

**Linking Russia with EU and global
greenhouse gas emission trading markets:**

Three paths for greening AAUs

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ABSTRACT

Three paths for linking the EU Emissions Trading Scheme with Russia are presented: (1) Joint Implementation (JI); (2) greened allowances/green investment schemes (GIS); and (3) linked cap-and-trade systems, in which a Russia domestic emissions trading (DET) system would link with the EU's domestic ETS. The authors conclude that the third option, emissions trading through linked domestic systems, offers the greatest opportunities to mobilize capital to obtain significant emission reductions with lowest transaction costs. The authors discuss innovations like call options and “split level” arrangements on government-to-government and business-to-business (B2B) levels. Annexes provide reference materials and identify minimum elements for domestic emissions trading in Russia.

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Table of Acronyms

AAU	Assigned Amount Unit. Unit of allowable emissions for Annex I Parties to the Kyoto Protocol for the years 2008-2012. One AAU = the allowance to emit one tonne of carbon dioxide-equivalent greenhouse gas.
Annex I Parties	Parties included in Annex I of the UNFCCC.
B2B	Business-to-business.
CDM	Clean Development Mechanism established under Article 12 of the Kyoto Protocol.
CER	Certified Emission Reduction, certified through the CDM.
DET	Domestic emissions trading.
ERU	Emission Reduction Unit, derived from a JI project. Each ERU represents one AAU rendered surplus as a consequence of a JI project.
EUA	European Union Emissions Allowance
EU ETS	European Union Emissions Trading Scheme.
JI	Joint Implementation established under Article 6 of the Kyoto Protocol.
ICER	Long-term CER, generated from forestry projects under the CDM.
MEDT	Ministry of Economic Development and Trade of the Russian Federation.
NAP	National Allocation Plan – plan for allocating EUAs in the ETS.
RAO-UESR	United Energy Systems, Russia's largest electricity producer.
RDEA	Russian Domestic Emission Allowance
tCER	Temporary CER, generated from forestry projects under the CDM.
UNFCCC	United Nations Framework Convention on Climate Change (1992).

Linking Russia with EU and global greenhouse gas emission trading markets: Three paths for greening AAUs

EXECUTIVE SUMMARY

As the European Union and Russia each move forward on implementation of the Kyoto Protocol and on joint cooperation in a range of areas, from climate to energy to trade, we note that there has not been much progress to date on linking the two carbon markets, even though (a) Russia's participation is needed for both the pre-2012 and post-2012 framework, (b) the EU still faces a shortfall in its Kyoto compliance, and (c) linkage could return significant environmental and economic benefits to each. This article examines possibilities for linkage between the European Union's Emissions Trading System and Russia via emission trading paths, with a view to enhancing cooperation on a broader scale than the project-based approaches that have been tested thus far.

Reviewing Russia's carbon economics, we find that even as Russia's overall emissions dropped during its economic crisis, the carbon intensity of its economy actually increased during the economic downturn. More recently, Russia's economic recovery has begun to achieve gains in energy efficiency; however, its absolute emissions growth is likely to outpace these gains absent incentives that shift Russia to a lower-carbon economic growth trajectory. Carbon investment can make a significant difference in Russia's environmental and investment picture. The most powerful tool for catalyzing such a shift is the Kyoto Protocol.

To implement Kyoto, EU member states established a domestic emissions trading system in 2005. In that system, EU companies may cover their emissions with EU Allowances, with reductions from joint implementation and Clean Development Mechanism projects, and with mutually recognised third country allowances. Yet EU member states have been reluctant to trade with Russia unless allowances are 'greened', i.e., represent real emission reductions. We analyse three paths for possible EU-Russia linkage:

- Joint implementation – reductions earned via individual projects in Russia;
- "Greened" allowances/green investment schemes (GIS); and
- Linked cap-and-trade systems, in which a Russia domestic emissions trading system would link with the EU-ETS.

We find that emissions trading through linked domestic emission trading systems offers the best opportunities at lowest transaction costs. Moreover, by buying call options, EU member states could hedge against sharp increases in future carbon prices. Linked systems provide a solid basis for swaps, futures and forwards, all of which can improve liquidity and reduce risks and costs. These could be readily implemented through a business-to-business (B2B) approach. We identify "next steps," and provide reference materials and minimum elements for establishing domestic emissions trading in Russia.

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1. INTRODUCTION

To meet their Kyoto Protocol targets, industrialized nations are seeking economically sensible strategies, including domestic emission reductions and application of Kyoto flexible mechanisms to yield real emission reductions abroad. Estimates indicate that even with robust domestic implementation, some Annex I nations may nevertheless need access, through carbon markets, to some 2 to 5 billion tonnes of CO₂-equivalent to meet Kyoto targets with reasonable cost. While joint implementation (JI) and the Clean Development Mechanism (CDM) can help meet this demand, neither is likely to be able to supply tonnes of this magnitude. Complementing project-based paths with emission trading paths can help nations close the gap more efficiently, deliver environmental and public health co-benefits, and make the Kyoto Protocol and its extensions a success.

The Russian Federation is preparing its role in the carbon market. As Kyoto implementation proceeds and the JI approval procedure is developed, proposals for greening Kyoto Protocol Assigned Amount Units (AAUs) and for domestic emissions trading in Russia (DET) have the potential to create new paths to the carbon market that can incentivize capital flows for significant energy efficiency and environmental improvements in Russia.

Why hasn't Russia so far been a player in the international carbon market? One reason is the lack of a concise view on how to accomplish linkage efficiently. Following a brief examination of carbon economics in Russia, we consider three paths: (1) JI; (2) greened AAUs/green investment schemes (GIS); and (3) linked cap-and-trade systems. To implement these, we discuss how AAUs can provide "transaction insurance"; how "mixed instruments" can combine AAUs, loans, and forwards and options; and how "split level" arrangements, in which GIS is realized on the government-to-government level while company-to-company and project-based mechanisms operate at the business-to-business level (B2B). Annexes present legal aspects, including the European Union (EU) Linking Directive, Article 25 of the EU Emissions Trading Scheme (EU-ETS), Kyoto Protocol track-I/II JI and emission trading requirements (Articles 5, 6, 7 and 17 of the Kyoto Protocol and excerpts from its implementing rules), and minimum elements for DET in Russia.

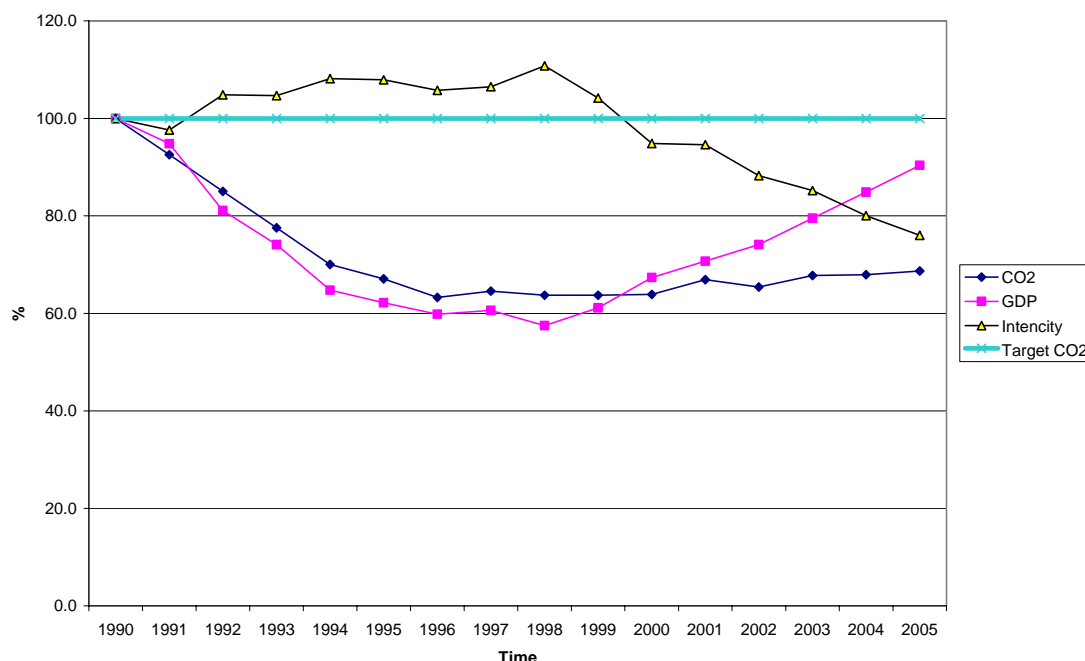
2 RUSSIA'S CARBON ECONOMICS

(Alexander Golub)

2.1 Overview

After the collapse of the Soviet Union in 1991, the Russian economy experienced a severe economic crisis, followed by relatively steady economic recovery and growth. In 1998 Russian gross domestic product (GDP) reached its lowest point. By 1999 the economy had begun to recover, and has demonstrated steady economic growth since then (see figure1)⁵.

Figure 1. CO₂ and GDP dynamics



During Russia's economic crisis, its decline in GDP was accompanied by a drop in carbon dioxide (CO₂) emissions, but CO₂ emissions decreased more slowly than did GDP. Therefore the carbon intensity of Russia's economy actually increased during the economic downturn (see Figure 1). After the 1998 financial crisis, GDP decline turned into rapid recovery; however, during the recovery

⁵ Source: Golub A, Kolosnitsina M, Dyakov D, Shaposhnikov D., 2006, Recovery growth and carbon emission in Russia. Journal of economic policy. Academy of National Economy, Russia (in press)

period, CO₂ emissions increased only modestly. As a result, the carbon intensity of Russia's GDP declined sharply. Since 1998, the real elasticity of CO₂ by GDP was not more than 0.31⁶. In fact, it was slightly lower since other greenhouse gas (GHG) emissions controlled by Kyoto Protocol grew more slowly than did CO₂. Among the complex combination of different factors that determined Russia's carbon emission dynamics during the recovery period, many were specific to Russia's transition to an increasingly market-oriented economy; therefore we cannot expect these factors to exert a long-term persistent influence on future carbon emissions in the Russian Federation. Many of these factors, like structural adjustment of the economy and initial response to market signals, were specific to Russia's transition to an increasingly market-oriented economy; therefore we cannot expect these factors to exert a long-term persistent influence on future GHG emissions in the Russian Federation.

For example, during the recovery period, in theory, conditions were ripe for a rapid increase in CO₂ emissions: Russia experienced income-driven increases in energy demand, coupled with low energy price elasticity (see Golub, Kolosnitsina 2006)⁷. Yet in fact, Russia's economy exhibited relatively low increases in energy consumption, and CO₂ emissions grew not even nearly as fast as GDP. Why? The answer is that during the overall transition period, Russia experienced a structural adjustment, including extremely rapid growth in the service and other low-emission sectors of the economy relative to overall economic growth, so that the share of these sectors increased. In addition, some no-regret and low-cost efficiency improvements were harvested. However, absent other policy interventions, this slow growth or stability in CO₂ emissions is not likely to persist. That is because the growth in relative share of the low-carbon-emitting sectors is unlikely to dominate as the higher-emitting sectors "catch up"; moreover, no-regret inefficiency potentials accumulated during the Soviet era will be exhausted at some point.

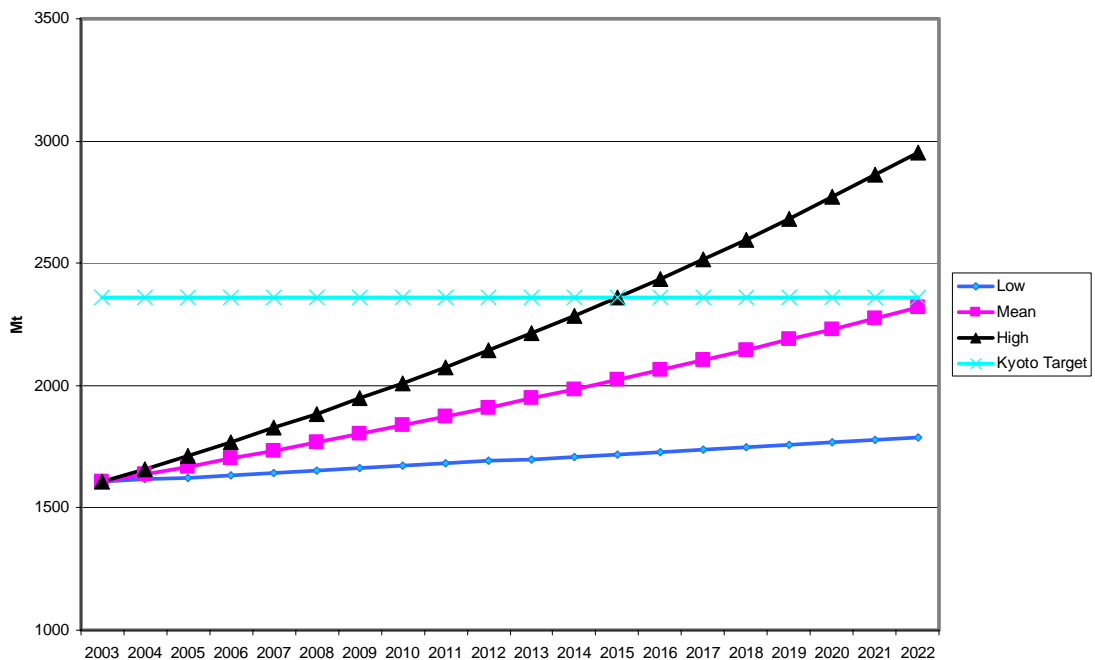
As the transition to the market economy is completed, it is anticipated that price signals will play a more significant role in determining energy demand as well as fuel mix (long-term price elasticity of fuel consumption should be higher than short term). Price increases are likely to encourage decline or moderation in overall demand for fossil fuels; however, relative changes in prices of different fuels, e.g., rapid increase in natural gas prices, may lead to rapid increase in consumption of lower-cost, locally available coals, with (*ceteris paribus*) concomitant increases in carbon emissions (see Dudek, Golub, Strukova 2006). Therefore incentives are likely to be needed in order to curb carbon emissions. A brief survey of available instruments indicates that the most powerful tool for providing such incentives is the Kyoto Protocol.

⁶ Taking into account CO₂ emissions estimated for 2005, the elasticity would be as low as 0.16. It should be noted that elasticity is sensitive to the period of calculation. Therefore projections that involve elasticity are usually complemented by sensitivity analysis (see for example Dudek, Golub, Strukova 2004).

⁷ Golub A, Kolosnitsina M, Dyakov D, Shaposhnikov D., 2006, Recovery growth and carbon emission in Russia. Journal of economic policy. Academy of National Economy, Russia (in press)

Considering Russia's technical capacity for substituting coal for natural gas in the fuel mix (see Golub et al. 2003)⁸, it becomes apparent that the share of coal in Russia's fuel mix for electricity generation may grow by as much as 4% per year. Such an increase would imply an increase in the emission factor of Russia's aggregated fossil fuels of 0.5%/year. Results of sensitivity analysis are presented in figure 2.⁹

Figure 2. Carbon dioxide emission in 90% confidence interval



As Figure 2 illustrates, by the year 2022, the difference between the low and high emissions scenarios for Russia could be as much as 1165 Mt of CO₂ in that year, and the cumulative difference over 19 years could be as much as 10400 Mt of CO₂ – an amount equal to roughly 40% of the total world CO₂ emissions in 2003. Absent other incentives, if Russia were to develop along a carbon intensive pathway, the consequences for the regional and global environment would be significant, and would present a much more challenging picture with regard to future commitments post-2012.

⁸ Golub A., Dudek D., Droste-Franke B., Ksenofontov M., Strukova E., Friedrich R., Markandya A. 2003. Economic Growth, Fuel Mix and Air Quality in Russia. Environmental Defense.

⁹ In order to compute 90% confidence interval for Russian CO₂ emission we applied the simple formula that links CO₂ dynamic with GDP, elasticity of fuel consumption and fuel mix. All independent variables mentioned above assumed uncertain and known up to its distribution. Then we apply Monte-Carlo method to compute CO₂ forecast. 90% confidence interval depicted in figure 2.

On the other hand, if Russia were to follow a low-emissions pathway, major GHG emissions savings could be achieved. Some of these could be transferred to other Annex I countries in the carbon market, and some of which would likely be saved for the future, providing a direct benefit to the global atmosphere and creating a more durable framework for consideration of emission reductions post-2012. Thus, additional incentives to reduce emissions now will put Russia on a lower emissions trajectory – a development that could reap positive returns during the next round of negotiations.

The Kyoto Protocol thus affords Russia a significant opportunity to grow its economy while avoiding sharp increases in carbon emission. Harvesting this opportunity is contingent upon incentives created through the emerging carbon market. Russia's "carbon harvest" can be collected in the future but decisions that predetermine this harvest must be taken today.¹⁰ Considering the lead-time for capital investment needed to reap the harvest, up-front capital for investment in various emission-reduction activities is needed in the nearest future.

2.2 THE INVESTMENT CONTEXT IN RUSSIA

2.2.1 Carbon investment as a share of GDP.

Given that investment in emission reduction activities is needed in Russia, it is necessary to examine the current investment context. While investment as a share of GDP is growing, investment is still at a relatively low level in Russia, and significant investment is not likely to flow into emission-reduction activities in the absence of a framework of incentives for such investment.

According to The Russian Institute for The Economy in Transition, investment into the Russian economy has grown faster than GDP during the recovery period.¹¹ In the recovery period, while an investment growth rate of nearly 10% per annum has outpaced average GDP growth of around 6.5% per annum, nonetheless, investment's share in GDP remains at a relatively low level in Russia by most measures. Investment's share in Russia's GDP has risen to about 9%; however, this is quite low as compared with what it was in 1990 (about 30-35% of GDP), or as compared with typical industrialized countries (about 20-30% of GDP)¹². In Russia the State plays an increasing role as investor, with State investments accounting for about 20% of total investment, and foreign direct investment (FDI) and bank loans accounting for about 5% and 7% of total investment respectively. In absolute amounts, FDI calculated in market

¹⁰ For example, as will be discussed more fully below, a decision today to proceed only with project-by-project JI would mean a relatively slow, small harvest of emission reduction opportunities in the future, with concomitantly fewer environmental and public health benefits. By contrast, decisions today to create a domestic emissions trading system in Russia that could link with systems in other nations could enable a wider harvest of emission reduction opportunities in the future.

¹¹ IET 2006. Russian economy in 2005. Trends and perspectives. www.iet.ru.

¹² See for example, Barro R., Sala-i-Martin X. Economic Growth. MIT Press 2004.

exchange rate (MER) terms is approximately \$6 billion, while total investment is slightly below \$120 billion¹³.

In the context of these still relatively low rates and amounts of investment in Russia, carbon investment can make a difference in Russia's overall investment picture. Incentives for carbon investment could not only boost FDI, but also increase domestic investment. Moreover, most carbon related projects in Russia have significant potential to create collateral benefits. Saving on fuel would be one such collateral benefit; others include development of new products and technologies; job creation; reduction in conventional pollution emissions; and improved public health. Carbon investment therefore could generate collateral investment and even further increase the investment potential of Russian economy.

2.2.2 Carbon investment from the perspective of the firm.

For a “regular executive” in a company, GHG reduction is a by-product of economic activity, and potentially of regulation, which is usually considered to be a cost to the firm, even after fuel savings are taken into consideration. If the GHG reduction by-product has economic value, however, then GHG reduction projects have the potential to increase cash flow and internal rates of return (IRR) for individual investment with carbon emission reduction outcome atop “conventional” benefits. As result an investment project with a GHG reduction component may have an advantage over a competing project that leads to increased energy consumption and carbon emission. Additional emissions will constitute an opportunity cost while emission reduction – augmented by concomitant fuel savings - would be treated as a potential benefit.

Nevertheless, there are two major barriers in Russia: 1) most of managers have limited knowledge regarding Kyoto flexible mechanism and for that reason simply ignore the potential “carbon component” of investment projects; 2) currently JI appears to be the only way to incentivize GHG reduction projects in Russia and, as will be detailed more fully below, the JI channel appears to be a very complicated and inefficient way to go.

To demonstrate how narrow the JI channel is, we refer to a document that has been presented to the meeting of the Russian government by the Ministry of Economic Development and Trade (MEDT) on 16 March 2006.¹⁴ In 2005 MEDT received more than 30 project applications with total emission reduction potential

¹³ Calculations for 2005, based on IET 2006. Russian economy in 2005. Trends and perspectives. www.iet.ru.

¹⁴ MEDT briefing materials “Implementation of The Kyoto Protocol to UNFCCC in the Russian Federation.

of 33.7Mt of CO₂ equivalent over the Kyoto commitment period. It is less than 2% of total reduction potential that presented in figure 2.¹⁵

Such insignificant numbers would not change business behaviour. Overcoming these barriers is essential if Russia is to embark upon a lower-carbon pathway.

Therefore below in this paper we are exploring possibility to create better channels for linking Russia to European emission trading system and further more to the international GHG market. These channels should be widely opened for up to 1700Mt of Russian AAUs backed up with emission reduction attributed to traceable activities aimed at reducing GHG emissions.

¹⁵ The cumulative difference between upper and lower bound of 90% confidence interval depicted in figure 2 over 2008-2012 is equal to 1700Mt of CO₂. These estimates are within the range of estimates presented in Golub A., Strukova E. Russia and GHG market. Climatic Change March 2004.

3. LINKING RUSSIA TO THE EU ETS: Options for Linkage of ‘Greened AAUs’

(Jos Cozijnsen)

3.1 Introduction

In the foregoing chapters we describe the potential flow of credits or allowances, based on the Kyoto budget and the reduction potential, and the environmental value that can be harvested in Russia.

In this chapter we describe how linking of the Russian carbon market – that is any carbon commodity flow – can be put into practice. It is good to see that the government of Russia is very anxious to do so, that EU companies, EU governments and European Commission are interested. And more and more Russian companies are getting more knowledgeable and mobilising themselves in organisations and on conferences. On June 28-29, 2006 Pointcarbon and the National Carbon Sequestration Foundation (NCSF) organise the ‘largest carbon conference in Russia. This marks the increasing exchange of information and commercial interest in emissions trading in Russia.

Before we discuss the paths to linkage we have to look at some fundamentals:

- *what* can be linked? and
- *what is needed* to make it linked?

3.1.1 What can be linked: Perspective of EU governments

EU governments could – or let companies do so -purchase surplus AAUs from the Russian government, via international emissions trading (Art 17 Kyoto Protocol). But EU governments have historically been reluctant to do so, preferring instead to purchase ‘Greened AAUs’. What the EU wants that Russia does with currently-surplus AAUs is¹⁶:

- restrict AAUs sales in volume and time (fear for price fall)
- save to later commitment periods (banking);
- link sales to green investment schemes: to show real, additional reductions.

Besides this, EU governments can also purchase emission reduction units (ERUs) from Russia, such units being derived from joint implementation projects in Russia.¹⁷ The Greening of AAUs has been on the table for a while, because also Japan and Canada said they will not enter into an inter-governmental AAU trade without a greening element.

¹⁶ Jurgen Salay, European Commission, IETA workshop, Moscow, April 4, 2006

¹⁷ The EU governments could, in principle, also purchase from Russia Certified Emission Reductions (CERs) achieved through Clean Development Mechanism (CDM) projects in developing nations, were Russia to obtain any of those.

Interestingly, the Baltic Sea Region Testing Ground Facility is willing to enter into agreements with host country authorities for delivery of AAUs for early credits before 2008¹⁸. It is assumed possible to activate JI-type investments prior to 2008 by using Assigned Amount Units (AAUs) as collateral for the generated early emission reductions. This could be achieved under bilateral agreements, for example as a linkage with the EU Emission Trading Scheme, thus creating the AAUs which would be used as early JI collateral.

To date, there has been hardly any AAU trade: one between a Japanese company, Sumitomo Corporation, and the Republic of Slovakia¹⁹. And a recent one of the Netherlands and the Rumanian government (see box).

Dutch buy up to 10 Mton of AAUs from Rumania (May 10th 2006)²⁰

In May 2006, Dutch Minister Brinkhorst of Economic Affairs and the Rumanian Minister of Environment and Waters Management Sulfina Barbu signed a Letter of Intent concerning co-operation between the Romanian Ministry of Environment and Water Management and the Ministry of Economic Affairs of the Netherlands for the implementation of Article 17 of the Kyoto Protocol of the United Nations Framework Convention on Climate Change. Under that Protocol provision governments can trade CO₂ allowances from their national budgets. Reports indicate that the Letter of Intent provided for the transfer of up to 10 Mton of AAUs. The price will depend on the market price, but will be around tens of millions Euro.

This is a new development. EU governments have always been reluctant to purchase emissions allowances directly from governments with surplus; they said they preferred to purchase ERUs from new emissions reduction projects under JI. The Dutch may have promoted now a new way of dealing with Kyoto, that benefit both sides. The transaction gives the Dutch more certainty to meet their Kyoto target, while Rumania is assured of upfront capital for the sustainable economic growth they need.

The transfer from the Rumanian into the Dutch National Emission Registry of AAUs can only take place after both countries are officially eligible for Kyoto trading and the Registries are connected through the International Transaction Log at the UN Climate Convention Secretariat in Bonn. This is expected to happen at the end of 2007 or beginning of 2008.

The Rumanian government has promised to spend money on energy saving projects and renewables. Dutch companies will undertake some of the projects. The agreement can therefore be seen as a bilateral green investment scheme, without the burden of bureaucratic procedures.

See article on [New Values Community, May 10th 2006](#)

¹⁸ See "The Testing Ground Facility: A Progress Report," Joint Implementation Quarterly, Vol. 11, No. 3, October 2005. The Baltic Sea Region Testing Ground Facility (TGF) is a regional carbon finance facility established in 2003 and structured as a Public Private Partnership between Governments and companies in the Baltic Sea Region. It is a compliance vehicle which purchases AAUs and ERUs projects on behalf of its investors.

¹⁹ See press release by Evolution Markets, December 6, 2002: http://www.evomarkets.com/ghg/assets/AAU_Trade_FINAL.pdf

²⁰ See <http://www.minez.nl/content.jsp?objectid=41341>



Factory in Copsa Mica, Rumania (photo www.un.org)

Of course, this situation can further change in more willingness to purchase AAUs towards 2012 when:

- some countries fear they fail meeting the targets²¹; The World Bank calculated that if the Annex I countries would at least purchase 50% of their under Kyoto needed credits on the carbon market, their demand would be 2,5 billion tCO₂ (2008-2012)²². Currently only a 14% percent of that is being prepared, 370 Mton²³. To meet the demand with JI and CDM only, supply should grow 10% annually the next seven years – a very ambitious growth rate for a project pipeline, particularly given experience to date.
- they fail to realise their ERU/CER purchase programme. For example as a risk management strategy, The Netherlands added tens of millions to their purchase budget, because they anticipate a risk that up to 10-20% of the emission reduction tonnes covered under Dutch purchase contracts may not be realised. EU member states together are planning purchase more than 500Mton of CERs/ERUs for compliance²⁴, and a prudent risk management strategy might weigh in favour of purchasing AAUs as a backup on the event that some percentage of these emission reductions are not realised.
- price levels of Emission Reduction Purchase Agreements (ERPAs)/CERs have fluctuated, from high levels (€30/tCO₂) to low levels (€6/tCO₂) and were more than € 20/tCO₂ on average in 2005. German bank KfW and the European Carbon Fund reported in April 2006 that the delivery price of ERPAs, is more and more linked in some way to the price of carbon in the EU market or indexed to European Climate Exchange futures contracts prices,

²¹ Russia And the Kyoto Protocol, Korppoo, Karas and Grubb, March 2006.

²² Suggested by Newcombe at [Worldbank HCC Meeting, Febr 15th, 2005](http://www.worldbank.org/HCC/Meeting/Febr15th2005)

²³ State and Trends of the Carbon Market 2006, Worldbank/IETA, May 2006, <http://carbonfinance.org/docs/StateoftheCarbonMarket2006.pdf>

²⁴ Jurgen Salay, European Commission, IETA workshop, April 4, Moscow, 2006

increasing their formerly cost effective credits²⁵. The on-line auction of ERPA through the Climex Platform and Asia Carbon have brought CER price already at €11 levels,²⁶ however, those prices may fluctuate as the EU market does as well.

- Time is running out for enough CDM and JI projects. The window of opportunity to realise JI projects is closing: 2008 is approaching, while the lead times from project idea through board review, approval, financing, construction to implementation and reductions are long.

In the graph below is shown how the linkage of the Russian market could have impact on the future global market price, according to market analysts:

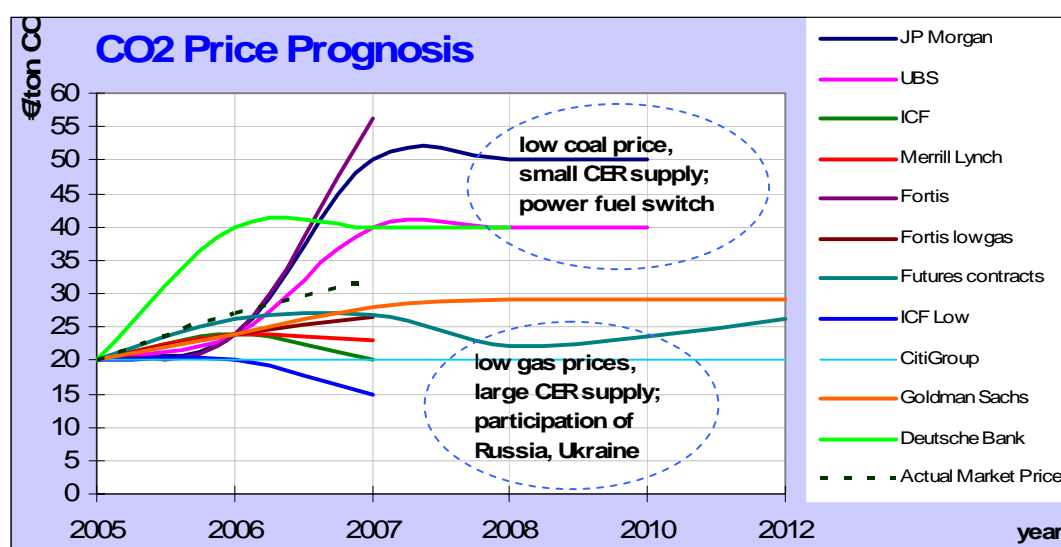


Figure 1, Graph showing several CO₂ development scenarios, Jos Cozijnsen, 2006

3.1.2. What can be linked: Perspective of EU companies

Companies could have a role as legal entities in the international Art.17 Kyoto Protocol trades of AAU, through which Protocol Parties can come into compliance. Companies could also trade AAUs for their own compliance, when the system they participate in, requires or accepts AAUs for compliance. The EU has arranged that companies may not use AAUs to cover their emissions under the EU ETS. They can only use EU Allowances, ERUs, CERs, tCERs, ICERs, and – importantly for our purposes, mutually recognised third country allowances, including AAUs when these are allocated under a domestic emissions trading system.²⁷ For the initial allocation, installations under the ETS

²⁵ CDM & JI Monitor 4 April

²⁶ See New Values website, April 24th, 2006 :

http://community.newvalues.net/2006/04/prices_continue_to_climb_in_ac.html

²⁷ See Article 25, DIRECTIVE 2003/87/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 October 2003 establishing a scheme for greenhouse gas emission allowance

receive EU Allowances (EUAs). These are converted into that unit from national AAUs. Installations can also purchase allowances at auction.²⁸ Or they can, provided for in the Linking Directive, surrender ERUs, CERs, tCERs, ICERs, that were already backed-up by AAUs in the National Registries²⁹. This Directive is further discussed below.

3.1.3. What is *needed* for linkage?

Linkage means that the commodities traded are fungible or exchangeable under the participating systems. Needed for such linkage is a set of legal and administrative arrangements, apart from the overall eligibility, a Party needs to meet for Kyoto trading. The main arrangements are listed in table 1 below. Before any real trading followed by transfer can take place the issue of ownership, and thus liability, must be resolved. The real need, according to some Russian analysts, was to define the market and the commodity traded³⁰. Once that is clear, how they can be regulated and traded, the legislator can shape a workable carbon dioxide trading regime. As long as that is not the case no legislation is likely to be forthcoming and only a speculative, quasi-market will be possible in the short-term. The special JI procedure is expected to be finalized in July. Question is indeed whether that the special procedure will facilitate full issuance and trade or a quasi-market.

In the mean time Netherlands lawyers have assisted setting up the Cadastre for Land Ownership, giving experience in electronic registering assets. The TACIS project³¹ delivered an overview of institutional implementation of the Kyoto Protocol and recommendations for setting up a Russian Emissions Registry. The UK Environment Ministry is offering Russia to use its DEFRA on-line software to elaborate a registry for cross border trade³².

trading within the Community and amending Council Directive 96/61/EC (reproduced in Annex I of this paper).

²⁸ See Article 45, COMMISSION REGULATION (EC) No 2216/2004 of 21 December 2004 for a standardised and secured system of registries pursuant to Directive 2003/87/EC of the European Parliament and of the Council and Decision No 280/2004/EC of the European Parliament and of the Council (reproduced in Annex I of this paper).

²⁹ DIRECTIVE 2004/101/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 October 2004, amending Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Community, in respect of the Kyoto Protocol's project mechanisms.

³⁰ Rapporteur's Report, "Emissions Trading in Russia: Opportunities and Challenges," BCSIA Discussion Paper 2000-26, Environment and Natural Resources Program, Kennedy School of Government, Harvard University, Oct 2000.

³¹ Official TACIS project name, sponsored by European Commission: "Technical Assistance to Ukraine and Belarus with respect to their Global Climate Change Commitments" and "Institutional Support to Kyoto Protocol Implementation- Russian Federation"; Beneficiary : Ministry of Economic Development and Trade; Partners: Other Ministries and Agencies of the Russian Federation involved

³² Personal Communication

Existing Russian commodity exchanges could offer its infrastructure to facilitate emissions trading too and to get acquainted with setting up futures or forward emissions trade mechanisms with international entities.

In the paragraph below we will discuss how these elements play their role in various linkage paths.

Table 1. Legal, administrative arrangements needed to facilitate linking through national trading systems.

Task	Comment	Current situation
Emissions Registry	<ul style="list-style-type: none"> - track ownership of ERUs, allowances - has accounts for international companies - facilitate transfer from and to accounts - within Register and with cross-border - tracks Compliance Reserve (90%)³³ 	<ul style="list-style-type: none"> -MEDT issued proposal to build register. - Various European governments are providing assistance to Russian government on development of infrastructure for market-based policies generally, e.g., experience with real property Cadastre: Main Administration of Federation Registration Service (MAFRS). And State Cadastre for <u>Real Estate St.Petersburg</u>; and also for market-based climate policies more particularly, e.g., through TACIS³⁴, UK Defra, and others
Legal status of allowances	<ul style="list-style-type: none"> Should be legalised to enable ownership and transfer of commodity. Need clear rules for establishing and registering title and for tracking transfers. 	<ul style="list-style-type: none"> - Property right: preferable, similar to common rights in Civil legislation. But is mixed with administrative law, issued by State -security: needs legal amendments -license, but not tradable at will of party
Designated national authority (DNA)	<ul style="list-style-type: none"> Authorise State Agency approve projects and issue ERUs, and ensure that issued ERUs are subtracted from national AAU account 	
Authorise legal entities	<ul style="list-style-type: none"> emissions permit 	
Monitor, verify, compliance, penalty system		

³³ To prevent countries from overselling, the Kyoto Protocol's implementing rules require countries to maintain a Commitment Period Reserve. See Decision /CMP.1, Modalities, rules and guidelines for emissions trading under Article 17 of the Kyoto Protocol (2005) (text excerpted in Annex 2 of this paper). Transactions in a linked system must comply with these requirements, and cannot entail transfers that exceed compliance thresholds. In the mean time Parties could enter into forward or futures contracts and transfer the AAUs at a later stage.

³⁴ Official TACIS project name, sponsored by European Commission: "Technical Assistance to Ukraine and Belarus with respect to their Global Climate Change Commitments" and "Institutional Support to Kyoto Protocol Implementation- Russian Federation"; Beneficiary : Ministry of Economic Development and Trade; Partners: Other Ministries and Agencies of the Russian Federation involved

Relation to State Budget	If Monetary Obligations of State apply, than Budget Code prescribes that provision has enter into State Budget	-Guarantee like AAU is non-monetary obligation, not affecting State Budget. - International/bilateral Treaty/Agreement/MoU makes Budget Code not applicable (Fed.Law 101-FZ)
Fiscal situation: VAT	-May tax value added at JI/GIS project: not case with trading. -depends on nature commodity: - Right: Vat/18%, Profit/24% - license: no VAT - security: 18% / 24%	
Fiscal situation: Tax	-First issuance by State: no tax: - - governments and agencies of foreign state do not need pay tax	-Letter Tax and Levies Minister, Jan 9, '03
Customs	- security: \$ 10/stake - to state: no customs	
Foreign currency	- special accounts - 100% reserve assets - State: no arrangements	

Jos Cozijnsen, 2006

4. Linking: General Overview (Jos Cozijnsen)

4.1 Linkage based on Kyoto system

If countries allocate AAUs directly to companies under a domestic cap-and-trade system, it appears to us that special bilateral arrangements are not necessary. If for example the Government of Japan were to sharpen its current Voluntary Emissions Trading System (JVETS)³⁵ and extend it through 2012, issue AAUs to companies with emissions in Japan, and allow the companies to tender other Parties' AAUs for compliance purposes. Then, if the Government of Russia were to do likewise, both could trade. If the ambition level of the Japanese and Russian emissions trading systems were not the same, the differences could either be settled by regulators in one country specifying what must be tendered for compliance purposes, or would otherwise be internalised in the carbon market price. In such a situation the Russian carbon market could be linked with other Kyoto-based markets.

4.1.1 Swap system

Under a swap system the emissions reductions or allowances would remain in the Russian Registry but would be surrendered in that Registry to cover emissions in the EU. Question that would arise:

- what is the legal and fiscal status in Russia of the swap?
- how can Parties ensure no double-counting?
- can the EU Party use the surrendered emissions reductions/allowances for Kyoto compliance?

4.1.2 Futures or forwards

Futures or forward emission trades can be based on various linkage systems, as described below. Forward trades exist already under the ETS. For JI and CDM there are so-called Emission Reductions Purchase Agreements (ERPAs) that have economic value. Other possibilities include:

- Forward Sale at a Fixed Price
- Forward Sale linked to an Index Price (e.g - EUA price) with no floor
- Forward sale linked to EUA price with a floor
- Spot Market Sale from 2009 onwards
- Call Options Contract for future emissions credits. There is the possibility to explore option trading. Since future emission dynamics are highly uncertain, UNFCCC Annex II Parties may consider a call option strategy as an insurance policy.³⁶

³⁵ See "Japan's Voluntary Domestic Emissions Trading Scheme JVETS (Launched in May 2005)", presentation by the Government of Japan, copy on file with the authors.

³⁶ Dan Dudek, Alexander Golub and Dominic Marcellino, The Call Option Alternative, [CARBON FINANCE | Volume 2 - August 2005](#)

Greening AAUs while Managing Cost: The Call Option Alternative.

By buying call options, UNFCCC Annex II Parties could hedge against sharp increases in carbon prices in international (or domestic) markets. Call options thus create a safety net without breaking overall emission caps. In contrast, what some have called a "cost cap" or "safety valve" would control the cost of GHG reduction at the expense of the environment. Under that approach, if the price of traded allowances reaches a specified level, government would simply print more allowances for sale at the capped price – allowing the amount of emissions to rise without limit.

Such an environmentally damaging outcome, however, is not necessary. Russia alone can easily offer from 1 to 2 billion t of CO₂ equivalent from expected surplus. Applying the call option approach to this headroom would then earmark the headroom, excluding it from AAU trading unless the call option were exercised by the end of 2008 -2012. Moreover, the terms of the "call option" can specify the Parties' agreement that proceeds will be directed to projects and activities that reduce emissions further. Under this approach, "green" AAUs backed up by additional reductions described in section 2 would be the only commodity for trading between now and the end of Kyoto commitment period

5. Linking: Three Pathways

5.1 Linking Russia with EU via Joint Implementation (JI)

JI generates Greened AAUs, because AAUs have to be reserved as backup or future ERUs to be issued to (green) CO₂ reducing projects. Some authors view linking through JI as the most promising approach³⁷.

Since the early 2000's the Netherlands tried to persuade Russia to get involved in the ERUPT tender programme for JI-based emissions reductions. For example RAO UES, Russia's largest power and heat company, identified a number of high-quality project proposals, in part as a result of the company-wide emissions inventory that it undertook as noted above. So did the paper company OJSC Archangelsk, lately with upcoming trading house Camco. Arkhangelsk Pulp and Paper Mill (APPM) has initiated a JI project through which it aims to sell one million ERUs to the market in co-operation with Camco International and the Environmental Investment Centre. APPM will install two boilers powered by biofuels at its plant, and aims to construct these by late 2006. Camco International will broker the Credits on behalf of APPM. This work arises directly from earlier steps by APPM to prepare its company-wide emissions inventory; present the inventory for independent expert review; and adopt a voluntary company-wide emissions cap.³⁸ Gazprom has also indicated some interest in hosting JI projects, after a JI pilot with Ruhrgas³⁹ and with 2 Japanese companies⁴⁰.

Proposals remained without success, however, in part because of lack of governmental approvals. This left many project-developers frustrated. In total 20 project proposals were submitted to the Dutch for only 10-30 Mton CO₂, despite much efforts from both the Dutch and Russian sides⁴¹.

Also Denmark is very active in building a JI Programme with Russia, where also the approval was lacking until recently. In 2005 the Russian Carbon Fund was launched as a limited liability company incorporated in Denmark involving itself in Joint Implementation projects in Russia. It offered projects to Government Tenders in the EU, World Bank, The European Bank for Reconstruction and

³⁷ Russia and the Kyoto Protocol, Opportunities and Challenges, Edited by Korpoo c.s., Chatham House, March 2006

³⁸ A. Golub et al., "Breaking Through Barriers In Russia," Environmental Finance, May 2004.

³⁹ Ruhrgas and Gazprom have a memorandum of understanding aimed at optimizing a section of the Russian natural gas system (5Mton), the installation of state-of-the-art energy infrastructure, improvements in energy efficiency, more employment and economic growth effect. Russia and the Kyoto Protocol, Opportunities and Challenges, Edited by Korpoo c.s., Chatham House, March 2006

⁴⁰ Nippon Steel Corporation and Sumitomo Corporation made a partnership in 2004 Gazprom to repair an aging Siberian gas pipeline (5Mton CO₂e). Russia and the Kyoto Protocol, Opportunities and Challenges, Edited by Korpoo c.s., Chatham House, March 2006

⁴¹ www.carboncredits.nl

Development (EBRD), the Nordic Environment Finance Corporation (NEFCO) and other institutional buyers. For example Norway's Statoil agreed to buy around 1 Mton CO₂e emissions reduction from a gas leakage reduction project at Rosgasification's Kurskgaz facility in Russia managed by the Russian Carbon Fund⁴². And also other foreign investors and carbon funds are interested to expand the volume of CO₂-reduction projects in Russia⁴³.



A view of Magnitogorsk Metallurgical Plant Photo: Vasily Shaposhnikov

Currently 30 JI projects are awaiting an approval letter. This is probably why Russia is ranked only 10th on the JI host country ratings made by Pointcarbon/Vertis Finance⁴⁴.

The situation may change rapidly. The Russian approval procedure and the necessary institutions are being prepared. In the UNFCCC framework, the JI Supervisory Committee (JISC) – comparable with the CDM Executive Board - has been installed and has started its work. Russia is to fast-track the legal process that will adopt JI procedures into Russian law. A draft document on the procedure was to have been presented to the office of the Russian prime minister by April 15, 2006. At an interministerial meeting, regarding the JI procedure, the Ministry of Economy was instructed to draft a proposal that will enshrine JI procedure into Russian law⁴⁵.

Joint Implementation will be legally regulated by a special procedure that will *not require it to wait for federal law* and go to the Duma to be implemented.⁴⁶ The proposal will outline the structure for Russia's Designated National Authority and the governmental body responsible for it. At a recent IETA workshop in Moscow, April 4th, 2006, deputy minister of economic development and trade Andrey

⁴² Kommersant, November 7th, 2005: <http://www.kommersant.com/page.asp?id=623928> and <http://www.statoil.com/statoilcom/HMS/svg03068.NSF/UNID/C1256D34004AA5D6C12570B4004C1F4E?OpenDocument>

⁴³ Strategy for the Russian Federation, EBRD, November 2004.

⁴⁴ CDM/JI Monitor, February 21, 2006, www.pointcarbon.com

⁴⁵ Pointcarbon News, April 16th, 2006, www.pointcarbon.com

⁴⁶ WWF Russia's Kokorin to Pointcarbon News,

Sharonov indicated that the procedures will be finalized in July, so that the 30 waiting JI projects can get the official approval.

The draft proposal will not include any provisions for Green Investment Schemes (GIS) or for emissions trading. However, it is to be believed that once the procedure has been established for JI, proposals for both GIS and for emissions trading would follow shortly after and most likely be adopted in the same way as JI procedure. It all depends also on what is feasible for Russia and what attracts international buyers' capital.

So, five years ago we saw EU governments active and companies through tender programmes looking for JI projects with the government on the buying side. Currently also European and Japanese companies are looking for JI projects to comply with their own national emission commitments. And within Russia various Energy Saving Companies (ESCOs) have been preparing projects to be implemented in projects and on facilities. These projects could play a role within JI, GIS as well as domestic trading (further more on the latter two). And some companies have launched carbon funds: RAO started the Energy Carbon Facility (ECF), including Gazprom. And in 2003 another non-commercial partnership, the 'National Carbon Accord' (NCA), was launched with the objective of coordinating the activities of the largest Russian corporations in using the Kyoto mechanisms to attract large-scale investments in joint-implementation projects⁴⁷.

Nevertheless, as mentioned before, the expected value of JI transactions as it appears now is nearly reaching 2% of Russian trading potential. Therefore GIS as well as domestic trading (further more on the latter two) should play significant role to enable Russian reduction potential. Some companies already have launched carbon funds and started preparation to accept and support "green investment" complementing FDI domestic collateral investment in to energy efficiency and other projects that have some economic return that could be coupled with carbon benefits monetarized in the carbon market.

5.1.1. The EU's Linking Directive

One path of linking the Russian carbon market with the EU ETS with companies via JI as main actor, is through the European Linking Directive⁴⁸. This Linking Directive is actually an amendment to the EU Emissions Trading Directive and is specially created for linkage of project based reductions to the EU ETS. It follows mainly the rules of the Kyoto Protocol and the Marrakech Accords. Moreover, it

⁴⁷ See RIIA Briefing Note, March 2004, [The Kyoto Protocol: Russian opportunities](#), Benito Müller, Senior Research Fellow, Oxford Institute for Energy Studies, and Associate Fellow.

⁴⁸ DIRECTIVE 2004/101/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 October 2004, amending Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Community, in respect of the Kyoto Protocol's project mechanisms; See: http://europa.eu.int/comm/environment/climat/emission/pdf/dir_2004_101_en.pdf

requires additional member state approval, before linkage is allowed in an individual case.

The Commission Regulation for a standardised and secured system of registries describes how the approval of JI and CDM projects is being settled⁴⁹. So, not all ERUs and CERs may be used to offset emissions under the EU ETS. For example the Linking Directive doesn't allow the use of forestry based reductions. There is always a risk that countries apply all kind of preferences, maybe political, before they accept the linkage of specific JI or CDM projects with the EU ETS. This is the risk of accepting an extra approval hurdle on top of the approval procedure that is part the JI procedure under Article 6 of the Kyoto Protocol.

Further, EU member states are allowed to apply quantitative limits to the use of ERUs (and CERs) for companies to offset their emissions. The limits have to be submitted in the Second Allocation Plan, due June 2006. The Netherlands is considering a limit of 8%,⁵⁰ Germany mentioned 15%.⁵¹ This means that a company may use ERUs/CERs for compliance up to 8% respectively of the amount of the initially allocated allowances. In Slovakia, the use of CDM and JI credits is even prohibited.⁵² This would stop Slovak companies selling EUAs and purchasing CERs or ERUs at a lower price for compliance purposes⁵³.

There is no experience with this linkage approval procedure, because companies have not used CERs for compliance yet and the linkage has not been tested yet. But it is important to flag this in an early stage because of the political sentiments that always play in this issue. Nevertheless, the Linking Directive acknowledges that the link between the Kyoto project-based mechanisms and the Community scheme, cannot be sufficiently be achieved by the Member States acting individually, and can therefore by reason of the scale and effects of this action be better achieved at Community level (Linking Directive Preamble, 19). The Community may adopt measures to improve Community approach.⁵⁴

⁴⁹ COMMISSION REGULATION (EC) No 2216/2004, of 21 December 2004, see:

http://europa.eu.int/eur-lex/lex/LexUriServ/site/en/oj/2004/l_386/l_38620041229en00010077.pdf

⁵⁰ Sept 14th, 2005, Netherlands Law Proposal for the Implementation of the Linking Directive

⁵¹ April 13th 2006, German Law Proposal for the Implementation of the Linking Directive (<http://www.bmu.de/emissionshandel/downloads/doc/36957.php>)

⁵² Slovakian Law for the Implementation of the Linking Directive, presented by Gabriela Fischerová, Ministry of the Environment of the Slovak Republic, at the 5th IETA Forum on the State of the GHG Market, 19 -21 October 2005, Ritz Hotel, Madrid, Spain, see also *JI Quarterly October 2005, Page 2.*

⁵³ *JI Quarterly, October 2005* (<http://jiq.wiwo.nl/jiq3-05.pdf>)

⁵⁴ It may also be noted that the scope of the Linking Directive is larger than the Kyoto Protocol. In principle it even creates the possibility of linkage to trade systems that operating under absolute emission caps within nations that are not parties to the Kyoto Protocol. With this provision, the EU explicitly reached out to states within the United States and provinces within Australia. The provision was adopted at a time when the Kyoto Protocol hadn't entered into force; it was envisioned that such a provision in the Linking Directive might stimulate broader participation in absolute caps. Also the CoP-9 decisions to safeguard the use of forestry based reductions were not taken at the time of the design of the Linking Directive. The European Commission is preparing an amendment of the Linking Directive to meet these changes.

The Linking Directive provides for the opportunity for an entity covered by EU ETS to swap European allowances for ERUs if the entity would like to undertake a JI project. However, this is highly unlikely to occur since EUAs are more expensive at the moment.

5.1.2. Track I versus Track II JI⁵⁵

Russia has always preferred Track I ERUs, because that would prevent the approval process that involves many countries and entities. After all, both countries involved that will decide on a JI project under Track I have to meet the Kyoto rules and remain eligible all the time. A further advantage of Track I is that it implicitly ensures the approval of the investing country that is called for by the Linking Directive.

Russia is in the process of meeting the eligibility criteria and having the national system needed under Art 5 and 7 of the Protocol⁵⁶. To date, no other Annex I Party has met the Track I eligibility criteria. Eligibility means the ability for a Party to use international emissions trading under Article 17 of the Kyoto Protocol.⁵⁷

To be eligible, among other requirements, a Party must have (FCCC/CP/2001/13/add.2):

1. established a national greenhouse gas registry;
2. its calculated 1990 emissions and the assigned amount;
3. a national system of greenhouse gas emissions and sequestration inventories;
4. submitted the most recent required inventory, National Inventory Report and the Common Reporting Format and
5. submitted supplementary information.

The above to the satisfaction of the Kyoto Protocol's review processes. When the last 3 conditions are lacking, only JI Track II is allowed.

Most Kyoto parties focus to be eligible in 2007, so that the review process can be ready before 2008. The target day for the EU for submitting its report to establish its assigned amount and become eligible to use the mechanisms is 31 December 2006. Once fully eligible, a Party can transfer or acquire AAUs or ERUs or use CERs.

⁵⁵ For a discussion of Track I vs. Track II JI, see generally http://ji.unfccc.int/JI_Projects/Eligibility/index.html; see also C. Jepma, "JI's tricky tracks," Joint Implementation Quarterly, Vol. 11, No. 3, October 2005;

⁵⁶ See Art 5,7,8, in Annex

⁵⁷ A Party is automatically eligible after 16 months of initial report (unless Compliance Committee determines a requirement is not met) The Compliance Committee may decide earlier that it is not proceeding. Initial reports are expected in the 2nd half of 2006. Each Party must continue to meet requirements to maintain eligibility. The Compliance Committee can subsequently suspend a Party's eligibility if that Party fails to maintain the requirements.

What we must realise is that eligibility relates to *ERU issuance, transfer and acquisition*. No eligibility is needed to develop and start running JI projects. So, a lot can already be done in practice. And to support that, entities can enter into contracts trade already (forwards, futures, options).

The requirement of Kyoto eligibility for Track I is mandatory and important. But at several conferences European representatives and analysts give the impression that, on top of this requirement, Track II approval is regarded as a kind of litmus test for Russia to see whether it can really meet the rules of the JI procedure⁵⁸. But in a Track I procedure, the buying and selling side can set the rules bilaterally, and speed up the approval process. Doing so, they can provide a faster and more beneficial ERU route themselves, without spending more time and cost through the extra JISC hurdle.

So, since EU member states generally favour Track I over Track II, we feel the EU should invest in elaborating with Russia bilateral Track I JI arrangements together. And doing so, both parts build trust and flesh-out the provisions and integrity they want. Track I gives Russia and the EU a clearer, faster and more concrete perspective on a flow of ERUs. And, Russia will have to meet the Kyoto eligibility criteria anyhow.

To conclude: when pursuing the linkage of Russia to the EU via Track II, two approval hurdles need to be taken: (1) the JISC approval process, involving the evaluation of projects by an independent organisation and (2) the approval process on the EU side whether to allow specific ERUs to get linked with the EU ETS; hence, the EU country needs to approve the JI project. It goes without saying that Russia has a preference for Track I. Thus, Track II risks delaying the linkage of the Russian carbon market with the EU ETS.

The position of Russia and Russian entities on the carbon will be different than on any other market. Because on the carbon market the best thinkable back-up for risk exists, namely the AAUs that the federal government need to reserve as back-up for any transfer of ERUs. The mere fact that the government owns these AAUs gives the highest certainty imaginable. These AAUs are allocated by the Kyoto Protocol, to be registered and tracked by the International Transaction Log (ITL) and transferred to the Russian Registry. We believe that financial institutions will regard this situation beneficial for the validity of projects and investments.

In the EU ETS this is arranged as follows: in order to transfer ERUs to the investor country, and before any ERUs are transferred, each Party included in

⁵⁸ For example the statement of Dutch Carbon Credits' Zsolt Lengyel, at the IETA workshop April 3rd 2006 in Moscow is illustrative for this situation: "*Lessons learnt, next step: JI Criteria, Guidelines and Procedures up and-running and fulfilling eligibility criteria for JI track II and Emission Trading (AAUs) as quick as possible....and we may return as buyers!*"

Annex I must issue in its national registry a quantity of AAUs equivalent to its assigned amount. Units will be created by converting AAUs or RMUs previously issued and held in the registry. The conversion takes place by adding a project identifier to the serial number and by changing the type indicator.

5.2 Linking Russia with EU ETS via a Green Investment Scheme (GIS)

Beginning with the National Pollution Abatement Facility (NPAF), the Russian Federation has significant experience with earmarked revolving funds to finance improved environmental management, strengthened by bilateral donors including Danish EPA. The NPAF was created to provide loans to enable Russian enterprises to implement environmental friendly investment projects with normal economic return.

Building on the experience of the NPAF, it was suggested in early 2000 that the Russian Federation develop environmental investment facilities and "green funds" for generating, channelling, and monitoring green investment flows, utilizing forward trades and options contracts to generate earmarked revenues to help compensate for the shortage of up-front capital to implement greenhouse gas emissions reduction projects and infrastructure. These proposals were developed specifically to address concerns that in the absence of such frameworks, emissions trading might otherwise simply shift allowances from one account to another with no measurable environmental or economic improvement. The proposals indicated that "to ensure reinvestment of revenues from forward trading, participating nations may wish to create revolving "green funds," using new earmarked funds or existing Environmental Funds that channel a substantial part of environmental protection investments and facilitate environmental protection policy implementation."⁵⁹

The green fund concept was further discussed by the Russian delegation during CoP-6, December 2000. Greening of AAUs is not defined under the Kyoto Protocol. It is not binding, not required. But on the other hand, greening can give some AAUs a premium over other AAUs, as the greened AAUs lead to ultimately a low-emission economy. By July 2002, the concept had been picked up by an international group of experts and elaborated in further publications.⁶⁰

⁵⁹ Management Systems for Financial Flows: The Role of Investment Facilities and Green Funds. Part III of a Report on Building A Market-Based Framework To Spur Capital Investments in Environmental Protection, Infrastructure Modernization, and Technical Innovation and Transfer in the Russian Federation and Newly Independent States, Environmental Defense and the Russian School of Higher Economics, 31 May 2000.

⁶⁰ Russian Energy and Global Climate, Green Investment Strategies for Co-operation on Climate and Energy, Project Convened by Climate Strategies: <http://www.climate-strategies.org/gisfinalreport.pdf>; see also A Russian Green Investment Scheme: Securing Environmental Benefits From International Emissions Trading, Climate Strategies, July 2002.

A GIS can be elaborated various ways, from a carbon fund with allocation by the Russian government to a tender system for allocations.

Linking the Russian carbon market with the EU ETS via some sort of Green Investment Scheme involves on one hand the surplus AAUs, and on the other hand binds Russia to use the revenues to create additional emissions reductions of energy saving. This approach in our view is a compromise between on one hand showing that Russian AAUs are needed for compliance with the Kyoto Protocol, but on the other hand showing that these AAUs can only be used for compliance under the condition that the objective is known in advance, namely in CO₂ projects. The difference with JI is that with JI the money flow goes from financing country/company to project operator/company, while with the GIS there is more governmental involvement or involvement from intermediaries such as an investment facility or multilateral development bank, collecting the revenues and distributing them over projects. Just as in the JI case, AAUs function as back-up for project-based reductions. Ukraine and Bulgaria are considering setting up GIS system. The World Bank is sponsoring research. And the concept generally has been received positively by a number of civil society organizations⁶¹.

First time the idea to use the revenues from AAU sale to provide full support to GHG reduction projects was presented in the Russian National Strategy study completed in 1998 by the Russian Bureau for economic analysis and the World Bank⁶² Later the GIS idea was further developed in the literature, by now there are several variation of GIS. All of them assume bottom up concentration of functional resource and then top-down distribution of financial support.

In this paper we propose the next generation of GIS based on horizontal business to business operation. Green investment facility in this case will just facilitate these horizontal relations braking barriers and reducing transaction costs and will not necessarily accumulate and distribute functional resources. Thus the first GIS generation is to some extent superfluous because an investing country or company can already on a bilateral level agree on the purpose of the money. That can be done in the framework of an MoU or national funds such as the National Pollution Abatement Facility. With creating The Second generation GIS with emphasis on horizontal cooperation the risk is that the attractive part – investment in reductions – is overshadowed by another bureaucracy of identifying, selecting and monitoring projects.

Moreover, the GIS is to some extent superfluous because an investing country or company can already on a bilateral level agree on the purpose of the money. That can be done in the framework of an MoU or national funds such as the National Pollution Abatement Facility. With creating a GIS the risk is that the

⁶¹ The Social Forum on Climate change generally supported the idea to link AAU trading with investment into activities that reduces carbon emission and generate local environmental benefits http://www.ecopolicy.ru/en/?id_rubrika=12.

⁶² Golub at al 1999.

attractive part – investment in reductions – is overshadowed by another bureaucracy of identifying, selecting and monitoring projects.

5.3 Linking Russia with EU via Linked Domestic Emissions Trading Systems; B2B transactions

Domestic trading generates greened AAUs by way of allocating AAUs as emissions budget to companies that are able to sell AAUs after they have invested in CO₂ reducing projects. Emissions Trading's advantage over JI is that Trading does not involve either the additionality discussion or project-by-project approval; thus, its transaction costs are much lower, and emissions trading can more readily enable very broad scale emission reduction investments. The ETS includes in Art 25 of the Emissions Trading Directive⁶³ the provision that the EU agree can with third countries on the mutual recognition of emissions allowances. This provision is voluntary, and there are no conditions mentioned the third country emissions trading system needs to meet. It could therefore be a similar system, but also, in theory a 100% auctioning system.

So, if Russia has a domestic emissions trading system in principle this could explicitly be linked with the EU ETS, by agreeing to recognize each other's emissions allowances, enabling their cross-border transfer and the use of the allowances in both systems.

Setting up a domestic trading system in Russia would require mandatory monitoring and reporting of emissions, the establishment of a legal framework, agreement over which sector should participate and distribution of responsibilities and enabling transfer of allowances⁶⁴.

Important is whether the European Commission will pursue this option and when they will agree on a mutual recognition. It is expected that the EU is not willing to agree on a Russian system that is only made for the linkage, that has no compliance regime and has no track record. The EU feels that Russia should first have some experience with its own trading system, so that it can be reviewed by others too and see that the enforcement is credible, that efforts are real and verifiable.

We expect that the EU has already some preferences to any domestic emissions trading system it may be linked to; so there are also preferences to a Russian domestic emissions trading system, namely:

- It should be mandatory; otherwise only sellers with 'easy' targets will be involved;

⁶³ Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003, See: <http://europa.eu.int/eur-lex/lex/LexUriServ/LexUriServ.do?uri=CELEX:32003L0087:EN:HTML>

⁶⁴ See Annex I of this paper; see also Russia And the Kyoto Protocol, Korppoo, Karas and Grubb, March 2006, page 51.

- it should entail an absolute cap. The EU has a general preference for environmentally integer ET systems as we can analogously read in the Preamble (18) of the Linking Directive. Though this is not said in Art. 25 of the ETS Directive on the Linking with Third Party ET systems, which gives no preliminary conditions. Moreover, the provision of the absolute cap was written to attract Non Kyoto Parties, such the US, to link domestic ET systems. So, in principle, the design of the third party ETS is free.
- We further expect that the EU will want to see that no Russian company under a domestic trading system will receive more allowances than it needs, in order to make the system more ambitious than business as usual and that only 'greened AAUs' are traded.
- The 'objects of trade' should be comparable: under the EU ETS governments have to set aside in their Registry the needed AAUS for the allocation of allowances to the companies. See box below with the procedure.

COMMISSION REGULATION (EC) No 2216/2004 of 21 December 2004 for a standardised and secured system of registries pursuant to Directive 2003/87/EC of the European Parliament and of the Council and Decision No 280/2004/EC of the European Parliament and of the Council

Article 45

Issue of allowances

After the national allocation plan table has been entered into the Community independent transaction log and, subject to Article 44(2), by 28 February of the first year of the 2008-2012 period and by 28 February of the first year of each subsequent five-year period, the registry administrator shall issue the total quantity of allowances set out in the national allocation plan table into the Party holding account by converting an equal quantity of AAUs held in that holding account into allowances.

This conversion shall take place through adding the allowance element to the unique unit identification code of each such AAU, comprising the elements set out in Annex VI.

The issue of allowances for the 2008-2012 period and each subsequent five-year period shall take place in accordance with the allowance issue (2008-2012 onwards) process set out in Annex IX.

You could say that even a BAU cap would be acceptable because cross-border sales will only happen as long as companies invest in reductions to get below the cap.

Last year three options for domestic emissions trading have been discussed in Russia amongst the MEDT and stakeholders⁶⁵:

- 1) a system led by private sector, self regulated, with limited government involvement,

⁶⁵ In the framework of the Technical Assistance of DEPA to MEDT, February 2005

- 2) benchmark and credits scheme and
- 3) government enforced system with Allocation Plans and absolute caps.

Each option helps releasing Russia’s carbon revenue potential, but has different strengths and weaknesses. They are listed in the table below:

System → Aspect: ↓	1) private sector-led self-regulating, minimal gov. involvement; voluntary targets	2) Government enforced, with voluntary benchmark and credits trade, ex-post verification (JI, tender, baseline/credits trade)	3) Government enforced absolute cap
Simple implementation	+++	+	-
Carbon Market access	-	+	++
Holding industry accountable for emissions	-	+	+

Table 2, Strengths and weaknesses of discussed domestic emissions trading options, Jos Cozijnsen, 2006

The national emissions trading, proposed 2 years ago by the National Carbon Union⁶⁶, with voluntary commitments and relative (intensity) targets, would not meet the EU conditions. But also for the Russian side it is beneficial when Russian companies invest in energy savings, pollution control and emission reductions. Because eventually Russian companies have to compete at the global market, making efficiency and cost savings crucial is also good for business.

The EU fears that the Russian government will allocate inflated budgets – in exchange for profit tax – that the companies can then sell at the carbon market. But more and more also Russian company organisations, such as the National Carbon Sequestration Union and the National Carbon Union, are accepting that entering the carbon market requires ambitious involvement in a national system.

For any domestic emissions trading system an effective system of verification and monitoring of emissions is crucial. Without strong and transparent verification

⁶⁶ See: <http://www.natcarbon.ru/en/analytical/system>

and monitoring capabilities, an emission trading or reduction program will lack international credibility⁶⁷.

Of course Russia doesn't need a cap-and-trade itself system to meet the Kyoto target; but that might be the situation in future commitment periods. And having than a system up and running makes it easier to meet future targets. Some argue that Russian companies would resist caps, because this could be a precursor to tighter caps after 2012 and suggest to start with 2 companies, RAO and Gazprom. But such a system would not meet EU's claims. All in all, some form of limited industry-specific emissions trading system could be possible as from 2008⁶⁸.

Emissions trading at the company level? The B2B Model

Looking toward the development of a Russia DET that would interface with the European Emissions Trading Scheme (EU-ETS) via the Kyoto Protocol's carbon market, one *innovative approach* that could facilitate linkage while assuring governments that total national emissions are remaining within Kyoto targets would be a "**business to business (B2B)**" approach. The B2B approach could provide a first step on a path to full AAU trading, opening the door more broadly to investment in economically sensible emission reduction projects, with far lower transaction costs, than conventional JI. Under the B2B approach:

- a Russian business that wished to participate in linked emissions trading could apply to the Russian government for an allocation of RDEAs.
- To obtain an allocation of RDEAs, the business would need to provide the government with:
 - A third-party-verified inventory of the business's total GHG emissions from all its installations in the Russian Federation; and
 - A proposed cap on the business's total GHG emissions. The cap would need to be set at a reasonably ambitious level, such that its achievement would represent a real reduction below business-as-usual.
- Upon receipt of the business's inventory and proposed cap, and after opportunity for public review and comment, the government would enter into an enforceable agreement, which might be enshrined in a Public Act or ordinance, in which the business agreed to limit its emissions to capped levels, and the government would allocate to the business RDEAs up to the level of the cap. The allocated RDEAs would be vintaged and identified in Russia's national registry.
- The business would then offer investment opportunities, to domestic or

⁶⁷ See Annex I of this paper; See also Entering Russia's Power Sector, Challenges in Creating a Credible Carbon Trading System, Lee, c.s., Environment and Natural Resources Program, Belfer Center for Science and International Affairs, John F. Kennedy School of Government, Harvard University, June 2001

⁶⁸ Russia And the Kyoto Protocol, Korppoo, Karas and Grubb, March 2006, page 51

foreign investors, in any project that reduces the business's emissions below its capped level.

- If the business is successful in reducing emissions below its capped level, some of its RDEAs would, in effect, be rendered surplus.
- The business would be authorized by the government to apply to the government for an allocation of Russian AAUs in exchange for its surplus RDEAs, on a tonne-for-tonne basis. The surplus RDEAs would be cancelled from the system, and the AAUs would be available for trade.
- If the emission reduction had been achieved via foreign investment, the business could repay the investment in part with AAUs, which the foreign investor could then use for compliance in another Kyoto Party, or sell on the international market.
- At the time the AAUs were transacted, corresponding entries would need to be made in Russia's national registry under the Kyoto Protocol and the Marrakesh Accords.
- If a business in another Kyoto Annex I Party tendered the AAUs for compliance with that nation's national emissions trading program, that government would enter the AAUs in its national registry under the procedures established by Kyoto and the Marrakesh Accords.

Advantages of the B2B approach. The B2B approach would allow AAU-based emissions trading to begin on a step-wide basis in Russia. By broadening the scope of activity to an entire firm or company, the B2B approach offers a much wider ambit than project-by-project approaches for mobilizing capital to achieve large-scale emission reductions quickly. As firms in Russia increasingly look to international markets, the B2B approach offers Russian firms a chance to demonstrate the ability to meet international standards for emissions inventories and transaction transparency. Because the B2B approach operates at the level

⁶⁹ See "Management Systems for Financial Flows: The Role of Investment Facilities and Green Funds, Part III of a Report on Building A Market-Based Framework To Spur Capital investments in Environmental Protection, Infrastructure Modernization, and Technical Innovation and Transfer in the Russian Federation and Newly Independent States

⁷⁰ cite to K.Tangen et al...." A GIS may finance a range of activities, from capacity building in respect of developing appropriate statistical collection and reporting methods to large-scale emission reduction projects. A GIS can include projects which are quantifiable – for which emission reductions can be estimated – or non-quantifiable. Two approaches can be adopted for GIS projects: a programme approach where a number of smaller projects are bundled together; and a project approach, where each project is treated individually. A programme approach would give priority to small and simple projects for which emission reductions are easy to monitor and verify such as: energy efficiency, fuel switching, renewable energy, and improvement of gas and heat networks. A project approach would favour large (perhaps very large) projects which may be more complex to organise requiring longer time horizons."

⁷¹ Dudek D., Golub A., Petsonk A., Safonov G., and Saparov M. 2002. Emission Inventory on Company Level: Lessons from Russia. Mitigation and Adaptation Strategies for Global Change 7, pp. 155-172.

⁷² Emissions Inventory on Company Level, Lessons from Russia, Dudek, Petsonk, Safonov, Saparov, in Mitigation and Adaptation Strategies for Global Change, 7, July 2002, Kluwer Academic Publishers.

of the entire firm, it offers a more efficient model than project-by-project JI, while at the same time achieving comparable certainty on the "greening" of AAUs.

The B2B approach builds on concepts of "Green Funds"⁶⁹ and "Green Investment Schemes" (GIS)⁷⁰ that have been described to date. The basic concept is to use AAUs to finance emission reduction projects. The B2B approach broadens this concept to achieve greater flexibility and lower transaction costs. Moreover, with the requisite careful tracking of RDEAs and their conversion to AAUs, the B2B approach could be readily integrated into a national cap-and-trade programme at some future date.

RAO United Energy Systems (UES): B2B in practice? Russia's largest CO₂ emitter (RAO United Energy Systems, which emits about 30% of Russia's overall CO₂ emissions – an amount roughly comparable to the total fossil fuel emissions of Canada or the UK⁷¹) already is counting the carbon component of its operations and is considering opportunities to participate in the carbon market. It has expressed frequently its desire to participate in organizing a national CO₂ trading regime. It has made many preparations, it has participated in feasibility studies to ascertain the costs of emissions reduction. It has, as first Russian company completed a CO₂ emissions audit of its plants, which has been independently reviewed by Environmental Defense against the Revised 1996 IPCC Guidelines⁷². And it has launched an own Carbon Fund, an internal department charged with coordinating and realizing CO₂ emissions abatement projects. And lastly, it has joined the Global Greenhouse Gas Register launched by the World Economic Forum at COP-9 in Milan.

Though setting up a robust system is beyond the control of outsiders, what seems crucial is that Russian and EU officials and experts work together in fleshing out what trade system would be best for Russia, EU and climate policy and would meet each others demands. This effort can be compared with the information exchange between the EU and Norway, geared at future linkage of the ET systems. And, moreover, since 2004, EU and Russian experts meet each other twice a year to improve cooperation at technical level in the area of climate change investments.

6. Conclusions and Next Steps

EU trading system does not preclude direct AAU transactions. Just recently the Netherlands purchased 10 MT of AAU surpluses from Romania. Russia could trade AAUs on bilateral basis even now. The remaining question is size of transaction. Unlikely that governments will be in a position to buy hundreds million of AAUs since such transactions will put unbearable burden on countries budgets. Most likely liberalization of business to business trade will be acceptable solution. Implementation mechanism in Russia may create a "green

filter” for AAUs transacted between businesses. Initial allocation of RDEA according to the principles described in previous section along with domestic trading would create precondition for business to business type of transaction. The exchange rules RDEA - AAU agreed between EU and Russia will provide assurance of environmental benefits.

For each Russian company that receives RDEA allocation there would be an option to invest in carbon reduction then track and register emission reduction accrued and finally exchange the RDEA balance for AAU in order to sell these AAUs at the international carbon market.

The general idea is to establish cap on CO₂ emission for the major sources – potentially on a B2B basis -- while applying policy and measures for the rest of economy. According to the analysis presented in the part 1 Russia has sufficient AAU budget to accommodate expected economic growth. According to various studies expected headroom should be in the neighborhood of 2 billion t of CO₂ however additional incentives created by participation in the international carbon market could double this potential. For these stationary sources, a designated Russian agency could issue RDEAs. The total number of RDEAs could be 5 billion tonnes of CO₂, covering emissions from major stationary sources. About the same amount should be reserved for emission sources that are not under the cap. Each allowance should have serial number and vintage.

The government will need to establish rules for allocation (see Annex, Minimum Elements). In making the allocations, the government may wish to consider expected emissions growth, structural changes in sectors, voluntary early action by companies, and other factors. Recognizing that any initial distribution is necessarily imperfect, most advanced emission cap systems are complemented by emission trading (the US sulphur dioxide (SO₂) acid rain trading program and the EU ETS are examples of such advanced systems). Trading is a tool to minimize the overall compliance costs. In contrast to trading for some conventional pollutants, GHG emissions trading is free of any “hot spots” problem, as GHGs mix uniformly in the atmosphere.

Strategies to reduce the risk of so-called "carbon bankruptcy" include the Commitment Period Reserve (90%) for Parties. In emerging markets where clear legal infrastructure for enforcing private contracts is not yet well developed, governments might seek to deploy further risk reduction instruments. These could include (a) private insurance; (b) carbon balance verification prior to completion of any international transactions in which RDEAs are converted to AAUs; and (c) either of the preceding, combined with government assurance/government guarantee that Commitment Period Reserve requirements will be observed.

Under the carbon balance verification approach, any international transaction (e.g. B2B) that entails converting RDEAs to AAUs would be considered as

"pending" until the firm presented a positive carbon balance. Forwards and options would be allowed, but actual conversions of RDEAs to AAUs would require a showing that the firm's commitment period emissions to date minus the sale amount plus its purchases to date are less than or equal to the total allowances held by it. Although such a rule would increase transaction costs, it would help create an insurance policy against "carbon bankruptcy".

Next Steps:

- Preparation on monitoring and inventory system is key for Kyoto Mechanisms eligibility and making use of Track I JI;
- Fastest track for Russia is linkage to the EU ETS through a Russia domestic trading system. This requires domestic political will, European involvement and European political will. The eligibility criteria will be met through the Kyoto process anyway.
- To make this link effective it is not needed to follow first Track II and Track I. Slowest track is via Track II and Track I, requiring incentives for Russian companies to stay involved.
- Create legal RDEAs that can be owned and transferred cross-border by international private entities, and that can be exchanged for AAUs. Listing of these allowances on an account of an entity means that the entity is the owner of the commodity, Once issued the commodity can not be withdrawn or cancelled, other than when it is surrendered for compliance.
- Upfront capital flow, with AAUs as collateral, can give the financial input needed for economic development.
- and parallel on developing a mutually recognised domestic emissions trading system.

Annex 1 – EU law (excerpts)

DIRECTIVE 2003/87/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC

Article 25. Links with other greenhouse gas emissions trading schemes.

1. Agreements should be concluded with third countries listed in Annex B to the Kyoto Protocol which have ratified the Protocol to provide for the mutual recognition of allowances between the Community scheme and other greenhouse gas emissions trading schemes in accordance with the rules set out in Article 300 of the Treaty.

2. Where an agreement referred to in paragraph 1 has been concluded, the Commission shall draw up any necessary provisions relating to the mutual recognition of allowances under that agreement in accordance with the procedure referred to in Article 23(2).

COMMISSION REGULATION (EC) No 2216/2004 of 21 December 2004 for a standardised and secured system of registries pursuant to Directive 2003/87/EC of the European Parliament and of the Council and Decision No 280/2004/EC of the European Parliament and of the Council (Excerpts)

Article 45. Issue of allowances.

After the national allocation plan table has been entered into the Community independent transaction log and, subject to Article 44(2), by 28 February of the first year of the 2008-2012 period and by 28 February of the first year of each subsequent five-year period, the registry administrator shall issue the total quantity of allowances set out in the national allocation plan table into the Party holding account by **converting an equal quantity of AAUs held in that holding account into allowances.**

This conversion shall take place through adding the allowance element to the unique unit identification code of each such AAU, comprising the elements set out in Annex VI.

The issue of allowances for the 2008-2012 period and each subsequent five-year period shall take place in accordance with the allowance issue (2008-2012 onwards) process set out in Annex IX.

Annex 2 The Kyoto Protocol on Climate Change and its implementing rules (excerpts)

Kyoto Protocol Article 3.11

Any ERUs ... which a Party transfers to another Party in accordance with the provisions of Art 6 or of Art 17 shall be subtracted from the assigned amount of the transferring Party.

Kyoto Protocol Article 5

1. Each Party included in Annex I shall have in place, no later than one year prior to the start of the first commitment period, a national system for the estimation of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol. (..)

2. Methodologies for estimating anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol shall be those accepted by the Intergovernmental Panel on Climate Change and agreed upon by the Conference of the Parties at its third session. (..)

Kyoto Protocol Article 7

1. Each Party included in Annex I shall incorporate in its annual inventory of anthropogenic emissions by sources and removals by sinks of greenhouse gases not controlled by the Montreal Protocol, submitted in accordance with the relevant decisions of the Conference of the Parties, the necessary supplementary information for the purposes of ensuring compliance with Article 3, to be determined in accordance with paragraph 4 below.

2. Each Party included in Annex I shall incorporate in its national communication, submitted under Article 12 of the Convention, the supplementary information necessary to demonstrate compliance with its commitments under this Protocol, to be determined in accordance with paragraph 4 below.

3. Each Party included in Annex I shall submit the information required under paragraph 1 above annually, beginning with the first inventory due under the Convention for the first year of the commitment period after this Protocol has entered into force for that Party. Each such Party shall submit the information required under paragraph 2 above as part of the first national communication due under the Convention after this Protocol has entered into force for it and after the adoption of guidelines as provided for in paragraph 4 below. The frequency of subsequent submission of information required under this Article shall be determined by the (..)

Kyoto Protocol Article 8

1. The information submitted under Article 7 by each Party included in Annex I shall be reviewed by expert review teams pursuant to the relevant decisions of the Conference of the Parties and in accordance with guidelines adopted for this

purpose by the Conference of the Parties serving as the meeting of the Parties to this Protocol under paragraph 4 below. The information submitted under Article 7, paragraph 1, by each Party included in Annex I shall be reviewed as part of the annual compilation and accounting of emissions inventories and assigned amounts. Additionally, the information submitted under Article 7, paragraph 2, by each Party included in Annex I shall be reviewed as part of the review of communications. (..)

3. The review process shall provide a thorough and comprehensive technical assessment of all aspects of the implementation by a Party of this Protocol. The expert review teams shall prepare a report to the Conference of the Parties serving as the meeting of the Parties to this Protocol, assessing the implementation of the commitments of the Party and identifying any potential problems in, and factors influencing, the fulfilment of commitments. (..).

Decision -/CMP.1, Modalities, rules and guidelines for emissions trading under Article 17 of the Kyoto Protocol

...6. Each Party included in Annex I shall maintain, in its national registry, a commitment period reserve which should not drop below 90 per cent of the Party's assigned amount calculated pursuant to Article 3, paragraphs 7 and 8, of the Kyoto Protocol, or 100 per cent of five times its most recently reviewed inventory, whichever is lowest.

7. The commitment period reserve shall consist of holdings of ERUs, CERs, AAUs and/or RMUs for the relevant commitment period which have not been cancelled in accordance with decision -/CMP.1 (Modalities for the accounting of assigned amounts).

8. Upon establishment of its assigned amount pursuant to Article 3, paragraphs 7 and 8, and until expiration of the additional period for fulfilling commitments, a Party shall not make a transfer which would result in these holdings being below the required level of the commitment period reserve.

9. If calculations under paragraph 6 above, or cancellations of ERUs, CERs, AAUs and/or RMUs, raise the required level of the commitment period reserve above the Party's holdings of ERUs, CERs, AAUs and/or RMUs valid for the relevant commitment period, which have not been cancelled, the Party shall be notified by the secretariat and, within 30 days of this notification, shall bring its holdings to the required level.

10. Any provisions relating to the commitment period reserve or other limitations to transfers under Article 17 shall not apply to transfers by a Party of ERUs issued into its national registry which were verified in accordance with the verification procedure under the Article 6 Supervisory Committee.

Annex 3

Minimum Elements for Domestic Emissions Trading in Russia

(Annie Petsonk)

The objective of these minimum elements are:

- To make a system that is
 - Environmentally effective and
 - Economically effective;
- To make a linkable system.⁷³

The minimum policy elements necessary for domestic emissions trading (DET) in Russia are the same as those in any nation:

- a. a legal obligation that specifies a *limitation of total emissions* of the pollutants of concern - that is, *an absolute cap on emissions*, portions of which are then *devolved* to domestic regions or sectors; and issuance of *Russian Domestic Emissions Allowances (RDEAs)*;
- b. *a mechanism for initial distribution* of RDEAs to emitters, including, in a *mixed system of JI and emissions trading*, a mechanism for allocating RDEAs to emitters; a mechanism for allocating RDEAs to projects such that, if the projects reduce emissions, the surplus RDEAs can be traded as ERUs; and a mechanism for ensuring that there is no double counting;
- c. *measurement* of emissions; reporting and tracking, through a registry, of calculations of emissions and transactions;
- d. *exchangeability*, including clear legal definitions of tradable units, a legal framework that recognizes emissions allowance savings and trading as valid means of complying with the emissions cap, with clear definition of the legal and fiscal implications of emissions trades;
- e. *accountability*: a system for holding emitters accountable for actual emissions in relation to allowable amounts of emissions;
- f. *consistency* in the rules framework and program administration; and
- g. *transparency* in reporting, tracking, and institutions.

a. *Cap on total emissions*. For Russia, the cap on total emissions is effectively created by Russia's ratification of the Kyoto Protocol. To implement DET, this cap needs to be devolved to emitters and/or projects at the national level; decisions need to be made about the duration of the cap; and decisions need to be made about the level of the cap that is allocated (devolved).

⁷³ See generally Report on Building A Market-Based Framework To Spur Capital Investments in Environmental Protection, Infrastructure Modernization, and Technical Innovation and Transfer in the Russian Federation and Newly Independent States, Environmental Defense and the Russian School of Higher Economics, 31 May 2000, from which much of this chapter is derived.

(i) *Devolution.* There are several options for devolving or allocating the cap to emitters for purposes of establishing DET. A cap could be applied to the total GHG emissions of all large installations in the country. Alternatively, a cap could be applied to the total GHG emissions of certain sectors or regions or projects. In each case, the next step would be to issue Russian Domestic Emissions Allowances (RDEAs) for emissions under the cap; require emitters to limit emissions to capped levels; require emitters to hold one RDEA for each tonne of GHG they emit; and allocate the allowances to regions or to companies.

(A) *Geographic caps.* Russia's national cap could be devolved geographically. For example, oblasts or municipalities could adopt caps on emissions so that emitters within their boundaries could participate in DET.

(B) *Industry sectors or companies.* Alternatively, caps could be placed on the emissions of a particular industry sector, or on the emissions of particular companies. The caps for the companies could be mandated by the federal government, as is the case in the U.S. sulfur dioxide emissions trading program, which caps the SO₂ emissions of all large thermal electric power stations in the United States. Or, companies could voluntarily cap emissions, as many multinationals (e.g., BP, Shell, DuPont, GE) have done, some even before participating in mandatory systems.

(ii) *Duration of the cap.* Many emission reduction projects typically have multi-year investment and capital stock time horizons. Given the growing awareness world-wide that carbon constraints will need to extend for decades,⁷⁴ a Russia DET that establishes *multi-year* emission caps – including caps that extend beyond 2012 – could provide industries, project developers, and investors with greater certainty, and thereby encourage more durable investment in new technologies and processes that boost productivity while cutting emissions. Creating a DET system that sets out, from the beginning, how allowances will be allocated, would send investors important signals of stability and predictability (see "allocation" and "consistency," below).

(iii) *Setting the level of the cap.* For Russia, whether the cap is applied to oblasts or companies, there are several possibilities for setting the level of the cap. The cap could be set at a level based on historical emissions. The cap could be set at a reasonable projection of future emissions. Or the cap could be set at 1990 levels. To maintain credibility in the context of linking Russia DET to

⁷⁴ See, e.g., Executive Order of the Governor of California E.O. S-3-05, signed by Governor Arnold Schwarzenegger 1 June 2005, directing "That the following greenhouse gas emission reduction targets are hereby established for California: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels."

international carbon markets, however, it would be preferable to establish caps either

- at levels that will require some significant effort to return emissions to the capped levels; or
- at levels that provide some room for emissions growth, provided that the "surplus" allowances are used to finance lower-emitting economic growth (green path).

(iv) Caps and sales. Forward sales and options contracts represent important risk management or hedging strategies for companies subject to, or potentially subject to, GHG emissions regulation.⁷⁵ While a cap does not already have to be in place before forward sales and option contracts can begin,⁷⁶ it is nonetheless the case that clarity on the framework for devolution of caps is crucial for the development of significant forwards and options sales.

b. Initial distribution. Whether RDEAs are devolved to regions, to sectors, to industries, or some combination, they must be some system for distributing them at the beginning of the program, before the trading market begins to operate. There are several possibilities, and each has advantages and disadvantages.

- **Auction.** Under the auction approach, emitters would be required to purchase RDEAs sufficient to cover each tonne of GHG they emit. Auctions can raise revenue for governments. But the auction approach may be disfavored by emitters to the extent that an auction effectively forces emitters to pay twice – once for the RDEAs they are required to hold, and a second time for the technologies and processes needed to reduce emissions to allowable levels. Moreover, because the auction approach effectively converts DET into a tax, it reduces the incentives for innovators to develop new low-emitting technologies and processes, and therefore diminishes the innovation power of DET.⁷⁷
- **Allocation on the basis of historical or projected emissions.** Under this approach, government would allocate RDEAs to emitters (e.g., oblasts, industry sectors, individual companies) based on their historical (or projected) emissions, without requiring emitters to pay for the allowances at the initial stage. One advantage is that emitters are not required to "pay twice." However, under this approach, there will be some dampening of innovation,

⁷⁵ See, e.g., D. Dudek et al, "The Call Option Alternative," Carbon Finance, August 2005.

⁷⁶ For example, in 1998, a Canadian energy company, Suncor, purchased 100,000 tons of voluntary greenhouse gas emissions reductions from Niagara Mohawk, a U.S. electric utility, and Suncor took an option to purchase an additional 10 million tons of reductions from Niagara Mohawk. Niagara Mohawk achieved the reductions through fuel switching (coal to gas), demand side management, and other measures.

⁷⁷ D. Dudek and W.R.Z. Willey, "An Overview of Taxes and Trading as Environmental Control Policies", in *Social Costs of Energy: Present Status and Future Trends*, O. Hohmeyer and R.L. Ottinger (eds.), Springer-Verlag, pp. 334-50, 1994

since some innovators who do not themselves emit GHG – e.g., developers of energy efficiency and energy saving programs, and developers of renewable and carbon-neutral energy – would never receive RDEAs, and may have difficulty "harvesting" the RDEAs rendered surplus by the energy efficiency and energy saving programs they institute.

- Allocation based on electricity generation performance or other performance standard. Under this approach, government would allocate RDEAs to industries regardless whether they emit GHG, and base the allocation on the industries' productivity. For example, electricity generators would be issued RDEAs based on the amount of electricity they generate, regardless whether they generate electricity by burning fossil fuels that emit GHG, by using renewable energy (wind, solar, biomass), or using nuclear power. Under this approach, low-carbon energy forms are favored; however, using this approach for initial distribution emitters hands a large windfall of valuable allowances to industries that don't need the RDEAs, and forces the fossil-fuel-burning industries to purchase the allowances from their competitors.
- Mixed approach. A mixed approach to initial distribution draws on each of the preceding. That is, initially, a large portion of the RDEAs are issued to GHG emitters at no cost. A smaller portion of the RDEAs are auctioned. And a portion of the RDEAs are reserved to be allocated to project-based reductions. Over time, government can shift the proportions of the allocations in order to provide further incentives for emission reduction, energy saving, and technology innovation. For example, under the second EU National Allocation Plan (NAP-2) some countries will auction up to 10% of the EUAs. Additional rules for mixed systems, however, will be needed (see below).

Regardless which approach to allocation is selected, from a legal point of view what is most important is that the allocation system be stable, durable, transparent, and fairly applied to all sectors and entities covered by the cap. If the legal system does not meet these requirements, then its legitimacy may be questioned by those subject to the cap, with the result that they may become reluctant to participate in the emissions trading market, including in investments to reduce emissions. Consequently, the legal, regulatory or policy framework should specify the allocation of RDEAs, or establish a transparent and fair process that will effectuate the allocation.

Additional rules for mixed systems: If the government wishes to encourage projects, including in uncapped sectors, that reduce emissions below specified "project baseline" levels, a legal framework must be established to ensure that:

- a. RDEAs sufficient to cover each project's baseline emissions will be allocated to qualifying projects;

- b. Project emissions are carefully monitored to determine whether the project actually reduced emissions, and whether the emission reductions simply resulted in "leakage" (increase in emissions) elsewhere;
- c. Actual emission reductions achieved by projects are recognized as rendering "surplus" some portion of the RDEAs allocated to the project;
- d. The surplus RDEAs are tradable;
- e. Trades in the surplus RDEAs result in corresponding registry transactions, with sales of project-based RDEAs being subtracted from registry accounts and purchases of the project-based RDEAs being added to the registry accounts;
- f. The system is transparent, fair, and broadly accessible, so that project proponents can readily apply for baseline allocations of RDEAs, and so that government regulators, other projects, and emitting sectors can be aware of how rapidly the remaining available RDEAs are being allocated.

c. Measurement. The total GHG emissions of each participant in DET, as well as national GHG emissions, must be quantified within a reasonable margin of error, using agreed measurement techniques, and with mandatory consequences - including attribution of unreported emissions - for program participants that fail to measure and report. Accurate measurements of emissions (actual or estimates) are needed not only to ensure the environmental integrity of the system, but also to ensure its fairness, public and investor acceptance, consistency, and transparency. Emissions measurement techniques therefore need to be reliable, valid, transparent, and publicly understood. Where calculations, rather than direct measurement, are utilized, the basis for the calculations must be clear and verifiable.

Measurement is essential to the credibility of DET because Russia's overall Kyoto commitment is defined in terms of total allowable emissions, and it is from compliance with Russia's overall Kyoto commitment that Russia's AAUs have value in the international marketplace. From the perspective of DET, measurement ensures credibility in the domestic market, so that one region or company that has worked hard to reduce emissions below its cap can realize the benefit of that reduction by trading it in the domestic market, and the value of its "currency" is not diluted by shoddy reporting on the part of another region or company.

Measurement is also crucial to credibility in the context of linking. Regulators in the EU will want to be assured that any increment of Russia's national cap (AAU or ERU) that is tendered to them in satisfaction of either a Member State's obligations under Kyoto or a company's obligations under the EU-ETS, represents a real emission reduction in the context of a known national quantity of emissions.

Stated differently, decision makers must have an accurate accounting of actual as well as allowable emissions in order to determine what quantity of

allowable emissions can be exchanged while maintaining the integrity of the total emissions cap. The challenge for Russia DET more broadly will be to achieve reasonably comparable measurement, using internationally accepted default parameters where direct measurement is not possible, for the balance of Russia's economy and all regions/sectors/companies participating in DET. Here again, initial experience with companies⁷⁸ is positive, but should be expanded. In addition, decisions will need to be made about the relative roles of the government and independent third-party monitoring and verification companies, an approach more commonly used in the European Union.⁷⁹

Russia already has positive experience with broad international acceptance of the emissions inventory for the roughly 30% of its national emissions that are associated with the electricity company RAO-UESR. The company prepared its inventory based on the IPCC Good Practice Guidance, adapting it to company level. The inventory was submitted for independent expert review. The independent expert review was published and presented at the 2001 continuation of the Sixth Conference of the Parties to the UNFCCC, and found a very high quality of the inventory, while recommending that the inventory be expanded to address the facility-by-facility level. See Dudek, Petsonk, Safonov, and Saparov, "Emissions Inventory on Company Level: Lessons from Russia," in *Mitigation and Adaptation Strategies for Global Change*, 7 July 2002, Kluwer Academic Publishers.

An essential aspect of measurement is real-time reporting and tracking, through a registry, of emissions and transactions. An institutional development which is important for market development, reporting and compliance is the development of accounting systems for tracking allowances and emissions. These systems serve several functions:

- Recording actual emissions. An emissions tracking system is essential to provide accurate, timely information about total emissions of each participating unit or entity.
- Identifying allowances held in allowance accounts by participants. Each participant will be required to ensure that its actual emissions do not exceed the allowances it holds in its account.

⁷⁸ Golub, Dudek, Katarski, Strukova, Yulkin, "Emissions Trading: Breaking Through Barriers in Russia," *Environmental Finance*, May 2004.

⁷⁹ For more detail on different approaches to monitoring, reporting and verification in the context of EU and US emissions trading markets, see J. Kruger and C. Egenhofer, "Confidence through compliance in emissions trading markets," *Sustainable Development Law & Policy* Volume VI, Issue 2 (Winter 2006).

- Recording transactions in emissions allowances. Since participants are permitted to engage in transactions in allowances, and since the measure of compliance is whether actual emissions in any given time period exceed allowable levels, it will be important to maintain careful records not only of allowance account balances, but also of all transactions into and out of allowance accounts.
- Recording the use of emissions allowances for compliance. Emissions allowances used for compliance must be canceled and placed in a cancellation account to ensure that no emissions allowances are used more than once to offset actual emissions.
- Ensuring that all transactions can be tracked - that no “double-sales” or “double-purchases” occur.
- Registering and legally acknowledging individuals and organizations engaged in emissions trading activities. These may include individuals and organizations that hold allowances, emit pollution, reduce pollution, and serve as market intermediaries.

Tracking systems that fulfill these functions can significantly reduce transaction costs and increase accountability, building the integrity of the market and thereby encouraging market activity.

Ledger-books. With these goals in mind, recording rules should establish two separate but coordinated “ledger-books,” one for emissions from the sources, the other for recording the total allowable emissions amounts and all transactions in emissions allowances. One way of accomplishing this is to establish “accounts” for emissions and for allowances. All emitters would be required to have emissions accounts and allowance accounts. All buyers and sellers of allowances would be required to have allowance accounts, regardless whether any particular buyer or seller actually emits. A third ledger-book may be used to reconcile or balance emissions and allowance accounts.

Recording of Transactions. Under this approach, every emitter must hold in its account allowances sufficient to cover its emissions. When an emitter or other entity buys allowances, the transacted amount should be added to that entity’s allowance account. Transacted amounts should be subtracted from sellers’ allowance accounts. Allowances tendered to government regulators for compliance purposes, that is, in satisfaction of the obligation to cover or offset emissions from sources, need to be treated as transfers out of the emitter’s allowance account. That is, tendered allowances no longer remain in the allowance account of the emitter, but are “used” or canceled to offset emissions from sources.

Reconciliation. The ledger-books then need to be reconciled or compared on a regular basis, at a minimum, annually, and perhaps more often, to ensure that emissions from sources do not exceed allowance account balances following transfers.

Serialization of allowances; use of central tracking system. An important tool for maintaining the integrity of allowance accounts is to identify each allowance by a unique serial number that indicates the origin of the allowance. Serialization can also help facilitate the use of a real-time tracking system, in order to ensure that the accounting system registers all transactions includes recordation of the serial number, the date and time of transfer, and the entities involved in the transaction. So, for example, in the case of allowance trading among entities, each allowance in an entity's allowance account would be serialized (identified by a unique serial number). Whenever the entity transfers an allowance to another entity, information identifying the serial number of the allowance, the date and time of the transfer, and the transferor and transferee would be recorded in a centralized tracking system or registry. The same approach would be used for tenders for compliance purposes.⁸⁰

Nomination of Competent Authority(ies). Governments, and, correspondingly, entities, will need to identify competent, accountable authorities to fulfill the institutional functions described here. For example, entities will need to identify persons with the technical and legal competence to be responsible for completing emissions reports, undertaking allowance transactions, and maintaining allowance account balances sufficient to ensure compliance. Government regulators will need to identify clear responsibilities for comparable activities at governmental levels.

→ Legal Issue: Authority to Require Measurement and Reporting. A regulatory entity, usually governmental (or, in the case of a voluntary program within an enterprise, an authority of the enterprise), will need to have legal authority to require emitters to measure their emissions, file reports on their emissions, and make those reports available to regulators and the public. The law or regulation that requires such reporting should specify the processes for measuring emissions. The regulator may require that direct emissions monitors be placed on smokestacks or tailpipes. Or the regulator may specify that emissions may be calculated based on, for example, fuel burned, type and composition of fuel, duration and location of burn, and technology of burn. In any event, the requirement to measure and report is a key building block, since it forms the foundation for all compliance assessment, and therefore for the

⁸⁰ While the date of issuance or initial allocation of the allowance would already be communicated by the serial number, and so inclusion of the date of transfer would be repetitive for the first transfer, the possibility that allowances might be transferred more than once necessitates the inclusion of the date of transfer for all transfers subsequent to the first one, in order to avoid double transfers of the same emissions allowance.

assessment of what constitutes "surplus" (i.e., transactable) emissions allowances/credits.

→ Legal Issue: Authority to Track Allowances and Transactions. A legal entity, which may be the same as the entity responsible for requiring measurement of emissions, but which alternatively could be another governmental entity, or even a private entity contractually obligated to provide this service for the government, would need to have authority to require allowance holders to track and report their allowance holdings and transactions, including identification of the entities from whom allowances were received, and to whom allowances are transferred. In an emissions cap-and-trade system, it is not necessary for authorities to require advance approval of emissions allowance transactions, provided that emissions measurement and reporting, and allowance tracking and reporting, systems are working well. For trading associated with project-based approaches, however, a regulatory authority will need to approve the creation and issuance of credits on a case-by-case basis.

d. Exchangeability is the ability to transact units increments of the domestic cap. If an emissions trading program develops large paperwork requirements, time lags, or uncertainties due to discretionary authority, participation will be needlessly discouraged. Individuals investing in activities that reduce emissions below capped levels almost certainly will wish to be assured that they will be able to sell the resulting "surplus" reductions and recoup their investments. Buyers of emission allowances will want to know that they will be able to use the purchased allowances to meet their compliance obligations. Anything that unnecessarily diminishes the fungibility of emission allowances will reduce the level of entrepreneurial search for emissions reduction opportunities among both buyers and sellers, impeding both the economic and the environmental effectiveness of the program.

e. Accountability requires that participants be held accountable for their total emissions in relation to their assigned emission limits. The program must be enforceable. Accountability builds upon the measurement and quantification of emissions, both for the base year and the compliance year, adding another element of environmental and financial assurance that reductions are in fact legitimate. In keeping with their mandates, implementing environmental authorities must focus on developing a framework that emphasizes ease of oversight backed up by accountability for emissions in excess of the cap, and serious penalties for fraud.⁸¹

f. Consistency is the key to creating incentives for innovation. The most important long-range result of any economic incentive program is to tap the creative energies of many differently situated buyers and sellers, enticing them to engage in an unending search for ever better ways to reduce emissions at lower and lower cost. Rather than relying on a few government engineers to determine

⁸¹ See also Kruger & Egenhofer.

what each polluter should do, technical experts everywhere are invited to test their ideas in the marketplace. These creative responses will not be elicited in the absence of fixed rules of the game and a reasonable expectation that opportunities for pollution reduction can be turned into financial rewards. Government administrators must be willing to set the overall policy framework, guarantee the fairness and legitimacy of the "game," and then, within reason, stand back and let it work. This does not mean that the rules can never be adjusted or that rewards should not change in response to fundamental changes in the underlying scientific or economic data. Rather, it means that the possibilities for any such changes should be spelled out in the initial ground rules and the ground rules should be adhered to when changes are made.

g. Transparency is the obligation to inform the public about the DET program's environmental objectives, rules, and actual performance. Earning and maintaining public support at home and abroad for a Russian DET program will be crucial to the program's success. Moreover, transparency is crucial to attracting new investment, including FDI, into a Russian DET program. In a competitive global market for emission reductions, investors will search for quality. If the nature of the cap, the measurement and reporting, the operational mechanisms for achieving the cap, and the accountability and compliance are not clear for everyone to see, private investors may be unwilling to commit funds, industries may refuse to cooperate, environmental advocates may object, and the public may quickly grow skeptical and hostile to the program.

h. Mixed system that includes both allowance trading and trading of project-based reductions. As noted above, DET in Russia might entail applying emission caps to certain regions, sectors, or companies, while at the same time allowing emission reduction projects in uncapped sectors to earn emission reduction units. To ensure the credibility and tradability of the project-based reductions, each emission reduction project's total baseline emissions must be independently verified, and the project must obtain an allocation of emissions allowances – allocated to it from the total pool of allowances under the national cap - to cover its baseline emissions. If an independent review determines that the project has reduced emissions below the amount allocated to it, then those emissions reductions effectively render some of the project's baseline allowances surplus and therefore transactable. Fortunately, the Kyoto Protocol already provides a template upon which DET rules for this devolution could be based. The Protocol requires that any ERUs that a Party acquires from another Party through JI shall be subtracted from the AAUs of the transferring Party and added to the AAUs for the acquiring Party.⁸² To ensure proper accounting for project-based reductions in a DET in Russia, it is crucial that the DET adopt analogous rules.

Additional rules may also be needed. For example, it will be necessary to decide whether the project must demonstrate that it actually "earned" its

⁸² Kyoto Protocol Articles 3.10 and 3.11

emissions reductions, or whether it may trade emissions reductions earned through other means (e.g., changes in weather, economic activity, etc.). Also it will be necessary to decide the duration of a project's baseline determination. It must be determined whether any leakage occurred, and if it did, the surplus allowances associated with the project must be reduced accordingly.

The fundamental challenge of linkage under the Kyoto Protocol is to enable emission reductions achieved in one KP Party's DET system to be transferred and tendered to government authorities for compliance purposes in another Party's system, with full accounting for the transfer in the context of each Party's emission limitation obligations under Kyoto. To achieve linkage, national authorities in each nation must be assured that "a tonne is a tonne is a tonne" – that is, that a one-tonne GHG emission reduction achieved in one nation is fully substitutable for a GHG emission reduction in another nation, and there has been no double-counting. The essential rules needed to allow effective and efficient linkage between two Parties' domestic emissions trading systems, with corresponding accounting at the international level, under Kyoto, are straightforward. The rules consist of:

- the minimum elements needed for DET in each nation;
- a decision by regulatory authorities in the transferring nation to convert domestic emission allowances to national AAUs on a tonne-for-tonne basis, and to allow those AAUs to be transferred to emitters or other entities in another nation;
- recognition by regulatory authorities in the receiving nation that Party-approved AAU transfers can be used by emitters in that nation to meet domestic emissions limits in that nation's emissions trading system;
- coordinated registries at the interface between the national and international systems in order to ensure smooth operation between the national domestic emissions trading systems and the Kyoto registries;
- publication and regular updating of domestic emissions allowance account balances and national AAU account balances so as to give markets confidence that both domestic and Kyoto obligations are being met; and
- national legislation requiring reporting to national authorities of international AAU transfers, whether by enterprises or others. Governments may wish to require advance notification of AAU transfers, so that governments can examine, in advance, the implications for national account balances; or governments may issue authorizations to entities participating in DET, authorizing them to trade AAUs. In either case, governments may need to establish "currency conversion" procedures, allowing entities trading in DET currencies to convert their domestic emission allowances to AAUs.

Annex 4: What Governments Should Refrain From Doing

(Annie Petsonk)

In their design of international and national market-based environmental policy systems, governments should refrain from introducing arbitrarily discriminatory and cumbersome requirements that reduce economic and environmental effectiveness. Consequently, governments should avoid enacting laws and regulations that:

- arbitrarily or unnecessarily discriminate against particular types of emissions allowance/credit transactions.
- arbitrarily or unnecessarily discriminate against transactions based on the way in which the emissions reductions were generated, or based on the nation or enterprise conducting the activity in question - a practice that could be in contravention of the UNFCCC.⁸³

While it is unlikely that market-based environmental policy frameworks are subject to the rules of international trade, avoiding such unnecessary laws and regulations can prevent needless friction with the international trade system.

Moreover, governments should avoid rules and regulations that unnecessarily increase transaction costs. Rules that require participants to provide information that is not strictly relevant to the operation of the system, or that limit the operation of the system without providing measurable environmental or economic benefit, would fall into the category of cost-increasing rules that should be avoided.

Finally, governments should avoid unnecessary, unannounced, and arbitrary rule changes. Investment in emissions reductions, like other serious infrastructure investment, requires sustained capital and effort over time. Such investment will not occur if the investment environment is unpredictable. Government can do its part to provide predictability by resisting temptations to change the rules.

⁸³ See Article 3.5 of the UNFCCC, which provides, "Measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade."