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The Kyoto Protocol: Russian Opportunities

By

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Key points

- **There are significant emissions savings to be made in the Russian economy.**
- **These are inevitable by-products of (energy) efficiency improvements, many of which are themselves a pre-requisite for the Russian economic growth targets.**
- **The project-based Joint Implementation mechanism is the most promising of the Kyoto Protocol opportunities to obtain the foreign direct investment required for these efficiency improvements.**
- **It is possible to activate such JI-type investments prior to the beginning of the first commitment period, 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, but only once the Kyoto Protocol has come into force (thus creating the AAUs which would be used as early JI collateral).**

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Abstract

Much, possibly too much, of the most recent debate on Russian ratification of the Kyoto Protocol has centred around the issue whether the Kyoto emission limit would hinder Russian economic growth, particularly in the context of the ambitious decadal Russian growth targets. The aim of this paper is to return the focus of the debate to the opportunities which the Kyoto Protocol could afford the Russian economy and which would be lost if Russia fails to grasp them by bringing the treaty into force in the very near future.

In a first part, macro-economic data published in a World Bank National Clean Development Mechanisms/Joint Implementation (CDM/JI) Strategy Study is used to estimate the value of the Russian CO₂ mitigation potential under the Kyoto mechanisms for different carbon prices. The second part addresses the question how this potential could most effectively be used for the Russian economy. It is argued that because of the leverage on foreign direct investment, the best use is through Joint Implementation projects. For maximum benefit to the Russian economy, these projects should start as soon as possible. This could, for example, be done under a linkage to the EU Emission Trading Scheme which uses Russian Assigned Amount Units (AAUs) as the ‘currency’ for such early reductions (prior to 2008). However, such opportunities will only materialise after an entry into force of the Kyoto Protocol.

The Kyoto Protocol: Hindrance or Opportunity?

One of the worries recently raised in some Russian circles is that Russia’s Kyoto emission limit, roughly a return to 1990 emission level, may be a hindrance to achieving the stated Russian goal of doubling GDP over the next decade. Indeed, a doubling of GDP under the present correlation of carbon emissions with economic output, as measured by the economy’s aggregate emission intensity, would lead to significantly more CO₂ emissions than allowed for under the Kyoto target (Figure 1.a: ①). Yet most experts agree that under the present inefficiencies, reflected, amongst other things, in the disproportionately large size of the current intensity¹ (Figure 1.b), this economic aim is practically unattainable.²

Indeed, based on considerations regarding the energy consumption necessary to surpass the Kyoto limit, Dudek *et al.* (2004)³ conclude that such a ‘sharp increase in CO₂ emissions in Russia would either interfere with economic growth, or [be] simply technically impossible.’ In the absence of a consensus about the expected rate of economic growth in the Russian Federation over the next decade, the authors carry out a probabilistic analysis over a large range of growth scenarios which leads them to conclude that it is virtually impossible (‘probability zero’) for Russia to exceed its Kyoto target.

Yet if Russia were to improve its economic efficiency to reduce its intensity to current Chinese or American intensity levels, then a doubling of GDP, at whatever time scale,

¹ 1.48kgCO₂/\$ in 1999.

² According to Axel Michaelowa ‘the worst that can happen would be a return to the 1990 emissions intensity [around \$1.2/kgCO₂]. The 1999 intensity would not be sustainable in the current economy with full capacity utilization and even less in a doubled economy as new plants will automatically be more efficient.’[private communication, 11 Feb. 2004]

³ D. Dudek, A. Golub and E. Strukova, ‘Economics of the Kyoto Protocol for Russia: The Mystery of Russian Ratification,’ Draft 2004.

would lead to an 8 percent *reduction* from present emission levels (Figure 1.a: ②), while under

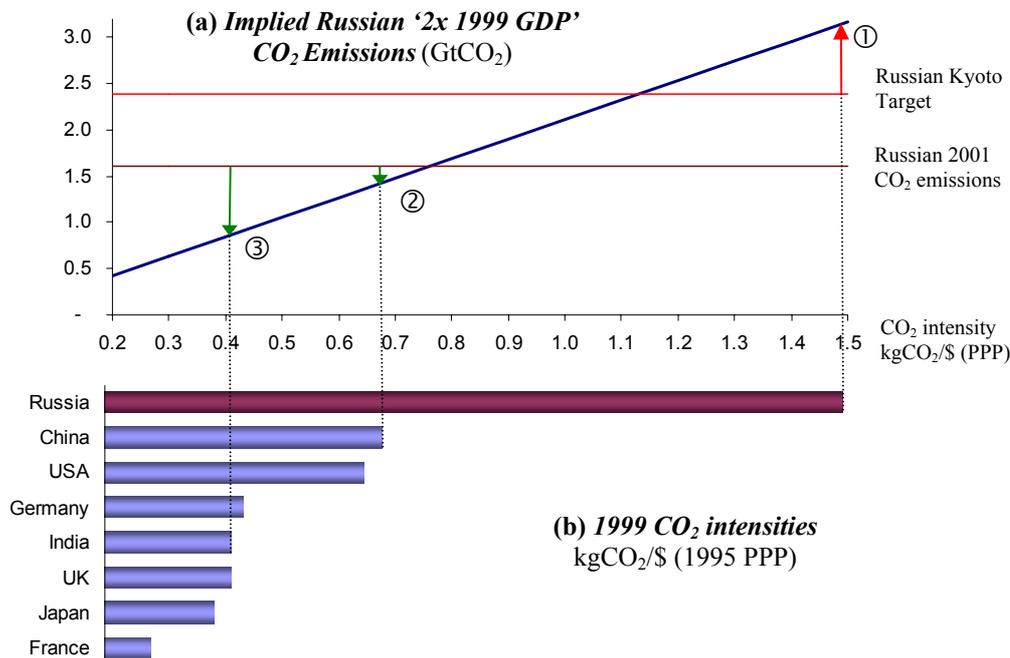


Figure 1: Russian 'Double GDP' Scenario Emissions and Selected Current CO₂ Intensities

Sources: IEA, *CO₂ Emissions from Fossil Fuel Combustion* (intensities);
 EIA <http://www.eia.doe.gov/emeu/iea/tableh1.html> (emissions)

Indian/European intensity levels, the Russian economy could double its GDP while *halving* (③) its *current* emissions! While conscious of the problems with such extremely aggregated comparisons,⁴ they do suggest there is, apart from a need, a potential for energy efficiency improvements with the concomitant CO₂ mitigation potential.

As is often the case, something appearing as a potential hindrance may really be an opportunity, and the aim of this paper is not so much to look at the former than to focus on the latter: the potential of the Kyoto Protocol to provide opportunities for the Russian people and their economy. However, to be more precise, it is necessary to look at the Russian economy in much more detail than what can be done on the basis of these aggregate intensities alone.

A study⁵ by the Moscow-based Bureau for Economic Analysis undertaken with the support of the Finnish and Swiss Governments under the World Bank National Strategy Studies (NSS) Program and presented to the Russian Inter Agency Steering Committee for the NSS project⁶ considers in some detail the Russian carbon dioxide emission projections and mitigation potentials. The authors use a macroeconomic input-output model to assess the potential for

⁴ For more on the problems with emission intensities, see Benito Müller and Georg Müller-Fürstenberger, 'Price-related Sensitivities of Greenhouse Gas Intensity Targets', *Climate Policy* 3 Special Issue 2 (2003):S59-S74.

⁵ Alexander Golub, Alexander Avertchenkov, Vladimir Berdin, Alexey Kokorin, Marina Martynova, Elena Strukova, *Study on Russian National Strategy of Greenhouse Gas Emissions Reduction*, Moscow: Bureau of Economic Analysis, State Committee of RF on Environmental Protection, World Bank NSS Program, 1999; <http://lnweb18.worldbank.org/ESSD/envext.nsf/46ByDocName/NationalStrategyStudiesProgramCompletedNationalStrategyStudiesNSS>.

⁶ Environmental Protection Committee, Hidromet, Ministry of Economy and Ministry of Energy.

carbon dioxide mitigation in the Russian Federation. Three scenarios are modelled: a ‘No New Technology’ (NNT) scenario, a ‘New Technology’ (NT) scenario, and a ‘New Technology and Emission Trading’ (NTET) scenario. All three scenarios are based on an assumed 4.5 percent annual GDP per capita growth for the 2000-12 time horizon of the model.

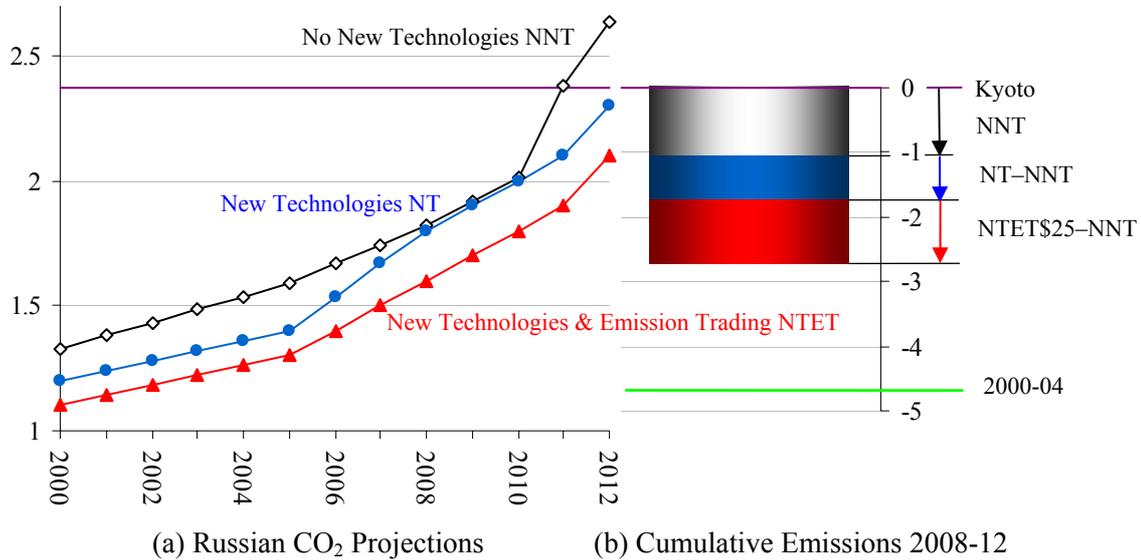


Figure 2: Projection of the National Strategy Study (GtCO₂)

No New Technologies (NNT)

In this ‘basic’ or ‘inertial’ scenario there is no replacement of old equipment by new technologies and equipment, and no modernization of enterprises. This scenario is the result of a continuously unstable economic situation. Subsidies are maintained at the 1997 level and basic regulatory tools remain simply the pollution charges of 1997. While delivering a hypothetical base-line, it is important to emphasise that the ‘inertial’-type of growth considered here may actually not be sustainable outside the confines of the model, at least not at the envisaged level and duration.⁷

New Technologies (NT)

The same as the NNT-scenario, except for assuming an improving economic situation and growth in the business sector. The economy experiences step-by-step increases in expenses for fuel, modernization, and new technologies. “Old” capacities are depreciating with two sources of depreciation: regular ageing, and lack of competitiveness due to trade liberalization. Fixed investments are directed to the sectors where available capacities are insufficient to produce goods in quantities required to meet expected demand. The model assumes that all new investments produce “new” efficient capacities, thus simulating “best management” practices.

New Technologies and Emission Trading (at price x) NTETx.

⁷ For one it may simply not be physically possible any more to acquire additional production facilities of the old vintage needed to sustain this growth rate. Some “best management” practices (see NT-scenario) can be unavoidable, they can be forced upon one, whether one wishes to engage in them or not.

This scenario, or rather scenario family, is the same as the *NT*-scenario, except for the introduction of a carbon price (\$/tCO₂). The range of carbon prices covered in the NSS study (\$2.5 to \$25/tCO₂) covers the present price expectations of the EU Emission Trading Scheme which currently has an allowance price – for 2007 delivery – of €14/tCO₂e (\$17.40).⁸

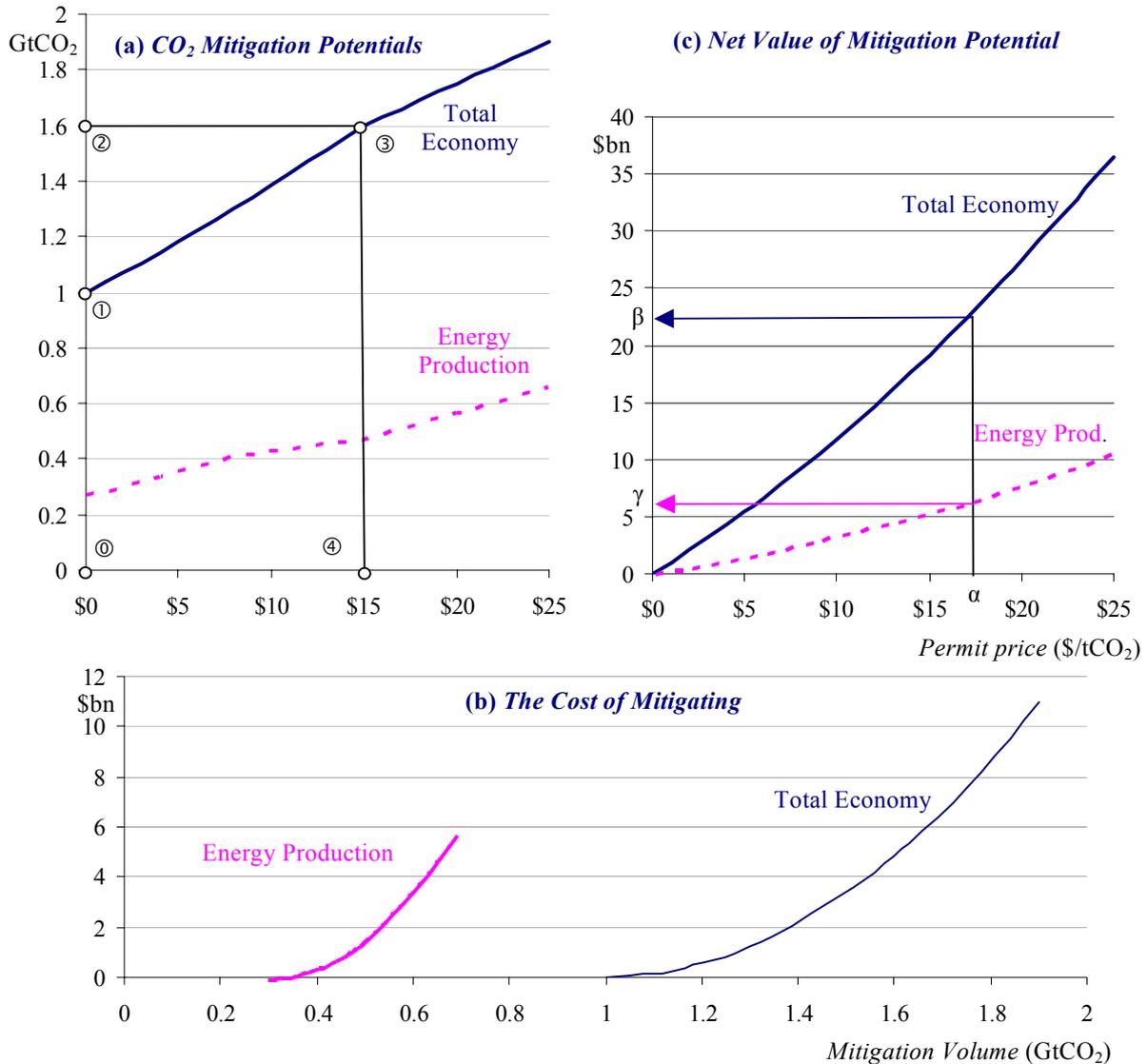


Figure 3: The Carbon Value of the Russian Mitigation Potential

As illustrated in Fig. 2, even the (hypothetical) worst-case ‘inertial’ NNT-scenario with no technological change stays significantly, namely 1.1Gt (or 9.2%), below the Russian assigned amount of 11.9GtCO₂. The (necessary) technology reforms carried out in the NT scenario deliver a further 0.7Gt (5.6%) of surplus permits, with the use of the Kyoto mechanisms, such as Joint Implementation, projected under the NTET\$25 scenario to generate a further 1Gt of CO₂ credits in the course of the first commitment period (2008–12). This ‘Kyoto mitigation potential’ is obviously a function of the assumed international permit price (the higher the

⁸ However, not all experts agree with this expectation. Axel Michaelowa, for example, believes that ‘prices above 3 Euro are highly unlikely. Current negotiations of national allocation plans tend towards a lax allocation. Moreover, there is more CDM potential at very low prices than most observers have acknowledged so far.’ [*ibid.*]

price, the larger the potential), and it is not expected to be evenly distributed among the different sectors of the Russian economy.

The input-output model used by Golub *et al.* treats GDP growth exogenously, which means it is unable to directly reflect the impact of engaging in the Kyoto mechanisms on GDP growth. But their data, graphically represented in Fig.2a, can be used to at least estimate the net value (i.e. nominal value minus mitigation cost⁹) of the mitigation credits that can be economically generated given a specified permit price. At the EU ETS permit prices presently expected by the market for the beginning of the first commitment period, namely €14/tCO₂ (i.e. at α in Fig. 3c), the total net value of the Russian economy's mitigation potential for the first commitment period would be around \$22.4bn (β), with \$6.6bn (γ) falling into the energy production sector, or \$4.5bn annually (equivalent to just over one percent of Russia's 2003 GDP¹⁰), even in the absence of any sales of surplus emission allocations (AAUs).¹¹

However, one has to be careful not to misjudge the economic effect of these potential Russian national carbon assets on the basis of such simple comparisons with GDP figures. Properly used and given the right conditions¹², these assets could be a catalyst for foreign direct investment (FDI) on a much larger scale than their monetary value alone. Indeed, given the rule of thumb that each 'carbon dollar' would attract on average about four FDI dollars, it is clear that the effect of engaging in the Kyoto mechanisms on the Russian economy and its growth may be considerably larger than the estimate of the Russian carbon assets might suggest.

Jointly Implemented Early Green Investment linked to the EU Trading Scheme

a) Kyoto as an opportunity for the Russian business sector

The view that the Kyoto Protocol affords considerable opportunities for the Russian business sector, re-iterated in a recent *Japan Times* Editorial¹³, has been around for some time and is by no means confined to non-Russian experts and commentators. Even though the Russian business sector was relatively slow in discovering the Kyoto Protocol as a business opportunity,¹⁴ but this has changed markedly in the last couple of years.

⁹ The cost of reducing 2008–12 CO₂ emissions economy-wide from the No-New-Technology baseline by, say, 1.6Gt can be graphically represented by the area (①②③) to the left of the permit-price/volume graph in Fig. 3a, leading to the cost curves in Fig. 3b, and the net value –given a permit price of \$15/tCO₂ – by the area (①③④) below the curve, leading to the net-value curves of Fig. 3c.

¹⁰ \$418bn, market exchange rate GDP. Source: The IMF 2003 World Economic Outlook Database.

¹¹ As pointed out by William Blyth (personal communication 20 Feb. 2004), it is actually unlikely that a permit price of €14/tCO₂ could be maintained if the 1.1GtCO₂ of surplus allowances (Fig. 2) estimated in the Golub *et al.* (1999) were all to be sold.

¹² As pointed out by Justin Mundy in a private communication, the mere existence of such a potential does not necessarily mean that it will be realized, particularly if the enabling conditions in the Russian market place are not sufficient to assure cost recovery.

¹³ 'Russia's failure to participate in Kyoto could cost it investment from countries and companies committed to the treaty. The Kyoto Protocol calls for "joint implementation projects"; Moscow's withdrawal jeopardizes participation in such deals. That could influence thinking in business circles eager to modernize their companies. [...] The prospect of large-scale Japanese investment in Russia offers this country an opportunity to influence Russian thinking.' [*The Japan Times*, 'Russian reality test for Kyoto' Friday, December 12, 2003, www.japantimes.co.jp/cgi-bin/geted.pl5?ed20031212a1.htm]

¹⁴ For reasons explained in S.V. Vasiliev and G.V. Safanov, 'The Kyoto Protocol and Russian Business' *Towards a Sustainable Russia* No.25, 2003.

The Chief Executive Officer of the Moscow-based *Energy Carbon Facility* (ECF)¹⁵, for example, recently referred to the Kyoto Protocol as a ‘mechanism for facilitating energy savings in Russia’ and indicated that *United Energy Systems of Russia* (UES) and *Gazprom* (two of the largest energy firms in Russia) see Russian ratification as ‘a necessary step in implementation of market reforms and sustainable development¹⁶.’ Indeed, as reported in *The Moscow Times*,¹⁷ UES, representing about half of the installed electricity generation capacity in Russia¹⁸, has now joined the *Global Greenhouse Gas Register* launched by the World Economic Forum at COP9 in Milan.¹⁹

The Energy Carbon Facility is not the only network created for the Russian business sector to benefit from opportunities afforded by the Kyoto Protocol. On 23 July 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 projects.²⁰ Thus Vasiliev and Safanov, speaking on behalf of the NCA in an article on ‘The Kyoto Protocol and Russian Business’, unequivocally state that:

‘In the present day [Russian] business community, the leading role in the Kyoto process belongs to financiers and experts on attracting investment and business management who are aware of the fact that the Kyoto Protocol’s coming into effect has significant positive consequences for Russian business. [...] The process of technical and technological retooling of industrial branches and raising of production energy efficiency, which is now gaining strength, receives an additional impetus. The reduction in power consumption and the resulting cut in GHG emissions make possible attraction of additional investment for implementing these projects and programs in exchange of transfer of these cuts to the investor. All this reduces payback periods of projects and makes them still more attractive from an economical point of view. [...] [The members of the Carbon Accord] are convinced that the Kyoto Protocol will help Russia meet the challenge set by President Putin, double GDP by 2010, through taking real measures on modernization of production facilities and raising production efficiency.’²¹

In short, the major players in the Russian business sector are clearly aware of the business opportunities of the Kyoto Protocol and they have started to take proactive steps to ensure that these opportunities will be materialised, once the Protocol in force.

b) Joint Implementation as tool to attract foreign direct investment

Most of the past debate has been focussed on how to maximise the Kyoto benefits for Russia in the context of a significant amount of expected surplus emission allowances (‘hot air’) through measures such as supply cartelisations (‘hot air cartels’) and ‘Green Investment Schemes’ (GIS).²²

¹⁵ ECF was founded by RAO UES. Its current members include Gazprom and Yukos.

¹⁶ http://www.ieta.org/About_IETA/IETA_Activities/AnnualConference_2002/Martynova3.pdf

¹⁷ ‘UES Emissions Pledge’ 23 Jan. 2004; Page 6. www.themoscowtimes.com/stories/2004/01/23/061.html.

¹⁸ <http://www.rao-ees.ru/en/>

¹⁹ www.weforum.org/site/homepublic.nsf/Content/World+Economic+Forum+Creates+Global+Greenhouse+Gas+Register

²⁰ See Vasiliev and Safanov (2003):44.

²¹ Vasiliev and Safanov (2003):45.

²² See, for example, Kristian Tangen *et al.*, *A Russian Green Investment Scheme: Securing environmental benefits from international emissions trading*, Climate Strategies, 2002. www.climate-strategies.org/gisfinalreport.pdf; or

The notion of a GIS i.e. the earmarking of (surplus) allowance trading revenues for environment related purposes, was formally introduced by the Russian Federation at COP6 in December 2000. For sceptics who do not believe that surplus allowances will be available, an *ex ante* sale of ‘Assigned Amount Units’ (AAUs), with its implicit lowering of the country’s target, might not be particularly attractive, although it must not be forgotten that under suitable ‘green’ investment the revenues of such sales could generate more emission reductions than the AAUs sold, and do so at a benefit to the economy.

However, the Kyoto Protocol contains provisions with opportunities for the Russian economy far greater than any sales of AAUs, namely the project-based mechanism of Joint Implementation. The point is that benefits accruing to the Russian economy from the sales of AAUs will be determined by the revenue from these sales, while JI projects will very often involve foreign direct investments significantly larger than the value of the ‘Emission Reduction Units’ (ERUs) created by the projects.²³ Moreover, unlike (*ex ante*) sales of AAUs, transfers of ERUs would generally not increase the risk of non-compliance with Russia’s Kyoto target.

In short, given the above-mentioned needs of the Russian economy, particularly for foreign direct investment, JI has arguably always been more important than the trade in AAUs, a fact heightened by the demand-side problems of surplus permit trading,²⁴ and mirrored in the focus of the past debate concerning the implications of the Kyoto Protocol on Russia’s national interests.²⁵ Even today, JI is seen by many, particularly in the business sector, as the most promising feature of the Kyoto Protocol. This is reflected in the portfolio of the members of the National Carbon Accord who ‘have a package of offers from European countries, Japan and Canada who are prepared to make large-scale investments in projects on technical re-equipment and reconstruction of production facilities that would be registered as “pilot” joint implementation projects.’²⁶ The official interest in JI was reaffirmed at COP9 in a request by the Russian delegation which led to the confirmation by the Executive Secretary that preparatory work will be undertaken by the United Nations Framework Convention on Climate Change (UNFCCC) Secretariat this year to facilitate the implementation of JI projects.

The potential for JI activities between Russia and Japan – such as the recent proposals between Nippon Steel, Sumimoto and Gazprom²⁷ and between Toyota Tsusho Corp. and Russia’s

William Blyth and Richard Baron, *Green Investment Schemes: Options and Issues*, OECD and IEA, COM/ENV/EPOC/IEA/SLT(2003)9, 2003.

²³ The value of the ERUs generated by a JI project will generally not cover the investment costs for the project. The ERUs are most likely only one of the factors in the investment decision, although given the competitive nature of international market places, they may well be crucial in the decision to invest.

²⁴ In many OECD countries – including the US

²⁵ Indeed, the arguments concerning the need for a supply cartelisation in the face of a glut of surplus AAUs were not just about trade revenue maximisation, but also about supporting the international price of emission permits in order to avoid squeezing JI projects out of the market.

²⁶ Vasiliev and Safanov (2003):45.

²⁷ JAPANESE FIRMS CONSIDER JI INVESTMENT IN GAZPROM PIPELINES

02.02.04 (Itar-Tass) Nippon Steel Company and the Sumitomo Commercial Investments Corporation are considering the possibility of investing more than 283 million US dollars in the job of repairing Gazprom pipelines in Russia, cutting greenhouse gas emissions by up to 5 MtCO₂e annually. [...] The two companies are looking to invest in repair work under the Joint Implementation (JI) mechanism of the Kyoto Protocol, but are unable to do so until Russia has ratified the protocol.

<http://www.pointcarbon.com/article.php?articleID=3169&categoryID=147>

Energy Carbon Facility (UES)²⁸, has been discussed in an earlier RIIA Briefing Paper.²⁹ This, and the existence of the EU Emission Trading Scheme (EU-ETS), are the reasons why the present study focuses on JI with the European countries.

c) Options for ‘Early Joint Implementation’

The main problem with JI as a means of supporting Russian economic growth is its timely use, particularly in light of the ambitious Russian growth target. To achieve it, the Russian economy has to undergo tremendous structural change in a short period of time, implying that no time can be lost in attacking this challenging transformation if the target is to be achieved. Yet, while there is some room for debate³⁰, the Marrakech Accords seem to preclude ‘early’ JI i.e. the crediting of project-based emission reductions prior to 2008, the beginning of the Kyoto commitment period, in contrast to early (CDM) crediting in developing countries, which is permitted. This has indeed been one of the contentious aspects of the Protocol for Russia.³¹

One idea which has been put forward to enable Russia (and other economies in transition) to attract the desirable early JI-type project investment was endorsed by the World Bank’s Prototype Carbon Fund (PCF) as early as June 2000. In its *Implementation Note No. 8*,³² the PCF takes the view that

‘emission reductions generated prior to 2008 in a JI project can therefore be “guaranteed” by allocations of equivalent quantities of assigned amounts units by the project host country. As these ERs [emissions reductions] are verified, in accordance with the verification procedure, they can be transferred between the registries of the host and the acquiring party as AAUs once the Parties involved are eligible to do so. While these transfers will count against the assigned amount of the host for accounting purposes, they are actually verified emissions reductions. This has therefore had the effect of using up an addition portion of the host’s assigned amount headroom [or “hot air”] for the commitment period but at the same time reducing actual emission in that country in an independently verified way. Provided all relevant Parties meet eligibility requirements, the PCF will be able to utilize this method to receive emission reduction generated and verified prior to 2008. Indeed, this is the approach which has already been incorporated into the first Emission Reduction Purchase Agreement. The Marrakech accords appear to confirm that this is a legitimate and prudent approach.’

²⁸ ‘Toyota Tsusho seeks Russian carbon credits’ <http://www.pointcarbon.com/article.php?articleID=3292&categoryID=147>

²⁹ Benito Müller, ‘Ratifying the Kyoto Protocol The Case for Japanese – Russian Joint Implementation’ Briefing Paper No. 21, Royal Institute for International Affairs, London: May 2001. Reproduced as ‘The case for Japanese–Russian joint implementation in implementing the Kyoto Protocol’, *Climate Policy* 1, 2001:403-410. Note that

³⁰ An analysis by the Prototype Carbon Fund (PCF 2002) maintains that the relevant paragraph in Marrakech Guidelines for the Implementation of Article 6 ‘is not entirely clear. When it provides that “ERUs shall only be issued for a crediting period starting after the year 2008” it is not clear if this means the ERUs can only be generated by such projects after 2008 or whether the ERUs generated between 2000 and 2008 are “held in suspension” until 2008. If it means the latter then this could mean that PCF projects generating ERUs prior to 2008 could “bank” those early ERUs until the crediting period begins.’ [Prototype Carbon Fund (2002), ‘Policy Framework for Obtaining Early Credit For Emission Reductions in JI Projects. Updated Version in the light of the Marrakech Accords’, *PCF Implementation Note Number 8*, January 2002, <http://prototypecarbonfund.org/router.cfm?Page=Operations>]

³¹ ‘Mr. Illarionov’s [said] that the protocol was inequitable since it did not include major developing nations such as China and India.’ [*The Japan Times*, ‘Russian reality test for Kyoto’ Friday, December 12, 2003, www.japantimes.co.jp/cgi-bin/getted.pl5?ed20031212a1.htm]

³² <http://prototypecarbonfund.org/router.cfm?Page=Operations>

In other words, whether or not pre-2008 project-based reductions will be declared certifiable as ERUs by the first COP after entry into force of the Protocol (COP/MOP1), they can be used to attract JI-type investments simply by the host government (Russia) putting up a collateral in AAUs.

Another idea was mentioned in a Climate Strategies study, presented at COP8 (December 2002) in New Delhi, namely the use of Green Investment Schemes in crediting such early reductions,³³ which some Russian commentators state as the preferred use of these schemes.³⁴ Both ideas are indeed closely related. They are both based on the use of AAUs as collateral for early emission reductions. But, *pace* Tangen *et al.* (2002), the PCF proposal is not ‘by definition part of the concept of GIS.’³⁵ The investment under a ‘GIS is based on the income from sale of surplus AAUs.’³⁶ The FDI involved in JI projects, by contrast, is likely to be far larger than the value of the ERUs generated by the projects.

Nonetheless, many of the points made by Tangen and his associates about early GIS crediting³⁷ apply equally to the PCF scheme. In particular, there is the likely need for some kind of bilateral GIS-type agreement between Russia and potential foreign ‘early-JI’ partners to set the legal framework for these transactions. And it is here that a linkage with the new EU Emission Trading Scheme may prove to be of particular value. The proposal by Alexander de Roo, the European Parliament’s rapporteur on the directive linking credits from JI and CDM projects to the EU Emissions Trading Scheme ‘to add text to the Directive which assures that credits from JI and CDM can be used already from the launch of the EU ETS in 2005, as opposed to the Commission’s proposed 2008 date’³⁸ should therefore be a welcome move from the Russian perspective,³⁹ particularly given the significant additional mitigation potential that would be created by such an early linkage.⁴⁰

However, as alluded to earlier, it must also be kept in mind that certain improvements in the domestic business environment and other risk reducing measures may be a precondition to realising this Russian JI potential.⁴¹ The willingness of the members of the Russian National Carbon Accord not only to adopt voluntary emission reduction targets, but ‘to bear costs related to the formation of [an emissions allowance] market, including making inventory of greenhouse gas emissions by market participants, establishing corporate and national systems of monitoring, registration, certification and verification of GHG emissions reduction, and arranging special trade areas without placing extra charges on the federal or regional budgets’⁴²

³³ ‘Early reductions (before 2008) can be credited and transferred to investors. This will improve the economic performance of projects and help to attract early investments.’ [Tangen *et al.* 2002:p.22]

³⁴ See, for example, Evgeni Sokolov, Energy Carbon Facility RAO UES Rossii: http://www.climate-strategies.org/gis_delhi_panelviews.doc

³⁵ Tangen *et al.* (2002):65.

³⁶ Tangen *et al.* (2002):65.

³⁷ Tangen *et al.* (2002): Section 9.1.2.

³⁸ ‘EU Parliament’s rapporteur in favour of linking JI and CDM to ETS with or without Kyoto’, *Point Carbon* 29.01.04; <http://www.pointcarbon.com/article.php?articleID=3158&categoryID=147>

³⁹ Should AAUs not be admitted under the EU linkage directive, then they could always be dealt with by allowing the early JI investors to participate in Kyoto emission trading.

⁴⁰ Golub *et al.*’s. (NSS 1999:35) conservative estimate (assuming a permit price of only \$8/tCO₂) the gain from starting in 2005, as opposed to 2008 could be 730MtCO₂.

⁴¹ ‘Russia and Ukraine are long-term prospects. They have a tremendous JI potential, but their business environment is notoriously difficult and they have been slow in developing JI capacity. JI investors may shy away from these countries until the situation improves, or unless they can obtain risk coverage from institutions like the EBRD’ [Samuel Fankhauser and Lucia Lavric, ‘The investment climate for climate investment: Joint Implementation in transition countries’, *Climate Policy* 3 (2003) 417-434:432.]

⁴² Vasiliev and Safanov (2003):45.

may prove to be a significant step in this direction and should as such be welcomed by the potential foreign investment community.

Conclusions

- There are significant emissions savings to be made in the Russian economy.
- These are inevitable by-products of (energy) efficiency improvements, many of which are themselves a pre-requisite for the Russian economic growth targets.
- The project-based Joint Implementation mechanism of the Kyoto Protocol is the most promising of the Kyoto Protocol opportunities to obtain the foreign direct investment required for these efficiency improvements.
- It is possible to activate such JI-type investments prior to the beginning of the first commitment period, 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, but only once the Kyoto Protocol has come into force (thus creating the AAUs which would be used as early JI collateral).

In short, the Kyoto Protocol does afford significant opportunities for the Russian economy, but only once it comes into force. And each month this is delayed amounts to an opportunity cost that should be considered in taking the relevant decisions, particularly if Russia does not see Kyoto ratification as linked to other issues such as the ongoing WTO negotiations, as stated by both the Russian Foreign Minister Igor Ivanov⁴³ and the Power Minister Igor Yusufov⁴⁴ on 4 February, the day of the Kyoto Protocol ratification by the Ukraine, arguably the one neighbour of Russia with most similarities in the climate change context.

⁴³ 'No link between Russia-EU relations and signing of Kyoto protocol' AFP 4 February 2004, as reported by <http://www.eubusiness.com/afp/040204165816.43mik8sr>

⁴⁴ 'Russia's WTO Membership Should Not Be Linked To Kyoto Protocol Ratification' Novosti, 4 February 2004, http://en.rian.ru/rian/index.cfm?prd_id=160&msg_id=3886738&startrow=1&date=2004-02-04&do_alert=0

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