of the exports in the accession countries is 2–3.5 times higher than in the NIS. If natural resources are excluded, the estimated NIS shortfall would be larger since raw materials have a higher share of natural resources in their EU export than in the exports of the accession countries. Consequently, exports were 16 per cent of GDP (PPP) for the accession, but only six per cent of GDP for the NIS countries, indicating that the lacking exports may be considered lost production. A worrying signal is that the gap appears to be persistent and shows no tendency for decline.

Domestic climate policy context

Most of the economies in transition do not have clear-cut policies aimed at reducing greenhouse gas emissions in their countries. As anywhere else, attitudes towards climate policy have been dictated by political and economic priorities. At the same time, because of an anticipated emission reduction surplus, domestic climate mitigation efforts were mostly influenced by factors other then compliance with the Kyoto Protocol.

For the Central European countries and the Baltics, the fulfillment of EC *Acquis Communautaire*[13] and preparation for possible participation in the EU Emissions Trading System will be the driving forces in terms of domestic climate policy. The new EU member states will have to comply with all energy-related EU laws, including the Energy Charter Treaty, the Integrated Pollution Prevention and Control Directive (IPPC), the Landfill Directive, the Large Combustion Plants Directive, Directive on the Promotion of Electricity from Renewable Energy Sources, as well as various energy efficiency directives.

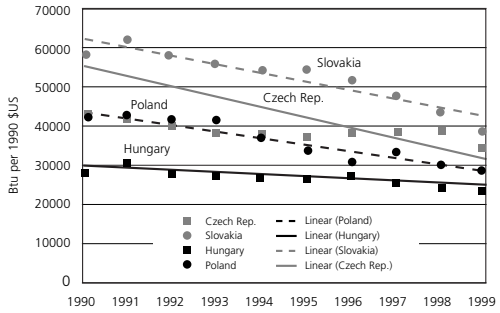
Harmonization of legislation is already taking place. For example, the Hungarian Parliament adopted a Program on Promoting the Use of Renewable Energy, while the new Czech Energy Management Act created a basis for improving energy efficiency in line with the energy *acquis*. Although Polish levels of energy efficiency, as well as the share of renewables, remain low, a new Renewable Energy Development Strategy was adopted by the Polish Parliament in 2001 and a special regulation was introduced to obligate the purchase of energy produced in co-generation with heat from unconventional or renewable sources.

Competitiveness, cost-savings and the pressures of keeping up with EU standards have steadily driven down energy intensity in the accession countries. Energy consumption and GHG emissions per unit of GDP have declined in all of the Central and Eastern European states, with Croatia, Hungary and Slovenia being the best performing countries in the region registering energy intensities within 30 per cent of the EU average.

Some of the accession countries see advantages in establishing early cap and trade systems and anticipate that they can facilitate the involvement of the industry and early participation in the EU Emissions Trading Scheme (ETS). Slovakia, for example, is preparing to introduce a domestic emissions trading system, and both the Czech Republic and Poland are considering their feasibility. Although the EU bubble under the Kyoto Protocol does not envisage partici-

pation of the new member states, their involvement in the scheme as an EU-wide mechanism will be possible. Specific details of the kinds of allowance transfers and their potential volumes will be clear when appropriate linkages are created connecting EU ETS and the flexible mechanisms.

Figure 2. Energy consumption for dollar of GDP

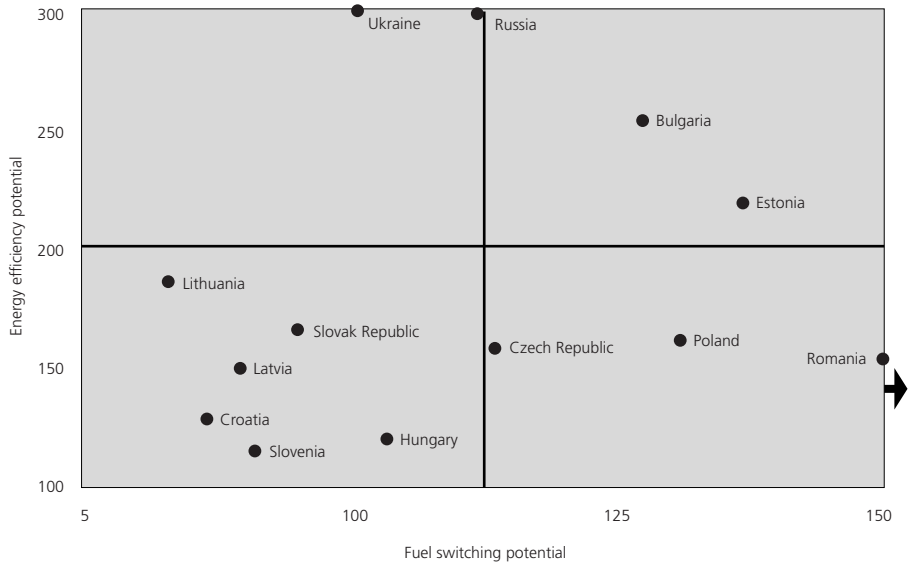


Source: EIA, www.eia.doe.gov

In contrast, Ukraine and Russia are not expected to make any domestically-mandated progress in GHG emissions reduction in the near future. Reduction in GHG emissions that followed the fall of the Soviet Union was a result of the economic downturn and is primarily associated with significant worsening in the well-being of the people. Both countries hope that economic activity will eventually revive, which is likely to immediately increase the level of GHG emissions as Russia and Ukraine are the least energy inefficient countries in Annex I (see Figure 3). Ukraine, by some definitions, is the most energy intensive country in the world.[14] Ukraine's energy intensity was 101.3 thousand Btu/US$1990 in 1999—about eight times that of the United States and more than 15 times that of Japan. It is 2.4 times higher than of its neighbour Russia, and about 4.5 times higher than the EU average if GDP is corrected for purchasing power parity.[15] Inefficient and antiquated practices in key economic sectors such as energy and heavy industry, carbon intensity of the energy consumed, and lack of renewables are the key factors causing high carbon intensity of Russian and Ukrainian economies. For example, obsolete technological equipment represents more than 50 per cent of the total industrial assets of the metallurgic industry, and similar numbers are observed throughout Ukrainian industry.

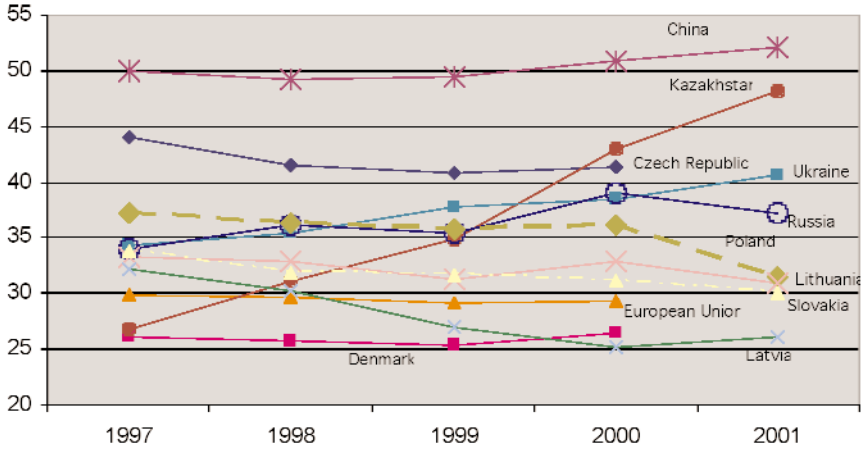
The notorious hot air has been dubbed "cold air" in the former Soviet Union countries. Poverty that gripped both Ukraine and Russia produced great distortions in the energy markets. Both Ukraine's and Russia's energy sectors remain riddled with debt and lack the funds for modernization. Transmission losses

Figure 3. Energy and carbon intensity in EITs, 1998



Source: Frankhauser, S. and Lavrie, L. The investment climate for climate investment: Joint Implementation in transition countries, EBRD, 2003

Figure 4. Industry value added as a percentage of GDP



Source: World Bank, 2003

of 25–40 per cent are not uncommon for the district-heating sector, undermining cost-effectiveness of heat delivery. Although attempts are made to improve cost-effectiveness of the energy sector by allowing cutting off non-paying consumers, concerns are raised whether such policies are ethical, since it is often the most vulnerable and disadvantaged groups that bear the brunt. Especially in rural and remote areas, a high proportion of the population often has to live without heating or hot water in sub-freezing temperatures in the winter. In many regions, hot water is delivered for two to three hours a day, if at all. Energy access is becoming a problem, too—dilapidation of transmission networks means that entire towns can be easily cut off from the grid because of bad weather. Clearly, economic development and eradication of poverty are on the forefront of the countries' priorities. Whether or not it will bring a raise in GHG emissions is much less of a concern.

At the same time, both Russia and Ukraine continue to be countries with extraordinary industrial potential because of their vast human and natural resources, and geographic proximity to major markets, which was much evidenced by the recent economic growth. Over 2000–2001 alone, industrial output in Ukraine accelerated by an estimated 31 per cent, most of which occurred in energy-intensive export-oriented industries such as steel production and metal processing. The share of metal processing industries in the structure of industrial production in Ukraine has increased from 12 per cent in 1990 to 26 per cent in 1999 (42 per cent—in export), while a share of the energy sector has increased from 8.9 per cent to 22.3 per cent during the same period.[16]

This trend is echoed in the carbon intensity of GDP —while Russian CO_2 emissions per unit of GDP remained essentially stable over the last 10 years (on average 1.3 MtC per thousand 1995 US$), the carbon intensity of Ukraine has been steadily increasing from 2.44 MtC per thousand US$ in 1992 to 3.13 MtC in 2000.[17] With the development of energy-intensive low technology production, Ukraine seems to be returning to perverse structural disproportions formed at the time of the Soviet Union. In the face of low investment and protectionism of external markets, it would be difficult to reverse this trend. Given that a considerable part of the industrial capacity in Ukraine and Russia remains unutilized, it is likely that GHG emissions there will continue to grow.

International climate policy context

The best-known fact about economies in transition is that they are expected to reap substantial revenues from participation in emissions trading and joint implementation. Recent economic modelling predicts GHG trading in the region to reach the volumes of 990 to 1,500 Mt CO_2 per year in the first commitment period, generating export revenues of between US$3 to 11.5 billion per year.[18] Although

such high assessments of the trading volumes appears over-estimated—some climate change practitioners see the whole global GHG market in 2010 at about US$10 billion[19]—there is no doubt that economies in transition offer plentiful opportunities for cost-effective investment in GHG emission reductions. Three key factors will determine the supply of the allowances in the EIT region—the amount of surplus AAUs, the scope for cost-effective JI opportunities, and the institutional capacity to participate in the Kyoto Protocol mechanisms.

The total amount of surplus that resulted from the economic transition is estimated between 190 and 370 MtC per year,[20] or 696 to 1,356 Mt CO_2 equivalent. The degree of such reductions varies throughout the region, with Russia, Ukraine, Poland and, to a lesser extent, Romania, expected to be the biggest suppliers of hot air among the transition countries. The only economies in transition where a surplus is not anticipated are Slovenia, Croatia and possibly Lithuania. Although some studies show that the amount of surplus available in the newly-acceded EU countries may be sufficient for reductions required in the EU bubble,[21] it is hard to guarantee that this surplus can be maintained, since—because of the relatively small size of the economies of the majority of new EU members—even medium changes in the industry can substantially shift the amount of actual emissions. Moreover, all of the countries in the region are experiencing growth and might choose to hedge the risks of carbon-constrained development by banking their surplus AAUs for future commitment periods or by grandfathering them to key industrial sectors for future trading within EU ETS. The actual amount of allowances available in all of the transition countries will depend on the eventual performance of their economies and the importance of energy-intensive sectors for their development.

Additionally, about 500 Mt CO_2 annually are predicted to be available for reduction under JI credits at a cost of under $18 per tonne. Most of the JI opportunities in the EITs are in the energy sectors and relate to energy efficiency improvements, renewables and fuel switch. Also effective and plentiful are opportunities in the waste management sector. Ukraine, Bulgaria, Russia and Romania are estimated to have the highest JI potential, while Slovenia, Croatia and Hungary are expected to have the lowest scope for cheap emission reductions.[22] The Czech Republic, Poland and Romania stand out as countries with good opportunities for fuel switch because of their heavy reliance on domestic coal. However, the overall JI potential of accession countries will be significantly reduced because of the additional constraints imposed by compliance with the EU *Acquis Communautaire*. Despite the fact that the new EU members have negotiated individual transition periods for compliance with the *acquis*, they will be at a relative disadvantage in terms of base-line determination. The only exceptions may be the cases of Lithuania, Slovakia and Bulgaria, where the decommissioning of nuclear power plants is expected to result in higher baseline emissions.

Last but not least, the potential supply of allowances will depend on the institutional capacity to process carbon purchase transactions. The institutional capacity, which in the context of implementation of the Kyoto Protocol is often defined as a combination of the host country's political will, its ability to meet eligibility criteria and, to a lesser extent, the prior experience gained through the Activities Implemented Jointly (AIJ), is considered as a crucial issue for the EITs. Currently, many EIT countries lack both the institutional and regulatory infrastructure for participation in the flexible mechanisms and the necessary political and technical expertise, especially in government. The accession countries are generally more prepared in this regard (with the exception of Slovenia and Croatia, who do not anticipate much trading activity), which reflects both their progress in institutional development and their interest in participation in the Kyoto mechanisms. Despite current difficulties, the basic prerequisites necessary for fulfilling eligibility criteria will likely be created in most of the economies in transition by 2007.[23]

Flexible mechanisms: Who will benefit?

The key issue that the EITs will have to take into account when designing their climate policies is that the true shape of the carbon market for the economies in transition will be determined by a range of factors of which their supply of emission reductions will be of lesser importance. The primary limiting factor to the volume of GHG trading in the region will be the overall level of demand for international emission reductions, which will be driven by the required scope of domestic reductions in Annex II countries. The second factor limiting demand for EIT allowances will be the competition from CDM,

which is already seen as a more attractive mechanism because of better design of the project rules and the existence of better developed institutions. Lastly, the demand for allowances generated in the EITs will hinge on investor confidence in the EIT markets and will depend on the institutional capacity and investment climate in the transition countries.

The actual volume of the global GHG trading will likely be smaller than predicted because of the constrained demand in Annex II countries. The economic modelling work, which relies on the assumptions of an equilibrium of global demand and supply as determined by perfect markets, tends to overestimate the volume of GHG trading, as well as the price of allowances. In reality, it is already clear that specific state policies will influence the demand for the allowances internationally, as well as regionally. Switzerland and Portugal, for example, have already announced that they will refrain from the use of the flexible mechanisms. So far, only Canada and Japan have expressed strong interest in pursuing international emissions trading, while most of the EU countries appear to be more interested in JI. However, even the demand of the countries interested in flexible mechanisms will be limited and eventually determined by the mix of domestic and international efforts. A good example is Canada, where out of the estimated 240 Mt CO_2 annual gap in the first commitment period, the government plans to acquire internationally only 10 Mt CO_2. Although there is a possibility that some of the 25 MT CO_2 reductions allocated to Canadian domestic emissions trading systems may be achieved internationally through JI, even here the government capped the anticipated price at around US$7.50.

At the same time, the true scope of institutional capacity required for implementing the flexible mechanisms will reach far beyond that defined by the eligibility criteria. The functioning of any markets is contingent on the development of robust market institutions and the prevalence of the rule of law. Thus the key to institutional capacity for participation in the flexible mechanisms will be not simply the fulfillment of eligibility criteria, but the existence of strong institutional frameworks, as well as appropriate levels of governance and transparency. Ukraine and Russia in this respect are the least prepared for the flexible mechanisms, as their underdeveloped institutions might severely undermine the efficiency and integrity of the nascent carbon market. Limited participation of civil society in public policy making, the culture of secretiveness over energy and environmental policy decisions, political instability and the freezes of government capacity in election years are only some of the factors that might hinder successful implementation of the flexible mechanisms in the former Soviet Union countries.

Investors in emissions reduction projects face higher risks then traditional investors—in addition to delivery risk, they are more susceptible to political and regulatory risks. Therefore, it is the markets that enjoy high investor confidence and offer better investment climate that will be more successful in attracting interest of carbon investors. Such factors as the development of market institutions, economic and financial instability, progress in privatization and institutional reform, degree of liberalization and structural change, efficient and sound legal mechanisms for solving disputes, and the prevalence of corruption will all come into play when investment decisions are made.

This corollary is critical for evaluating the potential scope of GHG trading activity in the region. Support of private sector investment has been strongest in the new EU member states, whereas in Russia and Ukraine complex tax regulations, rampant corruption and extortion, as well as a weak and hostile legislative environment kept traditional investors away. For example, such a common feature of post-Soviet markets as uncertainty concerning basic ownership rights, which are held provisionally based on the political allegiance of the owners, as well as arbitrary enforcement of laws and regulations pose enormous risks for carbon investors, affecting discount rates and eventually project revenues. Furthermore, in Russia domestic opposition from local companies to foreign involvement, made many Western energy companies hesitant about investing in Russia's energy sector. Bulgaria and Romania are generally also known for a less then favourable investment climate, particularly because of government corruption and lack of trust in the judiciary. Whether this can be changed by the pressures of EU accession remains to be seen.

Two recent studies conducted by EBRD and PointCarbon/Vertis Environmental Finance on the attractiveness of JI in economies in transition rank Ukraine and Russia among the least attractive countries for JI in the region.[24] However both studies, having more qualitative approaches, fall short of reflecting the scale of gaps in investment capacity in the region. If we were to take FDI as a more quantitative assessment, the difference in per capita FDI

Rank	Scope for JI	JI Capacity	Investment climate
1	Ukraine	Czech Republic	Estonia
2	Bulgaria	Hungary	Hungary
3	Russia	Slovak Republic	Czech Republic
4	Romania	Poland	Slovak
5	Poland	Romania	Lithuania
6	Lithuania	Estonia	Slovenia
7	Czech Republic	Bulgaria	Poland
8	Estonia	Latvia	Latvia
9	Slovak Republic	Lithuania	Croatia
10	Latvia	Russia	Bulgaria
11	Hungary	Croatia	Romania
12	Croatia	Slovenia	Russia
13	Slovenia	Ukraine	Ukraine

Source: EBRD, 2003.

between the best-performing country (Czech Republic) and the worst-performing country (Ukraine) in 2000 was about 1,760 per cent. An unfavourable investment climate translates into various types of administrative, economic, and political risks and losses for the investor and may eventually raise transaction costs high enough to significantly restrict the demand for allowances from high-risk countries. Lower costs of emission reductions in Ukraine and Russia would hardly justify higher project transaction costs,[25] making significant private investment in Ukraine and Russia less likely. In the end, the most attractive will be the countries that offer the best combination of mitigation potential and business environment, such as the candidate countries of Bulgaria and Romania.

Given low demand for ERUs and considerable risks that investors still associate with JI, private investment in project-based activities in economies in transition will likely come as an add-on to business-as-usual FDI, either through companies that already have established relations with transition countries or through companies that are interested to do so in the future. Consequently, the likely recipients of the majority of JI investment will be accession countries. Although their JI scope is reduced and the marginal abatement costs are on average higher than in CDM and former Soviet Union countries, they offer lower risks and thus lower transaction costs. Excellent investment efficiency, proximity, and access to the EU markets also mark up their investor attractiveness. Additional opportunities provided in the accession countries because of the linkages with EU ETS may result in the saturation of carbon markets in accession countries unless local governments set out strong policies limiting the amount of trading. On the contrary, Ukraine and Russia will not see the amount of private JI investment that could have been expected given their potential to supply cheap emission reductions. To capitalize on carbon investment opportunities, they would need to develop legal and policy frameworks that provide incentives for long-term private sector participation. Since this was not done to encourage traditional private investment, it is unlikely that this will happen for carbon investment. Thus the only private projects in Russia or Ukraine will most probably be those that offer extremely cheap ERUs, involve high-volume transactions, and are in line with solid longer-term interests of investor companies and the political interests of the hosts.

Obviously, the GHG market in the former Soviet Union countries is likely to be driven by public investment (e.g., governmental ERU-purchasing program or hot air purchases in the form of a Green

Investment Scheme, GIS) and will follow political and economic priorities of the donor countries. Even if not in substitute to official development assistance (ODA), public investment in GHG emission reduction in the FSU countries will follow ODA patterns. This is potentially treacherous soil for Ukraine and Russia, since several recent reports indicated that ODA in general, and in the region in particular is neither effective nor efficient.[26] Both Ukraine and Russia will, therefore, need to be very careful in accepting bilateral public investment, whether through JI or GIS, since it is their carbon budgets that will be at stake. For the donor countries too, reliance on public investment will be associated with high delivery and domestic political risks because of weak governance and general problems with corruption in the former Soviet Union region.[27] It might even be possible that a significant share of public investment, especially from the EU, will eventually go to the accession countries where the risks are lower and political priorities are higher.

Development vs emission reductions: Is there a dilemma?

The implementation of the flexible mechanisms under the Kyoto Protocol will clearly bring uneven benefits for the countries with economies in transition. For EU accession countries, JI and emission trading will be in line with their developmental and political priorities. Although no mega-deals are likely to come out of the region, carbon-financed investment will be mostly additional to current FDI and will facilitate further integration with the EU economies. The receding trends in energy intensity and industry value added suggest that GHG trading will likely enhance already on-going processes of modernization and de-carbonization in the region. Whatever will be the price of carbon-constrained development for the accession EITs in the future, the macro-economic benefits of EU membership will most certainly outweigh the cost of compliance with the European or international climate policies.

In Ukraine and Russia, the volumes of carbon investment will likely fail to answer the countries needs or make a significant shift in energy consumption and carbon intensity patterns. For Ukraine, the issue is exports of steel and electricity, for Russia, exports of natural gas and the potential need to switch to coal to sustain them. Clearly, "normal" exports have more attractiveness for them than GHG exports—firstly, these are more or less real products, which generate normal budget revenues; secondly, they do not entail additional risks associated with them.

The urgency of GHG emissions in Russia and Ukraine will acquire particular poignancy in the future. Without being moderated by adequate investment in emission reductions, their development may continue on a carbon-intensive path. In view of the political and economic isolation of Ukraine and Russia and the absence of EU accession pressures in the foreseeable future, there will be few incentives for them to join future compliance regimes. Thus, effective action will be required on the part of the international community to ensure that FSU countries will stay engaged in climate policy. Despite the risks, OECD countries should not shun making at least some carbon investments in the FSU. First of all, seemingly insurmountable difficulties can be overcome following the wisdom of the traditional business community.[29] Secondly, support of de-carbonization of the industries in Russia and Ukraine will have a positive long-term political and economic effect for the OECD countries themselves. For the benefit of both sides, it will be crucial how emissions trading and bilateral emission reduction purchasing schemes will be designed and whether adequate frameworks will be created to mitigate risks for both sides. To insulate carbon investments from extortion and corruption, "strong implementers" such as multilateral credit agencies rather then soft bilateral programs might be required. The hosts' concerns that carbon investments should be efficient will also need to be addressed, for example by encouraging the use of local technologies and involvement of local consulting companies. Other incentives might need to be introduced by OECD counties through macro-economic policies, such as lifting quotas and tariffs on labour-intensive energy-efficient exports, setting "green" standards to imported electricity and negotiating debt-for-carbon arrangements.

Endnotes

1 The original number was 11. Czechoslovakia split into Czech Republic and Slovakia after a "velvet divorce" in 1993, Slovenia and Croatia were added at COP-3 in Kyoto.

2 US DOE, International Energy Outlook, 2001; UNFCCC, Comparison of GHG emission projections, 2001; International Energy Agency, 2001.

3 Non-Annex I EITs are Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Georgia, Kazakhstan, Kyrgyzstan, Macedonia, Moldova, Tajikistan, Turkmenistan, Uzbekistan, Serbia and Montenegro.

4 Twelve former Soviet republics (excluding the Baltic States) are members of the group: Azerbaijan, Armenia, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Uzbekistan and Ukraine.

5 Ukraine is a member of anti-Russian GUUAM group, an alliance of Georgia, Ukraine, Uzbekistan, Azerbaijan and Moldova, formed in 1996 with the view to promote regional economic cooperation through development of an Europe-Caucasus-Asia transport corridor. In July 2002, Uzbekistan left the group to join a more promising Shanghai Cooperation Organization.

6 Thomas, Paul. Asset valuation under non-market conditions in transitional economies: the case of Ukraine (up-coming).

7 A normal market economy is taken as 100 per cent. Data source: Anders, Aslund and Andrew Warner, The EU Enlargement: Consequences for the CIS countries (up-coming).

8 Anders, Aslund. Ukraine's Return to Economic Growth, *Post-Soviet Geography and Economics*, No. 5, 2001.

9 World Development Indicators, 2002.

10 Anders, Aslund. Ukraine's Return to Economic Growth, *Post-Soviet Geography and Economics*, No. 5, 2001.

11 Russian Federation Country Brief, World Bank, 2002.

12 Anders, Aslund and Andrew Warner, *The EU Enlargement: Consequences for the CIS countries* (up-coming).

13 The entire body of European laws is known as the *Acquis Communautaire*. EU candidate countries must adopt, implement and enforce all the *Acquis* to be allowed to join the EU.

14 US DOE, World Energy Consumption Indicators, 2001.

15 Frankhauser, S. and Lavric, L. *The investment climate for climate investment: Joint Implementation in Transition countries*, EBRD, 2003.

16 Laskarevsky, V. *Assessment of JI Potential in Ukraine*, Institute of Energy, revised 2003.

17 US EIA, 2002.

18 Grutter J.M., *et al.*, *The Potential GHG Market in EIT countries*, World Bank, 2002.

19 Joshua F., The Art of Pricing Carbon, Swiss Re Seminar on Reducing GHG Emissions, Switzerland, 2002.

20 US DOE, International Energy Outlook, 2001; UNFCCC, Comparison of GHG emission projections, 2001; International Energy Agency, 2001.

21 Jan Pretel, EU Enlargement and role of flexible mechanisms in accession countries, presentation at the Central European University, Budapest, 2003.

22 Frankhauser, S. and Lavric, L. *The investment climate for climate investment: Joint Implementation in Transition countries*, EBRD, 2003.

23 CG11 Workshop on Capacity Building and Emissions Trading, UNCTAD, 2002.

24 PointCarbon, 2002; Frankhauser, S. and Lavric, L. *The investment climate for climate investment: Joint Implementation in Transition countries*, EBRD, 2003.

25 For example, it is anticipated that informal project kick-backs may reach up to 40 per cent of the total project value.

26 Center for Policy Studies, Kiev, Ukraine, 2003.

27 In 2001 Transparency International rated Ukraine and Russia among 10 most corrupt countries in the world.

28 Laskarevsky, V. *Assessment of JI Potential in Ukraine*, Institute of Energy, revised 2003.

29 Gassan-zade, O., *Making Flexible Mechanisms Work in the Countries of the Former Soviet Union: A Handbook of Practical Solutions*. Kiev, Ukraine (forthcoming).