Annex I Parties' current and potential CER demand

For Asian Development Bank and International Emissions Trading Association

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PointCarbon
Carbon Price Forecasting

Table of Contents

EXECUTIVE SUMMARY

This report has been prepared as part of an assignment given jointly by the Asian Development Bank (ADB) and the International Emissions Trading Association (IETA), to Natsource and Point Carbon, respectively. The task has been to examine demand for CERs. Natsource has studied private sector CER demand and preferences, while Point Carbon has been responsible for preparing a summary of key Annex I Parties' initiatives and preferences regarding CER procurement.

The following key lessons can be learned from Point Carbon's study on Annex I Parties' demand for Certified Emissions Reductions (CERs):

- Annex I Parties' planned CER procurement -2012 is currently about 100 $MtCO_2e$; however, judging from key actors' (e.g. Japan, Italy, Spain) distance to their Kyoto targets and (at least in the case of Japan) domestic abatement costs, this number is likely to increase.
- The Dutch dominate among the Annex I Parties in terms of public CER procurement. They have signed more MoUs, have more market experience, have established a much broader set of initiatives (tenders, as well as agreements with both multilateral, regional and private banks), and are currently finalising the contracts under their CERUPT tender.
- New renewable energy is the project type preferred by most respondents, while several actors are sceptical towards sinks and (to some extent) large-scale hydropower
- Most MoUs have been signed with Latin American countries. Nevertheless, several MoUs have recently been signed with Southeast Asian countries.
- Most respondents are reluctant to state their CER price preferences. The price range among those doing so is 3-6.5 USD/tCO_2e.
- As Annex I Parties to some extent show a bias towards investing in neighbouring countries, and many Annex I Parties are situated in Europe, there is a tendency towards internal Annex I resource competition between CDM and JI
- Several Annex I respondents prefer to invest in CDM host countries in Latin America. To the extent that specific countries are listed, the large, well-known ones (Brazil, China, India) dominate.

CDM's part of the cake

It is difficult to estimate the volume of CERs to be procured by Annex I Parties in the first Kyoto commitment period, for several reasons. First, many Parties have not yet crafted a clear strategy as to how they are to fulfil their Kyoto commitments (apart from perhaps the rather weak supplementarity principle contained in the Kyoto Protocol,

signalling that a significant portion of reductions should be made domestically). Second, among those having done so, few, if any, have specified how large a portion of investments should go to CDM in particular. By suggesting total amounts to be invested either through the Kyoto mechanisms as such, or project-based mechanisms, they leave their options open. Third, there is a distinct difference between planned and estimated volumes of reductions through the CDM. The former reflects the policies and measures currently planned by each Annex I Party. Such plans might change considerably throughout the first commitment period, in light of e.g. a Party's (perceived) distance to its Kyoto target, the relative success of policies and measures it has implemented, carbon prices; or a move from an investment strategy based on obtaining enough credits for compliance to a more offensive strategy.

A rough estimate based on the table below suggests that Annex I Parties currently plan to acquire CERs equalling about 100 $MtCO_2e$. The Netherlands are by far the most advanced among the actors that have so far published plans for acquiring CERs, although countries like Canada and Denmark have recently increased their focus on CER procurement.

If the proposal for linking the EU ETS to CDM and JI is approved by the EU Parliament and Council, there will be a limit on the quantity of allowances allocated under the EU ETS for the period 2008-2012. However, this limit is not likely to be achieved given supply-side inertia. Judging from current and projected distance to Kyoto targets (see figure below), some Parties (notably Japan, Italy and Spain) will probably need to make use of the flexible mechanism to a larger extent than currently envisaged.

Table 1 Annex I Parties' total planned CER purchase in 1st Kyoto commitment period (2008 – 12)

Annex I Party	Total planned CER purchase, 1st Kyoto commitment period (2008-12)
Austria	20-30 $MtCO_2e$ (JI&CDM)
Canada	50 $MtCO_2e$ (CDM, JI and ET)
Denmark	6,25$MtCO_2e$, but ≈ € 120 million to be invested in JI/CDM -2007
EU	Unclear (depends on linking proposal and possible procurement initiative)
Finland	Will be clear after revised Climate Strategy in late 2004
France	Nil (as of present), but encourages companies to invest
Germany	Nil (as of present), but encourages companies to invest
Italy	At least 60$MtCO_2e$ (JI&CDM)
Japan	At least 95$MtCO_2e$ (JI&CDM)
Netherlands	67$MtCO_2e$
New Zealand	Nil (as of present), but encourages companies to invest
Norway	0-13 $MtCO_2e$
Sweden	Will be clear after revised Climate Strategy in late 2004
Switzerland	About 5 $MtCO_2e$ (JI&CDM)
UK	Nil (as of present), but encourages companies to invest

Project types

To the extent that respondents wish to state their CDM project type preferences, renewable energy (with the notable exception of large-scale hydropower) dominates the picture, followed by energy efficiency and landfill gas projects. Regarding project size, no specific preferences were stated (Finland has launched a small-scale (SSc) CDM tender, while the Dutch specified a minimum project size of 100,000tCO_2e in their CERUPT tender, but none of these should be interpreted as a general preference of the country in question).There is a trade-off between the wish to invest in projects with clear sustainable development side effects on the one hand, and many respondents' preference for large-volume, low-cost CERs on the other (the latter would often come from landfill, large-scale hydropower or sink projects).

Most of the Annex I countries that have specified their preferences, have so far not focused on sinks, as there is still considerable political and methodological uncertainty related to the role of sinks in the CDM. The EU Commission's proposal for linking the EU ETS to CDM and JI does not currently open for converting sinks CERs to EU allowance units, but leaves the door open for doing so as a result of political negotiations on sinks at COP-9 in Milan, December 2003. While not legally binding, the Commission's proposal suggests that CERs from large-scale hydropower projects not in line with World Commission on Dams criteria should not be possible to use for compliance purposes in the EU ETS.

Table 2 Annex I Parties' preferences regarding CDM project types

Annex I Party	Preferred project types
Austria	Energy efficiency, renewable energy. Not sinks.
Canada	No preferences so far. Companies decide.
Denmark	Renewable energy, fuel switch, cogeneration.
EU	Current status of "linking proposal": sinks and large hydro in danger.
Finland	No sinks in SSc tender; focus on lowest price, and broad experience.
France	No specific preferences.
Germany	Energy efficiency, renewable energy. Not sinks.
Italy	Renewables (biomass), energy efficiency, landfill gas for power.
Japan	No official policy but emphasis on Japanese new renewables/energy efficiency technology.
Netherlands	Renewable energy, biomass, landfill gas; no sinks in CERUPT tender.
New Zealand	No specific preferences.
Norway	Probably restrictive towards sinks.
Sweden	Renewable energy.
Switzerland	No specific preferences, although probably a preference for renewables.
UK	No specific preferences.

CDM host country preferences

The table below yields several conclusions. First, few countries have specified their CDM host country preferences. For some countries, this seems to be because they perceive this to be sensible information related to a competition for high-quality, low-cost CERs. For others, this reflects a lack of focus on CDM, or that a CER procurement strategy has not yet been prepared.

Second, to the extent that preferences have been stated, they are rather general, in the sense that few specific host countries are singled out. Again, this might be due to concerns for Annex I competition for CERs, or a lack of a clear procurement strategy.
Third, to the extent that single CDM host countries are specified, respondents tend to focus on large, well-known countries perceived to have large volumes of cheap reductions (e.g. Brazil, China, and India).

Fourth, while this is not a dominating trend, some respondents point to the need for public CDM investment in countries that do not stand to gain from private CDM investment, e.g. Africa.

Table 3 Annex I Parties' preferences regarding CDM host countries

Annex I Party	Preferred host country/ies
Austria	No specific preferences, but prefers JI and European countries
Canada	Canadian companies' interest decides, so far Latin America in practice
Denmark	No specific preferences as yet
EU	No specific preferences as yet
Finland	No official preference. Much focus on JI, Americas and SE Asia
France	African countries
Germany	Latin America and Asia
Italy	No official preference
Japan	No official preference but focus on ASEAN and China in practice
Netherlands	No official preference, but focus on Latin America and Asia
New Zealand	No specific preferences as yet
Norway	No specific preferences as yet
Sweden	South America (Brazil), Asia. Africa when SD component vital. Much focus on JI. Geographical spread of projects
Switzerland	India, China, and South America (Brazil)
UK	No specific preferences as yet

Memoranda of Understanding

Before making general conclusions on the role of Memoranda of Understanding (MoUs) on CDM co-operation, three caveats should be made regarding CDM MoUs:

- MoUs in general only state involved parties' intentions, they are not binding for any of the parties involved. This means that a MoU between, say, The Netherlands and Nicaragua on 5MtCO_2e, does not guarantee that the Dutch will acquire 5MtCO_2e through the CDM. Nor does it guarantee that if the Dutch do so they will acquire these 5MtCO_2e in Nicaragua. Nor does a MoU render Nicaragua legally responsible to provide 5MtCO_2e of reductions to The Netherlands on demand.
- We have good reasons to believe that many MoUs are not made public, for example because the investor country wishes to avoid competition from other investor countries, or because elements of the MoU are part of negotiations that are either confidential or not finished.
- There are different reasons why some countries have not signed any MoUs. Some have so far decided to leave CER procurement to companies, while others have not yet crafted a procurement strategy – for example because they are confident that they will reach their targets without investing in CERs.

Some conclusions can nevertheless be drawn from the table below. First, although the Canadians have ambitious plans, the Dutch have signed MoUs with more CDM host countries than any other Annex I Party. They have concentrated on Latin America so far, but might turn towards Asia as well. This leads to the second conclusion, namely that most MoUs have been made with countries in Latin America. Third, to our knowledge, the Dutch is the only Party that has specified the amount of CO_2e linked to each MoU. Finally, several Annex I countries (notably Austria, Denmark, Finland, Norway, and Sweden) have so far been more interested in signing MoUs with JI host countries than with CDM host countries. This suggests that JI and CDM will compete for resources within the government bureaucracies of Annex I countries.

Table 4 Annex I Parties' MoUs with CDM host countries

Annex I Party	MoUs – countries ($MtCO_2e$)
Austria	Discussions with Bosnia & Herzegovina
Canada	Costa Rica, Colombia, Chile, Nicaragua, Tunisia, South Korea (no volumes indicated)
Denmark	Malaysia, Thailand and South Africa; discussions with China, Indonesia, Moldova and possibly Vietnam (no volumes indicated)
EU	None publicly available.
Finland	Costa Rica, El Salvador, Nicaragua; CDM co-operation included in general agreements with India and China (no volumes indicated)
France	Colombia and Morocco (no volumes indicated)
Germany	None publicly available (GTZ initiatives towards China, Mali, Jordan, Colombia)
Italy	Signed – or in process of signing – with Algeria, China, Cuba, Egypt, Israel, Moldova, Cyprus, Morocco, El Salvador, and Serbia. In talks with Brazil.
Japan	None publicly available (close co-operation with ASEAN countries, China)
Netherlands	Colombia (25 $MtCO_2e$), Costa Rica (30 $MtCO_2e$), El Salvador (5 $MtCO_2e$), Panama (20 $MtCO_2e$), Uruguay (5 $MtCO_2e$), Bolivia (10 $MtCO_2e$), Nicaragua (5 $MtCO_2e$), Guatemala, Honduras. Possibly Philippines. CER purchasing agreement with Indonesia under negotiation.
New Zealand	None publicly available.
Norway	None publicly available.
Sweden	None publicly available, but does not rule out the possibility
Switzerland	Costa Rica (inactive; no volume indicated); initiative towards China
UK	None publicly available.

Price range and payment terms

In general, Parties are reluctant to reveal their CER price preferences. Many are currently negotiating with project developers, and fear that stating their preferences would weaken their negotiating position.

Among the respondents stating their preferences, the price range is about €3 - 6.5/tCO_2e. This range might reflect the influence from existing dominant purchasers, like Dutch CERUPT as well as the World Bank Prototype Carbon Fund, which both have purchased CERs for prices within this range. The CER is not yet a standardised commodity; the characteristics of CDM projects can vary considerably, e.g. according to project type, transaction structure, project and host country risk, and/or the creditworthiness of the counterparty. Furthermore, while some respondents have considerable market experience, others have not been in the market for very long.

Some Parties signal a willingness to pay a premium for projects yielding additional sustainable development benefits. There is no clear trend as to preferences regarding terms of payment. While some Parties (e.g. Austria, Finland and Sweden) to some

extent open for upfront payment, others (e.g. Denmark and The Netherlands) wish to pay on delivery.

Table 5 Annex I Parties' preferred CER price range and payment terms

Annex I Party	Preferred price range and payment terms
Austria	Market price. Upfront payment possible.
Canada	Not decided
Denmark	Price preferences not decided. Max price for domestic reductions: 18USD. Payment on delivery. Tender information not yet made public.
EU	No specific preferences as not engaged in tender so far
Finland	About €3 (for the CDM projects in its portfolio). Upfront payment possible
France	None (government not engaged in CER procurement so far)
Germany	About €5. Payment terms currently under discussion.
Italy	No specific preferences.
Japan	None (government not engaged in CER procurement so far)
Netherlands	6.7 USD is max price. May pay more for renewable energy projects. Payment on CER issuance.
New Zealand	None (government not engaged in CER procurement so far)
Norway	None (government not engaged in CER procurement so far)
Sweden	5 USD. May pay more for sustainable projects. Upfront payment possible.
Switzerland	Possibly willing to pay more for CDM projects with environmental integrity
UK	None (government not engaged in CER procurement so far)

CER procurement initiatives

Annex I Parties have so far mainly chosen the following three strategies for CER procurement:

- Procurement tenders (Netherlands, Finland, Sweden)
- Participation in the World Bank's carbon funds (Canada, Finland, Italy, Netherlands, Norway and Sweden; possibly also Sweden, Austria and other European countries)
- Participation in other (privately initiated) funds (Switzerland; possibly also Denmark)

The Netherlands has broadened its strategy further. It has partnered with a regional development bank (CAF) and a private bank (Rabobank) for CER procurement, and currently discusses direct CER purchase agreements with at least one CDM host country (Indonesia).

For an overview over selected Annex I Parties' CER procurement strategies, see table below.

Table 6 Annex I Parties' CER procurement initiatives

Annex I Party	Overview of CER procurement initiatives
Austria	Considers joining CDCF; JI/CDM tender in process
Canada	CDCF (2,5million USD); signed MoU with BCF
Denmark	≈ € 120 million to be invested in JI/CDM -2007; some directly in projects, some in funds
EU	None
Finland	PCF (10 million USD); 0,5MtCO_2e) small-scale CDM tender soon completed
France	None
Germany	KfW carbon fund (€50-100 million) to be established
Italy	CDCF (7 million USD); has agreed to establish 15 million USD World Bank facility
Japan	JBIC (€31,3 million) and DBJ (€23,5 million) carbon funds
Netherlands	CERUPT (10-16MtCO_2e); PCF (10 million USD); CDCF (1MtCO_2e); Netherlands Carbon Development Facility (IFC and IBRD; €35 million/year for 4 years; (26MtCO_2e)); CAF (10MtCO_2e), Rabobank (10MtCO_2e); bilateral CER purchase (10MtCO_2e?)
New Zealand	None
Norway	PCF (10 million USD); signed MoU with CDCF
Sweden	PCF (10 million USD); tender; considers joining CDCF
Switzerland	Funds "Climate Investment Partnership"
UK	None

BCF=World Bank BioCarbon Fund; CAF=Corporación Andina de Fomento; CDCF=World Bank Community Development Carbon Fund; CERUPT=Certified Emissions Reduction Unit Procurement Tender; DBJ=Development Bank of Japan; IBRD=International Bank for Reconstruction and Development (World Bank); IFC=International Finance Corporation (World Bank); JBIC=Japan Bank for International Co-operation; KfW=Kreditanstalt für Wiederaufbau (German Development Bank); PCF=World Bank Prototype Carbon Fund.

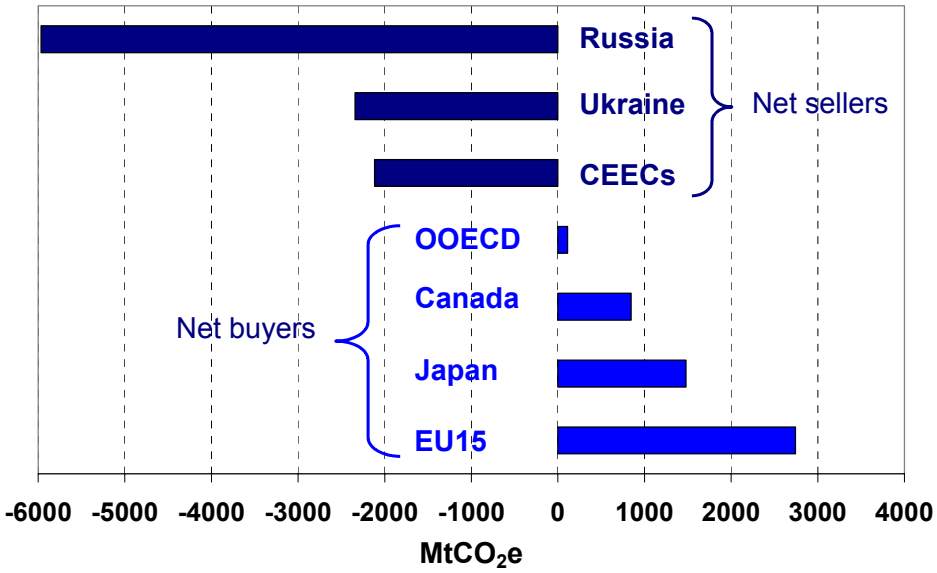
OVERVIEW

The terms of reference for Point Carbon's part of the project were the following:

- Provide an overview over Annex I countries' current and projected distance to their respective Kyoto target, and documentation of their current policy regarding to what extent and how they want to make use of CERs to meet their commitments;
- On a country level: Review and analyse key Annex I countries' existing agreements or MoUs on CDM projects with non-Annex I countries, where possible, in terms of volumes (million tones of carbon dioxide equivalent emissions), price ranges, project types, links between project types and price expectations, and other preferences relating to choice of host countries, CER quality (development impacts), project size/volumes, means of payment, willingness to advance payment of development costs for CDM projects, etc; and
- Provide an overview and status of established and emerging initiatives (tenders etc.) taken by Annex I government with the aim of acquiring CERs.

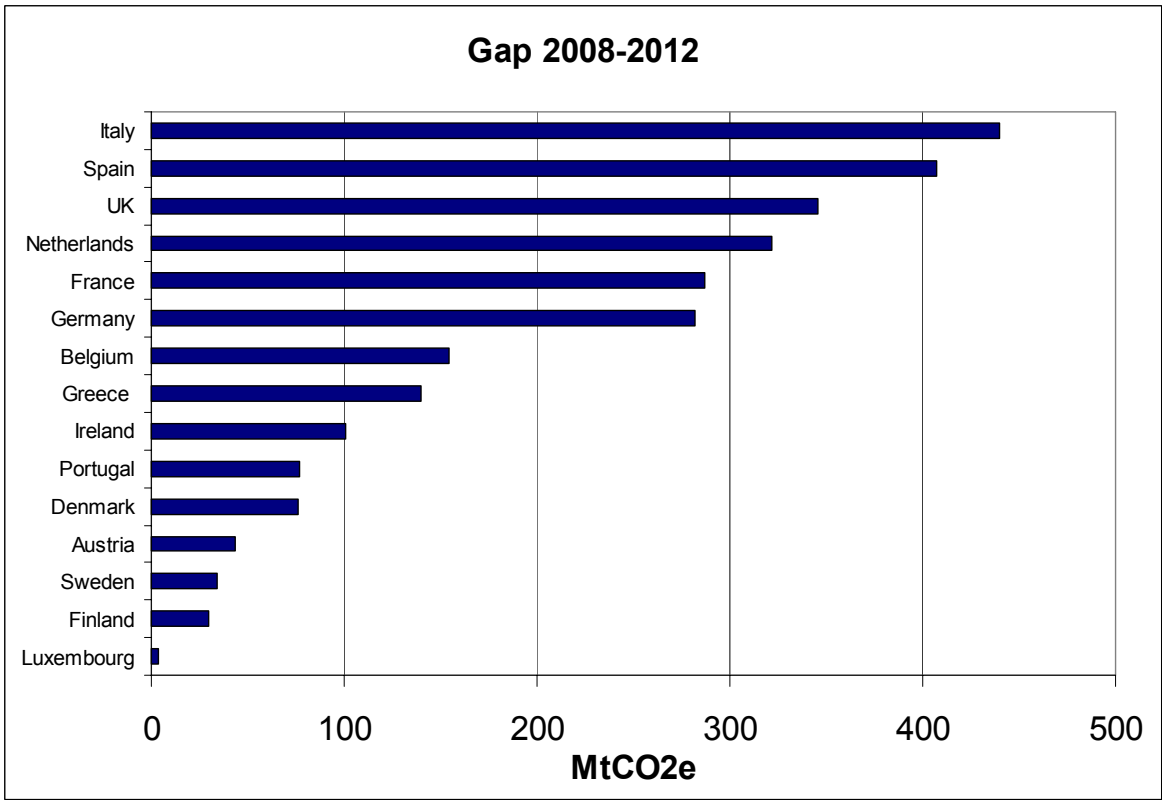
The figure below summarises the gap between the targets in the Kyoto Protocol and the business-as-usual emissions, aggregated for the five years of the first commitment period. Point Carbon's business-as-usual emissions do not take into account the effects of planned national emissions measures, but represent future emissions levels if no further measures are implemented. As the slide shows, the largest demand is expected in the EU, Japan and Canada, respectively. However, due to the large reductions in Russia and Ukraine the market in total is likely to be long. It is also worth noting that the "hot air" from the EU candidate member states in Central and Eastern Europe almost matches the expected demand from existing member states (EU15).

Figure 1 Gap between targets in the Kyoto Protocol and business-as-usual emissions



The figure below summarises the gap between the targets of EU countries under internal burden-sharing agreement and their business-as-usual emissions, aggregated for the five years of the first commitment period under the Kyoto Protocol. As the slide illustrates, Italy and Spain are expected to have the largest demand, but all countries – including Germany and the UK - will have to implement measures/buy credits in order to be in compliance with their targets under the EU burden sharing agreement.

Figure 2 EU-15 countries' distance to Kyoto targets in first commitment period (2008-2012)



ANNEX I PARTIES' PREFERENCES - COUNTRY STUDIES

The report is based on personal interviews with representatives from selected Annex I Parties (Austria, Canada, Denmark, EU, Finland, France, Germany, Italy, Japan, New Zealand, Norway, Sweden, Switzerland, The Netherlands, and United Kingdom). Some of the interviews were made in person at the CDM EB meeting in Bonn, 28-29 July, 2003, while the bulk of the interviews were conducted by telephone in the period 30 July-25 August, 2003. As many of the interviewees wished to remain anonymous, the names of the interviewees have not been listed in this report.

The market for CERs develops very quickly. It should be clearly emphasised that, since almost all of the country-specific information and data collected from this study is based on interviewees with key persons in Annex I Parties' CER procurement work, a considerable part of this information and data cannot be found in official documents. Thus, it has not been possible for Point Carbon to cross-check all data and information against written sources. This, together with the rapid market development, increases the possibility for imprecise or lacking information, but Point Carbon has nevertheless done its utmost to deliver a high-quality overview of Annex I Parties CER demand.

Not all categories of information have been possible to obtain for all countries, be it for lack of data; because the relevant decisions have not been made yet; because preferences have not been specified to the extent asked for in this study; or because country-level contacts have not been available in the limited project period. In particular, representatives from Spain would have been important to interview, as Spain is currently far from reaching its target under the EU bubble. However, all relevant personnel were on holiday in the period we tried to reach them.

Japan

Japan has committed to reduce GHG emissions during the Kyoto commitment period (2008-2012) 6 per cent below the country's 1990 emissions. The Japanese government envisages that 2% of this reduction shall happen through developing new technology; however, emissions from fluorinated gases (HFCs, PFCs, SF_6) are seen to increase so that they zero out the benefits of new technologies. 0.5 % of the reduction is to be obtained through methane (CH_4) and nitrous oxide (N_2O) reductions; and 3.9% through sinks. The rest, 1.6 %, is to be obtained through the use of the Kyoto mechanisms.

However, if no measures are taken during the first commitment period, emissions are expected to increase by 8 per cent, according to government sources. However, according to estimates using Point Carbon's Carbon Market Forecaster™, emissions

under a business-as-usual scenario will be 25 per cent above 1990 levels (excluding sinks) in 2012.

Japan's current position on CDM (as well as on JI) is that companies, not the government, should develop projects and obtain credits for them. As the government will not purchase CERs directly, there is currently no perceived need to negotiate Memoranda of Understanding (MoUs) with CDM host countries.

While Japan does not specify any project preferences other than conformity to CDM rules and modalities, Japanese CDM authorities are quite eager to check CDM projects' delivery conditions, as they need to make sure Japan meets its overall commitments. Some CDM host countries want to retain part of the CERs from a project and trade on their own discretion. However, the Japanese believe that in order to trade, non-Annex I countries would need to take on a commitment, as trading is an incentive linked to such a commitment.

The government guidelines for CDM project approval do not differentiate among project types. However, financial assistance programs for CDM activities favour energy efficiency and renewable energy technology transfer from Japanese companies. Most government funding for feasibility studies, production of project design documents and validation, and CDM capacity building in host countries, targets China and ASEAN; for example, only a couple of the feasibility studies selected by NEDO for implementation focus on other areas than these.

Two CDM funds have been planned for the Japanese fiscal year 2003 (i.e. within March 2004; there are unconfirmed speculations that the two funds might be merged into one):

- The Japanese Bank of Industrial Cooperation (JBIC) fund, under the Ministry of Foreign Affairs' supervision, was to be established in July 2003. Total fund size was to be 4 billion yen (31,3 million USD), with a 0.6 billion yen (about 4.85 million USD) contribution from JBIC and the rest from the private sector (e.g. trading houses and (petro)chemical companies). It has received more than 100 inquiries regarding more than 80 project ideas. Some are at a very early stage, while others have already been started.
- The Development Bank of Japan (DBJ) fund is also to be established in 2003, with a total fund size of 3 billion yen (about 23.5 million USD). It expects contributions from the steel industry and electric utilities.

Table 7 Emerging Japanese CDM/JI fund(s)

Managing institution*	Expected launch date	Capitalisation (mill. USD)	Companies' contribution (mill. USD)	Main industries targeted
DBJ (METI)	Late 2003	23.5	23.5	Utilities, steel industry
JBIC (MFA)	Late 2003	31.3	26.5	Trading houses (petro-) chemical industries

Thirty-six Japanese industries have committed to voluntary GHG emissions reductions targets through the business federation Keidanren, to be achieved through domestic action. Keidanren is supportive of Kyoto Mechanisms utilisation, while they are strongly against domestic emissions trading. The electric power industry is the only sector with a significantly higher level of greenhouse gas emissions than in 1990 (emissions in 2001 were 12.6% up according to Keidanren's report on the follow-up of its targets; however, note that 8.7% of this could be attributed to other industrial sectors, e.g. due to increased power consumption). The Federation of Electric Power Companies of Japan's (FEPC) commitment as part of Keidanren – a 20 per cent reduction in CO_2 emission intensity pr. kWh compared to 1990 level by fiscal year 2010 – may thus be difficult unless use of the CDM or other flexible mechanisms is introduced.

Keidanren made its overall commitment on the assumption that FEPC would meet its commitment. All other sectors' indirect emissions will be influenced if the FEPC does not meet its target. Therefore, and as long as FEPC meets its commitment, even if it be through the CDM, Keidanren is not likely to interfere. As the power sector's contribution to GHG emissions dwarfs all other sectors' contributions, it is hard to see that other industrial actors in Japan would be able to offset the increased emissions from the power industry significantly.

The FEPC's GHG commitment is also based on the premise that 13 nuclear power plants would be built in Japan between 2000 and 2010. However, METI's Energy Resource Board recently has said seven is a more realistic number, due to siting difficulties. This means that, unless flexibility is introduced, the FEPC members will not meet their objective, nor would Keidanren.

Finally, the overall Keidanren goal (that 2010 GHG emissions should equal those of 1990) is not necessarily in the agreement with the government's guidelines from 2002 (which say that industry needs to reduce emissions by 7 per cent from 1990 levels). Thus, CDM (and other Kyoto mechanisms) might play a more important role for Japan than envisaged so far.

Canada

Canada is committed to reducing its greenhouse gas emissions to 6 per cent below 1990 levels on average through the first commitment period (2008-2012) - a reduction of 240 $MtCO_2e$/year from their projected "business-as-usual" emissions level in 2010. According to the government plan, at least 10 $MtCO_2e$/year in the first Kyoto commitment period of this is planned to be reached through the use of all three flexible mechanisms.

The Canadian International Development Agency (CIDA) started the Canada Climate Change Development Fund (CCCDF) in 1999 and selected 45 projects in 2000. The CCCDF has 100 million Canadian Dollars (about 72 million USD), and focuses on adaptation, emissions reduction, sequestration and capacity building, where some of the money is allocated to CDM-related capacity building. This fund will, however, solely engage in capacity building and not in CDM projects directly, as this money is earmarked as Official Development Assistance (ODA). Still, workshops are conducted, and the CCCDF demonstration projects improve the infrastructure and may be replicated as CDM projects.

Furthermore, the private sector is encouraged by the government to engage in CDM projects. The Canadian CDM/JI Office has the task of providing funding for reducing transaction costs. It accommodates for CER transactions for Canadian firms that want to engage in CDM projects and organises workshops, both for Canadian companies and CDM host countries. The CDM/JI office also funds technical studies to advance host country project proposals to a stage where they can be approved by Canadian companies, providing assistance on establishing baselines, the development of project portfolios, pay registration fees and assist capacity building. The available funding for these activities is 25,5 million Canadian Dollars (about 18 million USD) in the period 2001-2005. How much is spent on each project depends on its characteristics, but the average would be approximately 40 000 Canadian Dollars (about 30 000 USD). The companies invest and develop projects, and the government shares some of the costs.

Canada has engaged in CDM MoUs with South Korea, Chile, Colombia, Costa Rica, Nicaragua and Tunisia along with a JI MoU with Poland and one project-specific MoU (Canada does not wish to say with which country). 11 MoUs are under negotiation. The Canadian MoUs generally do not involve specific amounts of $MtCO_2e$. Embassies are used as interlocutors in order to facilitate the MoUs.

The Canadians admit to have country preferences, but will not specify them. However, on a general level, the Canadians prefer to focus their CDM engagement in countries where Canadian companies are present or where Canadian companies have an expressed interest in CDM investments, and in countries with established organisational and institutional infrastructure. Canada currently conducts most of its CDM activity in Latin America, but is open to Asian and African countries as well. The Canadians will not comment on which Canadian companies are most interested in developing CDM projects. Still, Canadian forestry companies in fuel substitution projects have expertise on the field.

Project type preferences are not established so far. As long as the projects are in line with the Marrakech accords, the government does not interfere in choice of project

sectors. Preferences regarding price, volumes, payment and time-scale depend on the interest from the private sector.

Canada has been involved in the World Bank Prototype Carbon Fund (PCF) since its beginning, and recently joined the Community Development Carbon Fund (CDCF). It has signed a MoU with the World Bank's BioCarbon Fund as well.

The Netherlands

50 % of the Dutch reduction target of 200 $MtCO_2e$ in total for the first Kyoto commitment period is planned to be met through the use of the Flexible Mechanisms. Of these, 67 $MtCO_2e$ are estimated to be met through purchasing CERs.

The Dutch work along several tracks in order to purchase CERs. The responsible Dutch government institution is Senter Internationaal, which is working on behalf of the Dutch Ministry of the Environment (VROM). Senter organised the CDM procurement tender CERUPT. They will, however, not conduct a new tender until the market is more mature, because they perceive EU procurement rules as too rigid at this stage. Multinational financial institutions like the International Finance Corporation (IFC), the International Bank for Reconstruction and Development (IBRD) and the Corporación Andina de Fomento (CAF), the latter focusing on Latin America and the Caribbean, and private financial institutions like Rabobank are contracted by VROM as intermediaries to select CDM projects and purchase CERs for the benefit of the Netherlands. The Netherlands also invests in the World Bank Prototype Carbon Fund and in the CDCF.

The Dutch have carried out studies and found that they can pay max 6.7 USD per CER. However, depending on the technology, they are willing to pay more, e.g. for renewable energy projects. CERUPT will be a good indicator for their price ranges. NGOs have claimed that prices are so low that it would impede CDM market development. However, the great interest from CDM host countries in CERUPT shows that the interest is there, and a market too, according to VROM. Due to high transaction costs, only large projects will qualify, at least according to the Marrakesh rules. This is why the Netherlands also invest in the Community Development Carbon Fund of the World Bank, in order to run small-scale projects. Earmarked public funding is used to purchase CO_2 reductions through the CDM. The money used by the Netherlands is thus tax money, and the Ministry of Finance has instructed Senter to be cautious with advance payments. In theory it is possible to pay a certain part in advance, but a preference would certainly be to pay on issuance of the CERs. Because the money is budgeted for the 2008-2012 period, the Dutch have a preference for projects carried out within the first commitment period.

The Netherlands engage in bilateral purchase agreements with CDM host countries, and have engaged in Memoranda of Understanding (MoUs) with nine countries: Bolivia, Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama and Uruguay. Although these are all Latin American countries, there are reasons to believe that Asian countries will be subject to more interest from the Netherlands shortly. Currently, the Dutch have negotiations with the Philippines, India and Indonesia about agreements to cooperate within the CDM area (the latter being a CER purchase agreement rather than a MoU). In addition, they are negotiating with Ecuador on a MoU. The MoUs are not legally binding to either of the parties involved.

The Dutch have experienced that Latin America has been more eager to get involved in CDM co-operation than other regions. Still, the Dutch emphasised that the existence of MoUs is no prerequisite for engaging in projects with a host country.

The total amount of CERs included in the MoUs is sufficient to reach the Dutch CER purchasing goal of 67 $MtCO_2e$ in the period of 2008-2012. Still the Dutch don't want to state the exact amounts, because they regard these amounts to have more of a symbolic than a stringent value. The Dutch find that MoUs facilitate the cooperation with the host countries, and in particular the issuance of letters of approval. The MoUs are only means of making the host country aware of the implications of them ratifying the Kyoto Protocol, and thus, more specifically, they need to concretely think about how much CERs they will be able to produce and more specifically, how many CERs they are, in principle, willing to sell to the Netherlands. Still, some examples of amounts of CERs included in the MoUs are: Uruguay: 5 $MtCO_2e$; Bolivia: 10 $MtCO_2e$; Colombia: 25 $MtCO_2e$; Costa Rica: 30 $MtCO_2e$; El Salvador: 5 $MtCO_2e$; Nicaragua: 5 $MtCO_2e$; and Panama: 20 $MtCO_2e$.

Common EU Initiatives

In principle, there are at least two ways that EU Member States (MS) could coordinate their approaches towards the procurement of CERs under the EU umbrella. One would be to pool the resources of each member state in some kind of procurement facility. However, it is likely that the views of MS would diverge on this approach. For example, some MS have already initiated procurement tenders (Netherlands, Sweden, Finland) or are in the process of doing so (Austria), while others have not progressed very far in terms of crafting a CDM strategy. A second possibility would be that the EU, being a separate Party to the Kyoto Protocol, with e.g. its own registry, decides to establish a facility of its own.

Ideas about such efforts have to some extent been discussed as part of the European Climate Change Programme's in relation to what is now a proposed Directive on linking the EU ETS with the project-based Kyoto mechanisms. Discussions on whether – and, if so, how – to use EU funds for purchasing CERs, are also to some extent ongoing in the EU Commission at present, although no concrete proposals exist. An interesting, but controversial aspect of such an EU initiative is that it could potentially be a reserve for countries that are not able to meet their targets.

Possible EU procurement initiatives will be assessed in light of the further development of the proposed linking Directive, for example as to whether there will in fact be a quantitative limit on the use of CERs and ERUs for compliance purposes in the EU ETS.

In one sense, there already exist facilities where EU MS are already in the process of pooling financial resources to obtain credits; all Scandinavian countries are engaged in The Baltic Sea Region Energy Co-operation (BASREC) Testing Ground Facility for the use of the Kyoto mechanisms, and Finland, The Netherlands and Sweden have all co-funded the World Bank Prototype Carbon Fund. Furthermore, the Netherlands and Italy have both invested in the World Bank's Community Development Carbon Fund (CDCF), and Austria as well as Sweden might follow suit.

Germany

Germany currently does not plan to fulfil its emissions reduction commitment through the CDM, as the government of Germany intends to reach its Kyoto commitment solely through domestic actions. However, there is obviously still the scope of German companies buying CERs to meet their commitments under the EU ETS.

At the moment, the government of Germany has not entered into any MoU. It is, however, negotiating with several countries, but cannot give more information at this stage. At present there are no preferences regarding regions, however there is a wish to invest in both CDM and JI projects. The government acts on demand, that is, when a project developer approaches them with a potential project. However, the Germans will not enter into a MoU with a country which has strategic views that are not compatible with their preferences for renewables and energy efficiency projects.

Currently, Germany has not developed any CDM fund. It concentrates on the conversion of CER into allowances in the EU Emissions Trading Scheme. German funds will be fuelled mostly by private money. Still, the German Development Bank, KfW (Kreditanstalt für Wiederaufbau) is currently developing a fund, financed by KfW itself, as well as the Ministries of Environment and Economics, and private actors. The

fund is to become a public-private undertaking, where industry is expected to have a large share. A project development team was established two months ago, but the carbon fund is still in a conceptualisation phase. The fund is expected to be operational in the second part of 2004; however, much depends on the outcome of the EU linking directive. Then the fund, as a first stage, is expected to have reached the amount of 50 million Euros in order to develop a reasonable portfolio. When it has started operating, 100 million Euros is expected to be the fund's capitalisation. Generally speaking, the KfW would like the German government to engage in MoUs.

The KfW fund will focus on renewable energy and energy efficiency projects. Government money and KfW funding will only benefit these types of projects, but if other project developers want to invest in other types of projects and get the necessary approval, the government will not interfere. However, sinks projects are not going to happen in the current political context in Germany. There is a strong preference for larger and lower-cost projects, and thus more advanced CDM host countries are regarded as more attractive, due to the assumption that this would imply less risky projects. Germany regards Latin American countries as more advanced, but they are also interested in looking into Asian projects as soon as the fund is operative.

Prices will depend very much on the pricing policy on the fund, which is not decided upon yet, and market prices. Still, given current conditions, Germany expects to pay 5 Euro per CER in order to ensure good CER quality. Premiums of certain types of projects are not investigated so far. It depends partly on the EU linking directive. Volumes will be discussed. It seems to be a mix between large and small projects.

However, nothing is decided yet. The Germans will call for projects, and then they will develop a project portfolio. KfW has the advantage that it has experience from financing projects in developing countries. Germany's official development assistance (ODA) is partly channelled via KfW. Therefore, it is expected that CERs will be bought on delivery and at projects will simultaneously be supported until they are up and running. Overall financing packages will probably be made. Time-scale perspectives of CDM projects are under discussion. The fund is set to buy CERs until 2012, but the Germans believe that individual contractual agreements for the period after could happen.

France

France adopted a national climate program in 2000, which envisaged carbon taxation on energy, but these measures were suspended. This has significant consequences for major fields of the climate program, and especially the industry sector.

Firms responsible for nearly a fifth of French greenhouse gas emissions in 2001 have signed up to a voluntary commitment to reduce these emissions by 14% compared with 1990 levels by 2007. However, the voluntary emissions reduction scheme is in a transitional phase, due to the EU ETS, where the government is responsible for the allocation to the different firms. Hence, some of them will have larger reduction targets than they undertook under the voluntary scheme, whilst some will undertake further voluntary emissions reductions initiatives when the directive is in place in 2005.

The French government does for the time being not intend to purchase CERs, nor engage into JI projects, as the French emissions reduction target is planned to be met entirely by domestic reductions. Still, France has engaged into an agreement of mutual understanding with Colombia in order to promote and facilitate the development of CDM projects, a similar agreement with Morocco is just about signed, and several other agreements are being discussed with CDM host countries with which France has a good relationship. Although the French government does not participate directly, as this is delegated to the private companies, the government wants French companies to participate within the EU ETS. Currently, the French government is developing a manual for French companies in order to help them with capacity building as well as in identifying potential projects. The manual is to be published by COP-9. The government will not engage in funds, at least not at the moment. This will, in any case, be stated in the 2003 national climate plan.

There are no restrictions imposed on French companies engaging in CDM projects, apart from the general CDM rules and modalities. The French government finds it politically important that CDM projects not only take place in potentially large markets like Brazil, China and India, but also in Africa and less-developed Asian countries. It is not against using some ODA in developing projects, but is awaiting the rules on this point. Regarding project types, it depends on the offers, but the preference would be renewables and especially energy efficiency.

Italy

According to its national climate plan, Italy needs to cut its GHG emissions by 92.6 $MtCO_2e$ by 2010. The plan identified measures to cut 51.8 $MtCO_2e$ of which 12 $MtCO_2e$ were to be achieved through CDM or JI projects. It is a well-established fact that Italy's economy is characterized by low carbon intensity and high abatement costs, and thus a large amount of the remaining 40.8 $MtCO_2e$ would probably need to be achieved through the use of the Kyoto mechanisms.

Furthermore, as is the case for most other countries, the national plan is different from the baseline scenario. According to Point Carbon's estimates, the gap between Italy's

greenhouse gas emissions in the period 2008-2012 and its Kyoto target is likely to be about 391 $MtCO_2e$. As declared in the "Guidelines for national policies and measures regarding the reduction of greenhouse gas emissions", carbon credits generated by the Clean Development Mechanism (CDM) and the Joint Implementation (JI) projects are expected to offset national greenhouse gas emissions between 10% and 50% of the reduction foreseen for the first commitment period. This means that Italy would have to achieve up to 195 $MtCO_2e$ through international emissions trading and/or CDM/JI projects.

The exact extent to which flexible mechanisms will contribute, will depend on the evolution of both the carbon market as well as national abatement costs. Currently the government plans to acquire at least 12 Mt CO_2/year. Periodic revision of the status of implementation of the national policies and measures regarding the reduction of greenhouse gas emissions might lead to a reassessment of the contribution of flexible mechanisms.

There have been political statements saying that even more than 50% of Italy's reductions could be made outside Italy. Italy could thus become one of the main players in the emerging carbon markets. To our knowledge, no decision has been made on the relative emphasis on CDM and JI, respectively, in that regard. Italy's Third National Communication signals very clearly the need for a public sector CDM assistance program under the coordination of a specific agency, to facilitate CDM and JI project development and hints towards a CDM/JI tender seems to be implied.

Italy is carrying out a series of activities in order to support and foster Italian companies to invest in CDM and JI projects. The Italian Ministry for the Environment and Territory is in the process to sign, or has signed, cooperation agreements with the following countries: Algeria, China, Cuba, Egypt, Israel, Moldova, Cyprus, Morocco, El Salvador, and Serbia. Contacts are ongoing with Brazil. The Chinese program plays a significant role. The Italians have established a specific office in China as part of this co-operation, which includes participation in two CDM capacity building studies (one together with Germany's GTZ, the Swiss government, the World Bank and China's Ministry of Science and Technology; the other with UNDP). However, to the extent that this co-operation includes concrete CDM projects, such work is at the project identification stage.

The Italian Ministry for the Environment and Territory (Minambiente), together with the Parties of Turkey, Lebanon, Tunisia, Morocco, Spain and Greece as well as UNEP and the EU Commission, has also launched a project promoting CDM activities between the Mediterranean countries, including the elaboration of pilot projects.

In addition, Italy is exploring the opportunities offered by international institutions. So far Italy will contribute US$ 7.7 million to the World Bank Community Development Carbon Fund (CDCF) and receives in return certified emission reductions from small projects in least developed countries and poor communities in all developing countries. Also, Italy has signed a bilateral agreement with the World Bank for receiving CERs from CDM projects (US$ 15 million).

There are also currently negotiations going on with industry regarding voluntary agreements. Italian companies' subsidiaries agree to implement CDM projects, e.g. Eni's. The question of who would actually obtain the credits (the Government or the specific companies) is part of the negotiations.

Regarding project types, this issue is still being explored. However, renewables (notably biomass), energy efficiency, and landfill gas for power are of interest. The National Plan also mentions sinks. No preferences on price ranges or attractive host countries were provided.

Austria

According to national plans, Austria has to reduce 16,85 $MtCO_2e$ per year to meet its Kyoto target. It and estimates that one third or one forth of these will have to be made abroad, through the flexible mechanisms. It is not specified how much will be achieved through the CDM in particular.

Recently, a law was passed that channels government money to the involvement in CDM and JI projects. The Austrian JI/CDM program has the following funding at its disposal to buy (potential) CERs and ERUs: At least €1 million in 2003, € 12 million in 2004, € 24 million in 2005 and € 36 million in 2006. This money is not necessarily bound to the specific years. The law establishes an institution working on behalf of the government, setting up guidelines and the institutional arrangements for JI and CDM. This work will be directed by Kommunal Kredit.

Austria has MoUs with 6 JI countries, but does not prioritise MoUs with CDM host countries. That is a question of resources, as there are few people working on these issues.

These days, guidelines for CDM and JI projects are being developed, in line with the new legislation. In any case, the guidelines are not legally binding, and there will not be any concrete incentives or restrictions on CDM projects regarding countries, price, project types, volumes, means of payment or time-scale, other than what is decided within the rules and modalities of the CDM. Still, renewable energy projects and energy

efficiency projects are preferred. Small-scale projects are in principle desirable, however, the Dutch will not rule out large-scale projects, as long as they contribute to sustainable development locally. Prices are not established yet

Regarding payment, the Austrians try to learn from the Netherlands and the PCF. However, in principle they think it's necessary to give a certain part in advance, with all contractual safe-guards taken. Austria will, as a buying country, not limit its procurement periods to the first commitment period under the Kyoto Protocol.

Traditionally, Austria is more closely linked to Eastern Europe and the Balkans than to developing countries, so they don't have strong communications with potential CDM host countries, but more with project developers. Austrian companies have mostly good contact in Eastern Europe. JI seems to be preferred by Austrian companies. As for the CDM, Austria is trying to enter into a MoU with Bosnia and Herzegovina, on the condition that they ratify the Kyoto protocol. In Bosnia, there are some ideas for projects, at least hydro and biomass.

Austria wants to engage in funds and CDM facilities to get CERs, as they regard these as more promising than looking at single projects. Austria has not joined any fund yet, and does therefore not want to say which funds, but what they can say is that they are looking closely at the CDCF. The negotiations with other funds are at a preparatory stage.

Finland

Finland developed a domestic Climate Strategy in March 2001 to fulfil its commitment as part of the "EU bubble" to stabilise its emissions at 1990 levels. A study has concluded that because Finnish industry is very energy-efficient, a domestic emissions trading system would be far more expensive than trading with other countries, e.g. the EU.

This was also part of the rationale behind the establishment of a Finnish CDM/JI Pilot Programme led by Ministry of Foreign Affairs, launched 1999. It was allocated €20 million (of which €10 million was invested in the World Bank Prototype Carbon Fund (PCF)). The aim is to deliver 1.2 $MtCO_2e$ over the first commitment period and the price at € 2.5–6/tCO_2e.

Finland launched a tender for small-scale CDM projects in early 2003. Out of 28 tender offers received in March 2003, it proceeded with 23 projects in South/Central America, Asia and Africa. Preliminary contract negotiations were started with 7 candidate projects offering CERs within the lowest unit price range of €2.47-€3.2. The Finns now

have 5-6 CDM projects in the pipeline (in Asia and Central and South America), of which 2-3 projects were in the pipeline before the tender. The Finns have recently started detailed negotiations with 3 project developers offering CERs in the range of € 2,47-3, involving biomass and hydropower projects in Central America and Asia. A total amount of approx. 500,000 tCO_2e (equal amount of CERs) will likely be purchased. The contracts are expected to be signed in late 2003. Because this is a SSc tender, transaction costs (validation, registration, CER verification etc.) included in the price estimate are high in relative terms.

Finland has signed MoUs with Costa Rica, El Salvador, Nicaragua, India and (a more general agreement) with China. The Finns generally have a policy of signing MoUs with all countries in which they engage in projects.

It is unlikely that many projects would start if the Pilot Program simply purchased the verified emission reductions after they have taken place. Therefore, it is possible to negotiate that a proportion of the purchase price will be paid in advance; any and all advance payments will be subtracted in equal sums from payments made based on the delivery of emission reductions. A security may be required for advance payments. In case of non-delivery, the Ministry shall have the right to reclaim any and all advance payments for which the corresponding emission reductions have not been delivered.

The project must have either an endorsement letter or approval by the host country and have solid institutional support. The project must not have negative social, economic or environmental impacts, and it must be supportive of the Finnish Policy on co-operation with developing countries. Projects that reduce poverty, promote environmentally sustainable development and enhance social equality, democracy, human rights as well as good governance will be given priority.

Denmark

Denmark has an emissions reduction target within the "EU bubble" of 21 % by 2008-2012 of 1990 levels. Unless a Danish objection regarding exceptional circumstances in the Kyoto base year is taken into account, the Danes have calculated that they will need to reduce emissions by 25$MtCO_2e$/year in the first Kyoto commitment period.

The Danish government has a political goal of not spending more than 120 DKK (ca. $18, or €16) per ton of domestic CO_2e of emissions reductions. Thus, emissions reductions exceeding this price are to be made through the Kyoto Mechanisms. Cost effectiveness is a keyword, and the government has endorsed as a principle that the private sector should be responsible for 90% of the greenhouse gas reductions, and that the public sector should be responsible for 10%, i.e., 2.5$MtCO_2e$ per year. Half of the

latter should be reached through the CDM, the rest through JI. This means that planned government CER purchases are max 1.25 $MtCO_2e$/year. The Danish government will not impose restrictions on the JI or CDM activities of the private sector. So far, an emphasis has been put on JI projects; the Danish government has earmarked 130 million DKK (ca. 19,5 million USD, ca. 17,5 million Euro) to JI projects in 2003 and no money to the CDM (although some of these funds might be transferred to the 2004 budget).

In late August, Denmark announced additional plans for public investment in CDM and JI initiatives. Investments will be divided between international funds and a portfolio managed directly by Denmark. The portfolio will be divided between the Environmental Protection Agency, responsible for JI, and the Ministry of Foreign Affairs, responsible for CDM. 1 September, the Ministry of Foreign Affairs established a CDM Unit. The project sourcing has started. Plans are to invest DKR 200M (€27M) annually 2004-2007, split equally between JI and CDM projects. This suggests a more aggressive strategy than strictly necessary to obtain CERs equalling 1.25 $MtCO_2e$/year, as previously stated (see above), although details of the new initiatives are still not clear.

Denmark has already signed MoUs with a number of prospective JI and CDM countries. It aims to sign contracts with all Eastern European countries, including Russia, as well as CDM agreements with Malaysia, Thailand and South Africa. Denmark is currently negotiating Memoranda of Understanding (MoUs) with China, Indonesia and Moldova. Denmark prefers to establish CDM agreements with countries with which they already have co-operation through the Danish environmental development aid, because they're already working there, and because of considerable reduction volumes. Also, these countries are interesting because they have emissions of a kind that makes it viable to run sustainable energy projects. These criteria will necessarily have implications for the choice of countries (e.g. African countries are regarded as less interesting).

Currently it has not been decided whether Denmark should state specific preferences regarding CDM project types. Still, the Danish CDM Unit currently focuses mostly on renewable energy and energy efficiency projects. Projects that have been identified are biomass projects utilizing waste from the Malaysian palm oil industry to produce energy, as well as CDM projects recovering methane gas from landfills with energy production. The projects identified in the three CDM host countries will potentially lead to emissions reductions (and, hence, CERs) of 1,7 – 2,3 million tons of CO_2e per year, yielding a total price of DKK20-80M (€2,7 – 10,8M) per year. Still, the Danish have not set any maximum price that they are willing to pay for CERs; however, they mention €5 per CER as a reasonable price to pay for quality CERs. Additional projects will be identified in all three countries mentioned above, as well as possibly in China, Indonesia and Moldova. Other potential CDM host countries, like Vietnam, have also shown their interest in CDM co-operation with Denmark.

The investments will not have any direct impact on the first period of the EU ETS, as the Danish government has no direct obligations under this scheme. Still, the Danes believe that this plan will have impacts for allocation in the long run, when the Kyoto Protocol enters into force, and hence indirectly lighten the burden of Danish companies.

Denmark has a clear preference for paying on the issuance of the CERs. Although the main focus will be on projects within the first commitment period, this does not mean that the Danish necessarily want to end all projects in 2012.

Sweden

The Swedish climate strategy (November 2001) aims for a 4 per cent GHG emissions reduction from 1990 levels by 2010 without accounting for sinks or flexible mechanisms. In the EU burden sharing agreement Sweden has a target of plus 4 percent. The Swedish government shall also consider a revised national target that includes flexible mechanisms in 2004. Because Sweden is part of the EU ETS, it is difficult to plan how this should be done in advance.

The CDM procurement program under the Swedish International Climate Investment Program (SICLIP-CDM) aims to assemble a portfolio of four to six CDM projects that are geographically spread. The call for CDM projects was issued in May 2002. It has focused on small-scale new renewable energy projects, although large-scale projects have not been excluded. Currently, 6 projects are in the pipeline (1-2 of which are pending). The three of these that have progressed furthest are sugarcane bagasse projects in Brazil. Of the remaining projects, one is in India (biomass), one in Africa, and one in Asia (the host countries of the latter two are not public, because it is still uncertain whether they will be implemented as planned).

A tender for JI projects (SICLIP-JI) was issued in late July 2003. It is therefore reasonable to believe that much resources (economic and manpower) will focus on this tender in the near future rather than on developing further CDM projects. In fact, interviewees state that Sweden is unlikely to engage in more CDM projects – at least in the short term – apart from perhaps investing in the World Bank Community Development Carbon Fund (CDCF).

Sweden has developed 65 Activities Implemented Jointly (AIJ) projects, estimated to yield total emissions reductions of 4.28 $MtCO_2e$. However, this major effort has focused on the Baltic countries and Russia. Dominating project types have been fuel switching (to biofuels); energy efficiency improvements in buildings; and improvements in district heating distribution.

While several JI MoUs have been signed, no CDM MoUs have been signed as yet, but it is not ruled out as a future strategy. Countries in Latin America are deemed most attractive for CDM investment, together with Asian countries. However, the Swedish government emphasises sustainable development aspects of projects, to the extent that it is comfortable with paying a somewhat higher price per CER for projects with such benefits.

The Swedish Energy Agency (SEA) does not intend to co-own CDM projects; it is interested in project partnership to the extent necessary in order to ensure that chosen projects are successfully implemented. SEA anticipates some capacity-building assistance in relation to CDM projects, and support to project developers through the project analysis required under the CDM. On a project-by-project basis it might also consider transferring funds in advance for CERs to be generated during the first crediting period.

Switzerland

The Swiss currently discuss the extent to which the private sector – that is, approximately 600 firms – should be allowed to make use of flexible mechanisms in the first commitment period. The private sector has legally binding targets, but it is hard to tell how much of the necessary reductions they will achieve through the CDM; probably around 1 $MtCO_2e$ will be reduced through the flexible mechanisms per year in the 2008-2012 period, but this depends on the outcome of the current discussion.

The extent to which companies will be able to purchase CERs also to some extent depends on Switzerland's links to the EU ETS – or the lack of such. Switzerland is not a member of the EU. It might be able to link to the EU ETS, although there have been reports lately suggesting that this will be difficult before 2008.

Switzerland could be able to obtain half of its emissions reductions commitment in energy efficiency gains, without high costs. In general, most emphasis is given to reducing emissions domestically.

Three alternatives for a more ambitious climate policy are under discussion: a carbon tax; a carbon tax combined with so-called "*Klimarappen*"; and only "*Klimarappen*". The funds obtained through *Klimarappen* could be used to buy ERUs and CERs abroad as well as invest in Swiss transport sector.

"Klimarappen" is a means of raising money through the polluter pays principle, in this case through a 1 eurocent fee on fuel. It will be managed by the economy itself under the heading of a voluntary initiative. This means less money will have to be spent to

meet the emissions reduction target. Money raised through *Klimarappen* would not be recycled into the economy, in contrast to tax money.

The Swiss government recently provided financial support to the Climate Investment Partnership, a non-profit public-private investment partnership aims to provide new sources of funding for greenhouse gas reduction projects including CDM projects.

Norway

The proposed domestic emissions trading system in Norway opens for the use of credits under CDM (and JI) for compliance purposes. Government projections suggest a need to acquire 5-6 $MtCO_2e$ (lower if processing industry closed down; higher if 2-3 natural gas power plants with emissions of about 2 $MtCO_2e$ each are built) to meet Norway's target of +1% from 1990 levels.

The CER share of the reductions is unknown. It would depend on whether – and, if so, how – Norwegian actors will be able to trade in EU allowance units (Norway is not an EU member and its system would therefore need to be linked to EU's for Norwegian EAU trading to take place). It also depends on to what extent Norway will make use of International Emissions Trading (which will probably be limited).

There are currently no plans for government purchase of CERs through tenders, or even investment in single CDM projects. The Government White Paper from 2002 states that private companies should take the lead in reducing greenhouse gas emissions, and that no role is envisaged for government in this regard. Nevertheless, the role of the Norwegian government is under consideration. The scope of the proposed Norwegian system is much broader than that of the EU ETS; if it needs to be shrunken in order for linking to take place, too few credits/allowances might be available for sectors outside the ETS. This would force the government to secure enough credits, either directly or through intermediaries. The potential links between Norway and the EU are to be clarified in relation to the development of legislation and guidelines for the domestic Norwegian emissions trading system (within 2004).

Norwegian authorities have co-sponsored several studies of the CDM in China. Discussions have also been initiated with countries in the Caribbean (Cuba etc.) in regards to CDM project development, but this is still in an early phase.

United Kingdom

It is currently not very likely that the UK government will develop CDM projects, because the goal of the national climate change program is to meet the reduction targets domestically. The use of the flexible mechanisms is left to private companies through the European Union Emissions Trading Scheme (EU ETS). It is still uncertain whether UK needs JI or CDM. Still, it is in the government's interest that UK companies engage in CDM or JI projects. Private companies can meet as much as they want of their obligations through CDM projects, and they may sell credits, not necessarily to the British government; if they want to sell CERs to for example the Dutch government, that is no problem. Moreover, the UK government is not active in engaging in MoUs. If a company comes to the government saying that their planned investment in CDM projects depends on the government engaging in a MoU with the host country, this will of course be done.

The UK Climate Change Project Office is set up to promote UK CDM participation and give guidance to UK companies that want to develop CDM or JI projects.

The government has no preferences regarding regions or countries where CDM projects should be developed. However, they have experienced that the UK business wants to know where the market is developing. UK has not gotten to the stage of having established preferences regarding project types or sectors to invest in CDM projects. The UK Climate Change Projects Office thinks that such preferences will only manifest themselves if there will be lots of projects.

New Zealand

New Zealand formally ratified the Kyoto Protocol on 19 December 2002, thereby agreeing to meet its GHG emission target of matching 1990 levels. Unlike the majority of Annex I nations, the larger part of New Zealand's GHG emissions are derived from the agricultural sector, mostly in the form of methane from the country's 50 million sheep and cattle. Estimates have stated that agricultural emissions are still approximately at 1990 levels, which is in contrast to the energy sector where GHG emissions grew annually by an average of 2.4% between 1990 and 2002.

The national response to climate change issues is directed through the New Zealand Climate Change Office. The main climate policy instruments implemented so far have been domestically focused and include projects for emission reduction tenders; a carbon tax; and Negotiated Greenhouse Agreements.

The first tender round for GHG emission reduction projects is scheduled to occur in September and October 2003. 4 $MtCO_2e$ will be available. Incentives might include money or the pre-allocation of emission units. The minimum reduction in emissions is 10 $ktCO_2e$ for the first commitment period.

The carbon tax will only be implemented if the Protocol enters into force. It will be levied until 2007 and then throughout the first commitment period, and will be capped at NZ\$25/tCO_2e (farmers are exempt). The Government retains the option of introducing emissions trading as an alternative to the carbon tax.

Negotiated Greenhouse Agreements (NGAs) are designed to provide an exemption to the proposed carbon tax. In exchange, firms commit to moving towards world's best practice in emissions management. NGAs are limited to firms or industries whose competitiveness is at risk from foreign producers subject to less stringent climate change policies.

The policies and initiatives undertaken by New Zealand to date have been domestically focussed, and as a result there has been little interest in acquiring credits via the JI and CDM project mechanisms available through the Protocol. The reason for the lack of interest lies in the fact that New Zealand is expected to be a net exporter of credits and therefore has no interest in buying them. Indeed, credits generated by the wind farm projects undertaken by TrustPower and Meridian have been offered for sale via the ERUPT program, with the permission of the New Zealand government.

New Zealand has been assigned the adjusted GHG target amount of 309$MtCO_2e$ over the first commitment period, and emissions are predicted to be around 383 $MtCO_2e$ over this interval. However, forestry sink, energy efficiency and waste management initiatives are expected to generate credits of 105 $MtCO_2e$, 20 $MtCO_2e$ and 5 $MtCO_2e$, respectively, resulting in net excess credits in the order of 56 $MtCO_2e$ over the first commitment period.

Conclusions

To sum up and conclude, the following should be highlighted: Several Annex I Parties seem set to increase use of Kyoto mechanisms due to the current and projected distance to their Kyoto targets. The Americas dominate the CDM host country arena, but there is a tendency towards a greater focus towards Southeast Asia. To the extent that host country preferences are stated, there is a focus on large, well-known countries, probably from the perception that they can deliver large CER volumes for a low cost.

Interestingly, the three countries often mentioned (Brazil, China, India) are among those having experienced most domestic problems regarding host country approval and project implementation to date. The Dutch dominate the scene among the Annex I Parties, although e.g. Canada and Denmark have increased their focus on CDM lately. An increasing number of Annex I Parties engage in MoUs with CDM host countries. Only the Dutch specify the amount of CO_2e linked to each MoU (and the Dutch tone down the importance of such quantifications as well, saying it is only done for awareness-raising on the part of CDM host countries). Several Annex I Parties still lack clear CDM strategy; for some this is because they are confident in fulfilling their commitments domestically.

Data on CER price preferences is limited, as respondents were (understandably) reluctant for strategic reasons. However, the price range among those having stated a preference was 3-6.5USD/tCO_2e. There was no clear trend regarding payment upfront vs on delivery.

There is some willingness to pay for projects' sustainable development (SD) benefits, but the survey shows a price-quality trade-off. There is still considerable scepticism towards the use of sinks for (Kyoto) compliance, although several Parties leave the door open for changes as a result of COP-9. A factor that might influence the volume and geographic location of CDM investments is how the borders between development aid and CDM investments will be drawn in practice in the period towards 2012 (cf. discussions in the OECD Development Assistance Committee), e.g. in CDM capacity building projects that include a project-related component. However, such deliberations could not be included in this study, due to time constraints.

Due to the strict time limits of this study, there was not much time available to make use of Point Carbon's modelling apparatus. One suggestion for a continuation and further improvement of this study would be to use Point Carbon's Carbon Market Forecaster model (covers the Kyoto system) as well as our CDM Forecaster model to examine more in detail the dynamics and interplay of CER demand on the one hand and Annex I countries' current and projected distance to their respective Kyoto targets on the other.

The information contained in this report will quickly be outdated; even in the short period the project has lasted, several new initiatives have been made public. Thus, it should be considered to update this study on a routine basis.

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Appendices

APPENDIX 1:

POINT CARBON PRESENTATION, SOUTHEAST ASIA FORUM ON GHG MARKET MECHANISMS AND SUSTAINABLE DEVELOPMENT, 11 SEPTEMBER 2003

PointCarbon
Market Intelligence and Analysis

CDM market overview

Jorund Buen, Partner, Point Carbon
SE Asia Forum on GHG Mitigation,
Market Mechanisms and Sustainable Development,
Manila
11 September 2003

1

PointCarbon
Market Intelligence and Analysis

Outline of presentation

- Brief overview of Point Carbon
- CDM demand analysis
- CDM supply analysis
- Summary: Why is the price low? Which factors may influence this?

2

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Market Intelligence and Analysis

Products and tools

Product Portfolio

- **News and market information**: CDM Monitor, Carbon Market News, Carbon Market Europe
- **Research and analysis**: Carbon Market Analyst, Carbon Market Quarterly, Carbon Market Projects, JI Country Profiles

Analytical tools

- Transaction database
- Structural models
- Empirical models
- Trading systems database
- CER forecaster
- Country ranking (JI/CDM)
- Expert polls

3

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Demand

4

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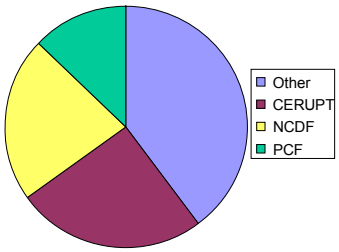
CERs: Funder's keepers?

- Annex I governments dominate CDM buyer side at present
- Might keep for compliance rather than trade
- However: New public-private partnerships emerge

CERs issued 2005 (produced -2004)



5

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ADB/IETA study: Key insights

- Planned CER procurement -2012 ≈ 100 $MtCO_2e$; will likely increase (JPN, IT, SP distance to target)
- Dutch dominance (MoUs; market experience; breadth of initiatives; volumes)
- Preferred project type: Renewables
- MoUs centred in Latin America; SE Asia gains popularity
- Price preference: indicatively 3-6.5 USD/tCO_2e (limited data); some willing to pay more for "quality CERs"
- Investment preference: neighbouring countries; Latin America; large, well-known countries
- Internal Annex I resource competition CDM vs JI?

6

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CDM's part of the cake

Country	Total planned CER purchase, 1st Kyoto commitment period (2008-12)
Austria	20-30 $MtCO_2e$ (JI&CDM)
Canada	50 $MtCO_2e$ (CDM, JI and ET)
Denmark	6,25$MtCO_2e$, but ≈ € 120 million to be invested in JI/CDM -2007
EU	Unclear (depends on linking proposal and possible procurement initiative)
Italy	At least 60$MtCO_2e$ (JI&CDM)
Japan	At least 95$MtCO_2e$ (JI&CDM)
Netherlands	67$MtCO_2e$

7

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Market Intelligence and Analysis

CDM's part of the cake

Country	Planned volume of CDM reductions, 1st Kyoto commitment period
Austria	4-6 $MtCO_2e$/year (JI&CDM)
Canada	10 $MtCO_2e$ totally (CDM, JI and IET)
Denmark	1,25$MtCO_2e$/year; ≈ € 120 million to be invested -2007
EU	Unclear (depends on linking proposal and possible procurement initiative)
Italy	At least 12$MtCO_2e$/year (JI&CDM)
Japan	At least 19$MtCO_2e$/year (JI&CDM)
Netherlands	67 Mt CERs 2008-2012

8

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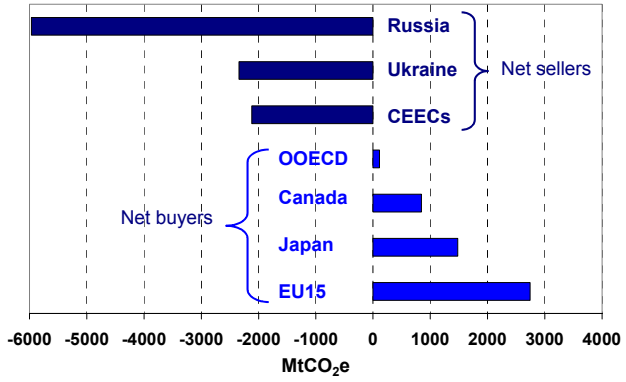
Kyoto gaps



9

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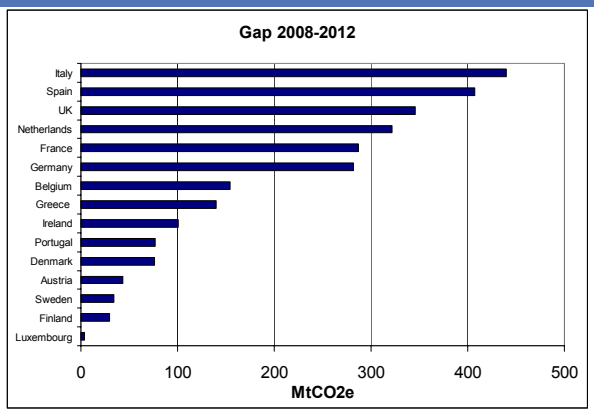
EU Gaps



10

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Payment and price preferences

Country	Preferred price range and payment terms
Austria	Market price. Upfront payment possible.
Denmark	Price preferences not decided. Max price for domestic reductions: 18USD. Payment on delivery. Tender information not yet made public.
Finland	About €3 (for the CDM projects in its portfolio). Upfront payment possible
Germany	About €5. Payment terms currently discussed.
Japan	None, but detailed examination of project agreements
Netherlands	6.7 USD is max price. May pay more for renewable energy projects. Payment on CER issuance.
Sweden	5 USD. May pay more for sustainable projects. Upfront payment possible.

11

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MoUs

Country	MoUs – countries ($MtCO_2e$)
Austria	Discussions with Bosnia & Herzegovina
Canada	Costa Rica, Colombia, Chile, Nicaragua, Tunisia, South Korea
Denmark	Malaysia; discussions with China, South Africa
Finland	China (general agreement), Costa Rica, El Salvador, Nicaragua, India
France	Colombia and Morocco
Germany	None (capacity building initiatives: East Asia incl. India, Indonesia, China; Chile; Peru; Colombia)
Italy	Algeria, China, Cuba, Cyprus, Egypt, El Salvador, Israel, Moldavia, Morocco, Serbia
Japan	None (close co-operation with ASEAN, China)
Netherlands	Colombia (25 $MtCO_2e$), Costa Rica (30 $MtCO_2e$), El Salvador (5 $MtCO_2e$), Panama (20 $MtCO_2e$), Uruguay (5 $MtCO_2e$), Bolivia (10 $MtCO_2e$), Nicaragua (5 $MtCO_2e$), Guatemala, Honduras. SE Asia (Indonesia, Philippines)?

12

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Project types

Country	Preferred project types
Austria	Energy efficiency, renewable energy. Not sinks.
Canada	No preferences so far. Companies decide.
Denmark	Renewable energy, fuel switch, cogeneration.
EU	Current status of ”linking proposal”: sinks and large hydro in danger.
Italy	Renewables (biomass), energy efficiency, landfill gas for power.
Japan	No official policy but emphasis on Japanese new renewables/energy efficiency technology.
Netherlands	Renewable energy, biomass, landfill gas; no sinks in CERUPT tender.

13

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Supply

14

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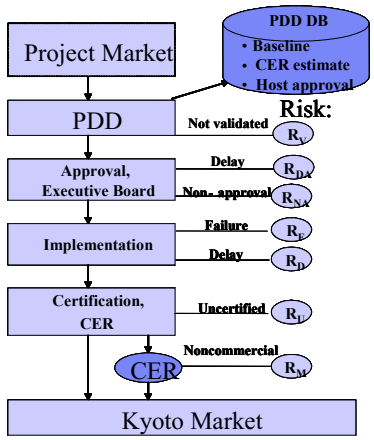
The CDM Pipeline



15

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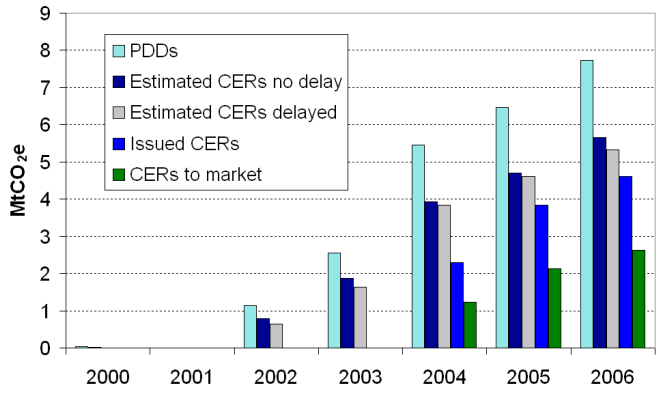
CERs to market



16

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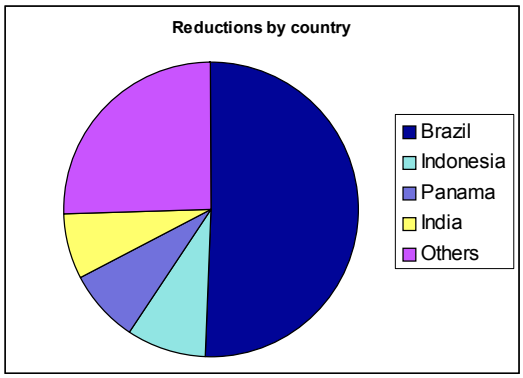
CDM host countries



17

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Why are prices low?

- Considerable supply of PINs to few, dominant buyers that may co-ordinate actions
- Demand for *potential* CERs limited due to uncertainty and risk
  - Will Kyoto enter into force?
  - Will CDM host country approve?
  - Will host country impose restrictions making project economically unviable?
  - Will CDM EB approve methodology & project?
  - Will we fail to implement the project?
- Dominant CDM buyers have probably had important influence on carbon prices so far

18

Future price drivers: Scenarios

- **Upward**:
- First CERs issued (only Kyoto risk left for most buyers)
- Host country and CDM EB approval standardised
- CER price stratification
- Early CER supply limited due to barriers
  - Accumulated 3-3.5 $MtCO_2e$ to enter the market within 2005
- Linking Directive approved
  - Possible to convert CERs and ERUs to EU allowance units
  - No significant barriers to CER supply
- EU ETS Allocation Plans concluded; many actors short
- Russian ratification, Kyoto entry into force
- **Downward**:
- CDM awareness → no. of low-cost projects ↑
- Sinks modalities and guidelines clarified
- Host country skepticism towards pure mitigation projects → complicated approval processes
- Price competition AAUs v CERs

19

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20