Legal Aspects of the Implementation of the Kyoto Protocol

Presented by Vourvoutsiotis Apostolos for International Business Law

GSO FH Nürnberg

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A Short History of the Framework Convention on Climate Change

- 1979 First World Climate Conference
- 1987 Montreal Protocol
- 1988 The Intergovernmental Panel on Climate Change (IPCC) established
- 1990 Second World Climate Conference
- 1992 Framework Convention on Climate Change (FCCC) in Rio
- 1995 COP 1 Berlin Mandate
- 1996 COP 2 in Geneva
- 1997 Meetings of the Ad hoc Group
- 1997 COP 3 in Kyoto
- 1988 COP 4 in Buenos Aires
- 1999 COP 5 in Bonn

APOSTOLOS BOURBOUTSIOTIS:

	e in total CO_2 emissions in %	Potential energy savings in %	Number of market imperfections	Potential effect on CO_2 emissions in %	Savings not likely achieved due to existing market imperfections in %
1. Residential sector	27.7				
space heating and air conditioning	11.0	10-50	some-many	1.1-5.5	0-50
water heating	5.6	0-50	some-many	0-1.8	0-50
refrigeration	2.1	30-50	many	0.5-1	20-30
lighting	1.2	>50	many	>0.6	30-50
2. Commercial sector	13.4				
space heating and air-conditioning	6.8	0-50	some-many	0-3.4	0-50
lighting	3.4	10-30	some-many	0.3-1	0-50
3. Industrial sector	34.1				
improved motors/drives	9.0	10-30	few-some	0.9-2.7	0-10
steel production	4.6	15-25	few-some	0.7-1.2	0-15
chemical production	5.9	10-25	few-some	0.6-1.5	0-20
pulp and paper industry	1.2	10-50	few-some	0.1-0.4	0-10
cement production	0.9	10-40	few-some	0.1-0.4	0-10
4. Transport	28.1				
passenger cars	13.7	30-50	many	4.1-6.9	20-30
goods vehicles	9.1	20-40	some	1.8-3.6	10-20
5. Other (agriculture etc.)	2.6				
Total	100.0			10.9-30	

Potential energy savings by end use component in IEA countries, Source: EC, Joint Research Centre (Dec. 1997), Climate Change Research and Policy: Updates, Part II, page 51

The Climate Change Convention Agreements

- The United Nations Framework Convention on Climate Convention is the centrepiece of global efforts to combat global warming

- The Convention sets out some guiding principles

- Both developed and developing countries accept a number of general commitments

- Industrialized countries undertake several specific commitments (in particular, reducing emissions to 1990 levels by the year 2000)

- The richest countries shall provide "new and additional financial resources" and facilitate technology transfer

Major Issues discussed in Kyoto

- **Emission reduction targets**
- **Financial Mechanisms**

Emissions Trading Art. 17, 6

- harnessing the efficiency of the marketplace for the lowest cost solution
- under an international emissions trading regime, a country (or firm) would be able to meet its emissions reduction target by reducing pollution itself, purchasing reduction credits from another country (or firm) that was able to achieve excess gains, or some combination of both

Joint Implementation Art. 4,6,3 (10-14),10

uses international partnerships on projects to reduce emissions, e.g., a company in the US invests in a project that reduces emissions in another country (such as a developing nation) and uses those reductions as a less expensive means

of meeting its own target.

Clean Development Mechanism Art. 12, 11

creation of a ‘clean development mechanism’, in which climate-related projects in developing countries are funded by developed countries

Final agreements

- Emission reduction targets to apply to 6 greenhouse gases (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride).Art. 3(1)

- ‘differentiated’ reductions of 5% from baseline 1990 levels by developed nations by the first commitment period 2008 - 2012 (EU 8%, US 7%, Japan 6%, Russian Federation 0% - 5.2% average overall). Art. 3(1)

- “countries undergoing transition to market economies” (EIT) to have differing baseline years, and “a certain degree of flexibility in implementing their commitments” no commitments from developing countries. Art. 3(5),(6)

- developed countries to use 1995 as their base year for HFCs, PFCs and SF6. Art. 3(8)

Final agreements **(continued)**

- blocs of countries to be allowed to jointly achieve aggregate of targets (e.g., EU). Art. A(1)

- net changes in emissions from human-induced effects on forests to apply to reduction targets (e.g, reforestation and deforestation). Art. 3(3)

- each country must report on baseline year emissions, submit yearly emissions inventories, and develop and report on programmes for emission reduction and adaptation to climate change. Art. 5,7,8

- countries will cooperate on pertinent communication, research, ‘clean’ technology transfer, education and public awareness. Art. 10

Final agreements (continued)

- emissions to be measured and counted by methodologies established by the IPCC. Art.5(2)

- expert review teams to be established by the COP to assess each country's implementations. Art. 8

- The supreme body of the Convention is the Conference of the Parties (COP). Art. 13

- The COP and its subsidiary bodies are serviced by a secretariat. Art. 14

- The Convention establishes two subsidiary bodies SBSTA and SBI. Art. 15

- protocol to come into force 90 days after 55 countries, accounting for at least 55% of the total 1990 emissions. Art. 25(1)

Unresolved Issues

- national governments still to ratify
- no commitments from developing nations
- no yet defined penalties in case of non-compliance
- no details on specific policies and measures to meet reduction targets. Art 2
- no details on implementing permits system, including penalties
- no details on funding mechanism for developing nations
- compensation fund discussion postponed

Major Problems with the approach

- Problem viewed as a technical issue, i.e., technology and economic instruments are the solution
- No mention of reducing consumption in developed nations
- Reductions are not large enough to prevent major climate effects
- Little sense of urgency or appreciation of the magnitude of the problem

Cost of climate changes up to the year 2030 in case no additional measures applied

- Rainfall increase by 20-30% in winter in N. Europe and N. America; decrease by 5-15% in summer

- Agriculture: loss of plants, 900 million deaths from hunger = $ 1.8 billion

- Irrigation: Loss of 44 million hectares = $ 500 billions

- Hydroelectric power: Annual loss of 360.000 GWh = $ billion dollars

Cost of climate changes up to the year 2030 in case no additional measures applied (continued)

Temperature increase: 2xCO2=1.8 deg C.
Impacts:

- Agriculture: double the number of destructed plants due to excessive heat = $ 1.080 trillion

- Health: additional 540.000 deaths from tropical diseases + 1,3 million additional deaths due to heat = $ 2,6 trillion

Cost of climate changes up to the year 2030 in case no additional measures applied (continued)

Sea level Rise: 2xCO_2 = 18cm

Impacts:

- Agriculture: loss of 60 million square km of productive lands = $ 4,8 trillions
- Water: Increase the cost of the irrigation due to water salinisation =??
- Human Resources: 12 million refugees = $ 240 millions

Cost implication of the Kyoto emission limits

CO2 reductions by EU 8%, US 7%, Japan 6%, Russia 0% (434.781Gg)

-no commitment for reductions by China and developing countries

- the marginal cost in 2010 implementing the protocol could be:

$ 125 per ton of carbon (Nordhaus and Boyer, 1998)

$ 240 per ton of carbon (Manne and Richels,1998)

- According to Clinton administration's analysis, the total cost to the USA of implementing Kyoto could be just $ 7-12 billion per year, if the agreement is implemented cost effective , but perhaps 10 times large otherwise.

MS	Commitments in accordance with the article 4 of the Kyoto Protocol
Austria	-13%
Belgium	-7,5%
Denmark	-21%
Finland	0%
France	0%
Germany	-21%
Greece	+ 25%
Ireland	+ 13%
Italy	-6,5%
Luxembourg	-28%
Netherlands	-6%
Portugal	+ 27%
Spain	+ 15%
Sweden	+ 4%
UK	-12,5%

- Not yet notified to UNFCCC secretariat
- Notification expected at time of ratification

Necessity of an intra EU comoliance mechanism; possible framework

EU sectorial policy

- Energy

- promoting energy efficiency and saving (12% RES of the EU energy production up to 2010)
- reducing the environmental impact of the production and use of energy sources

- Transport

improved fuels, train and combined transport

- Industry

energy efficiency, EMAS, eco-efficiency strategies

- Housholds

energy efficient products, energy labeling, consumers information

- Agriculture

Methane emissions, Waste management and development of new technologies, Reduce Nitrogen and improve crop management. Agenda 2000.

- Land use change and forestry

Report on land use from the IPCC mid. 2000

- Structural Funds

195 billion to structural Funds and 18 billion to Cohesion Fund

- 4th and 5th Research and Technology Development Programme

Conclusions

- **Why Kyoto Protocol is important?**
- **Why flexible regime?**
- **What should have been done?**
- **Trends**

Motivated in part by the prospect of legally binding emission limits, companies, cities, and individuals have pursued a host of new initiatives.

Regional Cities initiatives. Local Agenda 21. As national governments struggle over the Kyoto Protocol, many city governments are moving to reduce their emissions. Over 100 cities, representing 10 percent of global emissions, have joined the Cities for Climate Protection campaign to reduce emissions by investing in public transportation, tightening up public buildings, and planting trees.

Companies initiativies.

Green products. Sustainable policies. Investments in new energy sources na dtechnologies. EMAS and ISO 14000 has over 15000 certifications. DJ Sustainability Group.

Taken together, these efforts suggest that it will be easier and less expensive to reduce greenhouse gas emissions than it appeared a few years ago.