Significance and Issues of COP8 - Trends Toward CO_2 Emissions Trading and Outlook for the Future

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Introduction

COP8 (The Eighth Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change) was held from late October to early November 2002 in New Delhi, attracting approximately 5,000 participants from 170 countries. At the previous session, COP7 in Marrakech, a first move toward ratification was made with final agreement on detailed rules for applying the Kyoto Protocol adopted at COP3 in Kyoto. The Kyoto Protocol was expected to be ratified and take effect by the World Summit on Sustainable Development (WSSD) held in Johannesburg over late August - early September 2002, however as this did not happen, this COP was seen by many to be lacking in force. COP8 can also be viewed however as an important session that explored ways to combat rising emissions in developing countries, and brought emissions trading in the broader sense (the Kyoto mechanisms) closer to reality, including approvals for OE (operating entities) at the concurrent meeting of the CDM (Clean Development Mechanism) Board. At COP8, participants were urged to ratify the Protocol, with countries such as Canada taking their cue from this. As of the end of January 2003 the number of ratifying countries stood at 104, well above the 55 required for the Protocol to take effect, however in terms of share of global CO_2 emissions (percentage of 1990 total for countries subject to controls on emissions), the EU (24.2%), Japan (8.5%), Canada (3.3%) and other countries (7.9%) together accounted for only 43.9% of emissions. For the Protocol to take effect, the share of total emissions must be at least 55%, making ratification by Russia with 17.4% essential. Russia can expect to benefit from ratification of the Protocol as a seller of emissions rights, and thus with the Protocol taking effect now only a matter of time, it is predicted to do so by COP9 in Milan in

December 2003. (See Table 1)

European nations such as the United Kingdom, the Netherlands and Denmark are now incorporating systems for emissions trading into their environmental policies, in addition to environment taxes and other measures already introduced, with the European Union moving toward an EU-wide emissions trading scheme from 2005 onward. Japan has yet to explore these issues in earnest, making it undeniably a late starter in this area.

1. Sequence of events leading up to COP8

While the road has been full of twists and turns, over the last decade the first steps have been taken toward practical measures to stop global warming. This began with formulation of the Framework Convention on Climate Change at the United Nations Conference on Environment and Development (Earth Summit) held in Rio in 1992, taking effect in 1994, followed by the first COP (Conference of the Parties to the United Nations Framework Convention on Climate Change) session held in Berlin in 1995, where work began on drawing up the Protocol; then adoption of the Kyoto Protocol at the third session (COP3 in Kyoto), and formulation of rules for applying the Protocol at COP7 (Marrakech, 2001). (See Table 2)

2. Significance of COP8

While not representing the milestones of COP3 (Kyoto) and COP7 (Marrakech), COP8 may nevertheless be considered more than simply a link between COP7 and COP9. In *Results of COP8 and Outlook for the Future* (Second Research Department, Environment Group researchers Hirokazu Sasaki, Shin'ichi Nakaguki, Suzuko Tanaka) published on the Institute of Energy Economics, Japan Website in January 2003, the authors contend that “COP8 was held in a ‘vacuum’ - with detailed rules for applying the Protocol decided at COP7, however the Protocol itself not yet in effect - and because it was dominated by technical discussions, received very little attention.” (URL: http://eneken.ieej.or.jp) Meanwhile, Naoki Matsuo, representing Climate Experts (Climex, a global warming strategy advisory service)

notes that COP8 was “what you might call a ‘linking’ meeting where a few items left out of the Marrakech Accords (rulebook for the Kyoto Protocol) were fixed up. However, with leader of the developing world India hosting the meeting, and this being the first COP since the appointment of Dr. Rajendra K. Pachauri, Director-General of the Tata Energy Research Institute, as Chairman of the IPCC (Intergovernmental Panel on Climate Change), some progress was expected on important items on the developing world agenda (in particular concerning future commitments).” Matsuo also comments that, “with the CDM Board launched at COP7 due to make its first report on the year’s work, there were hopes too that this would provide a foothold from which full implementation of the CDM could proceed.” (URL: http://www.climate-experts.info/) Whether COP8 does indeed live up to these expectations will depend greatly on the follow-up that takes place from now on.

Table 1 Percentages of CO_2 Emissions in the Annex 1 Countries in 1990

USA	36.1%
Japan	8.5%
UK	4.3%
Italy	3.1%
Australia	2.1%
Netherlands	1.2%
Canada	3.3%
Spain	1.9%
Czech Rep.	1.2%
Germany	7.4%
France	2.7%
Poland	3.0%
Romania	1.2%
Russia	17.4%
Total other	1.6%
Total	100.0%
(EU)	(24.2%)
(Other countries)	(7.9%)
(Japan)	(8.5%)
(Canada)	(3.3%)
(Total ratifying countries)	(43.9%)

Note: Countries in ( ) are those ratifying the Protocol as of January 28, 2003

Table 2 Evolution of Agreements from COP6 to COP8

Session	Date	Host city	Main items of agreement
COP1	Mar-1995	Berlin	Framework for negotiating numerical targets, joint implementation activities
COP2	Feb-1996	Geneva	Basic direction for setting timing of application and legally binding quantitative targets
COP3	Dec-1997	Kyoto	Adoption of the Kyoto Protocol, baseline years, target years, numerical targets, differentiating targets, applicable GHGs, Kyoto mechanisms (emissions trading, etc.), developing countries made exempt
COP4	Nov-1998	Buenos Aires	Rules for applying the Kyoto Protocol e.g. application of the Kyoto mechanisms to be drawn up by COP6
COP5	Oct/Nov 1999	Bonn	More details of Kyoto mechanisms, identifying problems with observance, aim for Kyoto Protocol to take effect by 2002
COP6-(1)	Nov-2000	The Hague	No adjustments to the basic policies for applying Kyoto Protocol
COP6-(2)	Jun-2001	Bonn	Second COP6 session, at which basic agreement (Bonn Agreements) reached on core issues involved in the application and implementation of the Kyoto Protocol. Reconfirmation of 2002 target for Protocol to take effect
COP7	Oct/Nov 2001	Marrakech	Adoption of legal documents (Marrakech Accords) pertaining to implementation of Kyoto Protocol and based on Bonn Agreements
COP8	Aug/Sep 2002	New Delhi	Of the Kyoto mechanisms, in particular approval of detailed rules for applying the CDM (Clean Development Mechanism) and of the operating entities charged with approving CDM projects; adoption of the Delhi Ministerial Declaration (developing and developed nations working together to combat global warming)

(NOTE) COP9 December 2003 Milan

(Sources) Produced by the author from information provided by the Industrial Science and Technology Policy and Environment Bureau of the Ministry of Economy, Trade and Industry, 2002, and the New Energy and Industrial Technology Organization (NEDO), 2002

3. CDM

The CDM Board was established at COP7, subsequently convening a total of six times up to COP8. The Board explored a number of issues, assigning priority to the detailed rules for application of the CDM determined under the Marrakech Accords; conducting a more detailed study via the Panel operating under its auspices, and reporting on the results of its activities at COP8.

The CDM Board is scheduled to meet eight times before COP9. The CDM Board has the power to approve the main operators of the CDM (OE or operational entities), and attention is now focused on how this accreditation process will function. For the process, the Accreditation Panel or CDM-AP selects an Assessment Team or CDM-AT from its Roster of Experts to screen the applications of candidate OEs. The accreditation process looks at two different roles of the OE, i.e. project validation, and verifying and certifying reductions in emissions. For the former, applicants must show how they would carry out validation, and for the latter, they must present a document that sets out the potential for reducing emissions. It has been decided that applicants will receive provisional accreditation at this stage once the former has been confirmed. Official OEs need to be designated by COP, however up to COP9 (December 2003, Milan), if accredited by the CDM Board, an entity may act as an OE on a provisional basis.

The treatment of small-scale CDM projects has been clarified. Full approval has been given for the definition of a small-scale CDM project and simplified procedures devised by the small-scale CDM Panel.

In CDM certification, the fixing of baselines and question of monitoring methodologies have been addressed by the Meth Panel, and a form produced for the CDM-PDD (Project Design Document). Handling of CDM sink projects such as those involving absorption by forests is to be decided at COP9.

Thus with the overall framework for the Protocol rules of operation decided at COP7 (2001, Marrakech), and a flurry of activity on the part of the CDM Board, where things had been proceeding a little slowly, the structures are now in place for full implementation of the

CDM in 2003. However it is only reasonable to believe that while hopes may be high for the CDM, there will be numerous stumbling blocks in its practical application.

4. The second commitment period and other problems for the future

According to the Kyoto Protocol, negotiation of targets for the second commitment period for Annex B countries, (equivalent to Annex 1 countries in the Framework Convention on Climate Change) the first commitment period being 2008-2012, and the second 2013-2017, needs to commence by 2005 and be completed by 2008. This poses some rather major problems. There is the question of whether countries not ratifying the Kyoto Protocol, such as the United States and Australia, can be drawn back into the framework of the Protocol, and also the possibility of countries that have ratified the Protocol disengaging from it, unable to cope with the size of the burden on them, although with the Kyoto Protocol not yet in force, these issues have yet to be discussed officially. Moreover an important key to bringing the United States back on board, and having a real impact on global warming, will be to persuade developing countries with soaring emissions of CO_2 and other greenhouse gases such as China and India to participate in some form or another, as the United States has insisted. There has been no progress on these issues at COP, however particularly with COP8 being hosted by a developing nation - India, there were hopes for some sort of progress on the question of participation by developing countries. Furthermore with the appointment of Dr. Pachauri, Director-General of the Tata Energy Research Institute as Chairman of the IPCC (Intergovernmental Panel on Climate Change), there was speculation that the Delhi Ministerial Declaration discussed here in more detail later would provide positive indications of participation of developing countries. Ultimately however, only minor progress was made.

5. Problems with the ratification and effectuation of the Kyoto Protocol

Initial projections were that over 55 countries would have ratified the Kyoto Protocol by COP8, clearing the 55% benchmark for CO_2 emissions (Annex 1 countries, 1990 baseline) and allowing the Protocol to take effect. This however did not occur, so countries yet to ratify

were encouraged at COP8 to do so. One result was that Canada started moving toward ratification, undeterred by fierce opposition from the country's industrial sector, and the enormous disadvantage this would bring in international competition with its non-ratifying neighbor the United States. In Russia, which holds a crucial key to effectuation of the Protocol, despite the potential for enormous economic benefits from the Kyoto mechanisms and emissions trading in its broader sense, passing legislation through the Duma is generally a difficult process, with ratification of the Kyoto Protocol believed to be no different. Russia is said to have made its positive attitude toward ratification *per se* clear at the WSSD held prior to COP8, however the actual timing of ratification remains unclear. For the Protocol to take effect before COP9 (December 2003, Milan), the Russian parliament would have to ratify it by the end of August 2003. Once the Protocol takes effect, a COP (Conference of the Parties to the United Nations Framework Convention on Climate Change) and MOP (Meeting of the Parties) (i.e. countries that have ratified the Kyoto Protocol) are to be held concurrently, this COP/MOP1 commencing in December 2003. Once this happens there is a possibility that the United States will become simply an observer with no speaking rights, being a member of the former, but not the latter, in what promises to be the moment of truth for US environmental diplomacy.

6. Financial mechanisms

Investment by developed countries (Annex 1 countries) in developing countries (non-Annex 1 countries) is an issue, as is making funding from the various Funds available as quickly as possible, both providing a graphic illustration of the North-South dimension of combating global warming. The GEF (Global Environment Facility) has reported on approval for the procedures for managing the new Special Climate Change Fund (SCCF) and Least Developed Country Fund (LDCF). In its report the GEF mentioned a number of areas that need to be improved, including the transparency of the decision-making process, the appropriateness of providing funds, the possibility of predicting funding, increasing the amount of funding available, and the sustainability of GEF projects. The gulf between North

and South on these matters however proved too wide, and rules for managing the Funds were left as unfinished business to be decided by COP9.

7. The Delhi Ministerial Declaration

The details of the Delhi Ministerial Declaration given here are from the November 2002 report by the Global Industrial and Social Progress Research Institute (GISPRI) concerning its participation in the Eighth Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change/17th Meeting of Subsidiary Body for Implementation (COP8/SB17), via the research paper entitled Results of COP8 and Outlook for the Future (Second Research Department, Environment Group researchers Koichi Sasaki, Shin'ichi Nakakuki, and Suzuko Tanaka), which was published in January 2003 on the website of the Institute of Energy Economics, Japan (URL: http://eneken.ieej.or.jp). Interested readers are advised to visit the website directly. According to this IEEJ research paper, "The Delhi Ministerial Declaration was put forward by COP8 host nation India, and may be viewed as a political ploy to increase enthusiasm for a COP with no important items on its agenda. Although the content of the Declaration is not binding, it did provide an important indication of the direction of future negotiations."

(a) Parties that have ratified the Kyoto Protocol strongly urge Parties that have not already done so to ratify the Kyoto Protocol in a timely manner;
(b) Parties have a right to, and should, promote sustainable development. Policies and measures to protect the climate system against human-induced change should be appropriate for the specific conditions of each Party and should be integrated with national development programmes, taking into account that economic development is essential for adopting measures to address climate change;
(c) National sustainable development strategies should integrate more fully climate change objectives in key areas such as water, energy, health, agriculture and biodiversity, and build on the outcomes of the World Summit on Sustainable Development; Advance

unedited version

(d) All Parties, taking into account their common but differentiated responsibilities and respective capabilities, and their specific national and regional development priorities, objectives and circumstances, should continue to advance the implementation of their commitments under the Convention to address climate change and its adverse effects in order to achieve sustainable development;

(e) Adaptation to the adverse effects of climate change is of high priority for all countries. Developing countries are particularly vulnerable, especially the least developed countries and small island developing States. Adaptation requires urgent attention and action on the part of all countries.

Effective and result-based measures should be supported for the development of approaches at all levels on vulnerability and adaptation, as well as capacity-building for the integration of adaptation concerns into sustainable development strategies. The measures should include full implementation of existing commitments under the Convention and the Marrakesh Accords;

(f) Parties should promote informal exchange of information on actions relating to mitigation and adaptation to assist Parties to continue to develop effective and appropriate responses to climate change;

(g) The specific needs and concerns of developing country Parties arising from the adverse effects of climate change and the impact of the implementation of response measures should be given full consideration;

(h) International cooperation should be promoted in developing and disseminating innovative technologies in respect of key sectors of development, particularly energy, and of investment in this regard, including through private sector involvement and market-oriented approaches, as well as supportive public policies;

(i) Technology transfer should be strengthened, including through concrete projects and capacity-building in all relevant sectors such as energy, transport, industry, health, agriculture, biodiversity, forestry and waste management. Technological advances should

be promoted through research and development, economic diversification and strengthening of relevant regional, national and local institutions for sustainable development;]

(j) Access should be improved to reliable, affordable, economically viable, socially acceptable and environmentally sound energy services and resources, taking into account national specificities and circumstances, through various means;

(k) Actions are required to diversify energy supply by developing advanced, cleaner, more efficient, affordable and cost-effective energy technologies, including fossil fuel technologies and renewable energy technologies, hydro included, and their transfer to developing countries on concessional terms as mutually agreed;

(l) Actions are required at all levels, with a sense of urgency, to substantially increase the global share of renewable energy sources with the objective of increasing their contribution to total energy supply, recognizing the role of national and voluntary regional targets as well as initiatives, where they exist, and ensuring that energy policies are supportive to developing countries' efforts to eradicate poverty;

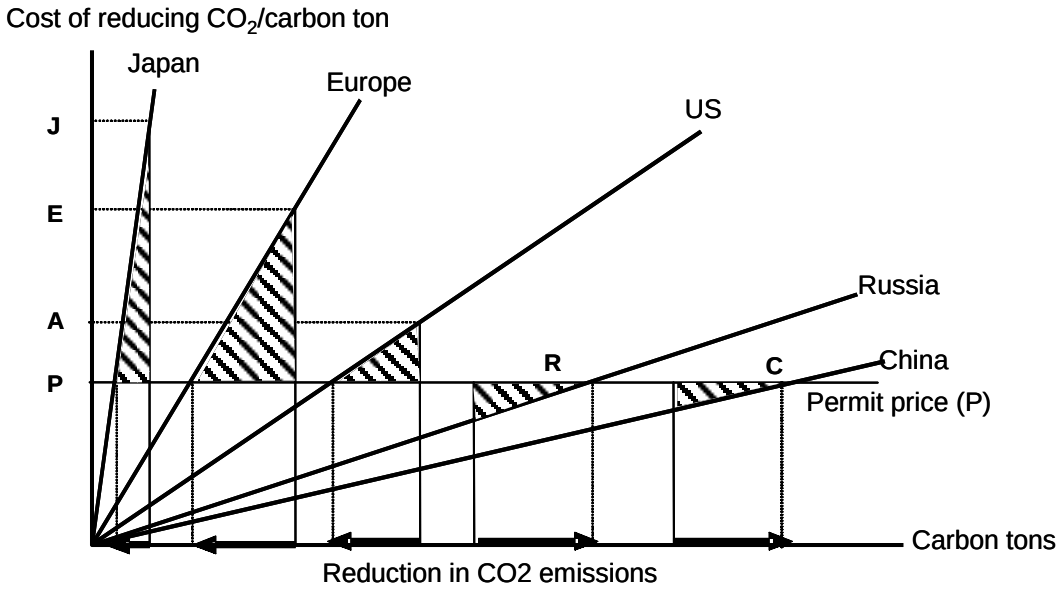
(m) Annex I Parties should further implement their commitments under the Convention, including, for Annex II Parties, those relating to the provision of financial resources, technology transfer and capacity-building, and demonstrate that they are taking the lead in modifying longer-term trends in anthropogenic greenhouse gas emissions, consistent with the ultimate objective of the Convention, through the adoption of national policies and corresponding measures for the mitigation of climate change;

8. Developments in emissions trading

Since COP7 in 2001, there have been numerous developments in emissions trading, including the CDM, this trend gathering pace at COP8. The United States, which already ran its own domestic scheme for trading in SO_2 (sulfur dioxide) emissions as an economic instrument for tackling the emissions problem, pushed for emissions trading in the broader sense (the Kyoto mechanisms) to be included in the Kyoto Protocol at the final stage of COP3.

Despite this, the United States chose to distance itself from the Protocol. It was calculated that a withdrawal by the Americans - expected to be the biggest buyers of emissions permits - from the emissions trading market (at this stage a change in the US administration had not yet ruled out a return to the framework of the Kyoto Protocol) would leave prices for emissions permits at a low level, with Japan, expected to be the next largest buyer, and Europe the next reaping the benefits, and sellers like Russia, Ukraine and the countries of Eastern Europe losing out. Projecting emission permit prices is fraught with difficulty. Assuming that emissions rights are traded without restriction, permit prices are determined by the marginal cost (MC) of reductions in emissions of greenhouse gases such as CO_2 on the world (global) market accompanying ET (Emissions Trading), JI (Joint Implementation) and the CDM (Clean Development Mechanism). In terms of economic theory this is all quite straightforward, however in reality we do not know the MC in dollars per carbon ton ($/CT). Figure 1 shows how the pricing mechanism would work.

Figure 1 Marginal Cost Curves for Reducing CO_2 Emissions in the 5 Main Countries and Pricing of Emissions Permits



X = Economic surplus (emissions permit importers) Y = Economic surplus (emissions permit exporters)

J (Marginal cost of reductions to Japan MC) > E (MC to Europe) > A (MC to US)

> P (price of emissions permit) = R (MC to Russia) = C (MC to China)

J: Marginal cost to Japan of reducing emissions

E: Marginal cost to European countries of reducing emissions

A: Marginal cost to US of reducing emissions

R: Marginal cost to Russia of reducing emissions

C: Marginal cost to China of reducing emissions

P: Price of emissions permit

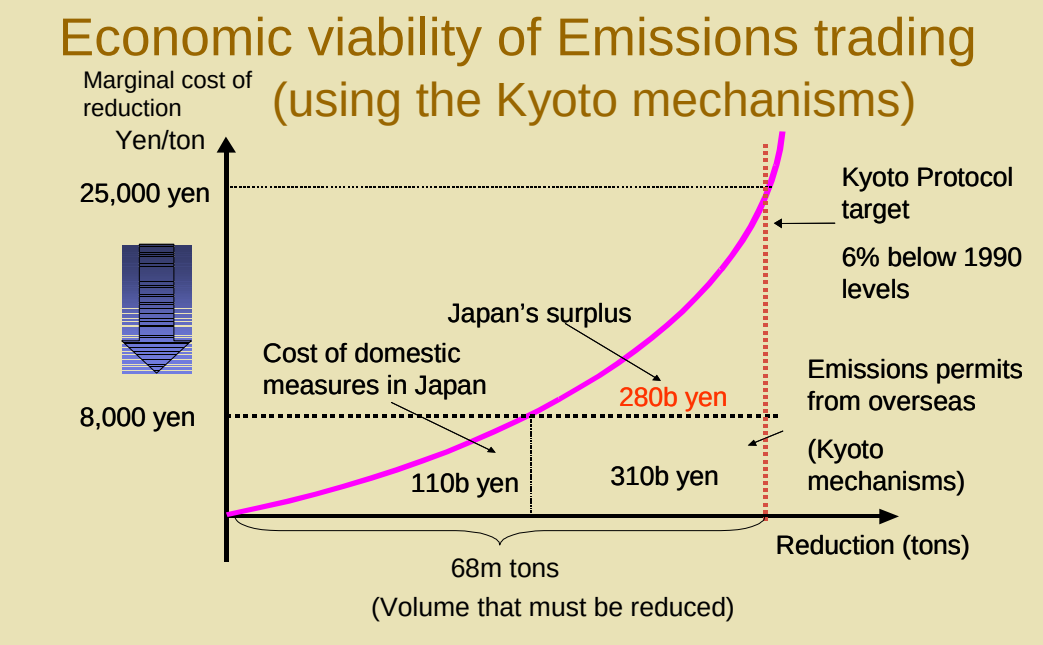
X: Economic surplus = diagonal lines above P

Y: Economic surplus = diagonal lines below P

J, E, A, R and C were estimated from Ellerman, A.D. and Decaux, A. (1999).

Figure 1 shows the mechanism for emissions permit price formation, providing no leads however as to the pricing level. Assuming hypothetically that Japan were to become a price leader rather than a price taker of emissions permit prices, if the country cut its rise in emissions of 68 million carbon tons (1990 +18%, no changes to present procedures) over the target (1990 minus 6%) to zero as of 2010 entirely through domestic initiatives, as shown in Figure 2 this would have the result MC (marginal cost) = price = $200/carbon ton. If on the other hand 60% of the reduction was achieved by importing emissions permits from overseas (i.e. only 40% domestically) to meet the target, the emissions permit price would fall to just under $70/carbon ton. Therefore if Japan, the largest potential buyer of emissions permits, relies entirely on seclusionary domestic measures like those set down in the Guidelines for Measures to Prevent Global Warming to cut its emissions, the price of emissions permits will rise, and the cost of preventing global warming for the whole of the world will increase. It is worth noting that use of the Kyoto mechanisms, i.e. global trading of emissions permits, would considerably reduce the cost of meeting the targets in the Kyoto Protocol.

Figure 2 Effects of Cost Reduction by Emissions Trading



(Source) Using data from the European Commission, "Economic Foundations for Energy Policy" (1999)
"Environmental Problems and the Future of the Energy Industry" (The Institute of Energy Economics, Japan 30th Summer University Energy Symposium)

Figure 3 Global Emissions Trading – Kyoto Mechanisms

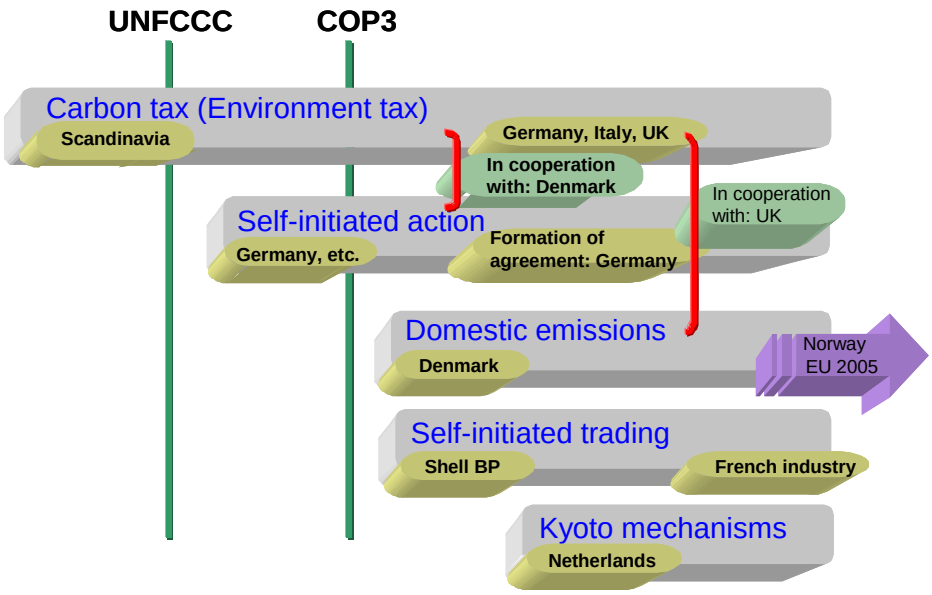
- Narrow interpretation of emissions trading (volumes exceeding targets) (Among Annex 1 countries)
- Trading in emissions credits generated by joint implementation (Among Annex 1 countries)
- Trading in emissions credits generated by Clean Development Mechanism (Between Annex 1 countries and non-Annex 1 countries/developing countries)

To expand global trading of emissions rights will require individual Annex 1 countries and regions such as the EU to introduce their own emissions trading schemes. The EU and

individual members of the EU are moving in this direction.

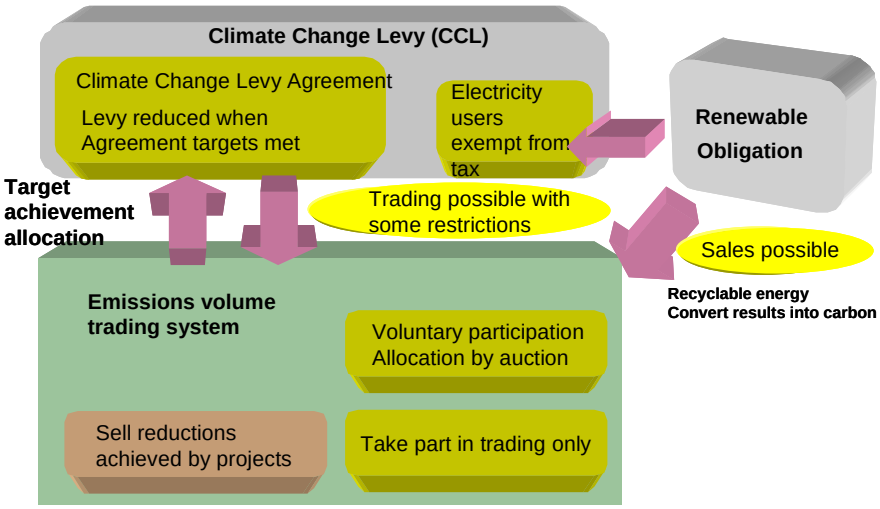
The British and Dutch models combine emissions trading schemes with environment taxes, which like emissions trading are an economic means of addressing the emissions problem.

Figure 4 Trends of Policies for Arresting Global Warming in Europe



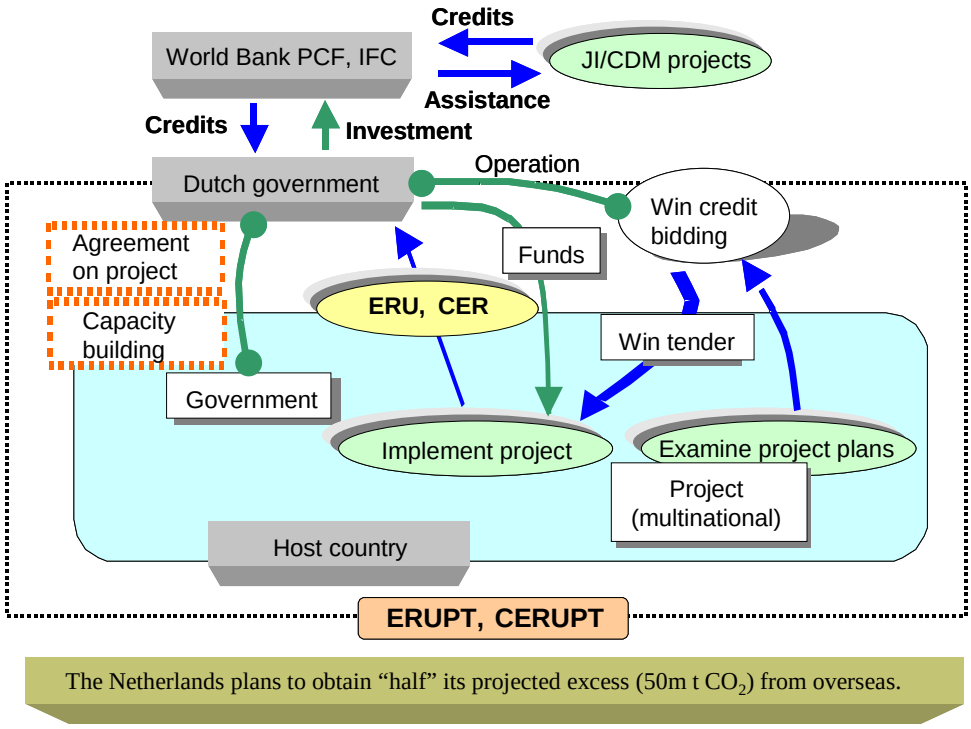
(Source) 377th Regular Research Briefing (Hiroki Kudo, The Institute of Energy Economics, Japan; January 31, 2003)

Figure 5 British Policy



(Source) See Fig. 4

Figure 6 Netherlands Policy



(Source) See Fig. 4

The British model leaves room for a choice between environment tax or emissions permits, indicating that the UK is endeavoring to ensure the ongoing momentum of economic activity based on the autonomy of businesses. The Netherlands is taking a balanced approach, aiming to achieve 50% of its target through domestic initiatives, and 50% via overseas measures (use of the Kyoto mechanisms).

An emissions trading scheme for the whole of the EU is on track for introduction sometime from 2005 onward, although coordinating this scheme with the individual systems of member nations is sure to be an issue.

9. How is Japanese policy developing?

Reaching Kyoto Protocol targets will be extremely difficult for Japan, and under the Guidelines for Measures to Prevent Global Warming, by which Japan aims to meet its targets almost exclusively by domestic initiatives, the annual cost of meeting targets would

be a trillion yen. Moreover Japan has made no serious attempt to explore economic instruments such as environment taxes and emissions trading. In reality, for Japan to put in place measures to reduce emissions in time for the start of the first commitment period in 2008, it will need to introduce policies to set up the required systems by 2005 at the latest. Needless to say this will require some sort of leadership and decisive action, without delay.

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