

*Special Feature on the Kyoto Protocol*

# The Clean Development Mechanism: Current Activities of Japan

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According to Japan's official Climate Change Policy Programme, the government aims to reduce its greenhouse gas emissions by 6 percent compared with its 1990 base year emissions, mainly through domestic actions, and then address a projected 1.6 percent shortfall of emission reductions by utilizing the Kyoto Mechanisms. It is pointed out, however, that the shortfall might be larger than estimated. Among the Kyoto Mechanisms, Japan's priority is the Clean Development Mechanism (CDM) and joint implementation (JI), at least for now. The Government of Japan has been actively promoting CDM and JI projects with this in mind and providing various kinds of promotion schemes to private firms and host countries, especially in the Asia-Pacific region. So far, these have been process-based promotion schemes, in which, regardless of whether or not firms can acquire credits, they are able to receive support from the government. In contrast, as the level of understanding of the CDM and JI in Japan and host countries increases and the first commitment period of the Kyoto Protocol (2008–2012) quickly approaches, results-based promotion schemes are required that reward only those who actually succeed in acquiring credits. It should be noted also that some Japanese firms are moving towards purchasing emission reduction credits or investing in CDM and JI projects. The subjective motive for buying credits is partly to offset their future emissions, but mainly it is to gain know-how in credits procurement through experience. The next two or three years might be the last opportunity for Japan to start preparations for the CDM and JI, in which it is anticipated that both the government and Japanese firms will become active players.

*Keywords:* Clean Development Mechanism (CDM), Kyoto Mechanisms.

## 1. Introduction

It has been seven years since the Kyoto Protocol was adopted at the Third Session of the Conference of the Parties (COP 3) to the United Nations Framework Convention on Climate Change (UNFCCC) held in Kyoto, Japan, in December 1997, and many twists and turns have appeared during the ensuing years. The Bush administration announced the withdrawal of the United States from the protocol in March 2001, Japan ratified it in June 2002, and the Russian government (Cabinet) submitted it to the State Duma (Russian parliament) for ratification in September 2004. Today, it is anticipated that the Kyoto Protocol will enter into force in the first half of 2005.

In terms of climate policy, Japan has maintained that, regardless of Russia's ratification, it will make its best efforts to achieve its greenhouse gas (GHG) emission reduction commitment under the protocol and this policy has been proven to be right, when looking at movement in the Russian Federation. It is often pointed out, however, that the target for Japan under the protocol is onerous, and that the cost of

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GHG emission reduction in Japan is relatively high (e.g., IPCC 2001). Therefore, Japan will be able to gain a huge cost-benefit by using the Kyoto Mechanisms after first deploying domestic measures.

This paper will examine Japan's policy regarding the Kyoto Mechanisms and interpret the country's present attitude towards the Clean Development Mechanism (CDM) and joint implementation (JI). Furthermore, it will describe both current public and private activities relating to the CDM and JI in Japan.

## 2. Japan's policy regarding the Kyoto Mechanisms

According to Japan's Climate Change Policy Programme, which was originally created in 1998 and then revised in 2002, just before Japan's ratification of the Kyoto Protocol, it will reduce its GHG emissions by 6 percent compared with its 1990 base year emissions, mainly through domestic actions, and then address its offset of 1.6 percent by utilizing the Kyoto Mechanisms, which include international emissions trading (IET), JI, and the CDM (Government of Japan 2002). The figure of 1.6 percent of Japan's base year emissions corresponds to roughly 20 million tonnes of carbon dioxide (CO<sub>2</sub>) equivalent per year, or 100 million tonnes during the first commitment period (2008–2012), but the 1.6 percent figure is not clearly listed in the Climate Change Policy Programme. Officially, 1.6 percent is the estimated shortfall of the target after all the policies and measures to reduce domestic GHG emissions described in the program are enacted. In case Japan is able to achieve its target solely through domestic actions, it will not be necessary to utilize the Kyoto Mechanisms. It is often pointed out, however, that the program was created merely on optimistic assumptions and that, in reality, GHG emissions would not decrease as projected.

In April 2004, the subcommittee of Japan's Central Environment Council discussed provisional GHG emission estimates for the year 2010 based on current policies and measures (Central Environment Council 2004). According to meeting handouts, Japan's GHG emissions in 2010 might be 4.1 percent to 4.6 percent higher than its base year emissions. If this is true, it will have to reduce its GHG emissions by an additional 10 percent from its baseline, and the amount of emission reduction will be roughly 80 million tonnes of CO<sub>2</sub> equivalent per year, or 400 million tonnes during the first commitment period, after taking account of its sink credits, which corresponds to 3.9 percent of its base year emissions. The discussion in the subcommittee did not imply that Japan should revise the amount it utilizes the Kyoto Mechanisms, because the shortfall figure might be larger than estimated. Instead, the discussion seemed to persist in focusing on the necessity of strengthening domestic measures. At the same time, however, it recognized that Japan might have to rely more on the Kyoto Mechanisms to cover the shortfall from the target.

Among the Kyoto Mechanisms, Japan's government has apparently set different priorities on each mechanism. For instance, a heavy dependence on international emissions trading is not favored, partly because it will not start until 2008 and mostly because IET credits are not always backed by emission reductions. Sometimes these credits are criticized as "hot air," depending on the origin. Japan's government put priority on joint implementation because credits will be generated as the result of emission reductions. Central and Eastern Europe, however—which are potential countries that may

implement JI activities—are geographically and culturally distant from Japan. In addition, the enlargement of the European Union (EU) in 2004 and, as a consequence, the inclusion of the EU Emissions Trading Scheme (EUETS), may cause Japan to restrain its investment in JI projects in Central and Eastern Europe, because emission reductions in the target sector of the EUETS may not be approved as credits under the Kyoto Protocol (Government of Japan 2003). In contrast, CDM credits will be generated on the basis of emission reductions, including those made since 2000, which are strictly verified by third parties along with the official modalities and procedures. CDM projects can be implemented in non-Annex I countries, including Asian countries that are geographically and culturally close to Japan and where there is a lot of potential in terms of the amount of CDM credits.

As Yamaguchi (2002) points out, it might be difficult for Japan to procure the necessary credits by solely using the CDM, even if the amount of credits is equal to 1.6 percent of Japan's base year emissions. Therefore, while the government is unsure of its future policy regarding the Kyoto Mechanisms, especially at the end of the first commitment period, it intends not to focus, for example, on international emissions trading, and will stay with the CDM and JI (more with the CDM), at least for now.

### 3. Current CDM activities of the Government of Japan

#### 3.1. Approval of CDM and JI projects as a host country

Japan has been actively promoting CDM and JI projects in the last couple of years in line with its above-mentioned policy. In the first instance, Japan is one of ten nations among Annex I countries that have officially set up a designated national authority (DNA) for the CDM.<sup>1</sup> Its DNA is the Liaison Committee for Utilization of the Kyoto Mechanisms, and it has to date approved twelve CDM and JI projects as an investing country (see table 1). Of the twelve, two are in the validation process and they are expected to be Japan's first CDM projects. Both focus on the decomposition of hydrofluorocarbons (HFC) and were rated as the first and second largest projects in terms of the amount of credits among projects during the validation process. The estimated total amount of credits from the two would be about 4.8 million tonnes of CO<sub>2</sub> equivalent per year. It cannot be sure, however, that the estimated amount of credits will be generated from the projects and whether all the credits will be transferred to Japan. As far as the amount of credits is concerned, however, Japan can be rated as the first Annex I country that has approved a CDM project.<sup>2</sup>

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1. The UNFCCC divides countries into two main groups: Annex I, which is the industrialized countries, including the relatively wealthy ones that were members of the Organisation for Economic Co-operation and Development (OECD) in 1992, plus countries with economies in transition (EIT), and Annex II, which is the OECD members of Annex I (EITs not included). According to the UNFCCC's Web site, the other Annex I countries which have officially set up a DNA are Austria, Canada, Denmark, the European Community, Finland, Germany, Italy, the Netherlands, and Switzerland.

2. The Netherlands and the World Bank are also recognized as vigorous players in procuring emission reduction credits, but the Netherlands so far has procured credits mainly from JI projects, while the World Bank is not a party to the Kyoto Protocol and thus cannot approve CDM and JI projects as a host country.

**Table 1.** CDM and JI projects approved by the Government of Japan

Date of approval	CDM/JI	Applicant	Host country	Project name	Expected credits (tonnes of CO <sub>2</sub> /year)
12-Dec-02	JI	New Energy and Industrial Technology Development Organization (NEDO)	Kazakhstan	The Model Project for Increasing the Efficient Use of Energy Using a Gas Turbine Cogeneration System	62,000
12-Dec-02	CDM	Toyota Tsusho Corporation	Brazil	V&M Tubes do Brasil Fuel Switch Project	1,130,000
22-May-03	CDM	Electric Power Development Co., Ltd.	Thailand	Rubber Wood Residue Power Plant Project in Yala	60,000
15-Jul-03	CDM	INEOS Fluor Japan Ltd.	South Korea	HFC Decomposition Project in Ulsan	1,400,000
29-Jul-03	CDM	The Kansai Electric Power Co., Inc. (on behalf of e7Fund)	Bhutan	e7 Bhutan Micro Hydro Power CDM Project	500
03-Dec-03	CDM	Japan Vietnam Petroleum Company	Vietnam	Rang Dong Oil Field Associated Gas Recovery and Utilization Project	680,000
19-May-04	CDM	Sumitomo Corporation	India	Project GHG Emission Reduction by Thermal Oxidation of HFC-23 in Gujarat	3,380,000
29-Jun-04	CDM	Chubu Electric Power Co., Inc.	Thailand	A.T. Biopower Rice Husk Power Project	84,000
22-Jul-04	CDM	Electric Power Development Co., Ltd.	Chile	Graneros Plant Fuel Switching Project	14,000
01-Oct-04	CDM	Tokyo Electric Power Co., Inc.	Chile	Methane Capture and Combustion of Swine Manure Treatment for Peralillo	79,000
01-Oct-04	CDM	Tokyo Electric Power Co., Inc.	Chile	Methane Capture and Combustion of Swine Manure Treatment for Corneche and Los Guindos	84,000
01-Oct-04	CDM	Tokyo Electric Power Co., Inc.	Chile	Methane Capture and Combustion of Swine Manure Treatment for Pocillas and La Estrella	249,000

Source: Information taken from METI press releases accessed at <http://www.meti.go.jp>.

### 3.2. CDM promotion activities

Japan has been promoting various types of CDM and JI schemes to private firms and host countries in the Asia-Pacific region in recent years (main activities shown in table 2). These promotion schemes range from covering the first stages of the CDM project cycle to addressing the later stages. Private firms interested in the CDM and JI can access an outline as well as details of modalities and procedures in publications from relevant ministries (in Japanese). For those with questions or needing preliminary

consultation, the relevant ministries have established help desks or support centers. For those who have further interest in CDM and JI projects and want to examine and explore the possibility of potential projects, the ministries bear the costs, with certain limits, for feasibility studies after competitive selection from among applications. In addition, private firms can receive subsidies to cover part of their investment cost in CDM and JI projects, again after competitive selection from among applications.<sup>3</sup> In preparation for the future, when Japanese firms will acquire CDM credits and they wish to transfer those to the government, a national registry is being developed that will be operational in 2005.

In addition, Japan's relevant governmental ministries are implementing CDM capacity-building programs for other host countries in the Asia-Pacific region. The explicit objectives of the capacity-building activities are neither to support particular CDM projects nor to acquire CDM credits directly but to assist with the general development of institutional and human CDM capacity. It is also possible, however, to say that there is implicit interest in CDM credits in terms of procuring credits and achieving the emission reduction commitment of the Annex I countries.

**Table 2.** Japan's various schemes for promoting the Clean Development Mechanism and joint implementation

Category	Schemes/activities	Responsible entities
Publications	Illustrative Guide for the Kyoto Mechanisms (in Japanese)	Ministry of the Environment (MOE)
	Kyoto Mechanisms Guidebook (in Japanese)	Ministry of Economy, Trade and Industry (METI)
Providing information and consultation	Domestic Kyoto Mechanism Support Center	MOE, Overseas Environmental Cooperation Center (OECC)
	Help Desk for Kyoto Mechanisms	METI
	Help Desk for CDM Sinks	Forestry Agency
Feasibility studies	CDM/JI Feasibility Studies	MOE, Global Environment Centre Foundation (GEC)
	CDM/JI Feasibility Studies	METI, NEDO
Subsidies	Subsidies for CDM/JI projects	MOE, GEC
	Subsidies for CDM/JI projects	METI, NEDO
Registry	The Japanese National Registry (under development)	MOE, METI
Capacity building for host countries	Integrated Capacity Strengthening for CDM (ICS-CDM) in Asia	MOE, Institute for Global Environmental Strategies (IGES)
	Asia CDM Capacity Building Initiative	METI, NEDO

Source: The author selected information from the following Web sites:

<http://www.env.go.jp/earth/ondanka/mechanism/index.html>

[http://www.mofa.go.jp/mofaj/area/europe/pdfs/ji\\_seki.pdf](http://www.mofa.go.jp/mofaj/area/europe/pdfs/ji_seki.pdf)

<http://www.rinya.maff.go.jp/seisaku/cdm/top.htm>

[http://www.iges.or.jp/en/from/pdf/cop9/cdm/02\\_Makiya.pdf](http://www.iges.or.jp/en/from/pdf/cop9/cdm/02_Makiya.pdf)

[http://gec.jp/gec/gec.nsf/jp/Activities-Feasibility\\_Studies\\_on\\_Climate\\_Change\\_Mitigation\\_Projects\\_for\\_CDM\\_and\\_JI-CDM\\_Outline](http://gec.jp/gec/gec.nsf/jp/Activities-Feasibility_Studies_on_Climate_Change_Mitigation_Projects_for_CDM_and_JI-CDM_Outline)

[http://www.nedo.go.jp/informations/koubo/160330\\_2/160330\\_2.html](http://www.nedo.go.jp/informations/koubo/160330_2/160330_2.html)

[http://www.iges.or.jp/en/from/pdf/cop9/cdm/08\\_Ancha.pdf](http://www.iges.or.jp/en/from/pdf/cop9/cdm/08_Ancha.pdf)

[http://www.johannesburgsummit.org/html/documents/summit\\_docs/2908\\_partnershipsummary.pdf](http://www.johannesburgsummit.org/html/documents/summit_docs/2908_partnershipsummary.pdf)

3. To be accurate, it may not be appropriate to call the schemes subsidies. More explanation is provided below in section 3.3.

It should be noted that, although there exists a variety of support schemes from relevant government ministries for Japanese private firms to develop CDM and JI projects and to acquire emission reduction credits, there is a lack of strong incentives for them to do so. More specifically, there is no robust reason for Japanese firms to acquire CDM and JI credits. For instance, there is no concrete plan in Japan at the moment to introduce a cap-and-trade type of domestic emissions trading scheme linked with CDM and JI credits. Such a scheme would create a strong incentive for firms to acquire CDM and JI credits in order to comply with domestic obligations. Furthermore, there is no scheme yet for public procurement of CDM and JI credits, which would also give vigorous incentives to firms interested in gaining profits from credits trading.

In contrast to Japan, the European Union plans to introduce the EUETS in EU member countries in 2005, and CDM and JI credits are expected to be eligible for use by private firms to fulfill domestic obligations under it. Also, there are several other credits procurement schemes in Europe. The most famous are the Dutch Emission Reduction Unit Procurement Tender (ERUPT) and Certified Emission Reduction Unit Procurement Tender (CERUPT), both of which are geared to purchasing JI and CDM credits through competitive tender. In addition to these schemes, some European Union member countries are planning their own credits procurement schemes.<sup>4</sup>

In order to facilitate extensive participation of Japanese firms in CDM and JI projects, it will be necessary to introduce promotion schemes at the final stage of the CDM and JI project cycle, such as Japan's credits purchasing scheme.<sup>5</sup> Such schemes will not only give Japanese firms strong incentives and robust reasons to acquire CDM and JI credits but they will also lead the Government of Japan to cost-effectively utilize the CDM and JI.

The factors that determine what kind of promotion schemes will be most effective in facilitating the CDM and JI are the maturity of understanding of both Japanese firms and stakeholders in host countries and the general social and political situation regarding the Kyoto Protocol. At the premature stage, process-based promotion schemes—which allow firms to receive support from the Government of Japan regardless of whether or not they can acquire credits—would be effective, because it is an inevitable need right now to support firms with risk-free options so that they can take their first steps with fewer constraints. In contrast, as the level of understanding the CDM and JI in Japan and host countries increases, and with the first commitment period quickly approaching, it will be essential to provide firms with results-based promotion schemes with a certain risk attached that reward only those who actually succeed in acquiring credits. Firms that wish to acquire credits at minimum cost and then sell them at maximum price in a competitive market situation will try to seek out the best way to develop CDM and JI projects as cost-effectively as if they were agents of the Government of Japan.

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4. According to several news reports, Denmark, Austria, and Belgium are planning to implement a CDM and JI credits procurement scheme at an expenditure level in the millions of euros.

5. Japanese firms may have the option to sell credits that they acquire to the European Union or the World Bank, but several barriers (e.g., linguistic problems) exist that hinder these firms from dealing with foreign governments and international organizations. Furthermore, several Japanese promotion schemes attach conditions, such as the one that dictates that credits from financially supported projects should be transferred to the Government of Japan (see section 3.3).

### **3.3. Projected impacts of CDM credits procurement schemes**

Although both government and private firms have shown great interest for the introduction of results-based promotion schemes (in other words, CDM and JI credits procurement schemes), as mentioned above, they have not yet decided to do so, because there are still some legal and political constraints hindering their introduction. In Japan, the final allocation of governmental expenditure is determined by the Diet (parliament), and there are plenty of higher-priority political, economic, and social matters to address in the country at the moment besides the Kyoto Protocol and climate change. So far, as the protocol has not yet entered into force, there has been no legal obligation to reduce GHG emissions, and CDM and JI credits are not yet recognized officially at the international level. The Climate Change Policy Programme does not explicitly state that Japan will procure CDM and JI credits before the first commitment period. Rather, it implies that Japan will utilize the Kyoto Mechanisms when there is a target shortfall after having implemented domestic actions. Under these circumstances, it has not been so easy to justify direct governmental expenditure for CDM and JI credits, which are merely digital data at this moment. It might seem ironic that Japan is spending money on the “process” of the CDM and JI projects cycle instead of their final “results.”

Despite the discipline of Japan’s financial system, described above, it is inevitable that the government take action, instead of just observing the activities of EU member countries in buying CDM and JI credits. One noteworthy development is the Japan Carbon Fund (JCF). It is similar to the Prototype Carbon Fund (PCF) developed by the World Bank, and is currently being developed by the Ministry of the Environment (MOE), Ministry of Economy, Trade and Industry (METI), Development Bank of Japan (DBJ), and Japan Bank for International Cooperation (JBIC). The JCF is not supposed to procure emission reduction credits exclusively from Japanese firms but through international competitive tender. For Japanese firms, however, it will be easier to participate in competition for credits than for the World Bank. The JCF could provide one of the incentives for Japanese firms to acquire CDM and JI credits, because they would be able to sell those credits to the JCF and gain profits.

In addition, the relevant ministries have been exerting efforts to procure CDM and JI credits under the existing schemes. As shown in table 2, there are two subsidy schemes for CDM and JI projects listed that are provided by the MOE and METI. In substance, these schemes are not regarded as subsidies because both require CDM or JI credits in return for money that private firms receive from the relevant government ministries. For example, the conditions of the MOE’s scheme are that part of the credits acquired in the future must be transferred to the Government of Japan (in proportion to the amount of money the firms received from it, divided by the cost they incurred in acquiring the credits). Under METI’s scheme, applicants are requested to transfer the government part of the credits equivalent to the amount of money they received.<sup>6</sup> Under both schemes, in the case where private firms acquire credits, they are required to transfer to the government those credits in return for money they received. This is regarded as an advance receipt instead of a subsidy from the viewpoint of private firms. The Government of Japan has been taking the risk that the Kyoto Protocol will not enter into force and the consequential non-delivery of credits. Basically, private firms are not obliged to acquire credits, but they

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6. The amount of credits to be transferred to the government will be determined by dividing the amount of money they receive at the market price of a credit at that time.

do have an obligation to transfer credits when they succeed in getting them. Therefore, both subsidy schemes may be regarded as being quasi-credit procurement schemes.

#### 4. Current CDM activities of private Japanese firms

In general, most Japanese firms are not being overly aggressive in directly investing in the CDM and JI or in purchasing credits, with the exception of some limited industries. For instance, Japanese firms are well known as the largest contributor to the carbon funds managed by the World Bank (see table 3)—the total amount of contributions from Japanese firms amounts to more than US\$55 million—but most of it comes from the electric utility companies, which emit a huge volume of GHGs (approximately one-third of Japan's total CO<sub>2</sub> emissions). Thus they face the potential risk of being forced to reduce their GHG emissions; they also have relatively ample cash compared to most Japanese industries. Therefore, justifiable reasons are available to explain why they are trying to procure credits. On the other hand, the main reason they contributed to the World Bank and did not invest in CDM and JI projects directly is that the bank has more expertise in procuring emission reduction credits, while they have less at this point. Although Japan's electric utilities have been closely following the climate change issue and they have considerable knowledge of the Kyoto Protocol, it seems that there are still some obstacles hindering them from implementing CDM and JI projects by themselves.

The other industries in Japan have been less vigorous so far in either disbursing money to the carbon funds or in investing directly in CDM and JI projects, but, in fact, there are some firms that wish to purchase emission reduction credits. For example, large Japanese firms belonging to the Nippon Keidanren (Japan Business Federation) have pledged voluntary commitments to quantitatively reduce their GHG emissions (Nippon Keidanren 1997), and firms that are estimated to emit more GHGs than they pledged to are interested in procuring emission reduction credits in order to offset their excess emissions. Environmental departments within firms, for instance, that are in charge of dealing with environmental management issues, including GHG emissions reduction, are especially keen to procure credits. Nevertheless, as with the governmental financial system, the final allocation of investment is determined not only by the environment department but by top management, and each firm has plenty of other priority matters to address in order to survive in the current competitive business environment. So far, purchasing emission reduction credits has not been such an urgent matter for most firms, again, mostly because the Kyoto Protocol has not yet entered into force.

As described in section 3.2, however, the level of understanding of the CDM and JI has been increasing in Japan, as the first commitment period quickly approaches. The presumed entry into force of the Kyoto Protocol will definitely accelerate this trend. Although not all companies are disclosing their intentions, it is assumed that a number of Japanese firms besides the electric utilities are moving towards purchasing emission reduction credits or investing in CDM and JI projects. Although there have been less robust reasons to buy emission reduction credits so far, they can at least justify this behavior. The subjective purpose for buying credits is partly to offset their future emissions, but it is mainly to acquire know-how on procuring credits through experience at this moment. In other words, the main objective is not to achieve the final "result" of the CDM and JI but to be involved in the "process" of the

CDM and JI project cycle. Learning-by-doing is the most suitable term to describe the present motivation of Japanese firms.

**Table 3.** Japanese firms participating in the World Bank carbon funds

World Bank carbon fund	Minimum contribution <sup>a</sup>	Participating Japanese firms <sup>b</sup>
Prototype Carbon Fund (PCF)	US\$5 million	Chubu Electric Power Co., Inc. Chugoku Electric Power Co., Inc. Kyushu Electric Power Co., Inc. Mitsubishi Corporation Mitsui & Co., Ltd Shikoku Electric Power Co., Inc. Tokyo Electric Power Co., Inc. Tohoku Electric Power Co., Inc
Community Development Carbon Fund (CDCF)	\$2.5 million	Daiwa Securities SMBC Principal Investments Co., Ltd. Idemitsu Kosan Co., Ltd. Nippon Oil Corporation Okinawa Electric Power Co., Inc.
BioCarbon Fund (BCF)	\$2.5 million	Tokyo Electric Power Co., Inc. Okinawa Electric Power Co., Inc.

*Source:* Information from <http://carbonfinance.org> (accessed July 24, 2004).

<sup>a</sup>The minimum contribution is larger for government, although there are some private firms that have paid more than the minimum.

<sup>b</sup>The Japan Bank for International Cooperation (JBIC) is contributing to the PCF as a government participant.

As with the Government of Japan, private Japanese firms, generally speaking, prefer Clean Development Mechanism credits to joint implementation credits for almost the same reasons. In addition, there are two more reasons: (1) joint implementation rules are not very clear at present because they follow the CDM rules and, accordingly, the CDM offers a better way to get involved and gain experience; and (2) the CDM has an element of development assistance for developing countries, which provides a positive image for the firms involved.

## 5. Conclusion

Japanese firms, and even the Government of Japan, seem to have been waiting in the last one to two years to see whether or not the Russian Federation ratifies the Kyoto Protocol. The prerequisite for Japan to decide on policies and measures, and for Japanese firms to decide on a management strategy with regard to climate change after COP 3, was that the protocol would enter into force. When Russia's ratification of the protocol became unclear, Japanese firms began to ask, "What if the protocol does not enter into force?" It may be true that this kind of thinking deterred their aggressive involvement in the CDM and JI.

It is presumed, however, that the "prerequisite" may be upheld because of the commencement of ratification process of the Kyoto Protocol in the Russian Federation. The Government of Japan, and also the Diet (parliament), will pay considerable attention to complying with the Kyoto Protocol, which will

impose a legal obligation to reduce GHG emissions. This change will also affect the management strategy of Japanese firms. Now they have to prepare for the entry into force of the protocol and the anticipated additional domestic policies and measures introduced by the government. These policies and measures may impose burdens on Japanese firms but also may provide business opportunities. For example, the possibility of credit procurement schemes being introduced is becoming likely. At the time the Kyoto Protocol enters into force, CDM and JI credits will become official assets instead of merely digital data, thus for the Diet it will be possible to determine the expenditure needed for acquiring the potential assets.

Now is the last opportunity for Japan to start preparations for CDM and JI projects, especially those involving the Clean Development Mechanism, with just a few years before the first commitment period of the protocol begins. It is expected that both the Government of Japan and Japanese firms will become active players in the CDM and JI market in the near future, as was initially expected. It is time to prepare for what happens when the protocol does enter into force.

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