



## The case for Japanese—Russian joint implementation in implementing the Kyoto Protocol

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Viewpoint  
The case for Japanese–Russian joint implementation in  
implementing the Kyoto Protocol<sup>☆</sup>

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**Abstract**

The Kyoto Protocol in Japanese policy making must be seen as an instrument in strategic energy planning. A greater focus in Japanese implementation policy on joint implementation within the Russian energy sector (and less emphasis on domestic sinks) is argued to be at least cost neutral, if not outright profitable. More importantly, it would have the capacity to deliver entry into force of the Protocol, and with it a key component in strategic Japanese energy policy: the flexible additional supply required for the successful liberalisation of the Japanese natural gas market. © 2001 Published by Elsevier Science Ltd

*Keywords:* Kyoto Protocol; Russia; Japan; Joint implementation; Gas sector; Energy supply security

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**1. Introduction**

If the EU is willing to proceed with early ratification of the Kyoto Protocol (with or without the US), then Japan becomes a linchpin in trying to save the life of the treaty which saw the light of day under its patronage. According to Hiroshi Matsumura, Japan's basic strategy has thus far been "to construct a framework that would secure ratification by the US".<sup>1</sup> Sadly, this strategy has taken a severe battering since the 'US Aims to Pull Out of Warming Treaty'.<sup>2</sup> At COP6 in The Hague, Japan supported US

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<sup>☆</sup> This Viewpoint is based on a Briefing Paper published by the Royal Institute of International Affairs, "Ratifying the Kyoto Protocol — the case for Japanese–Russian joint implementation".

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<sup>1</sup> Matsumura, H., 2000. Japan and the Kyoto Protocol: Conditions for Ratification. Royal Institute of International Affairs, London, p. 5.

<sup>2</sup> The White House recently sought advice from the State Department about how the United States can legally withdraw its signature from a landmark 1997 global warming agreement, signalling its intent to pull out despite efforts by European and Japanese leaders to try to keep the agreement alive, an administration source said yesterday (Pianin, E., 2001. Washington Post 28, A01).

demands for generous rules on carbon sinks under the ‘catch-call’ Article 3.4 on possible subsequent additional categories of carbon sinks — a demand which led to an as yet unresolved conflict with the EU. However, Japan has been known to diverge from the American line, typically when ‘at COP5, Japan sided with the EU and played an active part in achieving a consensus that “the countries will endeavour to effectuate the Kyoto Protocol by 2002”’.<sup>3</sup> This commitment has to be taken seriously, since Japan is not known to renege on promises or official declarations of intent.

Japan’s stance at the beginning of the Kyoto conference, an emission reduction offer of  $-2.5\%$  below 1990 levels, was a compromise figure between the Ministry of International Trade and Industry (MITI) and Environment Agency of Japan (EAJ). As explained by Matsumura in this issue of *Climate Policy*, the subsequent push to a  $-6\%$  commitment alarmed MITI, especially since the expansion of the basket of greenhouse gases at Kyoto from three to six — usually seen as helping the Parties by introducing more ‘flexibility’ to the regime — actually added two percentage points below the reduction level that the Japanese believed they could achieve by 2010. At the time, the Japanese had little confidence in the Kyoto mechanisms. Instead, they ‘sold’ the package internally on the basis of potential claims for carbon sinks; it was Japan that introduced the final clause in Article 3.4, that “a party may choose to apply such a decision on these additional human-induced activities for its first commitment period, provided that these activities have taken place since 1990”. This addendum was assumed to deliver a further  $-3.4\%$  reduction, which left the projected deficit to the  $-6\%$  Kyoto target at  $-1.8\%$ , which in turn was budgeted to be covered by the Kyoto mechanisms.

At The Hague, the EU sought to restrict the allowable additional categories of carbon sinks, which — together with improved understanding of sinks — indicated that Article 3.4 would be unlikely to yield nearly as much as Japan had sought. This remains an unresolved dispute between the EU and Japan (whose position was also supported by the US before they distanced themselves entirely from the protocol).

A striking feature of the official Japanese implementation plan is that it has remained essentially unchanged for over 3 years. The domestic difficulties and dilemmas are explored in the article by Matsumura in this issue of *Climate Policy*. This Viewpoint explores one particular international dimension, concerning the expansion of natural gas supply and use.

### 1.1. *The case of natural gas*

In the aftermath of the 1970s oil shocks, and because supply from outside the Middle East (Brunei, Indonesia) was judged to be sufficiently secure, Japanese imports of liquefied natural gas (LNG) expanded rapidly from 1.5% of total energy supply (1979) to 10% in 1990. However, the security of supply concerns have helped to keep gas prices well above those of coal. While the UK price differential between natural gas and steam coal for electricity generation, for example, between 1993 and 1998 remained fairly stable at around US\$ 40/toe, the Japanese figures rose sharply from around US\$ 30 to 125/toe.<sup>4</sup>

The effect of this was and is that deregulation in Japan instead of a ‘dash for gas’ has led to a slightly less rushed ‘stroll for coal’. This trend is clearly not good news for the Japanese master plan on climate change. Matsumura considers two potential remedies: supply via pipelines from abroad, and increasing the pace of liberalisation of the electricity and gas markets. Matsumura clearly favours the latter “If the

<sup>3</sup> Matsumura (2000) 5.

<sup>4</sup> In 1997, the natural gas price for electricity generation was US\$ 235.2/ton of oil equivalent (toe) compared to US\$ 110.2/toe for coal (Matsumura (2000) 52).

government can avoid placing too much emphasis on security issues and, through deregulation, reduce the price of natural gas . . . there will emerge an energy market which manages to reconcile economic and environmental concerns”.<sup>5</sup> But the two remedies are not mutually exclusive. Indeed, construction of an overseas pipeline could help to overcome the sort of security worries considered by Matsumura to be a key impediment to liberalisation. In May 1997, MITI announced that Japan was again considering a pipeline between the Japanese mainland and the Russian gas fields on and off Sakhalin island. However, both this, and the Sakhalin LNG projects are fraught with political difficulties arising from a long-standing territorial dispute between the two countries.

An alternative potential measure for helping Japan reaching the target of  $-6\%$  is international emissions trading. According to Matsumura, “the purchase price for emissions to meet the  $-6\%$  target . . . would be US\$ 1.8 billion”.<sup>6</sup> This provides a benchmark for the (maximum) annual flexibility costs of replacing the controversial ‘3.4-sinks’ component ( $-3.4\%$ , 10.2 Mt Ce, 37.4 Mt CO<sub>2</sub>e): US\$ 306 million. Translated into US\$ 2.45 per head of population, or 0.004% of estimated 2010 GDP, no one can reasonably argue that the Japanese economy would be crippled by these costs. Moreover, a recent OIES modelling study on the impacts of the Kyoto Protocol on global fossil fuel markets<sup>7</sup> suggests that under its original master plan, Japan would actually be better off to the tune of 0.2% of real income (as measured by the Paasche Index). This economic gain arises in part because implementing the Protocol reduces both international oil prices and Japanese oil demand, and thus Japanese import bills. This suggests that if a switch away from 3.4-sinks to using Kyoto mechanisms is what it takes to deliver entry-into-force, then Japan does still have an economic — as well as political — interest in securing this. As it happens, Japan may forego much more than this if the Protocol does not come into force, but to see this, it is necessary to have a closer look at the climate change policies of the Russian Federation.

## 2. Russia

Russia is of great importance in both keeping the Kyoto Protocol alive and in particular for Japan’s future role.

### 2.1. *Surplus permits versus joint implementation*

The fact that the start of the multilateral climate negotiations coincided with the onset of the economic turmoil after the collapse of the Soviet Union has created the somewhat anomalous situation that Russia — and the other affected ‘economies in transition’ — are likely to end up with emission levels considerably below their Kyoto target, even without explicit mitigation measures. Given trading of ‘assigned amount units’, the resulting surplus — sometimes slightly pejoratively referred to as ‘hot air’ — offers a windfall arising from a clearly unintended and unwelcome turn of events. It would be wrong to deny Russia these windfall assets just because they have not arisen from intentional policy measures, but it would be

<sup>5</sup> Matsumura (2000) 61.

<sup>6</sup> Matsumura (2000) 44. Matsumura puts the Japanese 2010 reduction requirement from BaU at 60 Mt Ce (220 Mt CO<sub>2</sub>e) and assumes a permit price of US\$ 30/tC. Of the models surveyed in Bartsch, U., Müller, B., *Fossil Fuels in a Changing Climate*, Oxford University Press, Oxford, 2000, three-quarters had a 2010 permit price of less than US\$ 100/tC.

<sup>7</sup> Bartsch and Müller (2000).

equally wrong for Russia to use the revenues in promoting ‘business-as-usual’ economic growth without restructuring the economy to reduce its over-inflated emission intensity.<sup>8</sup>

According to Moe and Tangen, 2000, Russia’s ‘surplus quotas will meet between 35 and 50% of the total demand for quotas’.<sup>9</sup> Domestic Russian sources, being more optimistic about an economic recovery and taking a more traditional view of the linkage between economic growth and energy demand, tend to predict a smaller surplus.<sup>10</sup> Nevertheless, especially given the concentration of surplus permits in Russian (and Ukrainian) hands, a view is emerging that surplus permits should be sold somewhat sparingly, for reasons of (monopolistic) income maximisation, risk aversion, and environmental protection and legitimacy.<sup>11</sup> Russian ministry officials further suggest that the sale of surplus quotas may be conducted exclusively at a central government level, limiting the ability of regional administration and companies to engage in permit sales.<sup>12</sup>

The argument in favour of a limitation of surplus permit sales includes the justified worry that a supply of large volumes of surplus permits would drive down the permit price below the viability level of most JI projects (a worry that would be far more potent still in the initial absence of US demand).<sup>13</sup> Indeed, why would other nations get involved in trying to earn their ERUs from JI projects, if they could buy them cheaply on the permit market? And Russia does need foreign know-how (Joint Implementation being a potential favoured route) to efficiently exploit its resources. This is demonstrated by the alliance between Gazprom, the huge Russian gas conglomerate, and Ruhrgas. The annual fuel savings achieved (for Gazprom), according to Moe and Tangen, were ‘worth some US\$ 7 million if exported’<sup>14</sup> — and probably a lot more under today’s export prices.

Japan is technologically advanced in these areas and needs natural gas. A steady gas supply would improve security of fossil fuel supply, Japan’s primary goal, and also assist Japan in attaining its –6% target, through both cleaner fuel usage, and the scope for earning ERUs.

<sup>8</sup> Under ‘normal’ circumstances, it would have taken a considerable improvement in the emission intensity of the economy to obtain such surplus quotas. If Russia manages to invest its surplus permit earnings in such a way as to retroactively emulate this ‘normal’ generation of surplus permits, then there could not be a genuine objection to a trade in these permits. As it is unlikely that such restructuring could be achieved without additional inward investments, one would have to be weary of proposals such as the one apparently considered by the Clinton administration “to use the sale of the quotas to offset Russia’s debt to foreign countries” (Moe, A., Kristian, T., 2000. *The Kyoto Mechanisms and Russian Climate Politics*. Royal Institute of International Affairs, London, p. 66).

<sup>9</sup> Moe, A., Kristian, T., 2000. *The Kyoto Mechanisms and Russian Climate Politics*. Royal Institute of International Affairs, London, p. 45.

<sup>10</sup> Based on the assumption of 3.5–4% annual growth, the official estimates range from –8 to +4% deviation from the target (in percent of 1990 emissions).

<sup>11</sup> In a recent Viewpoint on the ‘outlooks and prerequisites of the Kyoto mechanisms implementation’ in their country, A. Mastepanov, O. Pluzhnikov, V. Berdin (Russian Ministry for Energy), and V. Gavrilov (Ministry of Economy and Trade) proposed that “the available assigned amount should be divided into two components. That part . . . produced by special projects and measures relating to GHG reduction taken since 1990 (early crediting) JI) should be freely traded; whereas the remaining (hot air) surplus, without a clear link to real emission reduction activity, should only be traded if the revenues are recycled into special projects resulting in emission reduction equal to or more than the amount of emissions sold” (Climate Policy 1 (2001) 125).

<sup>12</sup> Climate Policy 1 (2001) 125.

<sup>13</sup> A strong argument against the sale of surplus quotas is that their availability on the international emissions quota market will prevent JI in Russia with all its positive side-effects. The sale of surplus quota will postpone external investment until quotas are used up, at which point Russia will find itself with basically the same inefficient energy consumption structure as when it started. (Climate Policy 1 (2001) 70). If sales of surplus quotas are launched on a large scale, they may destroy the potential for JI projects with all their positive side effects. thus industry may come out against surplus quotas (Climate Policy 1 (2001) 74).

<sup>14</sup> Climate Policy 1 (2001) 100.

So, why is it not getting involved in JI in Russia? The primary reason is a territorial dispute between the two nations to which we now turn.

### 3. Japan and Russia

#### 3.1. *The Kurile Islands dispute*

The thorn in Russian–Japanese relations ever since the final days of World War II has been a territorial dispute over the Kurile Islands, arching from Hokkaido in the South to Kamchatka in the North. This cannot be the place to discuss the history of this conflict, apart from mentioning ‘A small step forward in Irkutsk’ recently taken by the head of government of the two countries.<sup>15</sup> Suffice to say, it has been detrimental to both parties’ economic interests. Soviet plans of transforming the neighbouring Sakhalin Island into a major hydrocarbon production centre (proposed as early as 1966) were systematically thwarted by the dispute, and with it a significant opportunity for Japan to increase its all-important security of energy supply. At present, Russian–Japanese relations are still governed by the 1993 Tokyo Declaration — issued on the occasion of a state visit by President Yeltsin — which stated the intention of both countries agreed to continue negotiations on the Northern Territories in order to be able to conclude a peace treaty. The key problem is that whilst Japan is of the view that territorial negotiations must go hand in hand with any other exchanges promoting bilateral relations, Russia considers talks about economic co-operation and national security to be a prerequisite for creating favourable conditions for the territorial negotiations.

In his analysis of the Northeast Asian oil and gas markets, Kuen-Wook Paik provides an astute analysis of Japanese policy towards Russian hydrocarbon in the shadow of this conflict.<sup>16</sup> He concludes that while there is still a marked difference in Japanese financial support to the hydrocarbon sectors in China and Russia largely because of the lingering Northern Territories dispute, there are signs in the spirit of a pragmatic shift towards *Sekei Bunri* (separation of politics from economics), Russian oil and, particularly gas may become more acceptable to Japan.<sup>17</sup>

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<sup>15</sup> Prime Minister Yoshiro Mori and Russian President Vladimir Putin . . . talks produced little new progress toward a settlement favourable to Japan’s claim on the islands east of Hokkaido. . . . This result was anticipated. Since taking power, Mr. Putin has consistently assumed a cautious posture on the bilateral territorial issue even though he has indicated he understands the importance of resolving the territorial dispute, which has posed a major obstacle to improvement of relations between Japan and Russia throughout the post-war decades. . . . The two nations, thus, cannot hope for a breakthrough in the territorial problem anytime soon. . . . Russia’s adamant stance will require that the post-Mori Japanese government rework Japan’s diplomatic strategy toward Russia with a new agenda for settling the territorial issue and concluding a peace treaty’. (A small step forward in Irkutsk, *The Japan Times* 27 (2001) 27 March).

<sup>16</sup> Paik, K.-W., *Gas and Oil in Northeast Asia*. RIIA, Energy and Environmental Programme, London, 1995.

<sup>17</sup> Paik, K.-W., *Gas and Oil in Northeast Asia*. RIIA, Energy and Environmental Programme, London, 1995, pp. 173–176. Japan has rarely been slow to secure a bridgehead to (China’s and Russia’s) oil and gas areas because of their huge potential and geographical proximity. Secondly, Japan’s commitment to both China’s and the FSU’s (Russia’s) oil and gas development has been fundamentally influenced by power relations rather than development economics’. . . . Tokyo’s reluctance to extend economic aid is based in part on its sober assessment of political uncertainties and the numerous obstacles to economic reform discussed above and more importantly, on its disappointment with the lack of progress on the Northern Territories issue. . . . However, Japan has begun to recognise the danger of losing its vested interests in Russian Far East oil and gas development to those major international oil companies that are pursuing opportunities in the Russian Far East, especially Sakhalin offshore. Consequently, its financial support for RFE, especially Sakhalin offshore, oil and gas development . . . seems to be less confined by the long-standing territorial dispute.

However, Paik also describes an interesting implementation case study involving MITI and several steel manufacturing and trading companies on the Japanese side, and Russia's Gazprom, in a multibillion dollar project that resulted in almost 10 years of wrangling with the delay caused by Russia's failure to pay debts of US\$ 330 million to nine Japanese trading companies. It stands to reason that this project may not have resulted in a warm-glow between the Japanese and Russian partners. Indeed, it was probably counter-productive if its aim was to foster closer trade partnerships.

### 3.2. *The solution*

The venture between Gazprom and Ruhrgas noted earlier (paid for in terms of gas exports) demonstrates the potential for successful collaboration. The failure of the MITI collaboration might have been avoidable, if the project could have been carried out under the joint implementation mechanism. Or, to be more precise, JI projects could be much less vulnerable to this sort of debt dispute simply by involving payment in terms of emission reduction units, and (possibly) barter deals.<sup>18</sup> Indeed, if companies such as Gazprom were to receive certain quantities of Russia's surplus permits, then it might even be possible to get earlier bad debts settled with assigned amount units.

The success of such collaborative efforts, in turn, may well pave the way to removing one of the biggest obstacles to a successful liberalisation of the Japanese natural gas market along the lines of the UK 'dash for gas': the relative inflexibility of supply through long-term 'take-or-pay' LNG contracts.<sup>19</sup> This obstacle could be overcome (i) by constructing natural gas supply pipelines, and/or (ii) by switching in time to more flexible LNG suppliers. As mentioned before, the first of these options is being actively pursued in the context of Sakhalin gas, which — in the not too distant future<sup>20</sup> — might also provide opportunities for the second option, since "Russian gas sellers have become more flexible, offering gas on shorter-term contracts",<sup>21</sup> although both have to be put into the perspective that Russian companies do not have a large share in the Sakhalin natural gas projects.

Due to the restricted specific nature of JI-projects, Japanese government agencies may well feel able to endorse them without fear of creating the impression to cave in on their interpretation of the Tokyo Declaration: JI projects can easily be interpreted as 'environmental assistance', on a par to the technical assistance generally agreed as being acceptable. The importance of the natural gas sector in domestic Russian policy, in turn, may in turn lead the Russian side to conclude that successful JI projects with Japan are sufficiently important to Russia to bring about the sort of favourable conditions regarded as a pre-requisite to the territorial negotiations by the Russian side.

All the issues raised in this section are driven not by environmental but by strategic energy and foreign policy considerations. And the solutions proposed in terms of engaging under joint implementation are

<sup>18</sup> In the case of Japanese JI-investors — unlike Ruhrgas, which is actually connected to the Gazprom pipeline system — such barter deals would have to involve some sort of swap, e.g. with the producing companies in the Russian Far East.

<sup>19</sup> Because Japan does not have international pipelines linked to producing areas, it depends on LNG as the only means of transportation for importing natural gas. Therefore, once a long-term contract is signed, Japan is bound by its take-or-pay article and is unable to modify the quantitative and price terms or to switch to other sources. The electricity companies are tied down by their existing contracts until these can be revised, between 2003 and 2005. (Matsumura, 2000, pg. 53).

<sup>20</sup> Again, international consortia — with substantial Japanese private sector involvement — are waiting for the bilateral climate to thaw in order to develop at least two major LNG liquefaction plants and terminals (imaginatively known as 'Sakhalin I' and 'Sakhalin II').

<sup>21</sup> Moe and Tangen (2000) 93.

solutions to energy concerns, concerns which exist quite independently of climate change problems. The solutions, of course, remain in the realm of fantasy without the (Annex I) Kyoto mechanisms, which is why the Kyoto Protocol has the very real potential to contribute significantly towards one of the key strategic objectives in Japanese economic planning: the security of fossil fuel supply.

In other words, the primary role of the Kyoto Protocol for Japan should be seen as that of an *energy policy instrument*, albeit with certain mitigation obligations. Of course, the instrument will not be available to Japanese policy makers — or anyone else, given the current international state of affairs — if Japan is unable to ratify the Protocol because it fails to be satisfied that it could comply with these obligations.

### 3.3. Summary

Provided the Russian Federation can put into place the necessary legislative and administrative measures and institutions, a switch from 3.4-sinks to JI with the Russian gas sector in the Japanese plan to implement the Kyoto mitigation target may well be ‘rational’ in any sense of the word.

- It is feasible. (i) There are enough ERUs to be collected from within the Russian natural gas sector to satisfy the budgeted 3.4-sink reductions many times over. (ii) The potential costs involved — if there are any at all<sup>22</sup> — are insignificant relative to the potential benefits.
- In the medium to long term, it may provide Japan with one of the key measures (a ‘dash for gas’ under a truly liberalised gas market) which could be required in addition to the ones envisaged in the master plan to fulfil its Kyoto obligation (in particular, MITI’s CO<sub>2</sub> reduction plans), thus enabling Japan to ratify, and hence deliver the early entry into force of the Protocol.
- The Protocol, once in force, may provide the key to overcoming the obstacles to establishing strategic alliances between the Japanese and Russian energy sectors which are trying to move away the historically strained political relations. Apart from enabling the ‘dash for gas’, this would be a major contribution towards the key aim in Japanese policy: the security of energy supply.

## 4. Dual track versus dead end

To end on a more general note: the current crisis surrounding the Protocol warrants a caveat concerning certain misguided objections to the early entry into force scenario mentioned in the introductory paragraph. The current US administration position simply means that they are not likely to participate in this environmental leadership scenario. Not more and not less. In particular, it does *not* mean that the US will not carry out domestic mitigation measures (see paper by Cochran et al., *Climate Policy*, this issue). Nor does it mean that entry into force of the Protocol would somehow forbid or prevent them to do so. With what this author sees as a regrettable dereliction of responsibilities by the current US administration we may be heading — at least temporarily — for a ‘dual track’ regime: some as yet unknown regime for the US and the Kyoto Protocol for the rest of the World. This is not implausible, and indeed some economic

<sup>22</sup> Given that many of the projects might be undertaken for energy security reasons quite independent of implementing the Protocol, an attribution of the their full cost — if any (namely, the Ruhrgas example) — to the implementation aspect would not be justifiable.



studies suggest that the participating countries including Japan may be better off.<sup>23</sup> While such a dual track may not be ideal, one should be very careful not to call for a stop to the Kyoto-track merely to retain at all cost the simplicity of a one-track World — in particular, if the track happens to be a dead end. One can only hope that the Japanese government will pay as much heed to the resolution unanimously adopted by their Upper House on achieving an international agreement to ratify the Kyoto Protocol, as the current American administration does to non-binding pre-Kyoto resolutions of their Senate.

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<sup>23</sup> A recent study by Prof. Yuzuru Matsuoka of Kyoto University according to which “the economic growth of Japan and Europe is highly likely to surpass that of the United States if the former two adhere to the 1997 Kyoto Protocol, . . . , while Washington rejects it”. Yomiuri, S., 2001, <http://www.yomiuri.co.jp/newse/20010422wo71.htm>, 22 April 2001.