

**Carbon Trade Watch
Briefing No.1**

The Sky is Not the Limit:

TNI BRIEFING SERIES
No 2003/1

By Carbon Trade Watch

ctw@tni.org

Introduction	3
1 What is emissions trading?	4
1.1 Environmental injustice in the USA	5
1.2 Dumping on South Africa	7
1.3 Greenwashing privatisation in Uganda	9
2 The origins of emissions trading	
2.1 The Rio Earth summit & climate change	12
2.2 The UN and corporate-led solutions	13
2.3 Corporations at the Earth Summit	14
2.4 Corporate 'good guys'?	16
2.5 NGO co-optation	17
2.6 Sinking the protocol	18
3 Trading rules	
3.1 The Kyoto trading regime	20
3.2 Conflicts of interest	21
3.3 Renewables under siege	22
4 Kyoto in context	
4.1 Trade and investment	23
4.2 The World Bank	27
5 Snapshot of key players	
5.1 International financial institutions	29
5.2 Corporations	30
5.3 Corporate lobby groups	31
5.4 Think tanks	34
5.5 Consultancies	34
5.6 Private sector trading initiatives	36
5.7 Environmental NGOs	36
Conclusion: can emissions trading work?	39

Introduction

At the Rio Earth Summit in 1992, the UN Framework Convention on Climate Change (UNFCCC) for the first time officially recognised climate change as a problem and made some very modest recommendations for future action.¹ Subsequent Conferences of the Parties (COP) to the UNFCCC resulted in the Kyoto Protocol, which included binding emissions reduction targets and set out a path for further future action.

At the Johannesburg World Summit on Sustainable Development (WSSD) held in August 2002, the Kyoto Protocol was held up as a major success of the Rio process.² Meanwhile at the Delhi meeting of COP-8 in November 2002, thousands of people took to the streets to protest market-based mechanisms such as emissions trading, which were being concretised within the Kyoto Protocol.³ Debate is far from over, but some events have been set in motion which are likely to have devastating impacts on people and planet if allowed to continue.

The Kyoto Protocol has begun laying the foundation for a completely new global marketplace in greenhouse gases. Six greenhouse gases emitted from industrial, agricultural and consumer sources; carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF₆) will be traded interchangeably in the brokerage houses and trading floors of the world markets. These 'environmental markets' are being left to the private sector and neoliberal government institutions to design, with little or no public consultation or accountability.

While the Kyoto Protocol is not the first time that emissions trading has been

used in the environmental arena, it is unprecedented in size and scale. Other trading schemes have largely been restricted to localised pollutants such as sulphur dioxide. However, pollution trading is becoming big business and is set to expand to cover other forms of pollution such as water effluents and mercury.

A free market in greenhouse gases threatens to encourage a 'race to the bottom' in environmental and social standards. Countries initially opposed to emissions trading, such as Norway and Denmark, have softened or reversed their positions partially due to the intensive lobbying efforts by their transnational corporations. In the South too, despite the Thai government's recent declarations expressing strong concerns about emissions trading and the impacts it would have on its environment and economy, most governments find it difficult to withstand the enormous corporate lobby pressure which has been brought to bear on them.⁴ If proponents get their way, a country will be able to meet 100 per cent of its Kyoto reduction commitments through purchasing credits in the market rather than reducing climate-damaging emissions at source.

Even though the Kyoto Protocol has been criticised for being a weak agreement, many of the largest environmental groups applaud it as a positive 'first step'⁵. Unfortunately the Protocol's market-based mechanisms such as emissions trading allow countries and companies to escape their responsibilities to reduce their own emissions. With the inclusion of these 'flexible mechanisms', this hard fought agreement may actually be a first step backwards.

"While the Kyoto Protocol is not the first time that emissions trading has been used in the environmental arena, it is unprecedented in size and scale."

1. What is emissions trading?

Pollution trading can include air, water and land pollution. Emissions trading is one aspect of the wider use of pollution trading, a market-based solution to environmental problems, and refers specifically to air pollution. Polluters are assigned targets for reducing their emissions of gases in a pre-defined time period. The polluters are then given a number of 'emissions credits' for the amount they are allowed to pollute, which is the level of their emissions minus their agreed target. There are several things that can happen:

Scenario 1: The polluter uses up the whole allowance in the allotted time period, but still pollutes more. In order to do remain in compliance, spare credits must be bought from another polluter, which has not used up the whole allotment.

Scenario 2: The polluter does not use the whole allowance and can either save the remaining credits for the next time period (bank them), or sell the credits to another polluter on the open market.

Scenario 3: The polluter can invest in numerous pollution reduction schemes in other countries or regions and 'earn' credits from these projects, which can then be sold, banked or used to make up shortfalls in the original allowance.

Credit generating projects come under two categories in the Kyoto Protocol. Projects which take place in a country with no target (mostly in the 'developing' world) come under the Clean Development Mechanism. Projects which take place in countries with a target come under Joint Implementation. Joint Implementation projects are mostly intended for Eastern Europe and Russia, however in theory they can take place in any country with a reduction commitment, such as in North America or Western Europe.

These projects can be monocultural tree plantations, which theoretically

absorb carbon from the atmosphere (carbon sinks), renewable energy projects such as solar or wind projects, improvements to existing energy generation, etc. The amount of credits earned is calculated as the difference between the level of emissions with the project and the level of emissions in an imagined alternative future of 'what would have happened otherwise' without the project. An added complexity with these scenarios is that pollutants can be interchangeable, meaning you can use your reduction in one gas (i.e. CO₂) to claim reductions for another gas (i.e. CH₄). The financial term for this is 'fungibility'.

The 'polluters' in the Kyoto Protocol are individual countries that have agreed to a specific reduction target which are currently set at an average of 5.2 per cent below 1990 levels of emissions. Each country will then decide internally how to distribute its allotted credits to polluters at home. In the Kyoto Protocol, this is likely to be only the big industrial polluters such as transnational corporations. In most respects, emissions markets are no different from current financial markets. They are subject to the same pressures of capital markets, such as price volatility, boom and bust cycles, speculative bubbles, etc.

There have been many types of emissions trading schemes, some more regulated than others. Despite rejecting the Kyoto Protocol, the USA has the most developed emissions trading markets, including trade in smog and acid rain-causing gases. However, the Kyoto market, set to start trading in 2008, will be the most ambitious undertaking, covering six greenhouse gases, variable reduction targets, and numerous mechanisms on a global scale.

1.1 Environmental Injustice in the USA

Pollution trading in the USA has saved industry a lot of time, money and trouble. However, pollution trading has also created 'toxic hotspots' in poor areas and in communities of colour, reinforcing existing environmental injustices.

When a polluter buys credits in a trading scheme, this enables them to continue, or even increase, their own pollution. On a global scale credits generated in the trade in greenhouse gases will come from dubious projects in countries far away from the source of the original pollution. Not only are credits enabling pollution to continue at home, but the generation of those credits is highly suspect as well. Communities living with factories on their doorstep will continue to suffer the effects of pollution indefinitely.

In the USA, the main traded pollutants in the schemes are sulphur dioxide (SO₂) and nitrogen oxides (NO_x). These pollutants are the main sources of smog, acid rain and have adverse impacts on human health. Particulate pollution (NO_x and SO₂ in the air) cuts short the lives of an estimated 30,000 Americans each year.¹ The US Environmental Protection Agency (EPA) claims that its pollution trading schemes are a success and have achieved low cost reductions far beyond its expectations.² The model for the national acid rain schemes is often cited as a smaller local program - the Regional Clean Air Incentives Market (RECLAIM), which is centred in the Los Angeles area.³

Sulphur trading in Los Angeles

The RECLAIM program "includes 370 facilities from various industrial sectors, including oil refineries, power plants, aerospace companies, asphalt batch plants, chemical plants, cement plants, and many more." The EPA state that "the major benefit of

RECLAIM is that air quality goals necessary to protect public health and the environment are met in a more cost-effective manner."⁴ It was introduced in 1993 and trading began one year later. However prior to its introduction, there was a lengthy dismantlement of the previous 'command and control' programme. This all added up to a loss of up to 10 years in pollution control legislation in the LA area. LA is one of the most polluted regions in the USA and with each year of inaction during the slow implementation of RECLAIM, thousands of people died.⁵

Trading programmes in effect privatise the problem of air pollution. Government and communities lose control over environmental protection, placing it in the hands of the polluters. When the incentive to reduce emissions is profit and cost-effectiveness, there is an incredible pressure to cheat by overestimating reductions, while underestimating emissions. This can lead to fraudulent claims of reductions, inaccurate reporting of emissions and general gaming of the system as demonstrated by the citations issued in March 2002 to Anne Scholtz. Scholtz, prominent architect of RECLAIM and CEO of the emissions broker ACE, was caught filing false trading reports.⁶ If fraud is prevalent in a small local scheme such as RECLAIM, it will almost certainly be rife in the international trade in greenhouse gases where it is impossible to properly monitor and enforce accurate reporting of emissions reductions and honest filing of trades.

Toxic Hotspots

One variant of the RECLAIM scheme - Rule 1610 - involved polluting factories buying credits that were generated from a four county car-scraping scheme. Polluters were to remove abandoned roadside vehicles and have them scrapped. However, vehicles were being counted as part of

the scheme that were not abandoned and had been brought in by their owners. Therefore credits were being generated but no reductions were being made. These fraudulent credits allowed polluters to continue emitting from their local factories. Pollution was then concentrated around these factories, creating toxic hotspots. As polluting industries in the USA are disproportionately located in low-income areas and communities of colour⁷, the trade in pollution created an uneven benefit in air quality between peoples. In this case Rule 1610 allowed the continued pollution of the local Hispanic communities around factories involved in the scheme.

Weak pollution zoning restrictions and other cheap production costs such as land and labour are all reasons why factories locate in communities with low incomes and/or of colour. This trend is seen in other rich northern countries as well as the USA. In the UK, low-income communities are twice as likely to have a polluting factory located nearby.⁸ It is likely that this phenomenon will be seen in greenhouse gas trading, as credits can be generated from Flexible Mechanisms. Reductions will not need to take place at their source, allowing factories to continue polluting locally. If the credits had been generated legitimately, the entire region would have benefited from the car-scrapping scheme. However localised air pollution in the Hispanic areas around the factories would not have been reduced, thereby causing uneven improvements in air quality.⁹

One defence of greenhouse gas trading is that the gases involved are global pollutants and therefore do not have a localised toxic effect. However greenhouse gases are not produced in isolation. The industrial processes that produce them also produce toxic co-pollutants. These toxic co-pollutants will continue to flow into the air, water and land of communities living around

factories whose owners are busy buying and selling carbon credits, instead of simply reducing their emissions where it is produced. With the introduction of emissions trading globally, environmental injustices will be exacerbated on an unprecedented scale.

1.2 Dumping on South Africa

Sajida Khan was diagnosed with cancer in 1996. Sajida's nephew, who lived with her, died of leukaemia aged eleven. Seven out of ten of the houses in her block on the Clare Estate in Durban, have tumour cases in the family.¹ However another block of houses nearby has no equivalent rates of death and cancer. What could account for such high levels in one place and not the other? One of the differences between the two is that Sajida's block is downwind of the waste dump, Bisasar Road landfill, that borders her house, and the other block is upwind.

In May 2002, the Prototype Carbon Fund (PCF), a pool of money managed by the World Bank, described the Bisasar Road as "a world-class site" and an "environmentally progressive" model to be applauded internationally.² In fact the PCF is so enthusiastic about the site that it is funding a landfill gas extraction project there. The project is planned to commence in March 2003 and will extract methane generated by waste decomposition and use it to generate up to 45 MW of electricity for supply to the national grid. However electricity is not all that the project will generate. Methane (CH₄) is the most powerful of all the greenhouse gases that are to be reduced under the Kyoto Protocol. The reduced methane from the dump will be turned into emissions reductions (ER) credits that the PCF will sell onto foreign countries and companies, which they can then use to count towards their reduction commitments in Kyoto. The managers of the site, Durban Solid Waste (DSW), also claim that the resulting electricity from the methane will replace energy which would have been generated by coal-fired plants and therefore represents additional reduction in greenhouse gases.³ This reduction in coal use is also cited as a 'local benefit' by the PCF who state that the results will be an

"improvement in air quality and the overall quality of the environment."⁴

According to DSW's permit, the Bisasar Road site is only licensed for domestic waste. However due to a lack of adequate monitoring, medical waste has been found on the site and residents report observing private corporations dumping there.⁵ As a result locals are now taking DSW to court for violations of its permit. It is unclear if PCF is aware of this court case.

Income Level	Waste generation (kg/person/year)
Higher Income	540
Middle Income	150
Low Income, Formal	48

* waste generation statistics for Durban

The PCF state that local people will also benefit from the project because it will "improve the financial position of [Durban Solid Waste] DSW..." and that the project will "send a clear signal to the local population that the environment is a number 1 concern in South Africa and is being dealt with in the best way possible."⁶

Durban Solid Waste is part of the local city council structures. The council promised residents of Clare Estate that the dumpsite would be closed in 1996 and turned into "soccer fields...tennis courts...picnic and playlot for children."⁷ When 1996 came, a report commissioned by DSW found that cadmium levels were 2-3 times the guideline limit and lead was 10-40 times the limit.⁸ Both cadmium and lead are recognised carcinogens.⁹ However in face of all this damning evidence, the city council betrayed its promises of closure to the residents and renewed the DSW's permit, allowing continued dumping for another 20 years. In light of the past

behaviour of DSW, it is difficult to see how their financial position relates to a benefit for Sajida and other local residents as PCF claim. DSW is not simply short of the money that they need to make the dump safe, they have wilfully denied the problem.

By removing the threat of methane migration the PCF project is potentially beneficial for the community. The net result though, would sustain the life of the dump by making it more financially viable and renewing DSW's argument against calls for closure from local residents. As methane continues to be produced from dumpsites for up to 20 years after

dumping has ceased, the project would be more beneficial for the community if it were carried out as part of a closure plan.

Doing it in this way would still fit in with the aims of the PCF. DSW states that the

dump will remain open until 2012-15.¹⁰ However it is in the financial interests of PCF that the dump stay open as long as possible to recoup its investment and be able to generate the maximum amount of emissions reductions credits, from which it profits, by selling to countries over their quota.

The suffering of residents next to the landfill site is continued in the name of 'sustainable' development. The credits generated from their misfortune are used to make it possible for rich countries with unsustainable consumption patterns to continue as before instead of reducing their consumption in order to truly bring down greenhouse gas emissions.

The Bisasar landfill gas extraction project exposes the underlying problems with defining 'renewable'

energy in such broad terms. What this means on the ground is that unsustainable practices that negatively impact on local people's lives can become 'sustainable', thereby undermining people's struggles. Ironically, climate change mitigation, using emissions trading as a tool, has merely reinforced an environmentally destructive practice, which is harming people. The Bisasar Road project is powerful evidence that profit-driven emissions trading schemes and the protection of people and planet are irreconcilable.

"To gain the ER credits they will keep this site open as long as possible. To them how much money they can get out of this is more important than what effect it has on our lives."

— Sajida Khan, Local resident affected by emissions credit project, Clare Estate, Durban, South Africa

1.2 Greenwashing privatisation in Uganda

The Prototype Carbon Fund (see “Key players” and “Kyoto and the World Bank”) has initiated a hydropower project in the area of the Uganda West Nile. This project consists of:

- Construction of two medium-sized run-of-river hydropower plants and diesel backup generators;
- Development of an isolated mini-grid for regional electricity transmission and distribution; and
- Replacement of Uganda Electricity Board’s (UEB) diesel capacity and privately owned small diesel engines and generator sets.

These run-of-river plants will be a 5.1 MW hydropower plant at the Nyagak site in Nebbi District. Two years later, a 1.5 MW plant will be constructed in Olewa, Arua District.¹ These are not large hydropower projects, such as the controversial Bujugali 250 MW dam.

Deflecting criticism

However, the International Rivers Network, an NGO supporting local communities working to protect their rivers and watersheds, has roundly criticised the project. They question the absence of an Environmental Impact Assessment (EIA) and in particular the effects of the project on fish and other aquatic life, land use change and sediment transport.² According to World Bank Operational Directives every project has to complete an EIA. However, the PCF informed IRN that compliance with normal World Bank rules and procedures is not required of Clean Development Mechanism projects. Besides that, CDM requires only the host country to confirm that an EIA has been undertaken in accordance with its own requirements. Furthermore, the EIA is not subject to stakeholder comments and the validation process.³

Even though PCF claims not to be subject to World Bank rules in its response to IRN, on its website it states that: “The [World] Bank Group has a body of well-developed, mandatory safeguard policies which apply to all World Bank operations. These are applied to PCF operations to ensure that they are environmentally and socially sound...”⁴ There seems to be a fundamental contradiction in what the PCF says to critical groups and the rules it has set itself and then fails to put into practice.

However one of the basic criteria of Clean Development Mechanism rules has already been violated by the project. Under CDM rules, planners have to prove that the project would not have taken place anyway. The technical word for this is ‘additionality’. However, the PCF says that it is impossible to say that the project would have happened without the CDM/carbon finance.⁵

The Uganda Electricity Board (UEB), has been reformed and is slowly being privatised. It has been “unbundled” into four units:

- a. The Uganda Electricity Generation Company Limited (UEGCL)
- b. The Uganda Electricity Transmission Company Limited (UETCL)
- c. The Uganda Electricity Distribution Company Limited (UEDCL)
- d. The Uganda Electricity Board (remnant).

On the 22th of July 2002, “Eskom emerged the sole bidder for the generation concession (UEGC) and then teamed up with the UK-based CDC Globoleq to form a consortium to bid for the distribution company (UEDC). Eskom’s takeover of Uganda Electricity Generation Company (UEGC) is now almost certain after Ministry of Finance officials described its bid for the 20-year concession as ‘competitive enough’.”⁶ [see box Page 9]

PCF promoting privatisation

The PCF project in Uganda is emblematic of wider World Bank strategies to force private sector development in poor countries. The World Bank's new buzzword, "Private Sector Development" (PSD) is actually the reinvention of the old policy of privatising state-run utilities. The PCF project is the new face of this familiar strategy. In this way, renewable energy, a potential force for positive change, is being used as another way to impose existing top-down structural adjustment to 'developing' countries economies.

Poverty Reduction Strategy Papers (PRSPs) describe the economic plans of a country and are developed with the World Bank and IMF. The Government of Uganda says in its PRSP that "In the long run privatisation will transfer the need for major investment expenditures on to the private sector."⁷ Peter Kasenene, the minister in charge of privatisation in Uganda states that the, "government is convinced that sustained economic growth can only be achieved with vivid private sector participation."⁸ The influence of the World Bank's promotion of privatisation is clear and was evidenced in 1999 when the government of Uganda signed the Electricity Act which allows the entry of the private sector into the Ugandan energy market and the establishment of the Energy for Rural Transformation programme (ERT).

The ERT was developed with the assistance of the World Bank's Africa Rural and Renewable Energy Initiative (AFRREI), currently operating in

Uganda, Mozambique, South Africa, Nigeria and Zimbabwe. The ERT gets financial support via bilateral donors and the World Bank as part of AFRREI, which is designed to promote private sector-led rural development. The Global Environment Facility (GEF), a joint project of the World Bank, United Nations Environment Programme and the United Nations Development Programme, is a co-funder of the ERT. The PCF project is part of the ERT programme. The GEF reveals the links between PCF projects and the World Bank's wider policies of promoting privatisation through AFRREI; "Working with the World Bank on the Africa Rural and Renewable Energy Initiative (AFRREI), the GoU [Government of Uganda] has made significant progress in laying the groundwork for private sector led rural electrification..."⁹ Through this maze of acronyms lies the true purpose of PCF projects: to support the privatisation of energy in Uganda.

Privatisation & Unemployment

In South Africa more than 100,000 jobs have been lost due to privatisation.¹¹ Eskom has already "shed" more than 30,000 workers over the past 15 years.¹² Leslie Maasdorp, in charge of restructuring state-owned enterprises, at the department of public enterprises predicts that future sell-offs of Eskom shares would boost job creation.¹³ However the International Labour Organisation contends that there has been little evidence of post-privatisation expansion in employment in water, gas and electricity and the process of restructuring that goes along with privatisation has led to reductions in employment levels that affect up to 50% of the workforce.¹⁴

Sowetans have responded to this situation creatively, by resisting privatisation trends in South Africa and forming residents groups such as the Soweto Electricity Crisis Committee (SECC). This particular group has successfully challenged Eskom by reconnecting cut-off residents and protesting against the trend of privatisation in other areas of South African life such as water and land-use.

Privatisation & price increases: South Africa

In South Africa, the main energy provider is Eskom, a registered company with the South African government as its main shareholder. However, thirty percent of the company will be sold by 2006, pushing this former state-run utility further along the road to private sector control.¹⁵ Eskom has been successful at connecting many more people to the national grid. However it has come at a high price, with up to as many 20,000 electricity cut-offs per month in Soweto alone, as a result of inability to pay the high rates that came with the new electricity supply. Soweto residents pay 30 per cent more for electricity than nearby white suburbanites and overall domestic consumers pay 700% more at 24.59 cents per kilowatthour than some large corporations who pay 3.5 cents per kilowatthour.¹⁶ Eskom plans to further increase its tariffs for 2003 by an above-inflation rate of 8.4 per cent.¹⁷ This at the same time as profits of Eskom Enterprises, the non-regulated businesses division of the power utility, rose 400 per cent to almost R200 million over 2001.¹⁸ It does, of course, make business sense for a private business to behave in this way. However, the poor residents of Soweto, who already live in dire circumstances, cannot afford the extra burden that a profit-driven privatised electricity company places upon them. Nor can they afford to subsidise the energy use of large corporations and more affluent white suburbanites.

United Kingdom

The energy sector in the UK is completely privatised and as a result, since 1999 the price paid by large consumers fallen by 20 per cent. However, the price paid by small consumers has actually increased by 5 per cent." The introduction of retail competition for large consumers allowed them to negotiate better prices, but it seems that much if not all of the price reduction was paid for by small consumers."¹⁹

The PCF justifies the disbanding of the state-run UEB by stating that "there is a need for an experienced international partner who is financially, technically and managerially strong, as the development of mini-hydro resources is new in Uganda and there is no experience in operating a power system independent of UEB. Third, the disposition of UEB's existing assets in this region should be in accordance with the overall power sector reform

strategy in general."¹⁰ From one sentence to the next, they link together the inability of UEB to run a renewable energy project with its general dismantling in the region. Under the guise of providing expertise on renewable energy, the PCF is putting into practice the general policies of the World Bank to privatise rural energy in Uganda.

A Trojan horse

This is particularly worrying as the PCF is a wing of the World Bank, which receives very little scrutiny. As the PCF does not have the same public scrutiny as the World Bank has enjoyed, World Bank policies slip through this blind spot unnoticed and in the name of 'sustainable development'. This is in part a result of its relative newness but also due to the ambiguous nature of promoting itself as a more positive force for change. However the net result is that the PCF is not as carefully monitored by civil society as well as internally not being subject to the same imposed transparency and guidelines as the World Bank has had imposed upon it.

The Prototype Carbon Fund's primary function is as a vehicle of privatisation, a vehicle that is blazing a trail through the countryside, with the World Bank influencing which direction is taken and how the road will be paved. However the PCF phenomena goes beyond Kyoto and is part of a wider trend in international processes away from government legislation, and towards Public-Private partnership (PPP). The buzzwords of PPPs and 'private sector development' are new expressions for old policies of increasing market access in poor countries for foreign corporations, privatising state-run industries and supporting corporate control. Emissions trading has provided the vital link that was needed to incorporate renewable energy into wider World Bank strategies.

2. The Origins of Emissions Trading

2.1 The Rio Earth Summit & Climate Change

The United Nations Framework Convention on Climate Change (UNFCCC) was one of the major agreements to come out of the Earth Summit in 1992. The text of the UNFCCC was prepared in the years before the actual Earth Summit and went through final negotiations in Rio, where it was adopted.¹

Despite some obvious good qualities (see box), the UNFCCC did not include any commitment to legally binding emission reductions. Nor did it recognise the role of industry, over-consumption and free trade policies in exacerbating climate change. Why didn't the UNFCCC, and the other Rio agreements for that matter, have any teeth? The answer lies in the complex interaction between government self-interest, corporate influence and the rise in popularity of "multi-stakeholder" processes.

From the beginning of international discussions about climate change Northern governments have been opposed to the structural changes needed to truly combat the problem. Before the Earth Summit, the International Negotiating Committee (INC) was set-up to formulate a proposal text for Rio. Within the INC, both the US and the EU argued against binding reductions in greenhouse gases.²

Key Principles of the UNFCCC

In summary, the UNFCCC is a recognition of key principles regarding climate change. These principles formed the framework for negotiations that eventually produced the Kyoto Protocol in 1997. The UNFCCC;

- Recognised that climate change is a problem;

- Set an "ultimate objective" of stabilising "greenhouse gas concentrations";
- Established a framework and a process for agreeing to specific actions - later;
- Encouraged scientific research on climate change;
- Placed greater responsibility for battling climate change on the rich countries;
- Recognised that poorer nations have a right to economic development;
- Acknowledged the vulnerability of poorer countries to the effects of climate change;
- Called for the sharing of environmentally sound technologies and know-how; and
- Emphasised the need to educate people about climate change.⁴

"Ten years ago at the Rio Summit, 50 business leaders pledged a commitment to sustainable development. That was the start of the WBCSD. Since then, we have trebled in size and hugely amplified the voice of business in widespread dialogue."

— Philip Watts, WBCSD chairperson³

2.2 The UN and Corporate-led Solutions

A case in point is the first appearance of emissions trading on the climate change scene at the third session of the INC in Nairobi in September 1991. The UN Conference on Trade & Development (UNCTAD) set-up a department on greenhouse gas (GHG) emissions trading as early as 1991. UNCTAD also set up the International Emissions Trading Association (IETA), a corporate lobby group dedicated to promoting emissions trading. The GHG emissions trading project produced a report in May 1992 entitled "Combating Global Warming: Study on a global system of tradable carbon emission entitlements," with the financial support of the governments of the Netherlands and Norway.¹

Key successes of corporate lobbying on the UN climate negotiations:

- Lack of strong legally-binding emissions reductions adopted at Earth Summit and lower, less binding targets later in Kyoto.
- US withdrawal.
- Inclusion of the 'flexible mechanisms' in the Kyoto Protocol.
- Inclusion of 'sinks' in the CDM and domestic reduction strategies.
- Deference to WTO rules.
- Dominance of the 'public-private partnership' approach.
- Focus on technocratic fixes rather than structural change.
- Changed the discourse from environmental to technical.
- Marginalised and isolated radical positions.
- Governance transformed into a 'multi-stakeholder' dialogue with industry as a 'partner'.
- Changed character and role of the UN, particularly its leadership, to be more supportive of corporate and neo-liberal agendas.
- Influenced governments to remove IPCC staff that were more radical and political in their views.

The Economics of QWERTY

The top left hand row of letters on an English language computer keyboard reads Q,W,E,R,T,Y. The reason why this letter order exists is that when typewriters were first invented, the keys would often jam, and so it was advantageous to slow down the speed of typing. However, jamming keys are not a problem on modern computers.³

Despite the fact that this letter order slows down typing, society is locked in to using the QWERTY system. The structures that evolve around a design makes it near impossible to change the design, although alternatives might be much better.

Emissions trading is a relatively new phenomena, but if emissions trading becomes the QWERTY of the climatic keyboard, the 'jamming keys' could be post-cold war neo-liberal fatalism and the intervention of the corporate sector in making any alternatives impossible.

UNCTAD, an agency charged with the mandate to assist developing countries, admits that its "research is limited to the emerging carbon market."² Formal proposals for trading emissions however were not made until the mid-1990s. UNCTAD were already well developed in their research on greenhouse gas trading by then, having never pursued research on other alternatives or even other market-based solutions such as taxation. The neo-liberal bias of the UN in this instance is perhaps not so easily characterised as a matter of them succumbing to corporate pressure, but is perhaps more reflective of a culture within international institutions to develop corporate-friendly solutions as a matter of course. In the face of damning evidence against these kinds of 'one-size-fits-all' solutions from the past, UNCTAD has remained committed to emissions trading.

2.3 Corporations at the Earth Summit

Corporate lobby activity before the Earth Summit is unclear, but it is perhaps telling that much of industry's goals for the Earth Summit (i.e. promoting "cost-effective policies" and "self-regulation") were achieved.¹ Considering the connections to government delegations that corporations had, it is unsurprising they were so successful. For example, the chair of the Working Party on Sustainable Development in one of the most powerful corporate lobby groups in the world, the International Chamber of Commerce (ICC), was also a member of the UK official delegation in Rio.² The ICC has continued to have privileged access to policymakers and regularly makes statements to the International Negotiating Committee (INC) on climate change, representing the "voice of business."³

Corporations have played a major role in the climate talks, increasing influence and dominance from the Earth Summit to the present day. The corporate lobby employs three tactics for its strategy in the climate arena. The most public of these is to deny climate change exists using expensive public relations campaigns, supporting or employing climate sceptic scientists and setting-up fake grassroots groups to carry out anti-action campaigning.⁴ The second is to influence the process within the UN talks by direct lobbying of delegations. And thirdly, to promote business friendly solutions through 'partnerships' with NGOs, governments and the UN.

From Threat to Opportunity

The first two of these corporate tactics are old and familiar. The Global Climate Coalition (GCC) was the most vocal and influential lobby group during the climate process. The GCC successfully lobbied governments in the Earth Summit to avoid binding emissions reductions⁵ and in the lead

up to Kyoto in 1997 ran a huge advertising campaign aimed at undermining the science of climate change.⁶ In 2002 the GCC disbanded saying that it had achieved all it wanted to in the climate process, namely that: the US is not part of Kyoto, there are no tough sanctions on failure to achieve reductions, and corporate-led 'solutions' are unregulated and unrestricted in use.

When the United States withdrew from the Kyoto Protocol, US administration officials cited a Global Climate Coalition (GCC) figure that the treaty, without international emissions trading, would cost the US economy US \$400 billion⁷, aiming to show that it would not be cost-effective to join. The insurance industry is one sector, which does not share the same perspective. According to their forecasts, insurance losses due to extreme weather events will grow more than three times faster than the global economy.⁸ The interaction between insurance losses and growth leads to a prediction that by 2065, "the world economy cannot sustain the losses, and collapse will follow."⁹ Whilst the insurance industry is hardly the poorest sector of society, its losses give an indication of some of the losses faced by ordinary people. Thousands of UK homeowners living in flood plains cannot insure their homes, making their houses now virtually worthless, despite the fact that they must continue paying their mortgages. Clearly the impacts of climate change on those who would never have access to services like insurance will be even more devastating.

'Cost-effectiveness' and 'efficiency' are often used by corporations to undermine effective climate change solutions. However they are not neutral terms which can simply be calculated and universally applied to support a policy or model, without questioning which groups are affected and how. What is relatively 'cheap' and 'cost-effective' for one sector like

fossil fuel industries, can be more expensive and ineffective for another sector of society, and even for society itself. This can also apply over time, where actions can be good for one sector of society today, but disastrous for future generations. Under commonly used discount rates, benefits and costs that occur about 50 years from now are virtually irrelevant to present day decision-making.

Corporations saw the possible threats from climate change policy and worked to transform them into market opportunities by making themselves indispensable, diversifying risk, evading responsibility and by so doing ensuring institutional survival. Through cleverly engineering the parameters by which a given social or environmental problem is framed, corporations and neo-liberal institutions assert control over key social and environmental debates in the public sphere. Issues of human rights, public participation, community survival and ecological integrity become subordinated to a technocratic and corporatist agenda. What may have started off as a broad and contentious public debate on a host of issues resulting from climate change, has succumbed to intellectual and political apathy as the machinery for a new carbon economy is brought online. Corporate influence has ensured that any potential climate change legislation will be market-based and 'flexible', allowing it the greatest freedoms to continue business-as-usual with relative impunity.

As soon as climate change is described as a problem of a scarce resource being used irrationally, much the way food and water are discussed in many international fora, two avenues of problem solving

immediately appear in the prevailing neo-liberal politics of our times. First, the response to scarcity is to define property rights and protections for investors. This analysis can be recognised in statements like 'water is not unlimited and people will only value water if they have to pay for it.' When translated into everyday life this means replacing shared street free water taps with individual pre-paid water meters for every house, as has been seen in the South African township Orange Farm in 2002.¹⁰

The Global Climate Coalition estimates that the cost of the Kyoto Protocol to the US economy with international emissions trading would be cut to between US \$120 billion and US \$210 billion.¹¹

Second, to rationalise use of resources, the corporate ethic of the 'market' is considered the only possible and final way to 'efficiently' allocate resources. This is most easily achieved when resources are neatly parcelled into commodities.

Following-on from this approach, the only logical solution for climate change is to commodify the public good into tradable permits to access the global atmospheric dump for greenhouse gases. Enter the Kyoto Protocol.

The Global Climate Coalition effectively employed the twin track approach of denying climate change existed whilst positioning itself within the process and steering agreements in a corporate-friendly direction through the aggressive promotion of emissions trading. The GCC estimates that the cost of the Kyoto Protocol to the US economy with international emissions trading would be cut to between US \$120 billion and US \$210 billion.¹¹ This financial lifeline for the fossil-fuel dependent economy is now enshrined in international law. Trading decelerates the transition away from fossil fuels and buys time for industry to protect investments in fossil fuel production and consumption.

2.4 Corporate 'good guys'?

The third tactic of corporations is new and firmly splits the corporate world neatly in two. There are the ExxonMobils who are 'old-school', die-hard obstructers and deniers. Campaigners have targeted Exxon, and it is well known now that they are against the Kyoto process, firmly believing that industry can solve the problem if left to take voluntary action.

A memo from Exxon to the Bush administration in February 2001 suggested that the US lobby get rid of the then head of the IPCC, Bob Watson, who is an outspoken and radical scientist whose views Exxon dislikes.¹ At the subsequent election in April 2002 for the head of the IPCC, the US voted against Bob Watson and he was ousted. A coincidence, or an example of the kind of listening ear that a US \$1,200,000 campaign contribution can buy.²

And then there are BP, Shell and Enron who are at the forefront of reinventing themselves as being 'good guys'. In 1998 Kenneth Lay, the CEO of Enron, sent a letter to Bill Clinton which requested that he do as much as possible to harm the credibility of the climate sceptic scientists. Enron saw that Kyoto, "would do more to promote Enron's business than will almost any other regulatory initiative," and was one of the main proponents of emissions trading.³ Along with expensive PR campaigns such as BP's environmental 'Beyond Petroleum' make-over, these 'progressive' corporations have successfully advanced the concept of the Public-Private-Partnership (PPP).

By making low-cost investments in environmental projects, BP has reshaped public perception of them, making it possible to continue 'business-as-usual' having deflected criticism onto less sophisticated corporations such as ExxonMobil. This third approach is a development of

name of corporation	\$ spent on renewables	% of total investments
BPAmoco	50 million ⁵	3
Shell	100 million ⁶	0.1
ExxonMobil	insignificant ⁷	insignificant
Chevron Texaco	275 million ⁸	2.8

Based on projections for the current and future investments compared with total expenditure for 2001.⁹

corporate engagement in international processes, best epitomised by what happened at the WSSD in Johannesburg in 2002. There were no legally binding agreements reached at this second Earth Summit. Instead, over 280 PPPs were showcased demonstrating a lack of political will to make strong decisions and the enthusiasm of corporations to take control of solutions.⁴

2.5 NGO Co-optation

Furthermore, corporate culture is hypnotising environmental non-governmental organisations (NGOs) with “multi-stakeholder” dialogues. Big business has shaped itself into human form and become a ‘stakeholder’ in society. Part of the illusion of the ‘corporate citizen’ is to enlist the help of friendly NGOs in corporate activities, thus projecting the perception of credibility. Corporations have advocated that environmental NGOs should be the verifiers of their reductions. Andrew Ertel, president of Evolution Markets, suggests that such an NGO could be Nature Conservancy or the Environmental Defense Fund.¹ This is a lucrative opportunity for NGOs. In 1997 Nature Conservancy received US \$1,285,245 in

corporate contributions making them the 8th largest recipient of corporate funding that year.² The conflict of interest over verifying the emissions of the companies who are both paying you to do so, and providing general funding for your organisation is obvious.

However it is not just conservative environmental NGOs that have been neutralised by corporate strategies. At the original Earth Summit, the NGO Global Forum produced an alternative treaty, which was designed to guide the official Rio Declarations. In it they stated strongly that the climate negotiators should, “avoid any emission trading schemes which only superficially address climate change problems, perpetuate or worsen inequities hidden behind the problem, or have negative a ecological impact.”³ However after Kyoto, the large NGOs, who had been part of the creation of this alternative treaty in Rio, began to compromise their firm stand against emissions trading. By COP-6 in 2000,

even more politically critical groups like Friends of the Earth had changed their position on trading to a request that a 20% limit be imposed upon its use. Eight months later, press statements from Friends of the Earth International heralded the Bonn agreement as a “new hope for the future”, with the mood in the conference centre described as “euphoric”⁴. This when no concrete limits were placed upon the use of emissions trading and the deal they described as “junk” in COP-6 was a better deal than the one agreed to in Bonn.⁵

“There are many reasons why environmental NGOs are compromising their positions, but the most dangerous is an acceptance of the dominance of corporate culture and the subsequent failure to provide any challenge to this approach.”

Two years later in Johannesburg at the World Summit for Sustainable Development, Greenpeace and the World Business Council for Sustainable Development

(WBCSD) made a joint declaration on climate change urging governments to move forward. This was despite the fact that the WBCSD still does not necessarily endorse implementation of the 1997 Kyoto Protocol, in sharp contrast to the stated aims of Greenpeace. At the Earth Summit in 1992, Greenpeace and the WBSCD were ‘fighting like cats and dogs.’⁶ However ten years later they stood on the same platform even without a substantial common vision of where governments should move forward to.

There are many reasons why environmental NGOs are compromising their positions, but the most dangerous is an acceptance of the dominance of corporate culture and the subsequent failure to provide any challenge to this approach. This has led to a situation where corporations no longer need to lobby intensively as they have in the past. Big business’ interests have now been placed at the heart of political negotiations.

2.6 Sinking the Protocol

Bonn 2001: After the climate negotiations came to a standstill at COP6 in Den Haag in 2000, dramatic political events such as the US rejection of the Kyoto Protocol and subsequent compromise deals fundamentally undermined reduction targets. The departure of the US pushed the Protocol to the edge. COP-6.5 in Bonn the following year was intended to save the Kyoto Protocol. The overwhelming majority of governments and NGOs rushed to compromise, in the hope of keeping sceptical governments on board and trying to win the US back. Weakened rules in the Bonn agreement, combined with the departure of the US, mean emissions reductions may only be 0.1 per cent of 1990 levels for the rich industrialised countries.¹

Negotiating positions developed over many years were dropped in Bonn. One of the most important was the proposed cap on emissions trading, to prevent countries from achieving 100 per cent of their targets abroad. The Kyoto Protocol stated that trading should be supplementary to reducing emissions directly at source. However, what 'supplementary' meant had not been quantified. A cap would define that and the EU had been arguing for a 50 per cent limit on trading. The Bonn agreement only made a recommendation that "domestic action shall thus constitute a significant element of the effort." This was despite protest against emissions trading and arguments that carbon trading would be a new form of colonialism.² The only potential environmental 'win' was text in the agreement that countries should 'refrain from using nuclear power' in emissions trading projects. However long discussions on sinks came to a bitter end and they are now present in the CDM.

Carbon Sinks

Sinks refers to the use of trees, soils and oceans to absorb carbon dioxide from the atmosphere. While the science of sinks is still uncertain, there is a broad consensus that any potential storage of carbon is temporary as trees naturally live out their life cycles or are felled and the resultant carbon is ultimately returned to the atmosphere. Many environmentalists and indigenous communities around the world fear that use of sinks will have a negligible impact on reducing global warming while having an enormous impact on people worldwide as poor countries, desperate to earn money to pay back debts, look to selling their lands and forests for the carbon markets.

Projects in countries such as Uganda and Ecuador have already led to thousands of local communities dependant on forest areas being forced off their land as private Northern corporations backed by their governments, engage in a worldwide land-grab at wholesale prices. The logic of these carbon 'offsets' ensure that Northern countries can continue to emit disproportionate amounts of greenhouse gases. This corporate offset culture magnifies inequalities between the haves and have-nots as the South becomes the carbon dump for the over-consuming North. The threat to indigenous peoples and peasant communities is especially severe, as destruction and/or loss of access to forests for many peoples would destroy their livelihood. The First International Forum Of Indigenous Peoples on Climate Change stated "sinks in the CDM would constitute a worldwide strategy for expropriating our lands."³

Marrakech 2001: Sticking points at previous talks had been compliance rules to define how targets would be enforced and over-emitters punished. The Marrakech Accords, agreed at COP-7 in November 2001, laid the foundations for implementation assistance and judicial structures. The decision to make punishments effective and legally binding was postponed.

Delhi 2002: COP-8 in Delhi took place just after the World Summit on Sustainable Development in 2002. Whilst it provided “little guidance” on emissions trading, “the most significant events took place outside the negotiation rooms”, the behaviour of the US is worth noting. Despite the fact the US is not part of the Protocol, it still has an influential delegation present at negotiations as ‘observers’. At COP-8, the US delegation insisted that they be allowed to participate directly in meetings of the CDM Executive board. At present they are only allowed to watch the proceedings via video conferencing.^{3a}

On the point of reduction commitments for developing countries, US strategy took a U-turn. Historically the US has always argued that it is unfair to ask the developed world to make reductions when the developing world has no reduction commitments and this was one of the reasons given for the US rejection of the protocol. However, the US argued at COP-8 that it is unfair for the developing world to take on reduction commitments.⁵ Point Carbon, a corporate think-tank, stated that the US “line of argument bears a resemblance to the strategy employed by the Global Climate Coalition (GCC) in the Clinton era, and several observers commented that the

GCC, while being officially dissolved, now seems to have moved into the White House.”⁶

Key decisions on Kyoto trading rules still need to be taken, particularly on establishing the legal nature of compliance regime. Aside from this basic and essential requirement for an effective compliance regime, the most important political decisions have been taken. Governments must develop national implementation policies within which companies will operate. National

policy has become increasingly the focus of corporate lobby groups.

Even the politicians involved in negotiating the protocol admit the agreement is inadequate. However for some this is not a problem. Witness the Canadian

Finance Minister John Manley encouraging Canada to ratify the Kyoto Protocol by reassuring Canadians that they should not worry about international penalties if the country falls short of the its targets, because the treaty is not binding.⁷

“There is no realistic way to force Parties who exceed their targets to remedy the problem. Trade sanctions have sometimes been used to attempt to compel action. This is not contemplated in the Kyoto regime at this time.”

— Glenn Wiser, CIEL

3. Trading Rules

3.1 The Kyoto Trading Regime

While Kyoto is just one of the carbon trading regimes under development, it is the most advanced. It is also the platform that legitimises the growth of other trading schemes. For example, the emission targets in the Kyoto Protocol create the scarcity in emissions that make a competitive market possible. The Kyoto trading regime is a combined cap-and-trade and cap-and-credit system. The cap-and-trade system is formed by setting a fixed quantity of permits (the cap), distributing them and allowing them to be traded. The cap-and-trade system is included in the Kyoto Flexible Mechanism "Emissions Trading". Each country that committed to a Kyoto reduction target has a quota of permits. The size of that quota comes from each country's 1990 emissions level minus the amount they have committed to reduce.

The credit-and-trade system is formed by allowing emission-reducing projects to generate permits equivalent to the amount of emissions they save. The project based credit-and-trade systems in the Kyoto Protocol are the Clean Development Mechanism and Joint Implementation. Using Kyoto greenhouse gas emissions permits is much like using money in many respects. You can bank most permits for future use or sell them if you have an excess. If you run out of permits you can buy or borrow more. Governments trading improperly will go to a court-like forum and could even be excluded from trading. If they believe they have been treated unfairly, they also have the right to appeal.¹

Money-like characteristics come from the rules set out in the Kyoto Protocol. An example is the interest rate for borrowing by governments, which comes from the penalty for over-emitting in one emissions budget

period. The technical name for the emissions budget period is the 'compliance period', the first of which is 2008-2012. If at the end of 2012, you are missing 100 permits to make your emissions-budget balance, then for next compliance period you must find an extra 130 permits. That is, you pay an amount of 0.3 permits for every ton of greenhouse gas you fail to reduce. The interest rate of 30 per cent for a five-year compliance period translates into approximately a 5 per cent yearly interest rate.

If you are a corporation, you trade within legislation defined by the government of the country you are active in. It is however easy to form a subsidiary company, or if you are a transnational corporation to use internal trading and take advantage of beneficial trading rules in the country of your choice. There is no cap on trading to promote domestic reductions at source and it is unclear how governments could stop you trading if they are in danger of exceeding their emissions target. If you are a multinational company you can trade internally between different national arms of your corporation, taking advantage of schemes to generate cheap permits in the developing world.

Combing through the myriad rules governing this new system, the Kyoto permits can seem to be taking shape as a credible new commodity. However, by comparison with centuries of international trade, the Kyoto commodity is young and malleable. Rules attempting to protect the commodity's environmental integrity are fragile. It is questionable whether these rules are robust enough to survive the pressures of international trade.

3.2 Conflict of Interests

Consultancies are active at the corporate, governmental and intergovernmental levels as well as across different sectors such as auditing, lobbying and verifying. Top executives move between corporations and UN agencies.

Maurice Strong, one of the principal architects of the Rio Earth Summit, is also on the board of the Chicago Climate Exchange, set to be one of the most influential trading exchanges worldwide.

Frank Joshua, managing director at US-based consultancy Natsource, was formerly Global Director for Greenhouse Gas Emission Trading Services at Arthur Andersen. Prior to joining Andersen, Joshua served as United Nations' Head of Greenhouse Gas Emissions Trading, leading several expert groups including the UNCTAD Earth Council Emissions Trading Policy Forum and the UNCTAD Expert Group on the Clean Development Mechanism. He also served as the First Executive Director of the International Emissions Trading Association (IETA).

A recent example of a conflict of interest can be found in the controversial PCF-backed Plantar eucalyptus plantation project in Brazil.¹ When the Plantar project was assessed for the PCF by Norwegian-based Det Norske Veritas (DNV) it was recommended as a CDM project. However, DNV has significant consultancy contracts with two of the PCF's investors: Statoil and NorskHydro.² There is growing resistance to the Plantar project from diverse Brazilian groups.³

Other links between the private and public sectors can be seen in the UN's Intergovernmental Panel on Climate Change (IPCC). The IPCC report on 'Land Use and Land Use Change' had a crucial legitimising effect on sinks, paving the way for their inclusion in the

CDM. The authors of the report included executives from SGS, Monsanto and Ecosecurities. The World Rainforest Movement (WRM) identified that "some of the authors (and the companies they work for) will benefit financially from having drawn the conclusions they drew."⁴

One of the authors of the report, Pedro Moura Costa, was CEO and founder of environmental finance consultancy Ecosecurities. He worked on one of the first carbon sinks projects in the world as part of the Netherlands-based FACE Foundation. A FACE project in Ecuador was criticised as a 'lose-lose' situation - unsustainable for the climate and unsustainable for Ecuadorian people and environment.⁵ WRM argue that another IPCC report should be commissioned "free of the taint of intellectual corruption."⁶

"The corporations of this sector like Plantar S.A. installed themselves in our states in the 60s and 70s, in the middle of military dictatorship, taking advantage of attractive tax incentives. Unfortunately, local communities, direct targets of the actions of the corporations, never were consulted if they wanted or not this type of project for their region. The result was that Tupinikim and Guarani indigenous peoples were expelled from their lands, as well as traditional afrobrasilian communities and tens of thousands of peasants, increasing unemployment and, consequently, the despair of these populations who lost their lands and were left without their biodiversity and without their water."

— Excerpt of statement from Brazilian citizens, movements, politicians and churches against Plantar PCF project.³

3.2 Renewables under Siege

Emissions trading threatens to reduce sustainable renewable energy to a decorative by-product. The project requirements of CDM and JI contain obstacles for small renewable projects. These include difficulties in measuring and determining ownership of energy production.¹ Large multi-national corporations find it easier to overcome these obstacles than smaller firms. Companies such as Shell or BPAmoco, which have both renewable and fossil-fuelled facilities can offset within one corporate structure, have clear ownership and can achieve emissions reductions which are easier to measure.

The Dutch Government's CDM programme will pay up to US \$5.00 for permits from renewable projects.⁴ However, permits from sinks projects in the South could cost as little as US \$1.00.⁵

When large companies have superior access to subsidies, smaller companies find themselves at a competitive disadvantage. This undermines diversity and innovation in the renewable energy sector as a whole. In the Netherlands, subsidies for the solar industry in the 1990s were concentrated on Shell and eco-consultants Ecofys.² This limited the number of solar panel firms to just a few main players and Shell gained a virtual monopoly in solar panel installation. In contrast, German subsidies were distributed more fairly across different sized firms. By 2002 there were over 300 companies involved in supplying solar panels.³ A coal-fired power plant would find it more rational to introduce energy efficiency measures or switch to gas, than to replace the use of fossil fuels with a wind farm.

Renewable firms may find that the best prices for permits will not come from demand to fulfil Kyoto reduction targets, but from companies wanting to buy permits to build an environmentally friendly image. Frank Van Der Vleuten of Free Energy Europe, a manufacturer of solar panels, believes that, "The Kyoto mechanisms are far away from practical application and relevance.

Hardly anybody has a vision how they can be put into practice for small renewable energy systems." He adds "before establishing abstract market based mechanisms, the first and most significant step is recognising the real and many values of renewable energy which go beyond the cost of one emission reduction permit."⁶

"Most of the running for the CDM is, sadly, likely to be made by big companies offering marginally cleaner coal combustion kits to China."

*— Professor David Elliot,
Energy & Environment
Research Unit, Open
University, UK.⁷*

4. Kyoto in Context: Trade and Investment

As emissions trading emerges as a principle component of government climate change policy, the rules governing its use will have to cohabit with rules governing trade and investment. Increasingly, these trade and investment rules continue to develop and expand in scope and power affecting more and more aspects of human activity. Any efforts to improve the rules of emissions trading, or to curb its use, will be forced to contend with these forces of liberalisation.

As new international 'environmental markets' develop, in what way will these markets be subject to international rules governing trade and investment? The Kyoto Protocol, for example, includes three market-based mechanisms (CDM, JI, and Emissions Trading), which intersect with many existing rules in the World Trade Organisation (WTO). As such, speculation is rife over how the relationship between WTO rules and the Kyoto Protocol will pan out.

Free Trade in Greenhouse Gases?

The WTO governs international trading relationships between countries by enforcing complex rules, which extend beyond mere trade in goods to cover services, intellectual property rights, trade-related aspects of investment, agriculture, government procurement, and more. The WTO also includes a dispute settlement mechanism, which enables it to enforce non-compliance of its rules with devastating trade sanctions and penalties. Various ministerial 'rounds' in the WTO continue to expand and refine these rules to cover ever more aspects of global economic activity, with the ultimate goal of securing global free

trade, property protection, supra-national regulation of the economy, and dispute settlement for the global economy.

Since the rules for the Kyoto mechanisms are still being developed, and the WTO's Committee on Trade and Environment (the principal committee responsible for evaluating the relationship between Multilateral Environmental Agreements (MEAs) such as the Kyoto Protocol, and the WTO), is still deliberating, much remains speculation. Since international emissions trading, particularly with regard to the Kyoto

Protocol, will have a large impact on global economic activity, there is already a broad consensus among legal experts and academics that there are some points of conflict, which will need to be addressed.²

These include issues such as: subsidies for

renewable energy technologies, discrimination of products based on how they are produced, labelling standards, environmental and social standards included in CDM and JI, the nature of certain types of rules which may be imposed on emissions markets to prevent fraud, 'carbon taxes' and cross-border adjustments. In all these areas and more, there are concerns that WTO rules restrict countries from fulfilling key parts of the Kyoto Protocol. There has already been a glimpse of this, when in 1999, the US Clean Air Act provision restricting imports of low standard reformulated gasoline was struck down by the WTO in a challenge. As a result, the US Environmental Protection Agency was forced to rewrite the rules to be in compliance with the WTO ruling. The measure was aimed at meeting tougher air quality standards by preventing the use of low-grade gasolines.³

"The Kyoto Protocol to the UN Framework Convention on Climate Change (FCCC) may be the most important economic agreement penned in the 20th century."

— Aaron Cosbey, Royal Institute of International Affairs (RIIA)¹

The solution, as proposed by industry lobby groups and neo-liberal think tanks, is to encourage WTO compliance across the board. Many corporate lobby groups in particular, want unrestricted free trade in greenhouse gases rather than government regulation and taxation.⁴ The WTO's supremacy over national government's ability to legislate makes it difficult to implement climate policies, including tough regulations on emissions trading markets, which do not conflict with free trade rules. Increasingly, regional trade agreements such as NAFTA and the EU Single Market also contain such measures. A recent NAFTA dispute between the US and Canada over a toxic fuel additive, MMT, led to the Canadian government having to repeal its ban of MMT, a substance manufactured by US-based Ethyl Corp., and to pay compensation to the company for profit losses.⁵

Interestingly, the US government itself bans the use of MMT in fuels, whereas Canada was instituting the ban after it had signed NAFTA. Also of note, is that in this particular dispute, Ethyl Corp. was able to sue the Canadian government directly.⁶ Such 'investor-state' provisions are appearing in new trade and investment treaties and threaten to bring a whole raft of similar challenges against countries' environmental and social standards by transnational corporations.

Investment Liberalisation: An Emerging Threat

While global trade rules have an enormous impact on climate policy, global investment rules, as codified in the WTO's rules on services, intellectual property and trade-related investment measures, as well as through regional trade agreements, and through International Investment Agreements (IIAs) are also important to consider.

International investment can take two main forms: foreign direct investment (FDI) and international portfolio investment (IPI). FDI can be defined as an investment by a corporation from one country in an asset (in whole or in part) of a company (most often a subsidiary) in another country. Therefore a majority of FDI flows are in the form of mergers, acquisitions and takeovers, which contributes to the increase in size and concentration of the economic power of corporations.⁷

Portfolio investments can be defined as the buying of stocks, bonds or other parts of the financial markets that do not result in a 'controlling stake'. Such investment is often more short term than FDI, and much more speculative. Emissions trading, broadly defined, involves both forms of international investment. Project-based trades such as investment in a CDM or JI project would be considered FDI, while trading in emissions permits would be classified as portfolio investments. In the past, governments have tried to negotiate special multilateral agreements on investment in the WTO and in the Organisation for Economic Cooperation and Development (comprising the 29 most industrialised countries).

However intense public outrage and government opposition ultimately led to their demise. Corporate lobby groups such as the International Chamber of Commerce (ICC) and the

Sky for Sale

The Kyoto Protocol establishes three market-based trading mechanisms - Joint Implementation (Article 6), Clean Development Mechanism (Article 12) and Emissions Trading (Article 17). The rules and procedures for these mechanisms are still a work in progress, but certain basic concepts of their function are already clear. They enable trading in greenhouse gas allocations between countries in the form of Assigned Amount Units (AAUs - Emissions Trading), Certified Emissions Reductions (CERs - Clean Development Mechanism), and Emissions Reduction Units (ERUs - Joint Implementation). These 'credits' will be the primary product traded in the world markets as implementation of the Kyoto Protocol gets under way. It is these trading mechanisms and other policy questions related to the Kyoto Protocol, which has raised concern over the WTO's treatment of the climate agreement.

World Business Council for Sustainable Development (WBCSD) have been strong proponents of these agreements, matching their enthusiasm for international emissions trading proposals. The European Union continues to push for broader liberalisation agreements and provisions in the WTO, while the US and Canada have tabled ambitious investment provisions in ongoing negotiations around the Free Trade Agreement of the Americas.⁸ But the bulk of international legislation on investment lies in the patchwork of agreements between countries.

There are currently over 2100 Bilateral Investment Treaties (BITs) now in force worldwide.⁹ These are agreements negotiated between two countries, often containing very extensive provisions affecting a whole range of a country's regulations - particularly environmental and social rules. Regional free trade agreements

such as the EU Single Market and NAFTA also contain such provisions. More than 80 per cent of all BITs now in force have been negotiated since 1990, and each year a higher number are negotiated, amended or completed.¹⁰ This trend is only set to increase as countries in both North and South compete with each other to attract investment.

Playground Rules

In contrast, the UNFCCC and governments, caught up with the spirit of deregulation (or rather corporate friendly re-regulation), have been reluctant to develop strict rules and regulations for the use of market-based mechanisms in the Kyoto Protocol. In the absence of tight rules and strict enforcement mechanisms, business has been largely left to its own devices and in many cases actively encouraged to develop the rules of the market place as it sees fit.

This laissez-faire approach makes it easier for corporations to influence the pace and development of these markets. Once certain norms and standards are established, it will be much more difficult for governments to intervene in the markets. Through 'voluntary' emissions trades, 'pilot programs', and direct lobbying, corporations effectively inculcate certain business practices into mainstream policy. Much of the more recent US trading markets have developed in this manner. The United Kingdom went a step further and set-up its national emissions trading regime to be entirely voluntary, with relatively few guidelines. In general, where trading regimes have developed, governments have been wary of imposing stringent regulations and accountability mechanisms on corporations.

On an international level, this is even more difficult to accomplish, as consensus on sensitive economic policy decisions is often impossible to

“In the context of the Kyoto Protocol and other emissions trading markets, any rules aimed at improving their integrity and preventing fraud will continuously be threatened by the emergence of newer and more ambitious liberalisation initiatives.”

reach, due to much intransigence from the more neo-liberal economies, with the help of intense industry pressure. The absence of any binding commitments and agreements coming out of the World Summit on Sustainable Development (WSSD) is a case in point. Meanwhile in the WTO, negotiations are taking place to expand the scope of its rules on trade in services, and the dispute settlement mechanism is flourishing.

In the context of the Kyoto Protocol and other emissions trading markets, any rules aimed at improving their integrity and preventing fraud will continuously be threatened by the emergence of newer and more ambitious liberalisation initiatives. Wary of sparking high-profile disputes between trade and environment interests, governments have opted for a ‘complementary’ approach, whereby Kyoto rules are being designed to fit within the world trade system.¹¹ This ‘chill effect’ will have enormous consequences on the development of rule-making in the climate realm, as fear of WTO and regional trade and investment retaliation will continue to influence legislators’ decision-making. The significant weight of corporate power behind emissions trading is also unlikely to be swayed, as revenues from emissions markets begin to swell.

WTO AGREEMENTS WHICH POTENTIALLY AFFECT KYOTO RULES

‘Broad Principles’ - Major agreements:

General Agreement on Tariffs and Trade (GATT)

General Agreement on Trade in Services (GATS)

Trade Related Aspects of Intellectual Property Rights (TRIPS)

Trade Related Investment Measures (TRIMs)

General WTO Rules:

Dispute Settlement Understanding (DSU)

Most Favoured Nation (MFN)

National Treatment

Special Agreements:

Agreement on Subsidies and Countervailing Measures (SCM)

Agreement on Government Procurement (AGP)

Financial Services Agreement (FSA)

‘New Issues’ (Investment, Government Procurement, Competition Policy, etc.)

4.2 Kyoto and the World Bank

The World Bank has long been a heavy promoter of climate-damaging fossil fuel industries. Its lending portfolio has favoured these industries over renewable energy investments by a ratio of 22:1 in the last decade alone. Since the Earth Summit in Rio de Janeiro in 1992, the Bank has invested over US \$22 billion in fossil fuel projects such as oil, coal and gas, in developing countries and economies in transition. In the last ten years, the Bank financed 226 major fossil fuel projects such as gas and coal-fired power plants, refineries and processing plants. According to the Sustainable Energy and Economy Network (SEEN), these projects will release over 40 billion tons of CO₂ during their lifetime, equivalent to almost twice global human-caused greenhouse gas emissions in 1999.¹ Toxic co-pollutants associated with these projects will also have tremendous negative impact on human and environmental health for decades to come. In contrast, the Bank has only financed 35 renewable energy or energy efficiency projects, with a total outlay of US \$1 billion over the same period.²

Much of the World Bank's activities and lending decisions have been in favour of a broad privatisation agenda, particularly in the energy sector. The Bank, together with other regional development banks and the International Monetary Fund, have long pressured national governments in the South and economies in transition to open their markets in the name of poverty alleviation and efficiency. Over the years, these institutions have successfully pushed developing country governments to privatise state-owned energy utilities, through loan conditionalities and structural adjustment programmes. These privatisation programmes have been a boon to large transnational corporate interests from the donor countries, often correlating in a

reciprocal relationship between a particular loan and a subsequent contract offered to a company from the same donor country. According to testimony from then US Treasury Secretary Lawrence Summers at a Congressional hearing, for every dollar the US government puts in to the World Bank, it receives US \$1.30 in contracts for its corporations.³ Nine out of ten beneficiaries of energy sector lending from the World Bank went to benefit TNCs from the North, including companies like Enron, ExxonMobil, ChevronTexaco, General Electric and others.⁴

Therefore, it is with a high degree of suspicion that the World Bank's management of new programmes geared towards promoting clean energy investment and greenhouse gas offset projects, is viewed by campaign groups. Three new funds have been set up to promote investment in CDM projects - the Prototype Carbon Fund, the Community Development Carbon Fund, and the BioCarbon Fund, with a total capitalisation of US \$350 million.

World Bank and Emissions Trading

The first fund, the Prototype Carbon Fund (PCF), is a pool of money managed by the World Bank and describes itself as "pioneering the market for project-based greenhouse gas emissions reductions and to contribute to sustainable development."⁵ The money in the Fund is contributed by its 'partners' and these are seventeen corporations including oil transnationals BP-Amoco and Statoil, as well as six rich northern countries including The Netherlands, Canada and Norway.⁶

As the name implies, the PCF is a prototype for other fledgling funds of the World Bank such as the Community Clean Development Fund and the BioCarbon Fund (see "Key Players"). By the end of 2002, it had charged ahead with twenty-six

'renewable' projects.⁷ Although, within that definition of 'renewable' a great variety of projects can qualify. As a result, the PCF counts energy efficiency in the Czech Republic, waste management in Latvia, afforestation in Romania, waste incineration in Mauritius, landfill gas extraction in South Africa and soil conservation in Moldou as 'renewable'. While environmental groups such as Greenpeace define 'renewable' energy strictly in terms of solar and wind power, the PCF and its source, the Kyoto Protocol, include energy that stretches this definition to the limit.⁸

Another prototype fund that came out of this formula, the Community Development Carbon Fund (CDCF), whose slogan is "carbon with a human face," was launched at the World Summit on Sustainable Development (WSSD) in Johannesburg 2002, with a capitalisation of US \$100 million. It is intended to fund small-scale renewable energy and energy efficiency projects and is a joint project with the industry lobby group, the International Emissions Trading Association (IETA).¹⁰

The Bio Carbon Fund, launched in the beginning of 2002, is intended to support carbon sequestration projects such as forest sinks and reduce emissions from agricultural practices.¹¹ Environmentalists are concerned that the Bank is pushing controversial forest sinks projects despite a lack of scientific consensus on their ability to absorb carbon, and mass opposition from community groups and indigenous peoples worldwide.

Type of project	Number
waste management	3
energy efficiency	5

wind power	5
geothermal	1
afforestation	2
biomass	2
hydropower	3

Meanwhile, the corporate sector is taking heart. A World Bank study found that after the launch of the Bio Carbon Fund carbon trades in the first six months of 2002 by companies doubled in volume from the previous year.¹² The Bank estimates that carbon trades increased by 400 per cent in 2002 as a result of its high profile financial backing of the system.¹³ By creating these funds, the Bank together with the partner corporations and governments are establishing norms and standards which will have an enormous influence on the rules governing these projects.¹⁴

5. Key Players

A survey of current activity shows a combination of governmental and private sector initiatives, inside and outside of the Kyoto Protocol trading regime. A complex network of consultancies and individuals underpin a significant element of market design in governmental committees, business associations and the Intergovernmental Panel on Climate Change (IPCC). Corporations have been active in the national schemes in the UK and Denmark, and the project-based mechanisms facilitated by the Dutch government and the World Bank's Prototype Carbon Fund. There has also been a great deal of private sector activity independent of the Kyoto regime. North American corporations have been the most prolific actors in trading so far, especially Canadian contractors who have been involved in more than 50 per cent of trades.¹

There has been an explosion in numerous types of carbon market financial services in brokerage, project development, consultancy, procurement, online trading, financial journalism, event planning, project financing and so on. The branding is a smooth mix of cyber-environmental and financial language, forming names like: CO2e.com, Eyeforenergy, Natsource and Ecosecurities. There are also more proactive and advanced constellations of expertise forming international trading associations, stakeholder dialogue fora and consortia to conceptualise the way exchanges may work in the future. The next few pages provide a glimpse of the inhabitants of the world of emissions trading. It is not comprehensive as there are many more brokers, consultants, corporations, NGOs and financial institutions currently crowding into the market.

5.1 International Financial Institutions

EBRD: The European Bank for Reconstruction and Development has established a programme for the project-based Kyoto mechanism, primarily intended for Central and Eastern Europe countries, known as Joint Implementation (JI). However, this is less significant than the work done by the World Bank's Prototype Carbon Fund. The Dutch government has made numerous agreements with development banks to establish facilities to purchase GHG emission reduction credits. These development banks include the EBRD, as well as the International Finance Corporation (IFC), the Andean Development Corporation (CAF) and the International Bank for Reconstruction and Development (IBRD).²

Community Development Carbon Fund: In September 2002, the Community Development Carbon Fund was launched, a project initiated together with the International Emissions Trading Association (IETA). The World Bank and IETA have joined forces to collaborate on the US \$100 million fund, saying: "Five years after it started, the global carbon finance business...is approaching the half-billion dollar level in cumulative trade value. It is expected that the carbon market will exceed one billion dollars a year by 2008. Yet right now most developing countries are missing out on the benefits of carbon finance dollars. The Bank's responsibility is to make sure that an equitable share of this money, much of it private sector, ends up in the hands of the poorest, in the poorest areas of developing countries."³

BioCarbon Fund: Launched in November 2002, the BioCarbon Fund, will again, be administered by the World Bank, with a target size of US \$100 million. The BioCarbon Fund is

based on the “successful” PCF model and describes itself as “an opportunity to attract private capital to biodiversity protection, soil conservation and sustainable community development.”⁴ The Fund works on the same principle as the PCF by managing a pool of investment money, which is contributed by partners. These partners so far include commitments from fourteen private companies from the banking, energy, and consulting sectors.⁵

The Prototype Carbon Fund (PCF):

The Prototype Carbon Fund has been operating since 1999 and aims to stimulate the carbon markets, specifically the project-based mechanisms CDM and JI. It acts as any other project-based investment fund would and provides returns to its ‘partners’ from profits generated in projects. It is based in the World Bank headquarters in Washington and has twenty staff.⁶ The PCF is intended for larger renewable energy and efficiency projects with a particular emphasis on ‘public-private partnerships’. Along with the Dutch government’s JI and CDM programmes (CERUPT and ERUPT), PCF is considered the most significant influence on market expectations of price and verification rules. The PCF states rather defensively on its website that the World Bank “does not intend to remain as a player in this market”, “neither seeks a favoured nor monopolistic position under the UNFCCC” and “does not wish to position itself as the institution which will implement the CDM.”⁷ Sources report there is criticism from outside and within the bank that brokerage and market development do not fit within the World Bank’s mandate of poverty alleviation.

5.2 Corporations

BP-Amoco: The BP pilot scheme, designed in collaboration with US NGO Environmental Defense in 1999, was the beginning of the first major corporate ‘cap-and-trade’ greenhouse gas trading scheme. BP-Amoco’s overall target is a 10 per cent reduction below 1990 levels by 2010 (tougher than the average 5.2 per cent Kyoto target). They claim to already have achieved 5 per cent of that target, mostly through reducing gas flaring in offshore activities.¹

Enron: The bruised, battered and bankrupt corporate giant is not down for the count yet. Despite a disastrous year for energy trader, Enron still ranks number five on the Fortune 500 list for 2002,² and intends to re-open for business. Despite being widely known as one of the largest bankruptcies in corporate history, it has also been an early player in the emissions trading markets, particularly in the USA where it offered brokerage and consultancy services to power utilities and industrial consumers.

Its subsidiary, Enron Global Markets, specialised in SO₂ and NO_x trading in North America. The company pioneered the use of many financial instruments in the emissions markets. It also promoted the concept of cross-commodity swaps, whereby emissions permits could be traded for quantities of gas and coal. It lobbied aggressively to expand emissions trading markets, particularly in greenhouse gases.³ Breaking ranks with other energy corporations, Enron came out in support of the Kyoto Protocol, excited more by the opportunity to expand its emissions trading services to cover a global market, than the more limited single gas markets in North America.

Shell: Internal cap-and-trade system launched in 1998, which developed into the Shell Tradable Emission

Permit System (STEPS) programme in 2000. Shell aims to reduce GHG emissions 10 per cent below 1990 levels by 2002 and exceed Kyoto targets through 2010. The trading system includes Shell business units in Southern countries, which will host emission-reduction projects. These permit-generating projects and the way the permits can be sold on into the system are modelled on the CDM.⁴

5.3 Corporate Lobby Groups

Just as the business community once lobbied for 'more evidence on climate change' and then 'the inclusion of market-based mechanisms to achieve greenhouse gas reductions', they are now lobbying for as many market opportunities as possible within the Kyoto trading regime. The many different trading schemes create a risk that the market will develop incompatibilities at the international and national levels.

A fragmented market raises business costs, since bridging mechanisms between schemes will have to be created and it generally becomes more difficult for companies to manage risk. Business also repeatedly lobbies for rule standardisation between different trading schemes. The corporate argument is that the legal and administrative costs of completing a trade need to be as low as possible for the markets to be "cost-effective" - thus equating cheapness with cost-effectiveness.

International Chamber of Commerce (ICC): The most prominent and powerful of corporate lobby groups is the ICC and their position reflects most accurately the spectrum of corporate lobbying strategies. At the last subsidiary bodies meeting of the UNFCCC before the WSSD in 2002, ExxonMobil presented the ICC discussion paper on the role of companies in the Kyoto Mechanisms. The discussion paper states that the ICC believes:

- countries should recognise all valid greenhouse gas emission permits regardless of the national source or final owner of the permits;
- nations should not impose import or export controls on exchanges of greenhouse gas emissions permits;

- internal transfers of credits between affiliated companies of multinational corporations should not be restricted;
- transparent procedures should be established for national allocations of credits and for project approval so that companies can undertake transactions confidently based on readily available information;
- and nations should not establish eligibility, compliance or liability procedures that retroactively affect transfers undertaken in “good faith” by companies.

ExxonMobil stressed that both “national companies and affiliates of multinational corporations doing business [outside of countries with a Kyoto emissions target] should be equally eligible to develop Clean Development Mechanism projects under national procedures.”¹

Emissions Market Development

Group: EMDG was launched by Arthur Anderson, Credit Lyonnais, Swiss Re and Natsource at COP-6 in 2000. It aims to bring together major energy companies committed to the development of international emissions trading, in order to explore ways to build “effective and efficient trading infrastructure.”² The central proposal is a ‘carbon repository’, where firms could deposit reductions. The repository would facilitate trade of the reductions in advance of the emergence of fully developed national systems. EMDG plans to develop a “carbon rating engine” which would assess carbon value in a systematic and automated way.³

International Emissions Trading

Association: The IETA was set up in 1999 by the UN Conference on Trade and Development (UNCTAD). It first served as a body to develop ideas around emissions trading in the Kyoto Protocol process and later became a fully-fledged corporate lobby group, moving from the control of the UN to that of industry.



There are 50 members of the IETA including; BP, CO2e.com, Atomic

Energy of Canada Ltd., Eskom, Evolution Markets, KPMG, PricewaterhouseCoopers, Shell, Statoil and TotalFinaElf.⁴ They commissioned Point Carbon to construct a database of all trading schemes accessible through their website. IETA describe themselves as “the premier voice for the business community on emissions trading”, yet they were initially set up by the United Nations. The evolution of the IETA seems symbolic of the direction taken by the UN process itself, away from objective research and further into representation of the needs of already powerful interest groups. IETA met with PERT in 2001 with a plan to coordinate with them and the UK scheme designers in future and to reach out to recruit more members into the association.⁵

Emissions Marketing Association:

Working with the slogan “Serving the International Emissions Trading Community,” EMA brings together over 140 consultancies and corporations from around the world, including Mitsubishi, Cargill, Enron and Dow. EMA, which publishes the monthly newsletter ‘The Emissions Trader’, lobbies against any kind of restrictions or limitations on the use of the emissions trading mechanisms.⁶ They also provide intellectual support through awareness-raising efforts in the business community around the emerging emissions trading markets.

World Business Council for Sustainable Development (WBCSD):

By far one of the most sophisticated corporate lobby groups, the WBCSD is essentially a coalition of some 140 CEOs of the world’s largest

transnational corporations such as Dow, Shell, Eskom, and BP.⁷ The group has been a pioneer of corporate environmentalism, and has been one of the most dominant business voices in international deliberations on environment and development. The WBCSD favours a global treaty on climate change, though not necessarily outright calling for ratification of the Kyoto Protocol, mostly due to reluctance by its US members.

It has lobbied aggressively to undermine many of its provisions, preferring voluntarism versus regulation.⁸ The WBCSD has been so successful in promoting itself as a green business coalition that many NGOs have succumbed to their rhetoric and formed alliances with the corporate lobby group. Even campaign groups such as Greenpeace, who years before used to directly campaign against the WBCSD, have recently forged partnerships with them.⁹ The group has used its carefully crafted green image and the power of its corporate leaders to influence UN agencies and government institutions to accept WBCSD recommendations of market-based corporatist approaches to environmental and social policy. It has championed the flexible mechanisms of the Kyoto Protocol, and has been heavily involved in influencing the development of rules on emissions trading, such as accounting standards through a 'Greenhouse Gas Protocol', which is envisioned to be a global set of accounting standards and guidelines for emissions reporting.

It cooperates with other business groups such as the ICC and the IETA to coordinate business 'input' into most climate policy negotiations on the international, national, and local level. Its central demand for emissions trading is for nothing less than global free trade in greenhouse gases with as little government and regulatory intervention as possible.

5.4 Think Tanks

Point Carbon: Set up in May 2000, this group of researchers based in Norway, produce market analysis in the form of a monthly magazine and in-depth quarterly reports. Their analysis is firmly rooted in the pro-emissions trading camp, and they provide intellectual support for the market. Their mandate is to provide “decision-support services, market analysis and intelligence” and they monitor political and economic news to ascertain the effects upon the value of carbon permits.¹ However, they are not purely a think tank and lobby the UN process as members of IETA.

Pew Center: There is a great deal of integration between the corporate, research and public sector in the UNFCCC, perhaps because climate change has become such a specialised and technocratic subject that only a small number of people have developed the necessary expertise on the issues. It can sometimes be difficult to determine whether a group is a corporate lobby group or not. For example, the Pew Center on Climate Change presents itself as an independent research organisation and they will criticise US policy in a way that the Global Climate Coalition would never have done. However, it has been described as an industry front group and it works with thirty-seven companies - most on the Fortune 500 list - on emissions reductions.² It is funded by the Pew Charitable Trust, which derives its wealth from Sun Oil Company (Sunoco), Oryx Energy and investments in forestry, mining and oil firms.³



5.5 Consultancies

CO2e.com: Set up by Cantor Fitzgerald and PricewaterhouseCoopers, CO2e.com was launched at COP-6 in The Hague in November 2000. As its name suggests it is an on-line trading website for emissions trading but also provides consultancy, brokerage and other services through its ‘associates’. The associates ensure that CO2e.com is a one-stop shop for all emissions trading services.

PricewaterhouseCoopers is recommended by CO2e.com for: consultancy, verification and monitoring services, project eligibility as well as ‘other financial advice’.¹ In the wake of the scandals involving rival Arthur Andersen, these types of combined service units have come under great scrutiny. The same corporation that is giving financial advice should not be involved in accounting, or in this case, verifying credits.

Evolution Markets LLC: Riding on the coat-tails of Enron, Evolution Markets LLC has positioned itself to take on much of the business that Enron has lost. The company, offering brokerage and consultancy services, has staked more of its corporate reputation on the emissions trading markets than Enron, which could always rely on its core business of energy trading, generation, and transport. The New York-based company’s services cover the full range of emissions trading markets in the USA, including specialised regional markets in Texas, Los Angeles, and the Northeast. Like Enron and other competitors, the company also offers services in coal provision and weather derivatives (financial instruments to protect against risk related to weather, such as heating oil companies losing money if a winter is too warm and consumers use less oil). Unlike Enron, the company has branched out into offset

trading, such as a major sinks project in the Mountain Pine Ridge nation forest reserve in Belize, in which it is brokering the resultant Certified Emissions Reduction (CERs) units the Belize governments expects to generate from the project through the Clean Development Mechanism.²

Ecosecurities Ltd: One of the longest standing financial service providers in the carbon markets and declared the “best environmental advisory body” by Environmental Finance magazine.³ They work in sixty countries and have a large market share - up to 20 per cent of the yearly demand for emissions permits. They seek out potential sites for offset projects and hold them ready for when the demand for offset projects increases.⁴

Future Forests: Having trademarked the term “carbon neutral”⁵, Future Forests sell the right to use the term to anyone who will pay enough money into carbon offset projects. Future Forests was established by a former marketing executive and the firm has been very successful in recruiting high profile and fashionable sectors such as music award events, into their scheme. International summits are increasingly using Future Forests to improve their environmental image.

The World Summit on Sustainable Development also used Future Forests to set up a Johannesburg Climate Legacy project which awarded participants Bronze, Silver and Gold levels of sponsorship and a signed commemorative certificate, based on a sponsorship of US \$10 per tonne of CO₂, emitted by the Summit. The scheme failed to reach its targets.⁶

Natsource: This transnational energy brokerage firm has offices in the USA, Japan, UK, Canada and Norway and claims to have brokered US \$1.5 billion in emissions transactions.⁷ Two-thirds of that figure was purely in the sulphur trading markets in the USA in which they have been active in the

controversial RECLAIM programme (see “Sulphur trading: model or warning”).

Like Enron, the New York-based Natsource is better known for its services in electricity, gas and coal markets. Nonetheless the company is a market leader in emissions trading markets, and has been particularly active in promoting international trades in greenhouse gases. It has a significant presence in Europe where it has brokered the first trades in both the UK and Danish emissions trading markets.

It also boasts having played a key role in, “designing domestic and international climate change policies.”⁸ A recent addition to their staff has been Frank Joshua formerly of the now reviled consultancy giant Andersen. Joshua is widely recognised as one of the principal architects of the market-based mechanisms in the Kyoto Protocol having formerly led the UN Conference on Trade and Development (UNCTAD) Greenhouse Gas Emissions Trading Department, known as the UNCTAD/Earth Council Carbon Market Programme.

5.6 Private Sector Trading Initiatives

Chicago Climate Exchange: CCX has been developed by 28 large companies, including Ford, DuPont and BPAmoco, with the cities of Chicago and Mexico city, a group that emits 700m tonnes of carbon dioxide each year, more than United Kingdom does.¹ It intends to build up to a scheme between Canada, the USA and Mexico in 2003 and then open to international participants in 2004.² In the words of CCX chairman, Richard Sandor, “there have been years of discussion about the potential for trading carbon emissions, but the Chicago Climate Exchange will offer the first test of the concept on a scale with global potential.”³

Partnership for Climate Action: PCA was launched just before COP-6 by the US NGO Environmental Defense, Alcan, BP, Dupont, Ontario Power Generation, Pechiney, Shell and Suncor. Their aggregate emissions exceeded 360 million metric tons of CO₂ in 1990, which means this group would be the 15th largest emitter in the world if it were a country.⁴

Pilot Emissions Reduction Trading Project (PERT - now known as CleanAir Canada): “In 1995 a group of companies in Canada, (including DuPont), recognised emissions trading would be a reality and that we would like to participate in it.”⁵ The group decided to launch PERT and obtained approval from the Ontario Ministry of the Environment. “PERT has become a learning forum in which more than 102 entities, including companies, NGOs, academia and government agencies could come together. We were no longer just talking about emissions trading but had a system which allowed for real trading to exist.”⁶ PERT recently evolved into CleanAir Canada.⁷

5.7 Environmental NGOs

Environmental Defense:

Environmental Defense (formerly Environmental Defense Fund - EDF) is widely credited with developing and writing much of the Title IV section of the US Clean Air Act which established a nationwide tradeable permit scheme for sulphur dioxide (SO₂).¹ The group has been a long-time staunch advocate of market-based corporatist approaches to environmental problem-solving. Their own research on the effects of the US sulphur trading system has largely ignored the concerns of community groups.

Exposure to increased levels of SO₂ downstream from power utilities and industries were now emboldened by the market to increase emissions so long as they could buy relatively cheap credits in the EDF-backed scheme. While it is indeed true that aggregate levels of SO₂ have decreased in the US, academic studies and The New York Times attributed this phenomenon more to the use of relatively inexpensive technologies deployed onsite and process innovations rather than from trading.² Some locations, a large majority of which are poor and predominately communities of colour, have been reporting increased emissions of SO₂ and resultant toxic co-pollutants such as Particulate Matter and Volatile Organic Compounds lethal to human health and the environment.³ This prompted the National Environmental Justice Advisory Council, a government appointed body, to oppose any expansion of pollution trading schemes in the US and called on the US government to address the environmental justice impacts of emissions trading. While EDF has since paid more heed to issues of environmental justice, it has not deviated from its insistence on expanding pollution trading initiatives both domestically and on a global level. The group has lobbied

intensively for emissions trading to be included and given more prominence in the Kyoto Protocol, despite the significant differences between regulating more localised pollutant gases such as SO₂ and greenhouse gases which are more difficult to monitor, measure and verify. As environmental justice campaigner and prominent critic of the EDF approach, Mike Belliveau comments, “the international arena and global ecological stability now become the expanded testing ground for the free market theory of pollution trading... Blind faith in market forces and neo-liberal passion for regulatory reform have overshadowed the fact that emissions trading does not in fact reduce pollution.”⁴

World Resources Institute: Like Environment Defense, the World Resources Institute has been a long-time advocate of free market environmentalism and corporatist approaches. The Washington DC based think-tank has been a major partner of corporate lobby groups such as the World Business Council for Sustainable Development, and receives substantial support from government and UN agencies, international financial institutions such as the World Bank and Asian Development Bank, and individual corporations such as Monsanto, TotalFinaElf, Shell, BP, Cargill Dow, and many others.⁵ WRI has long advocated an international emission trading system and the Protocol’s market-based mechanisms as the most “politically acceptable international rules that secure cost-effectiveness and environmental integrity.”⁶

WWF: With an annual budget 3.5 times that of the WTO, dwarfing even some Pacific and African countries’ Gross National Product, the World Wildlife Fund resembles more of a corporation than anything else.⁷ The conservation group receives substantial corporate funding and as

with other NGO’s mentioned, has long favoured market-based approaches to environmental problem-solving particularly with regard to climate policy. Recently the group has called on EU Environment Ministers to support and adopt the EU Emissions Trading Directive, which will establish an ambitious EU-wide emissions trading programme, including greenhouse gases, by 2005.⁸

Interestingly, the group concedes that, “if some of the proposals being put forward at the moment are accepted, the cap-and-trade system will actually harm the environment and the climate.”⁹ WWF is also developing an eco-label for the CDM, which it argues, will be a ‘gold standard’ certification programme, which would help provide “certainty for investors and real climate benefit.”¹⁰

Greenpeace: The world’s most famous environmental brand, Greenpeace has developed its reputation by taking an uncompromising attitude towards stopping threats to the environment and through high-profile actions. In the past, Greenpeace has been highly critical of the inclusion of the market-based mechanisms in the Kyoto Protocol, and has campaigned directly against the destructive role of corporate lobby groups and their pro-emissions trading stance.¹¹

Not long ago, the group issued brilliant reports on the role of corporate lobby groups and the obsessive “dash for cash” corporations were pursuing, and how such emphasis would ultimately undermine the climate treaty.¹² Greenpeace Climate Policy Director Bill Hare, commenting at COP-5 of the climate negotiations in Buenos Aires, said: “This is turning into a trade and economic negotiation - climate is getting pushed further and further down the agenda. Science is being replaced by carbon trading markets as the driver for the talks.”¹³

GREENPEACE

However, over the years, Greenpeace's critique of emissions trading and the role of industry has faded into the background, as it has since focused almost exclusively on Kyoto ratification and campaigns against corporations still opposed to the treaty such as ExxonMobil.¹⁴ At its recent launch of the Choose Positive Energy campaign, the headline speaker was none other than former Shell boss and head of the corporate lobby group Business Action for Sustainable Development (BASD), Mark Moody Stuart.¹⁵

Greenpeace also controversially allied itself publicly with the World Business Council for Sustainable Development at the Johannesburg Rio +10 summit.¹⁶ The two former adversaries announced that they were "shelving their differences" and called upon leaders to take action on climate change. Soon after, the WBCSD clarified to the press that it did not necessarily mean that the business group was calling for Kyoto ratification, contradicting Greenpeace's assertions that it was.¹⁷

Greenpeace's increasingly muted opposition to emissions trading and its tacit and active endorsement of companies that support the Kyoto Protocol has been a major ideological victory for sophisticated corporate lobby groups such as the WBCSD, and has paved the way for further expansion and development of the market-based mechanisms. Many image conscious corporations seek to show off their environmental credentials and thereby allay public concern by teaming up with a trusted major environmental brand such as WWF or Greenpeace. In turn these groups feel they can exercise greater leverage over a company's behaviour. However at what cost?

Conclusion: can emissions trading work?

The answer to this question necessarily lies in the deconstruction of what it means to say 'work'. If success is measured by financial indices and the continuation of the economic and social order as it stands today, then emissions trading will be hailed as a victorious solution. Even with all the inherent problems of accounting, verification and monitoring, those constructing the emissions markets will make them 'work'. As can be seen with other current financial markets, even the ongoing scandals of fraud and cheating and regular occurrences of currency crises, capital flight and recession never stopped them in their tracks. The corporate scandals in the US, sparked by the Enron saga, had the power to expose fundamental flaws in the current economic system. However it was a missed opportunity. The markets may have suffered slightly but the 'crisis' was momentary and faith was soon restored in the system. Even while further scandals were erupting, other political news such as the 'War On Terror' soon eclipsed them in the news headlines.

These same problems encountered by other financial markets will apply to emissions trading and will be exacerbated by the absence of a credible and independent monitoring and verification body. At the same time as hundreds of millions of dollars are invested in setting up trading schemes all over the world, virtually no financial support is channelled into vital regulatory infrastructure. The UK alone has spent UK £215 million on their trial trading scheme.¹ As brokers, consultants, accountants, speculators,

energy corporations and politicians all scramble for a piece of the emissions trading pie, no equivalent level of activity is seen from credible verifiers or monitors. This imbalance can only lead to an emissions market dangerously reliant upon the integrity of corporations to file accurate reports of emissions levels as well as emissions reductions from projects. More worryingly, this inactivity from the regulatory side, means that corporations such as PricewaterhouseCoopers and Cantor Fitzgerald are playing multiple roles of accountants for polluting firms, verifiers of emission reduction projects as well as consultants. This can only lead to a severe conflict of interests, resulting in fraud and ultimately little guarantee of actual emissions reductions.

"The safeguards that you need in place are as complex, or even more complex, as the regulations that industry complained about in the first place."

— Mike Belliveau, Natural Resources Council of Maine

However all these problems will not stop the markets from 'working'. The markets will be functional, in much the same way that other financial markets are able to distract attention from their own fundamental flaws and isolate Enron and others by labelling them 'bad apples'. The very survival of a market depends on its ability to

appear stable with minimal regulatory 'interference'. A well-financed public relations industry as well as a lack of awareness and education on these issues in the world's general population will help maintain a semblance of stability and functionality. Emissions markets are not an exception and will benefit from the same illusion-building process.

The gap between theory and practice

However, once the meaning of whether or not trading will 'work' is expanded to include other values, then the fog created by impenetrable free-

market rhetoric begins to clear. Emissions trading is bad for people and the planet. It is the child of an economic system that has wreaked havoc on ecosystems and communities across the globe. But instead of learning the lessons from a disastrous history of imposing one-size-fits-all, top-down policies, emissions trading exemplifies that approach, closing off the space from which grassroots bottom-up solutions could emerge.

The only instance where an emissions trading scheme could work, for more than the free-market economic system, is if it were small, highly regulated, tightly defined, had no co-pollutants side effects, had rigorous independent monitoring and verification and vibrant community consultation, participation and assessment. However these are not features of any emissions trading system currently functioning or planned for the future. Another inescapable reality of emissions trading is that toxic co-pollutants are inherent in the production of most emissions of local and global pollutants. Therefore in no imaginable reality, could emissions trading 'work' for people and the planet.

In answer to those criticisms, greenhouse gas emissions trading proponents, and moderate critics, claim that the market is a transitional solution to give governments and corporations time to make the real changes that are needed. However major oil corporations such as BP and Shell, both enthusiastic initiators of internal trading schemes, have never voiced any serious intention to curb their main activities of oil exploration or production in the future. In fact, at the same time as the company claim reductions in emissions internally, BP predicts that it will increase future oil and gas output by 3 per cent annually.³ This will take their total emissions over that of the UK. Furthermore, BP's investment in

renewable energy is a mere 1 per cent of the US \$8 billion it spends on fossil fuel exploration and production every year.⁴

Corporations, motivated by profit, will not voluntarily cease damaging the planet and destabilising the climate if that practice provides the main source of their income. Emissions trading allows big corporations to dodge their responsibilities, by gaming a system they helped design and making superficial changes in their behaviour while continuing harmful 'business as usual' practices. Resistance to corporate power is in danger of being distracted by engagement with emissions markets. Many NGOs will take up their role as verifiers and monitors, ultimately resulting in divisions between those for and against emissions trading. The woefully inadequate regulation of emissions markets ensures that it will be difficult and time-consuming to check the veracity of corporations' claims that they have reduced their pollution levels. Meanwhile it will be tragically clear how much their emissions have increased through continuing to invest in fossil-fuel projects, which often result in gross abuse of human rights, such as the Baku-Ceyhan pipeline project, and the further destruction of pristine ecosystems like the soon-to-be exploited Arctic.

A first giant step backwards

The market in greenhouse gases under the Kyoto Protocol signals a historic proliferation of the free-market principle into the environmental sphere. It will be the first global trade in emissions and sets a disturbing precedent. The stage has now been set for the further encroachment of free-market environmentalism into international decision-making processes.

Environmental agreements are now being transformed into economic

treaties and emissions trading is evidence of the might that trade institutions have over environmental values. For example, the much-cited inspiration for the Kyoto emissions market - the sulphur trading market in the USA - has already spawned a whole generation of US-based pollution trading schemes. These plans include establishing trading schemes in mercury and water pollution permits. Emissions trading is also part of a wider trend towards privatisation and deregulation. Health, education, transport, energy and genetic information are all being privatised in ongoing processes in the WTO and the multitude of economic agreements currently being negotiated. Emissions trading is one more aspect of that trend and the interconnectedness of these processes is important to take into

account when evaluating whether this new market will 'work' or not.

The challenge ahead

To truly challenge climate change is to challenge corporate power, free-market policies and economic, social and environmental inequality. Empowered communities must be at the centre of decision-making about environmental problem. Otherwise, over-consumption, erosion of democracy and underlying patterns of domination are doomed to be replicated. Emissions trading transfers ownership of sustainable development to the private sector. It might once have seemed unimaginable that the drivers of a system that created climate change would be steering the solutions. Sadly it appears that the sky is, after all, not the limit.

Further reading:

"Pollution Trading and Environmental Injustice: Los Angeles' Failed Experiment in Air Quality Policy". Richard Toshiyuki Drury, Michael E. Belliveau, J. Scott Kuhn and Shipra Bansal (1999) Duke Environmental Law & Policy Forum. <http://www.law.duke.edu/journals/delpf>

"Democracy or Carbocracy?" Lohmann, Larry, The Corner House. Briefing #24.

"Greenhouse Market Mania: UN climate talks corrupted by corporate pseudo-solutions." Corporate Europe Observatory (CEO), CEO Issue Briefing, November 2000.

"Privatising Nature: Political struggles for the global commons" Goldman, Michael. TNI/Pluto Press, April 1998.

"Marketing the Earth: The World Bank and Sustainable Development." Friends of the Earth/Halifax Initiative. 2002. <http://www.foe.org>

Weblinks:

<http://www.tni.org>

<http://www.seen.org><http://www.corporateeurope.org><http://www.climate.indymedia.org><http://www.risingtide.org.uk><http://www.corpwatch.org><http://www.wrm.org.uy><http://www.cdmwatch.org><http://www.ejrc.cau.edu/climatechgpoc.html>

<http://www.twinside.org.sg/climate.htm>

Images: Zoe Young, Dylan Howitt, Heidi Bachram, Adam Ma'anit, Cheekystreak Productions, Christina Hotz, Comunidad del Limay.

Thank-you to: all in TNI, Dudu Mphenyeke, Sajida Khan, Mike Belliveau, Larry Lohmann, Markb, Ben Pearson, Robin, Giorgos Kallis, Eil Southern, Kevin Smith, Tammy Gilbertson, Tom Goldtooth, Patrick Bond, CEO, Marijke Torfs, Peer de Rijk, Susan George, eyfa, Rob Bradley, Pedro, Nuno, Suraje and Goncalo, all at Khanya College, all at The Graduate School of Public and Development Management (University of the Witwatersrand), Sean, families & friends who put up with us during this time.

Notes & References

Introduction:

1. See Page 10 for more on the UNFCCC.
2. According to Annie Petsonk of US NGO Environmental Defense, the WSSD 'revealed' that "While political leadership for broad environment and development issues is sorely lacking, the world's best hope for tackling climate change, improving water management, and protecting forests, remains legally binding treaties like the Kyoto Protocol, whose market mechanisms will engage countries, companies and communities in the search for better, cheaper, faster ways of meeting environmental targets." Palazzolo, Rose. 'Back Down to Earth: Wrap-Up on Johannesburg Summit'. Environmental Defense, September 6, 2002, <http://www.environmentaldefense.org/article.cfm?ContentID=2289>
3. CorpWatch. 'Massive Rally Against Climate Injustice'. Press Release, October 28, 2002. <http://www.corpwatch.org/press/PPD.jsp?articleid=4649>
4. "Bangkok to reject all carbon-credit deals." Pradit Ruangdit. The Bangkok Post. http://scoop.bangkokpost.co.th/bkkpost/2002/sep2002/bp20020911/news/11Sep2002_news06.html
5. AFP. 'Activists Hail Climate Accord as "First Step" But Rue Concessions'. Agence France Presse, July 23, 2001

1.1 Environmental injustice in the USA:

1. Clean the Air campaign fact sheets & reports. "Power Plants, Your Health and the Environment." <http://cta.policy.net/proactive/newsroom/release.vtml?id=17320>
2. US Environment Protection Agency. "Progress report on the EPA Acid Rain program." 1999, Page 4. <http://www.epa.gov/airmarkt/progress/arpreport/acidrainprogress.pdf>
3. RECLAIM program website <http://www.aqmd.gov/reclaim/reclaim.html>
4. EPA website: http://www.epa.gov/region09/cross_pr/innovations/reclaim.html
5. Interview with author of Mike Belliveau from Natural Resources Council of Maine in July 2002.
6. AQMD ISSUES VIOLATION FOR ALLEGED FALSE REPORTS IN RECLAIM. Aug. 2, 2002. website: <http://www.aqmd.gov/news1/acenov.htm>
7. See Environmental Justice Resource Centre for more information: <http://www.ejrc.cau.edu/>
8. The Geographic Relation Between Household Income and Polluting Factories. Friends of the Earth UK. 1999. http://www.foe.co.uk/resource/reports/income_pollution.html
9. "Pollution Trading and Environmental Injustice: Los Angeles' Failed Experiment in Air Quality Policy". Richard Toshiyuki Drury, Michael E. Belliveau, J. Scott Kuhn and Shipra Bansal (1999) Duke Environmental Law & Policy Forum. > <http://www.law.duke.edu/journals/delpf/>

1.2 Dumping on South Africa:

1. Survey carried out by local resident, Sajida Khan. Contact details available on request from Carbon Trade Watch team.
2. Letter from PCF manager, Ken Newcombe to the Mayor of Durban. May 2002. Copy available on request from Carbon Trade Watch team.
3. Stated by DSW manager, Dave Turner, in an interview recorded by the writer in November 2002.
4. PCFProject note for "Durban - landfill gas to electricity project". 10/06/02. Available from PCF website:
<http://prototypecarbonfund.org/router.cfm?Page=DocLib&Dtype=1>
5. Recorded interview with local resident, Sajida Khan. August 2002.
6. PCFProject note for "Durban - landfill gas to electricity project". 10/06/02. Available from PCF website:
<http://prototypecarbonfund.org/router.cfm?Page=DocLib&Dtype=1>
7. Letter from the assistant town clerk of the City of Durban to local resident Mr V.P. Vallabh. 6/10/87. Copy available on request from Carbon Trade Watch team.
8. Ecoserv report commissioned by DSW. 1996. Copy available on request from Carbon Trade Watch team.
9. Environmental Defense Scorecard results for Cadmium:
http://www.scorecard.org/chemical-profiles/summary.tcl?edf_substance_id=+7440-43-9
&
lead: http://www.scorecard.org/chemical-profiles/summary.tcl?edf_substance_id=7439%2d92%2d1
10. Stated by DSW manager, Dave Turner, in an interview recorded by the writer in November 2002.

1.3 Greenwashing privatisation in Uganda:

1. PCF website under "Uganda Project Public Topic Area", at the Validated Project Design Documents in the Project Design Document, 4th of December 2001,
<http://prototypecarbonfund.org/router.cfm?Page=Topics&ActionPage=/pcf/List/postings.cfm&CONFID=27&ShowArchives=Yes> The PCF calls the hydropower plants small, ESD, leading the design of the project calls them medium-sized, <http://www.esd.co.uk/eec/>
2. PCF website under "Uganda Project Public Topic Area" at the Comments from the International Rivers Network (IRN), 10th of May 2002
<http://prototypecarbonfund.org/router.cfm?Page=Topics&ECONFID=27>
3. PCF website under "Uganda Project Public Topic Area" at Re:Comments from the International Rivers Network (IRN), 23th of July 2002,
<http://prototypecarbonfund.org/router.cfm?Page=Topics&ECONFID=27>
4. PCF website under "Safeguard Policies".
<http://prototypecarbonfund.org/router.cfm?Page=Projects>
5. PCF website under "Uganda Project Public Topic Area" at the Comments from the International Rivers Network (IRN), 10th of May 2002
<http://prototypecarbonfund.org/router.cfm?Page=Topics&ECONFID=27>

6. http://www.ich.no/kurs/he2002/uganda_fact.htm & <http://allafrica.com/stories/200207220277.html>
7. Privatisation and poverty: the distributional impact of utility privatisation. Kate Bayliss. Centre on Regulation and Competition, Manchester University, Working Paper No. 16, ISBN:1-904056-15-6, January 2002.
8. Business Report, South Africa. "Eskom Enterprises will light up Uganda." Khulu Phasiwe. November 28, 2002 at 08:46AM. http://www.busrep.co.za/html/busrep/br_search_frame.php
9. Global Environment Facility Proposal for a PDF Block B Grant. <http://www.gefweb.org/operport/uganda.doc> p.5,6
10. PCF website, in Project Idea Notes, 'Energy for Rural Transformation PIN'
11. Business Report, South Africa. "Privatisation's toll: 100 000 jobs so far." Mokgadi Pela and Khulu Phasiwe. October 03 2002 at 08:26AM. http://www.busrep.co.za/html/busrep/br_search_frame.php
12. Business Report, South Africa. "Eskom seeks connection between big finance and power to the people." Quentin Wray. October 12, 2001 at 07:37AM. http://www.busrep.co.za/html/busrep/br_search_frame.php
13. Ibid.
14. "Privatisation and poverty: the distributional impact of utility privatisation." Kate Bayliss. Centre on Regulation and Competition, Manchester University, Working Paper No. 16, ISBN:1-904056-15-6, January 2002.
15. Business Report, South Africa. "Eskom seeks connection between big finance and power to the people." Quentin Wray. October 12, 2001 at 07:37AM. http://www.busrep.co.za/html/busrep/br_search_frame.php
16. "The Electricity Crisis in Soweto." Municipal Services Project Occasional Papers 4. By Maj Fiil-Flynn with the Soweto Electricity Crisis Committee. Editors Davis A McDonald & Patrick Bond. August 2001.
17. Business Report, South Africa. "Eskom gets green light for 8.4% rate hike." Nathi Sukazi. October 29, 2002 at 08:16AM. http://www.busrep.co.za/html/busrep/br_search_frame.php
18. Business Report, South Africa. "Eskom Enterprises is set to show 400% profit rise." Nathi Sukazi. November 08 2001 at 09:39AM. http://www.busrep.co.za/html/busrep/br_search_frame.php
19. The Impact of Privatisation on Electricity Prices in Britain. IDEC National Seminar on Public Utilities. Sao Paulo, August 6-8, 2002. Steve Thomas. <http://www.psir.org/reports/2002-08-E-UKImpactPriv.doc>
20. PCF website, in Project Idea Notes, 'Energy for Rural Transformation PIN'

2.1 The Rio Earth Summit & Climate Change:

1. Halpern, S. 1992. United Nations Conference on Environment and Development: Process and documentation. Providence, RI: Academic Council for the United Nations System (ACUNS). <http://www.ciesin.org/docs/008-585/unced-home.html>

2. Halpern, S. 1992. United Nations Conference on Environment and Development: Process and documentation. Providence, RI: Academic Council for the United Nations System (ACUNS). <http://www.ciesin.org/docs/008-585/unced-ch1.html#PC-climate>

3. Here's what Kofi Annan and Philip Watts had to say." 2002. WBCSD news. http://www.sustain-online.org/news/fullstory.php/aid/322/Here%92s_what_Kofi_Annan_and_Philip_Watts_had_to_say.html

4. A Beginner's Guide to the UN Framework Convention. UNFCCC website: <http://unfccc.int/resource/beginner.html>

2.2 The UN and corporate-led solutions:

1. See "Project History" for the UNCTAD Carbon Market programme on the website: http://r0.unctad.org/ghg/sitecurrent/about_u/project_h.html

2. Paul Krugman, 1994, "Peddling Prosperity", chapter "The Economics of QWERTY", p222

2.3 Corporations at the Earth Summit:

1. Welford, Richard. "Hijacking Environmentalism" (1997) page 73. Earthscan Publications Ltd, London.

2. Ibid. page 72.

3. Ibid.

4. Corporate Europe Observatory, "Greenhouse Market Mania" (2000). Paulus Potterstraat 20, 1071DA Netherlands, tel/fax:+31-20-612-7023 www.corporateeurope.org

5. Beder, Sharon. "Global Spin" (1997). Page 29. Green Book Ltd, Devon.

6. Corporate Europe Observatory (1997) The Weather Gods.

7. The Economic Committee of the Global Climate Coalition, cited in: Moor APG de, Berk MM, Elzen MGJ den, Vuuren DP van, Evaluating the Bush Climate Change Initiative (2002), The National Institute of Public Health and the Environment (RIVM), page 6.

8. Dr Andrew Dlugolecki, Climate Change specialist with CGNU (sixth largest insurance company in the world), The Guardian, 24 November 2000.

9. Ibid.

10. Is This What Efficiency Looks Like? Prepayment Water Meters, Public Citizen, (8/27/02) http://www.citizen.org/cmep/Water/cmep_Water/wssd/articles.cfm?ID=8210

11. The Economic Committee of the Global Climate Coalition, cited in: Moor APG de, Berk MM, Elzen MGJ den, Vuuren DP van, Evaluating the Bush Climate Change Initiative (2002), The National Institute of Public Health and the Environment (RIVM), page 6, footnote 3.

2.4 Corporate 'good guys'?

1. Confidential Papers Show Exxon Hand in White House Move to Oust Top Scientist from International Global Warming Panel." NRDC press release. 3/04/02. For original memo see: <http://www.nrdc.org/media/docs/020403.pdf>

2. "Bush energy plan - policy or payback?" BBC transcript, BBC Newsnight. Thursday, May 17, 2001. <http://www.greepalast.com/detail.cfm?artid=80&row=>
3. Controlling Hypocritical Authority: Gore's Expertise . Horner Op-Ed in National Review Online by Christopher C. Horner April 23, 2002. <http://www.cei.org/gencon/019,02972.cfm>
4. Key Outcomes of the Summit. Official website of the WSSD:
http://www.johannesburgsummit.org/html/documents/summit_docs/2009_keyoutcomes_commitments.doc
5. Based on BP plans to spend \$250 million over the following 5 years. "BP bows to solar power pressure." Terry Macalister. The Guardian. May 10, 2000.
<http://www.guardian.co.uk/business/story/0,3604,219174,00.html>
6. Based on average per year predicted expenditure of \$500 million. Shell annual report. Page 12:
<http://www.shell.com/html/investor-en/shellreport01/reports2001/frameset.html>
7. Shareholder Action Network resolution to ExxonMobil. 2002.
http://www.shareholderaction.org/exmob_res.cfm
8. ChevronTexaco's stated investments in 2002 in "emerging technologies and in a state-of-the-art upgrade of information technology systems." Annual report 2001:
http://www.chevrontexaco.com/investor/annual/2001/narr_investing_story02.asp#cleaner
9. Oil & Gas Journal: http://downloads.pennnet.com/pnet/surveys/ogj/ogj_00377883.pdf

NGO Co-optation:

1. Interview with author. February 2002 at Eyeforenergy conference in Okura hotel, Amsterdam.
2. Patterns of Corporate Philanthropy by Christopher Yablonski. Capital Research (1997).
<http://www.capitalresearch.org/misc/pcpXIII.pdf>
3. NGO Alternative Treaties, Global Forum at Rio. June 1-15, 1992.
<http://www.igc.org/habitat/treaties/>
4. Friends of the Earth International press release on website:
http://www.foei.org/media/2001/23_july_bonn.html
5. Friends of the Earth International press release on website:
http://www.foei.org/media/2000/24_nov_6_reasons.html
6. Rio + 10 Series: The Johannesburg Summit Differs from its Predecessor,
<http://www.ran.org/news/newsitem.php?id=571>

Sinking the protocol:

1. "Evaluating the Bonn Agreement and some key issues", The National Institute of Public Health and the Environment (RIVM) p 22. The Netherlands, 2001.
2. Centre for Science and Environment, Equity Watch , October 25, 2000.
<http://www.cseindia.org/html/cmp/climate/ew/index.htm>
3. Declaration of the First International Forum Of Indigenous People On Climate Change, Lyon, France September 4-6, 2000.

- 3a. Point Carbon website:http://www.pointcarbon.com/article_view.php?id=2002
4. Wiser, Glenn, "Report to CAN on Compliance Section of Marrakech Accords to the Kyoto Protocol", p3-4. CIEL, 2001.
5. <http://www.pewclimate.org/cop8/summary.cfm>
6. http://www.pointcarbon.com/article_view.php?id=2002
7. "Kyoto not binding", The Globe & Mail, 14.11.02,
http://www.globeandmail.com/servlet/ArticleNews/PEstory/TGAM/20021114/UKYOTM/national/national/nationalTheNationHeadline_temp/7/7/27/

Trading rules:

1. Wiser, Glenn, "Report to CAN on Compliance Section of Marrakech Accords to the Kyoto Protocol", pages 2-3. CIEL, 2001.
2. Ibid p3. CIEL, 2001.

Conflict of interests:

1. For more on Plantar see "The Plantar CDM project, Why it must be rejected by the CDM board and the PCF investors", Ben Pearson, July 2002, <http://www.cdmwatch.org>
2. "New Frame Agreements with Statoil and Norsk Hydro",
http://www.dnv.com/dnvnews/published_articles/2002-06-19_frame_agreement.htm
3. Excerpt of letter to those responsible for and investing in the Prototype Carbon Fund, from Brazilian organisations, movements, politicians, churches and citizens from different states like Minas Gerais, Espirito Santo, Bahia and Rio de Janeiro. The Brazilian Movimento Rede Deserto Verde (Alert against the Green Desert Movement) is the source of this campaign. See <http://www.wrm.org.uy/bulletin/56/Brazil.html>
4. Sinks that stink , World Rainforest Movement Bulletin June, 2000,
<http://www.wrm.org.uy/actors/CCC/sinks2.html>
5. Verónica Vidal i Oltra, Universidad Autónoma de Barcelona, "Impactos de la Aplicación de Políticas sobre Cambio Climático en la Forestación del Páramo del Ecuador", Páramos y Bosques de Niebla, Censat Agua Viva (FoE Amigos de la Terra), March 2000.
6. Sinks that stink , World Rainforest Movement Bulletin June, 2000,
<http://www.wrm.org.uy/actors/CCC/sinks2.html>

Renewables under siege:

1. The Emerging International Greenhouse Gas Market, p14, Pew Center on Global Climate Change, 2002. Authors: Richard Rosenzweig, Matthew Varilek, Ben Feldman, Radha Kuppalli, Josef Janssen.
<http://www.pewclimate.org/projects/trading.cfm>
2. Interview with Frank van der Vleuten, Free Energy Europe, Netherlands office, December 2002
3. Ibid.

4. The Dutch Government's CDM programme (CERUPT) will pay between US \$3.00 and US \$5.00 per ton of CO2 for permits, with the higher prices reserved for projects from renewable projects. Renewable is categorised by CERUPT as wind, geothermal, hydropower and solar. www.carboncredits.nl

5. "Evaluating the Bonn Agreement and some key issues", The National Institute of Public Health and the Environment (RIVM) p12. The Netherlands, 2001. Price in tons of CO2.

6. Interview with Frank van der Vleuten, Free Energy Europe, Netherlands office, December 2002

7. Interview with Professor David Elliot, December 2002.

4. Kyoto in Context: Kyoto and Trade and Investment

1. Cosbey, Aaron. 'The Kyoto Protocol and the WTO' The Royal Institute of International Affairs (RIIA), and the International Institute for Sustainable Development (IISD), December 1999.

2. Cosbey, Aaron. 'The Kyoto Protocol and the WTO' The Royal Institute of International Affairs (RIIA), and the International Institute for Sustainable Development (IISD), December 1999. Brewer, Tom. 'The trade and climate regimes - compatibilities and conflicts in WTO-Kyoto Protocol relationships' Policy Brief, McDonough School of Business, Georgetown University, Washington, D.C., Published by: The Transatlantic dialogue on climate change, CEPS, 19 March 2002. IISD-UNEP. 'Environment and Trade: A Handbook'. Published by the International Institute for Sustainable Development and the UN Environment Program, 2000. United Nations University-Global Environment Information Centre. 'Global Climate Governance: Inter-Linkages between the Kyoto Protocol and Multilateral Regimes' 1998. Zhang, Z.X. and L. Assunção. 'Domestic Climate Policy and the WTO', 2001, Nota di Lavoro 91., Fondazione Eni Enrico Mattei, Milan, Italy; 'The World Economy'. Zhang, Z.X., 'Greenhouse Gas Emissions Trading and the World Trading System', Published in the 'Journal of World Trade'. 1998, Vol. 32, No. 5, pp. 219-239; Reprinted in W. Bradnee Chambers (editor), Inter-linkages: The Kyoto Protocol and the International Trade and Investment Regimes, United Nations University Press, Tokyo, 2001, pp. 119-151.

3. US Trade Representative Press Release: 'WTO Dispute Settlement Panel Issues Report on EPA Rules for Imported Gasoline' USTR, Wednesday, January 17, 1996. Paulette S. 'World Trade Organization Finds That Clean Air Act Rules Create an Unfair Trade Barrier'. May 1996, Curtis, Mallet-Prevost, Colt & Mosle LLP Newsletter. Paulson, Michael. 'WTO CASE FILE: the Venezuelan Oil Case'. Seattle Post-Intelligencer. Monday, November 22, 1999. Trade Observatory website: http://www.tradeobservatory.org/FAQ/faq.cfm?faq_id=6. Raghavan, Chakravarthi. 'WTO Panel Rules Against US in Gasoline Dispute' SUNS, 6:55 AM Jan 18, 1996. <http://www.sunsonline.org/trade/areas/commodit/01180096.htm>

4. Corporate Europe Observatory. 'Greenhouse Market Mania: UN climate talks corrupted by corporate pseudo-solutions'. CEO, November 2000.

5. US State Dept. Website: <http://www.state.gov/s/l/c3745.htm> for official documents. See also: Benson, Robert W. 'Constitution? Forget It! NAFTA Rules' Los Angeles Times, Thursday, June 24, 1999.

6. Sforza, Michelle and Vallianatos, Mark. 'NAFTA & Environmental Laws: Ethyl Corp. v. Government of Canada' April, 1997. <http://www.globalpolicy.org/soecon/envronmt/ethyl.htm>

7. UNCTAD. 'World Investment Report', UNCTAD, Geneva, 2002.

8. FTA draft chapter on investment available at: http://www.ftaalca.org/ftaadraft/eng/ngine_1.asp

9. UNCTAD. 'World Investment Report', UNCTAD, Geneva, 2002.

10. Ibid.

11. IISD-UNEP. 'Environment and Trade: A Handbook'. Published by the International Institute for Sustainable Development and the UN Environment Program, 2000.

Kyoto and the World Bank:

1. Sustainable Energy and Economy Network database online at: <http://www.seen.org/db>

2. Ibid.

3. Testimony of Lawrence Summers to the US Congress, March 27, 1995.

4. SEEN, "The World Bank and the G-7: Changing the Earth's Climate for Business." SEEN/IPS, 1997.

5. PCF Website, <http://www.prototypecarbonfund.org>

6. Ibid.

7. PCF Annual report 2002 available online <http://www.prototypecarbonfund.org>

8. Officially, the Kyoto Protocol is quite vague about what technologies and energy sources can truly be considered to be 'renewable'. For example, in the Bonn agreement, the text on whether nuclear power was permissible or not, read that governments should 'refrain' from using nuclear power, leaving the door slightly ajar for the nuclear sector to keep a foot in. The definition of 'renewable' has been one of the key battlegrounds in the climate negotiations.

9. PCF Website, <http://www.prototypecarbonfund.org>

10. CDCF Website, <http://www.communitycarbonfund.org>

11. BCF Website, <http://www.biocarbonfund.org>

12. Johnson, Ian. "A Green Answer to Global Warming and Poverty." International Herald Tribune (IHT), Friday, November 29, 2002.

13. Ibid.

Key Players Introduction & IFIs:

1. Point Carbon, Carbon Market in 2002

2. IETA's Trading Scheme Database developed by Point Carbon:
<http://pointcarbon.com/schemes.php>

3. CDCF Website, <http://www.communitycarbonfund.org>

4. BCF Website, <http://www.biocarbonfund.org>

5. Ibid.

6. Telephone conversation with PCF secretariat officials. December 11, 2002.

7. Frequently Asked Questions, Prototype Carbon Fund website:
<http://prototypecarbonfund.org/router.cfm?Page=FAQ#10>

Corporations:

1. Information gained from a presentation given by Mark Akhurst, Head of Climate Change, BP at 'eyeforenergy' conference. February 2002. Okura Hotel. Amsterdam.

2. Fortune Magazine. 'Fortune 500 List' From the April 15, 2002 Issue.

3. Competitive Enterprise Institute (CEI). 'Enron's Lobbying Goals Would Kill More Jobs Than Its Collapse: Bankrupt Global Warming Policies Still Alive'. January 16, 2002.

4. The Emerging International Greenhouse Gas Market, p52, Pew Center on Global Climate Change, 2002. Authors: Richard Rosenzweig, Matthew Varilek, Ben Feldman, Radha Kuppalli, Josef Janssen.
<http://www.pewclimate.org/projects/trading.cfmPew>

Corporate lobby groups:

1. The role of companies in the Kyoto mechanisms, Presented by the International Chamber of Commerce (ICC), Earth Negotiations Bulletin on the side, 12 June 2002,
<http://www.iisd.ca/linkages/climate/sb16/enbots/pdf/enbots0903e.pdf>

2. "Arthur Anderson: Meeting Challenges with Solutions in the new GHG Emissions Market", The Carbon Challenge, supplement to Environmental Finance, p11, October 2000. Editor Mark Nicholls, Fulton Publishing Limited.

3. The Emerging International Greenhouse Gas Market, p37-38, Pew Center on Global Climate Change, 2002. Authors: Richard Rosenzweig, Matthew Varilek, Ben Feldman, Radha Kuppalli, Josef Janssen.
<http://www.pewclimate.org/projects/trading.cfmPew>

4. IETA members as of July 2002. IETA website:
http://www.ieta.org/About_IETA/Members/Members_July.pdf

5. IETA Annual General Meeting. December 4, 2001. Park Hyatt Hotel. Washington D.C., United States
http://www.ieta.org/Library_Links/AGM/Minutes_AGM_2001.doc

6. For more info, see: Corporate Europe Observatory, "Greenhouse Market Mania: UN climate talks corrupted by corporate pseudo-solutions." CEO, November 2000.s

7. WBCSD Website, <http://www.wbcds.ch>

8. For more info, see: Corporate Europe Observatory, "Greenhouse Market Mania: UN climate talks corrupted by corporate pseudo-solutions." CEO, November 2000.

9. Greenpeace/WBCSD Joint Statement released at the World Summit on Sustainable Development (WSSD) 28 August, 2002. See:
<http://archive.greenpeace.org/earthsummit/wbcds/> for the full text.

Think-tanks:

1. Point Carbon website "About Us": <http://www.pointcarbon.com/about.php>

2. Dunne, Nancy, "North America ponders Kyoto Alternative: The US, Canada and Mexico may set up a carbon emissions trading scheme under the auspices of Nafta", Financial Times, Dec 14, 2001.

3. Lohmann citing Cockburn, A. and Silverstein, K., Washington Babylon, Verso, London, 1996, pp.210-214. Democracy or Carbocracy? The Corner House, Briefing #24, footnote 88, p. 46.

Consultancies:

1. CO2e.com website "CO2e Associate Listings and Service Offerings":
<http://www.co2e.com/strategies/viewaffiliates.asp>
2. Evolution Markets website, <http://www.evomarkets.com/belize>
3. Ecoscurities website, http://www.ecosecurities.com/200about_us/223press_releases/223press_release_9_apr_2002.html
4. Market share and offset strategy quoted in: "Markt emissierechten broeikasgas zit te springen om kopers". Het Financieele Dagblad. Robin van Stokrom, 31 July 2002.
5. <http://www.futureforests.com>
6. Ibid.
7. Natsource website, <http://www.natsource.com>
8. Ibid. <http://www.natsource.com/about/>

Private sector initiatives:

1. Trading hot air, The Economist Oct 17th, 2002
2. <http://www.chicagoclimatex.com>
3. <http://www.chicagoclimatex.com/html/dowjones110402.htm>
4. The Emerging International Greenhouse Gas Market, p37, Pew Center on Global Climate Change, 2002. Authors: Richard Rosenzweig, Matthew Varilek, Ben Feldman, Radha Kuppalli, Josef Janssen.
<http://www.pewclimate.org/projects/trading.cfmPew>
5. Richard Hill, Head DuPont Canada's Emissions Reduction Credits Management and Trading Initiatives, and Manager of Firm's nylon polymers business, "Credits for Sale", The Carbon Challenge, supplement to Environmental Finance, 2000, p9.
6. Ibid.
7. <http://www.cleanaircanada.org>

Environmental NGOs:

1. Bradley, Jim. 'Buying High, Selling Low: Emissions Trading is a Flop on Wall Street, but is it Reducing Pollution?' E Magazine, Volume VII, Number IV, July-August 1996. Kinsman, John. 'Emissions Trading, The Economy and The Environment' Environmental Finance, October 2002. Page 26-27.
2. Wald, Matthew L. 'Acid-Rain Pollution Credits Are Not Enticing Utilities'. New York Times, June 5, 1995.
3. Turrentine, Haywood. Chair, National Environmental Justice Advisory Committee (NEJAC). 'Letter to Carol Browner, Administrator, U.S. Environmental Protection Agency'. March 11, 1998; NEJAC. 'Resolutions Concerning Disproportionate Impacts of Pollution Trading Programs'. Adopted December 12, 1996, May 15, 1997 and May 3, 1998.
4. Belliveau, Michael. 'Smoke and Mirrors: Will Global Pollution Trading Save the Climate or Promote Injustice and Fraud?'. Corpwatch, October 1, 1998.
<http://www.corpwatch.org/campaigns/PCD.jsp?articleid=1068>
5. World Resources Institute. 'Annual Report 2001'. For a complete list, see:

http://partners.wri.org/contrib_financial.cfm

6. WRI International Emissions Trading 'Project Description'
http://business.wri.org/project_description2.cfm?ProjectID=67

7. WWF. 'Annual Report 2001'

8. WWF. 'The EU Emissions Trading Directive: A vital EU policy initiative on climate change'.
4/12/02
http://www.panda.org/downloads/climate_change/emissionstradingdirectivebackgrounddec2002.pdf

9. Ibid.

10. WWF. 'The Gold Standard: Quality Standards for CDM and JI Projects'. WWF, October 2002.
http://www.panda.org/downloads/climate_change/COP8_standards.pdf It plays a dominant role in the Climate Action Network (CAN), the main NGO platform on climate change comprising some 287 NGOs worldwide. [<http://www.climnet.org>]

11. Greenpeace. 'Economics Take Over Climate Talks' Greenpeace Press Release, Buenos Aires, November 14, 1998.

12. Hamilton, Kirsty. 'Dash for Cash: Industry Lobbyists at the Climate Talks' Greenpeace, October 1999.

13. Greenpeace. 'Economics Take Over Climate Talks' Greenpeace Press Release, Buenos Aires, November 14, 1998.

14. Greenpeace 'Campaign Overview'
http://www.greenpeace.org/campaigns/intro?campaign_id=3937

15. Greenpeace-Body Shop Press Release. 'Governments Challenged to Back Green Energy'. London, Friday January 18, 2002. "Former Shell boss, Sir Mark Moody Stuart today challenged Western Governments to increase their renewable energy targets, at the launch of The Body Shop and Greenpeace International campaign, Choose Positive Energy."

16. Brown, Paul. 'Big business and Greenpeace urge action on climate change' Guardian, Thursday 29/08/02.

17. Pomeroy, Robin. 'Industry joins Greenpeace to demand climate action'. Reuters News Service, August 30, 2002. From the Reuters story: "But Stigson added later that the WBCSD, which has many members based in the United States - which has rejected the 1997 Kyoto pact on cutting emissions - was not necessarily calling on world leaders to ratify that pact. 'The Kyoto Protocol contains seeds that are important for the international global framework,' Stigson told Reuters. 'It is a rather difficult thing just to say you have to just implement the Kyoto Protocol as some people are saying, because that will not happen in a number of countries...but that doesn't mean you should not have an international framework.'

Conclusion:

1. Frequently asked questions on DEFRA website:
<http://www.defra.gov.uk/environment/climatechange/trading/auctionfaq.htm>

2. Recorded interview with Mike Belliveau in July 2002. Transcript available from Carbon Trade Watch.

3. The Star online, source Reuters:
<http://thestar.com.my/services/printerfriendly.asp?file=/2002/10/31/business/bp30b.asp>

4. Greenhouse Market Mania. Corporate Europe Observatory. 2000. "The Climate Greenwash Vanguard: Shell and BPAmoco":
<http://www.corporateeurope.org/greenhouse/greenwash.html>