

Chapter 2

‘Made in the USA’

A short history of carbon trading



In which the surprising story is told of how corporations, academics, governments, United Nations agencies and environmentalists united around a neoliberal or ‘market’ approach to climate change emanating from North America.

In the space of a few decades, a new form of global inequality has abruptly become politically important. An industrialised minority has been shown to be overusing the earth’s ability to cleanse the atmosphere of excess carbon and other greenhouse gases. Awkwardly, this inequality has turned out to be one that threatens survival itself – including, ultimately, the survival of the rich.

So what’s to be done?

By whom? And about what? Different people see the crisis in different ways.

Northern elites face one set of problems. How are they going to defend power and privilege over a global good they never had to compete for before? How are corporations and society going to cope with the new threat to a fossil-fuelled industrial structure? How best might corporations ride the wave of the climate crisis, seeking rewards for innovation and seizing new assets? What effect will different kinds of political action on climate change have on accumulation and inter-regional economic competition? How can the political unrest that’s sure to follow on from various climate disasters be either contained or exploited?

Southern elites are concerned about somewhat different questions. How can the climate crisis be prevented from being used as yet another excuse for pushing aside the long-thwarted claims of Southern countries to industrialisation and the world’s wealth? How might it be transformed into a source of political leverage? What are the best strategies for dealing with unanticipated catastrophes and enormously increased flows of environmental refugees?

As with every new international development, all sides are eyeing each other cautiously, uncertain how the new conditions will affect their respective standings.

Sounds like a familiar story.

Yes. But if elites' attitudes are predictable, some of the issues are new. Global warming isn't a threat like that of ozone depletion or even nuclear weapons. It can't be fixed without broad social and political change. Its implications for corporations are many-sided, but threatening for the largest energy companies and the energy-intensive private sector generally. Hardest of all, as this report will argue, averting the worst effects of climate chaos is likely to entail democratic mobilisation.

For global elites, particularly in the North, these realisations are inevitably harder to stomach than the threats posed by global warming itself. The science fiction-like spectre of rampant superstorms, collapsing agriculture and drowned coastlines is easily trumped, in the elite imagination, by the more mind-wrenching terrors of less energy use, less centralisation, slower transport, and – most staggering of all – less inequality.

But isn't it also the case that political and business leaders are simply in denial about the urgency of the climate crisis?

Northern environmentalists often like to say so. But as the last chapter has suggested, most elites, with a little help, can quite well imagine what lies in store if greenhouse gas levels continue to rise. What they have difficulty with is accepting political action that is commensurate with the problem.

You mean they know what's happening, but lack the political will to do anything about it.

It's not really a 'lack of political will'. In fact, as this chapter will document, many leaders – and the private corporations and technocracies that channel their choices – have a surplus of 'political will' for dealing with the climate crisis, just as they have plenty of political will for trying to turn any other crisis to their advantage. The problem is that almost all of this 'will' is directed towards technical, informational or 'market' fixes entrusted to a handful of undemocratic institutions.

Thus US president George W. Bush openly proclaims the need for the US to break its addiction to oil – only to propose technological fixes such as sequestration of carbon from coal-fired power plants, biofuels and more nuclear energy.⁵ Sir David King, the UK government's chief scientific adviser, warns that climate change is a threat greater than terrorism – only to embrace some of the same technologies, plus emissions trading, as a solution.⁶



Technological fixes are tempting.

What Is International Climate Policy About?

The 1992 Framework Convention on Climate Change 'was not negotiated primarily to reduce greenhouse gas emissions' but rather 'as part of a wider bargain between rich and poor countries, competing energy interests and governments faced with growing economic problems making investments in the future increasingly more essential but also more difficult.'¹

Sonja Boehmer-Christiansen, 1994

'It is more appropriate to explain the nature of the principal elements in climate policy at both national and international levels if one assumes that what is driving the leading states and firms in this regard is the concern to create new sites of capital accumulation, rather than a focus on aggregate GDP growth and the impacts of climate policies on such growth.'²

Karine Matthews and Matthew Paterson, 2005

'Establishing a robust global regime for addressing climate change is... comparable to the creation of the international trade regime under the World Trade Organization.'³

*Michael Zammit Cutajar,
ex-Executive Secretary
of the United Nations Framework
Convention on Climate Change, 2004*

'Acceptance of [the carbon trading provisions of the Kyoto Protocol] represents an article of faith, faith in the free market and faith in the process of globalisation. It rests on an ideological stance.'⁴

*Mick Kelly, Climatic Research Unit,
University of East Anglia, 2000*

You talk about 'fixes' as if there was something wrong with them. But what's wrong with fixes? Isn't that what we want – to fix the climate crisis?

The problem is that such 'fixes' don't fix. They promise to deliver the world from the worst dangers of climate change while leaving everything else – politics, commerce and so forth – just as it is. But in fact, as the rest of this special report will demonstrate, they do the opposite. They leave the course of climate change just as it is while exacerbating the inequalities that will have to be addressed if the issue is to be touched on at all.

This chapter will introduce this subject by sketching the history of the processes that trapped official international action on climate change within a US-style framework of neoliberal policy. It will suggest that a new enclosure movement has formed around three inter-linked strategies, or alternatives, each of which interacts with and often reinforces the others.

The first strategy works to reshape or suppress understanding of the climate problem so that public reaction to it will present less of a political threat to corporations. *The second strategy* appeals to technological fixes as a way of bypassing debate over fossil fuels while helping to spur innovations that can serve as new sources of profit. *The third strategy* appeals to a ‘market fix’ that secures the property rights of heavy Northern fossil fuel users over the world’s carbon-absorbing capacity while creating new opportunities for corporate profit through trade.

The knowledge fix

One constant theme of climate politics over the last 20 years has been the attempt to engineer public reaction to global warming so that it will present fewer political threats to, and more opportunities for, corporations and their political clients. Some corporations, particularly in the US, try to deny that humans are changing the climate at all. Others openly acknowledge the threat while trying to reformulate it in a way that benefits them.

So the big companies are arguing among themselves about global warming?

Yes, but on another level the different sides are working in similar directions. For example, more regressive factions in the oil industry, working public opinion mainly within the US, may promote the view that the climate isn’t changing or that it’s fruitless to try to do anything about it. Other factions, working worldwide, may argue that there is a scientific basis for action but read the science in a way that helps them steer international agreements toward technological and market fixes that preserve the inertia of fossil fuel-intensive industries. The broader outcome is the same: entrenchment of corporate power over carbon dumps.

It sounds like the good cop – bad cop technique of police interrogation. It’s as if, like the proverbial bad cop, industry activists within the US go straight for the throat of any international agreement on climate change – while, like the good cop, their colleagues outside the US ‘defend’ such agreements, hoping to cajole and squeeze them into giving them what they want. Have the people who deny that humans are causing the climate to change gone as far as the pro-tobacco lobby used to go in rejecting the evidence?

There are certainly some parallels with previous cases of suppression of scientific evidence, but the antagonists in the climate debate are more numerous and the issues more complicated.

The health effects of tobacco (some of which were noticed as early as 1602),⁷ were confirmed through extensive research in the 20th

century, but it was not until 1970 that the Surgeon General's health warning had to be displayed on every cigarette pack sold in the US.

Discussion of climate change science follows a somewhat similar – but much more complex and twisting – trajectory. Although the first explanation of how carbon dioxide can act as a greenhouse gas is usually attributed to the great Swedish scientist Svante Arrhenius in 1896,⁸ the 'greenhouse earth' analogy was used as early as 1827 by the French polymath Jean-Baptiste Fourier⁹ and the term itself mentioned by US scientist Thomas Chamberlin in 1906.¹⁰ In the 1950s, a regular rise in levels of carbon dioxide in the atmosphere began to be documented, and in the 1970s a series of studies by the US Department of Energy increased concern about possible global warming. In 1975, scientists still weren't sure whether the earth was warming or cooling, but 10 years later, at the first major international conference on the greenhouse effect at Villach, Austria, climatologists warned of a 'rise of global mean temperature which is greater than any in man's history' in the first half of the 21st century and up to a one-metre rise in sea levels.

At that point, with the help of funding-hungry research bodies, an alarmed US government moved energetically, in the words of one observer, to put climate scientists 'back in their cages'.¹¹

How?

It worked to shift the centre of gravity of engaged scientific inquiry into climate change from independent academics and the United Nations Environmental Programme to technical bureaucracies more closely tied to governments. These included the World Meteorological Organisation and the Intergovernmental Panel on Climate Change (IPCC), which was formed in 1988.¹²

The scientific debate over society's effects on the climate has some similarities with past debates over tobacco's health effects.



How did that help the US?

The Northern-dominated science bureaucracy that resulted was ‘increasingly dependent on multinational research funding’¹³ and was subject to a great deal of US influence, with many US officials assigned to comment on every draft report produced.¹⁴

Designated the task of providing governments and diplomats with authoritative but standardised story lines describing climate change, the IPCC naturally tended to homogenise contrasting views and downplay controversy. Under pressure from policy makers to say exactly how bad things might get, it also got into the dubious habit of reformulating indeterminacies and ignorance as ‘uncertainties’ or mere ‘risks’ or ‘probabilities’.¹⁵ This stance was useful in giving some policy makers the numbers they wanted and attracting more research funding, but it also encouraged the notion that governments and corporations could delay action until more ‘definitive’ results were in.

That’s hardly evidence that the IPCC was under the thumb of the US government.

It wasn’t. It’s important not to oversimplify. But there has always been a sense in which the IPCC has helped shape climate problems and solutions in ways that make them more acceptable to powerful governments and corporations. A more concrete example might be the IPCC’s response to diplomats’ request to look into the possibility of storing carbon in trees and soil as a way of compensating for carbon dioxide emissions.

I suppose you’re going to say that the IPCC was under a lot of pressure to give its stamp of approval to the idea of trading trees for smoke, because that’s what Northern countries needed in order to continue using fossil fuels.

Well, it’s certainly true that by 2000, when the IPCC submitted its 377-page report on *Land Use, Land Use Change and Forestry*,¹⁶ countries such as the US, Japan, Canada, Australia, New Zealand and Norway had been pressing hard for some time to be allowed to count huge amounts of the carbon soaked up by their forested land against their industrial emissions. Many Northern countries were also keen on being allowed to buy pollution rights from carbon-absorbing forestry projects abroad.

So perhaps it shouldn’t be a complete surprise that the IPCC’s report provided the US and its allies with just the conclusions they needed. The problem was that the report had to abandon normal standards of technical rigour in order to do so.



Under pressure from policy makers to say exactly how bad things might get, some scientists got into the dubious habit of reformulating indeterminacies and ignorance as ‘probabilities’.

What do you mean?

Defying a warning from the International Institute for Applied Systems Analysis that the IPCC's work to date 'could not be considered adequate in handling the uncertainties underlying the carbon-accounting problem and thus the Kyoto Protocol',¹⁷ the authors assumed without evidence that 'removals by sinks' could verifiably compensate for 'emissions by sources'. According to one author, the land use panel 'never considered' whether the necessary carbon accounting procedures were actually possible or not (see Chapter 3). After the report came out, one businessman panel member proclaimed that there were 'no technical problems left' with the idea of trading emissions for trees.¹⁸

It quickly emerged that the panel had brought little of the available knowledge relevant to forest carbon accounting to bear on its deliberations. Thousands of relevant peer-reviewed references were missing – on deforestation, the history of forestry development projects, peasant resistance, forest commons regimes, investor behaviour, and so on. While the panel observed that it is 'very difficult, if not impossible' to distinguish changes in biotic carbon stocks that are 'directly human-induced' from those that are 'caused by indirect and natural factors',¹⁹ it failed to draw the logical conclusion that it would be very difficult, if not impossible, for countries to claim credit for changes in forests and soils.²⁰ Ironically, it fell to non-scientist UN delegates from Southern countries such as Uganda, Kenya, Tanzania and Guatemala to raise scientific questions that the expert panel had neglected, about forest data, opportunity costs of carbon forestry, accounting for effects on fossil fuel use, discount rates, and so forth.

Are you suggesting that somebody bribed the whole panel to come up with the 'politically correct' response?

No, of course not.

Are you saying that this panel of dozens of reputable experts and business-people was somehow incompetent?

Not at all. Their technical qualifications were often impressive.

You mean that someone intimidated them, then?

Nothing so crude. The ways influence works are usually more subtle and more powerful. Most of the authors of the report were affiliated with environmental consultancies, mainstream forestry or economics institutes or faculties, industry associations, official agencies and government-funded research institutions. Many saw carbon 'offset'

research as a promising enterprise for their institutions. Three-quarters hailed from the North, and even more worked at Northern institutions. Over half of the authors and editors of the chapter examining the technical possibility of countries' claiming carbon credit for 'additional land and forest activities' within their borders were from the US, Canada or Australia – the three countries most active in demanding credit for wooded land.²¹

At the same time, the panel included no representatives of indigenous peoples who live in or depend on forests, or of communities directly affected by plantation projects. It included no representatives of communities damaged by fossil-fuel pollution that would be licensed by 'forestry offset' projects, who also would have had incentives to insist on better science. To the middle-class natural scientists and economists who dominated the panel, it was likely to be simply a given that there were vast 'degraded lands' in the South (but not the North) that could be taken over for carbon projects without land or forests being degraded elsewhere as a result; that project development agencies could do what they promised; and that it would be easy to determine from a distant office whether projects actually 'saved' carbon. The panel's membership was largely mismatched with the problem it investigated.

So you're saying that official climate-mitigation science is contaminated with politics?

No. To say the science is 'contaminated' would imply that it's an abnormal situation for science to be enabled, constrained and motivated by politics.

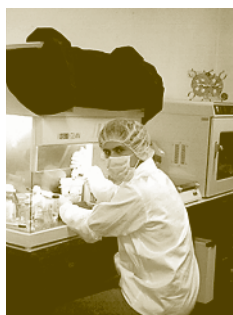
But it's not abnormal. It's unavoidable. No world can exist in which policy can be 'science-led' without science being 'policy-led' at the same time. Nor would such a world be desirable. Nor would it be desirable to live in a world in which people believed such a world was possible or desirable.

What are you suggesting?

Just that it would be constructive for scientists and policy makers to face the reality that 'modern science both constitutes and is constituted by particular forms of politics', as Sheila Jasanoff, Professor of Science and Public Policy at Harvard, puts it.²² It would be helpful for everyone simply to admit that both the answers scientists give and the questions they ask and the way they work are influenced by funding, by policy makers' and journalists' questions, by market ideologies, by cultural background, by friends, by schooling and all the rest.

Why would that be helpful?

Acknowledging and examining these lines of influence – rather than claiming that ‘good science’ is somehow immune from them – would give all sides incentives to be more aware of what kind of politics is involved in any particular research scheme, and what the consequences are. It could help refocus public attention on the importance of working to create an environment in which there can be scientific communities that ask interesting and varied questions of concern to a wide range of interests in a democratic society, and are not pushed too hard into trying to provide impossible escape routes for narrow elites or inveigled into dead-end research programmes, damaging mistakes and acts of self-deception. Such communities would be able to work among a group of peers who would allow and encourage them to question received wisdom, to make trouble for neoliberal doctrine when the scientific need arises, and to have the choice not to answer every policy maker’s or journalist’s demand with an oversimplification.

But what would make that possible?

Claiming to be able to conjure up an ‘objective’ science outside any social context isn’t an option.

Probably the only way to make a space for a science less restrained by neoliberalism is to work against the dominance of neoliberalism in the wider society. Finessing the problem by claiming to be able to conjure up an ‘objective’ science outside any social context isn’t an option. As science scholar Simon Shackley and colleagues observe, scientists may as well accept politicisation of climate science ‘as a given and find ways to cope constructively with such a political reality’.²³

In another example of the interpenetration of politics and climate inquiry, prodding from the US and ‘well-organized social science research interests’ resulted in orthodox economists capturing much of the agenda of the IPCC’s Working Group III, charged with defining possible responses to global warming.²⁴ The historical and social roots of climate change were ignored, as were grassroots resources for tackling climate change. Instead, technocrats forecast energy use, modelled the future global economy, collected socioeconomic data needed for management ‘solutions’ and toyed with the idea of using cost-benefit analysis to help make decisions about climate change. On the whole, the tendency was to try to fuse ‘formal mechanistic models across the various distinct natural and social science disciplines’²⁵ and to ‘treat society as a single species’.²⁶

The bad (social) science that resulted should not be blamed on bias – even the best-researched and best-defended results would have been biased – but on the narrowness and less than democratic nature of

the political process that guided and constituted the research. Correspondingly, insofar as the bad science that came out of Working Group III was challenged at all, it was countered most effectively by a political movement that put that narrow process in perspective, not a demand from within the profession of orthodox economics for greater ‘objectivity’.

How was the challenge made?

In 1995, economists in Working Group III, using data on how much money different groups spent to avoid risk of death, calculated the value of a statistical life of a US citizen at USD 1.5 million and that of a statistical life of a ‘developing country’ citizen at USD 100,000. The economists used these calculations to suggest that climate change would cause twice as much ‘socio-economic’ damage to the industrialised countries as to the rest of the world. The figures touched off a furore among Southern delegations to the UNFCCC, who contested this interpretation of their countries’ citizens’ appreciation for safety. The calculations were sent back to their authors.²⁷

Despite such setbacks, much of the IPCC’s work had the effect of making climate change seem potentially manageable by private and public sector institutions including oil companies and the World Bank, and by means of neoliberal approaches generally. It became ‘politically incorrect’ to enquire whether radical social change might be necessary to reduce greenhouse gas concentrations to a safer level. What was needed, it was implied, was to unleash the productive powers of private sector companies in the service of climatic stability. For corporations, this was the positive, opportunity-creating aspect of the ‘knowledge fix’.

But the story is far from one-sided. Viewed from another angle, the establishment of the IPCC was itself an admission of the difficulty of reconciling the climate problem with business as usual. And the very constraints inherent in having to pursue a highly centralised, self-censoring, compromise science meant that results indicating the reality of climate change – when they did come in from bodies such as the IPCC – were hard for the US and many large corporations to handle.

So this particular US attempt to block or shape public awareness of climate change was double-edged.

Very much so. It backfired so badly, in fact, that in the end various ruling factions in the US became dissatisfied with the very body – the IPCC – that the US had been so influential in setting up in order to

'contain' scientists' talk. Even Robert T. Watson, the World Bank scientist-bureaucrat who as head of the IPCC had often worked hard to accommodate scientific findings to US and World Bank sensibilities,²⁸ attracted the wrath of ExxonMobil and was voted out of his position in 2002.²⁹

But didn't US corporate interests have ways of influencing climate science other than through the IPCC?

Of course. US companies and their political supporters would never have dreamed of relying on only one set of institutions to contain the domestic political threats implied by climate change.

Corporate or corporate-backed groups such as the Business Roundtable, the Global Climate Information Project, the Coalition for Vehicle Choice, the National Centre for Public Policy Research, the Advancement of Sound Science Coalition and the Information Council for the Environment spent millions of dollars on experts, conferences, books and advertisements associating climate action with economic harm to the US, including higher petrol prices.³⁰ The US Electric Power Research Institute, which is funded by electric utilities, financially supported 'seven of the major authors of integrated assessment studies' as well as co-sponsoring a special issue of *The Energy Journal* on the costs of the Kyoto Protocol, provoking the editors of the academic journal *Climatic Change* to protest that the 'nature of funding of most leading economic models' of climate change was 'a source of concern'.³¹ Non-government organisations such as the Pew Centre for Climate Change and establishment think-tanks such as the Council on Foreign Relations, aided by the faculties of many North American and British economics departments, also helped carry the message to news media that Kyoto targets were 'unrealistic'.³²

Aligned with a somewhat different set of corporate interests, the Global Climate Coalition meanwhile aimed a multimillion-dollar disinformation campaign at US audiences attacking the whole idea that the climate was changing, including a USD 13 million pre-Kyoto Protocol advertising blitz in 1997 alone.³³ Business coalitions and corporate-funded think-tanks have also sought out and supported climate-sceptic scientists in order to disseminate their views in an attempt to ensure that the idea of human-caused climate change remains 'controversial'.³⁴

These are the famous climate change 'deniers' we always hear about?

Yes.

Are they really still around?

Well, these days they're fighting a bit of a rearguard battle. And there were never many of them in the first place. Still, as late as May 2006, the right-wing Competitive Enterprise Institute was laying out hundreds of thousands of dollars for a US television advertising campaign attacking 'global warming alarmism' as an attempt to 'suppress energy use' based on dubious science.³⁵ As before, such efforts are targeted mainly at the US public.³⁶ But they also remain visible elsewhere.³⁷

Still, it's in the US that the influence of the global warming sceptics really counts.

Yes. What with the dependence of US elected officials on corporate finance, extreme and often bizarre views about climate change that would not be heard elsewhere in the world have endlessly reverberated in the echo chamber of Congress as well as on US television news programmes. Also, while many US scientists do continue to be outspoken about the biophysical dangers of climate change and the global inequalities that underlie the overloading of the atmosphere with fossil carbon, they are seldom able to draw conclusions from these views in a way that challenges conventional economic development ideology and its corporation-first pieties. All too often, they follow warnings about the need for drastic action on climate change with claims (for instance) that more nuclear energy or tree plantations are needed, or that 'we should not have a strategy that results in premature retirement of capital stock'.³⁸

The same institutionalised weakness of imagination is reproduced in US universities, schools, newspapers and popular entertainment. The global warming movie *The Day after Tomorrow*, for instance, has plenty of scenes of New York streets awash in an icy Atlantic ocean, but, just as in UN negotiations, the words 'oil' and 'corporation' are not mentioned. The crisis the film is about, it is implied, can be traced mainly to the failure of political leaders to 'listen to scientists'. Aside from the slightly cheeky suggestion that Mexico might soon be faced with a tide of middle-class environmental refugees from the US, the movie's main contribution toward stimulating its viewers' political imaginations is to declare itself 'carbon-neutral' – a marketing strategy whose pointlessness will be explored later in this report. Former US vice-president Al Gore's documentary *An Inconvenient Truth*, released two years later, presents more climatology, but also winds up trying to channel action into carbon trading, responsible consumerism, tree plantations and other 'fixes'. Meditating on Hollywood disaster movies, literary critic Fredric Jameson once observed: 'It seems to be easier for us today to imagine the thoroughgoing deterioration

of the earth and of nature than the breakdown of late capitalism.³⁹ It's no surprise, in an age when Hollywood scriptwriters are advising the Pentagon on terror scenarios⁴⁰ and pulp novelist Michael Crichton appears as an expert witness on climate change before a US Senate committee,⁴¹ that such attitudes are reflected back into politics.

Where imagination is most lacking in such environments is in the realm not of climatology but of politics. An unhealthy mixture of biophysical horror stories, scepticism, fatalism and vague calls for 'action' is all too easily answered with sophisticated versions of 'business as usual'.

The technological fix

A second strategy for containing climate change and the present and future political threats it implies – as well as for using the climate crisis to open up new opportunities for corporations – is to appeal to technological fixes that allow continued exploitation of coal, oil and gas. Once again, the US has always played a central role.

What are these fixes?

From the 1970s to the 1990s, scientists such as Freeman Dyson and Norman Myers and economists such as Roger Sedjo proposed country-sized tree plantations (usually conveniently sited in the South) as ways of soaking up industrial carbon dioxide.⁴² Genetic modification has recently been added to this techno-fix: trees are now being deliberately engineered to absorb more carbon from the atmosphere.⁴³

Giant plantations were not the only place US elites hoped to stash the carbon released by the burning of fossil fuels. By 2000, one US Energy Department laboratory was laying plans to spend over USD 900 million over the next 15 years on such schemes as dosing soil with coal combustion by-products to increase carbon uptake, injecting carbon dioxide into deep ocean waters off the coast of Hawaii, and burying carbon dioxide hydrates under Monterey Bay.⁴⁴

Other US-inspired projects have included seeding large areas of land with organisms genetically engineered to fix carbon 'more efficiently'; establishing floating kelp farms thousands of square kilometres in size which, growing heavier as they consumed carbon dioxide, would eventually sink to the ocean floor; and using fleets of C-130 military transport planes to bomb Scotland and other countries with millions of metal cones containing pine saplings.⁴⁵ In 2001, the Los Alamos National Laboratory in New Mexico proposed constructing a collection of calcium hydroxide ponds covering an area of 200,000 square kilometres to scrub fossil fuel-produced carbon dioxide from the air.⁴⁶



An unhealthy mixture of biophysical horror stories, scepticism, fatalism and vague calls for 'action' is all too easily answered with sophisticated versions of 'business as usual'.

Good grief!

It doesn't end there. US and Canadian research institutions have also recently seeded various areas of the Pacific Ocean with iron particles to try to stimulate CO₂-absorbing plankton blooms.⁴⁷ With financial support from the US Department of Energy, human genome pioneer Craig Venter is now committed to creating a new life form – a synthetic construct based on simple micro-organisms – to clean up carbon dioxide or other greenhouse gases.⁴⁸

Scientists convened by the White House under George W. Bush have meanwhile proposed fleets of ocean-going turbines to throw up salt spray into clouds to improve their reflectivity.⁴⁹ And the US National Science Foundation is discussing the possibility of creating a biological film over the ocean's surface to divert hurricanes.⁵⁰ In January 2006, a 'weather-modification' bill (S517) was 'fast-tracked' by the US Senate and House of Representatives. The Bill was expected to become law before the 2006 hurricane season.⁵¹

US scientists have also long contemplated spraying the stratosphere with fine metallic particles to reflect sunlight, perhaps using the engines of commercial jets for the job.⁵² Taking unilateral action to dim the sky in this way, explained the late Edward Teller, the father of the hydrogen bomb, is a simpler, cheaper alternative to 'international consensus on ...large-scale reductions in fossil fuel-based energy production'.⁵³

These schemes sound crazy! Who knows what might happen if they were carried out? Shouldn't scientists and technologists be encouraged to use their ingenuity in ways that would help end dependence on fossil fuels instead?

Perhaps they should, but they would need more institutional, financial and cultural support to do so. Today, as Teller implied, the focus is on avoiding 'large-scale reductions' in fossil fuel use.

Supporting more use of fossil fuels certainly seems to be a big priority at, for example, the US Department of Energy and its old national nuclear weapons laboratories, which have teamed up with oil companies such as Chevron, Texaco, Shell, and BP to study geological sequestration of carbon dioxide. It's also a priority at top universities, due to floods of government and corporate funding directed at the same objective. In 2000, for instance, BP and Ford contributed USD 20 million to Princeton's Carbon Mitigation Initiative, the largest corporate contribution in the university's history. Headed by professors from two departments – mechanical and aerospace engineering, and ecology and evolutionary biology – the scheme tried to find ways to collect carbon dioxide at central processing sources, then store it deep underground. One ostensible objective was to help India and

China 'spend fossil fuels...without doing what we've done to the atmosphere'.⁵⁴

With the help of on-the-ground corporate experiments in Norway and Algeria, the initiative helped disseminate this little-tested and hazardous techno-fix⁵⁵ into mainstream discourse. A *Scientific American* article entitled 'Can We Bury Global Warming?'⁵⁶ appeared in 2005, along with a parlour game for industry, academic and NGO audiences that conveys the message that carbon capture and sequestration, biofuels, tree plantations and nuclear power can all be reasonably placed alongside energy efficiency and solar energy as components of a climate action portfolio.⁵⁷ By 2004, Ron Oxburgh, non-executive chairman of Shell, was on record saying that 'if we don't have sequestration I see very little hope for the world'.⁵⁸

Not to be outdone, Exxon-Mobil, General Electric, Schlumberger Technology and Toyota agreed in 2002 to funnel USD 225 million to Stanford University for a Global Climate and Energy Project assigned to investigate carbon capture and sequestration, production of hydrogen from fossil fuels, biomass energy, and other fields on a list set out in the contract with the four corporations.⁵⁹

The market fix

The third strategy for containing the political threats implied by climate change – while at the same time using it to create new opportunities for corporate profit – is the 'market fix'.

The market fix began to take shape in the late 1980s and early 1990s. Public pressure was growing for governments to agree to do something about global warming. Some of the changes needed had been obvious since the 1970s.⁶⁰ These included long-term shifts in the structure of Northern industrial, transport and household energy use away from wasteful expenditure of fossil fuels toward frugal use of solar and other renewable sources. Tackling the problem internationally meant addressing the institutions and power imbalances that had resulted in both the overuse and the globally unequal use of the earth's carbon-absorbing capacity.

That sort of action would have been hard for corporations, governments and UN agencies to accept unless they were under a lot of public pressure to do so.

Yes. It also required a historical and political perspective unfamiliar to many climate scientists and technocrats. It was easier to view global warming's causes in simple physical terms – 'too much greenhouse gas' – without looking too carefully at what would have to be done

to tackle the problem. The priority became to set some targets while leaving the ‘how’ of long-term structural change for later.

Many international negotiators and their advisers were encouraged to take this approach by the precedent of the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer.⁶¹ The Montreal agreement had been a technocrat’s dream. Spearheaded by Northern scientific bureaucracies and governments, it had never had to scrutinise the industrial system as a whole.⁶² The ozone problem was presented as nothing more than ‘flights of inanimate particles from activities deemed benign in themselves, and not the lifestyles of the rich and famous’, to quote the wry assessment of Harvard’s Sheila Jasanoff.⁶³

But the treaty worked. Unlike global warming, the ozone problem didn’t require long-term restructuring of energy sectors central to industrialised economies.⁶⁴ Only a few factories were involved. It was relatively easy to set a target and find substitutes for some ozone-depleting substances or phase them out. With the eventual backing of industry itself and the help of a few transition-aiding payments to Southern nations, nearly all nations wound up complying with the agreement.

A tempting model.

Yes. Many climate negotiators thought a similar idea might work with global warming.⁶⁵ They were even guided by some of the same scientist-bureaucrats. Targets and timetables for reducing emissions became the big issue. Few questions were asked about power, property, and path-dependence.

Into this vacuum rushed the idea that the technical means of achieving reductions could best be left to the private sector and ‘technology transfer’. And if corporations were going to be the stars of the show, why not make it as cheap and profitable as possible for them to meet whatever targets had been set?

And this was the market fix?

Yes. The earth’s carbon dump would gradually be made economically scarce through limits on its use imposed by states. Tradeable legal rights to it would be created and distributed to the biggest emitters. Bargaining would generate a price that would reflect the value society (that is, governments) placed on carbon dump use. Emitters who found ways of using the dump more efficiently could profit by selling their unused rights to more backward producers. They could also develop new dumps. The market would ‘help society find and move along the least-cost pollution reduction supply curve’⁶⁶ (see box on next page, ‘What is Carbon Trading?’).

What is Carbon Trading?

There are two kinds of carbon trading. The first is *emissions trading*. The second is *trading in project-based credits*. Often the two categories are put together in *hybrid trading systems*.

Emissions trading

Suppose you have two companies, A and B. Each emits 100,000 tonnes of carbon dioxide a year.

The government wants to cut their emissions by 5 per cent. It gives each company rights, or 'allowances', to emit 95,000 tonnes this year. Each company must either reduce its emissions by 5,000 tonnes or buy 5,000 tonnes of allowances from someone else.

The market price for these allowances is USD 10 per tonne. Company A can reduce its emissions for half this cost per tonne. So it's reasonable for it to cut its emissions by 10,000 tonnes: if it sells the extra 5,000 tonnes (for USD 50,000) it will be able to recover its entire expenditure. So the company saves USD 25,000.

For company B, making reductions is more expensive. Cutting each tonne of emissions costs it USD 15. So it decides not to reduce its emissions, but instead to buy the 5,000 tonnes of surplus allowances that company A is offering. If company B reduced its own emissions, it would cost USD 75,000. But if it buys company A's surplus allowances, the cost is only USD 50,000. So company B also saves USD 25,000 on the deal.

Both firms, in short, save USD 25,000 over what they would have had to spend without trading. If they are the only two companies in the country, this means the country's business sector winds up cutting emis-

sions just as much as it would have under ordinary regulation. But by distributing the reductions over the country's entire private sector, it costs the sector as a whole USD 50,000 less to do so.

Some emissions trading schemes allow companies to save any surplus allowances they have for their own use in future years, rather than selling them.

Emissions trading is also sometimes called 'cap-and-trade'.

Trading in project-based credits

Suppose you have the same two companies, A and B, each emitting 100,000 tonnes of carbon dioxide a year. Again, the government wants to cut their emissions by 5 per cent, so it gives each company allowances to emit only 95,000 tonnes.

But now the government tells each company that if it doesn't want to cut its emissions by 5,000 tonnes each, it has another option. It can invest abroad in projects that 'reduce' emissions of carbon dioxide 5,000 tonnes 'below what would have happened otherwise'. Such projects might include growing crops to produce biofuels that can be used instead of oil; installing machinery at a chemical factory to destroy greenhouse gases; burning methane seeping out of a coal mine or waste dump so that it doesn't escape to the atmosphere; or building a windpower generator. The price of credits from such projects is only USD 4 per tonne, due to low labour costs, a plethora of 'dirty' factories, and government and World Bank subsidies covering part of the costs of building the projects and calculating how much carbon dioxide equivalent they save.

In this situation, it makes sense for both company A and company B to buy credits from abroad rather than make reductions themselves. Company A saves USD 5,000 by buying credits from projects abroad rather than cutting its own emissions. Company B meanwhile saves USD 55,000. The total saving for the domestic private sector is USD 60,000.

Other names for project-based credit trading include ‘baseline-and-credit’ trading and ‘offset’ trading.

Hybrid trading systems

Some pollution trading systems use emissions trading only. *Hybrid* systems use both emissions trading and ‘offset’ trading, and try to make ‘allowances’ exchangeable for project-based ‘credits’.

The US sulphur dioxide market uses emissions trading only. But both the Kyoto Protocol and the EU Emissions Trading System mix ‘cap-and-trade’ allowances and project-based credits, and try to make them mutually exchangeable.

Such systems are enormously complex. Not only is it difficult to try to create credible ‘credits’ and make them equiva-

lent to ‘allowances’. Mixing the two also changes the economics.

For example, imagine that company A and company B above are allowed three options in any combination: cutting their own emissions, trading allowances with each other, or buying credits from abroad.

For company B, the best option would be, again, to buy USD 20,000 worth of credits abroad rather than spend USD 75,000 to reduce its own emissions.

For company A, the best option would be to cut its own emissions by 10,000 tonnes – but only if it could find a buyer who would pay USD 10 per tonne for the 5,000 allowances it would have to spare. Instead of having to pay USD 20,000 for carbon credits from abroad, it wouldn’t have to spend anything.

Unfortunately for company A, it can’t find any such buyer. If company B can save USD 5,000 by going abroad for credits, it won’t buy company A’s spare allowances. But company B is the only other firm in the emissions trading scheme. So without company B as a buyer, it’s not worthwhile for company A to make any cuts at all, and it too will wind up buying credits overseas.

As Michael Zammit Cutajar, the former executive secretary of the UNFCCC, has stressed, this approach was ‘made in the USA’.⁶⁷ The pollution-trading mechanisms that formed the core of the Kyoto Protocol were of a type proposed by North American economists in the 1960s;⁶⁸ put into practice in US markets for lead, nitrogen oxides and sulphur dioxide and other pollutants beginning in the 1970s and 1980s;⁶⁹ and successfully pressed on the UN by the US government, advised by US economists, US NGOs and US business, in the 1990s.⁷⁰

What is the Kyoto Protocol exactly?

The Protocol was adopted in 1997 at one of the annual conferences of the parties to the 1992 United Nations Framework Convention on

Climate Change (UNFCCC). The treaty finally came into force on 16 February 2005, having been ratified by 127 countries responsible for 61 per cent of global greenhouse-gas emissions.

The Protocol binds 38 industrialised nations to reducing their emissions an average of 5.2 per cent below 1990 levels by 2008–2012.

But there are loopholes. Countries unable or unwilling to achieve these modest targets are allowed to 'compensate' for their failure through three trading mechanisms, or markets.

Which are?

First, they are allowed to buy emissions rights from countries that have permits to spare. Countries that were able to win very lax targets to begin with, such as Russia and the Ukraine, are likely to have plenty of permits with which to supply this market.

And second?

Second, industrialised countries can also escape the need to reduce emissions by putting money into carbon-absorbing forestry or soil conservation.⁷¹

And third?

Last, and most important, the industrialised North can escape its obligations to reduce at home by investing in special, UN-approved 'greenhouse gas-saving' projects abroad.

What are these foreign-based projects?

They fall into two categories. Clean Development Mechanism (CDM) projects are carried out in the South, in countries not subject to the emissions 'cap' on industrialised nations.

Joint Implementation (JI) projects are similar, but are set up in other industrialised countries, in practice mostly in Eastern Europe.

Such trading mechanisms had been tried out nowhere in the world outside of the US. By and large, they had failed even there (see Chapter 3). But support for them from the Bill Clinton regime set in motion a politics that eventually prevailed over both European and Southern opposition⁷² (see box on page 52, 'International Climate Politics: Some Recent Highlights'). As climate expert Michael Grubb notes, the 'dominance of US power, and the continuing weakness of foreign policy... elsewhere' has ensured that the negotiations following the Kyoto Protocol – as well as the Protocol itself – have been 'very much as sought by the US administration'.⁷³

Also significant was support from some Northern corporations, who were happier with schemes that gave big polluters free property rights in previously ‘open access’ global dumps than with programmes focused on taxation and more conventional forms of regulation. Traders and bankers hoped to set up new carbon exchanges in London, Chicago, Sydney, Amsterdam, Leipzig and elsewhere. Environmental groups, too, threw in their lot with the market fix on the theory that it was the only way to get a climate treaty approved.⁷⁴

By the time the second George Bush pulled out of Kyoto in 2001 (much to the consternation of US companies hoping to profit from carbon trading, such as Enron), the approach had become internationally entrenched even though its original political rationale had vanished. Its environmentalist backers, many of whom had by now spent much of their careers in the negotiations, were left in the odd position of having to champion an agreement written largely by the US for US purposes on the basis of US experience and US economic thinking, but which no longer had US support.

But the anomaly was quickly forgotten. Journalists and environmentalists alike soon came to treat any criticism of the Kyoto Protocol not as directed against US-style ‘free market’ environmentalism but, ironically, as playing into the hands of US oil interests and as endorsing a do-nothing position. A little-tested idea spearheaded by a small US elite was now perceived as a global consensus and the ‘only show in town’.⁷⁵

Why was US pressure to turn the Kyoto Protocol into a set of market mechanisms so successful?

There’s no simple answer. Almost certainly, many factors were involved.

First, there is sheer force of numbers. In the 2000 UNFCCC climate negotiations in The Hague, to take one example, the US fielded 150 well-equipped delegates, housing them in a luxury hotel and sending well-rested and well-briefed representatives to every working group meeting, while Mozambique had to put up its three harried delegates in a noisy youth hostel occupied largely by Chinese tourists.⁷⁶ During complex negotiations featuring many simultaneous sessions and drafts of hundreds of crucial documents flying around for continuous comment and revision, such numerical superiority can be decisive.

The US was also able to impose a language on the climate talks in which objections to neoliberal policies could not be effectively made.⁷⁷ As IPCC member Wolfgang Sachs notes, orthodox economics and public policy methodology prevented the question even being

raised as to what type of changes would be necessary to reduce greenhouse gas concentrations to a safer level or allocate atmospheric rights equitably.⁷⁸ Officials of most countries had neither the background nor the staff to work out in time how to counter, or even to understand, a complicated pollution-trading policy jargon essentially 'made in the USA'.

In addition, the structure of the climate negotiations was itself biased in favour of US interests. As scholar Joyeeta Gupta notes, standard UN negotiating techniques such as 'avoiding polarisation', 'incrementally building on agreement', and pretending to be guided by international legal norms handicap activist Southern diplomats by automatically relegating talk of structural change to the category of the 'merely rhetorical' or 'irrelevant'.⁷⁹ Privately, too, negotiators also often speak of US trade threats, bribes and 'dirty tricks', although diplomats and other officials who are successfully targeted often want to keep the news off the record as much as the US itself does.

One example of US influence in the negotiations comes from the Kyoto Protocol talks themselves. In 1997 Brazil proposed a 'Clean Development Fund' that would use penalties paid by industrialised countries that had exceeded their emissions targets to finance 'no regrets' clean energy initiatives in the South.

The gist of Brazil's proposal was accepted by the G-77 nations and China. During a few days of intense negotiations, however, the fund was transformed into a trading mechanism allowing industrialised countries to buy rights to pollute from countries with no emissions limits. Fines were transformed into prices; a judicial system was transformed into a market.

How?

Smaller negotiating groups assigned to discuss channelling penalties for Northern failure to meet emissions targets to a fund for the South were dominated by Northern delegates who wanted to dodge the issue of penalties as much as possible. The 'direct link between compliance and the fund dissolved'⁸⁰ and the negotiations turned into a gruelling series of sessions on how to convert the clean development fund into a version of a trading scheme the US had already been backing against the opposition of most of the G-77/China and the EU.

The Clean Development Mechanism that resulted now occupies an immense slice of UN time and involves billion-dollar money flows despite the fact that its effect on the climate may well be negative (see Chapters 3 and 4).

International Climate Politics: Some Recent Highlights

1990: In the wake of warnings from scientists, international support grows for requiring countries to reduce their greenhouse gas emissions to mitigate global warming. The US is opposed.

1991: The UN Conference on Trade and Development sets up a department on greenhouse gas emissions trading.

1992: The Rio de Janeiro Earth Summit produces the United Nations Framework Convention on Climate Change (UNFCCC) to prevent ‘dangerous anthropogenic interference with the Earth’s climate system’. The UNFCCC suggests, but does not require, that emissions in 2000 not exceed 1990 levels.

1994: The UNFCCC enters into force, signed by 153 countries. The Alliance of Small Island States, in an attempt to hold sea-level rise to 20 centimetres, demands that emissions be cut to 80 per cent of current levels by 2005. The US and its allies reject the idea of cuts, saying that it would be cheaper for them to be allowed to buy permits to pollute in an emissions market. Most EU nations, believing they already have cost-effective means for domestic reductions, portray the US proposal as an attempt to shirk responsibility.

1996: US proposals to avoid reductions by buying permits from abroad and borrowing against future emissions continue to be condemned by the EU, G-77 nations and most NGOs.

1997: The Kyoto Protocol is adopted, binding industrialised countries to limit emissions to approximately 95 per cent of 1990 levels by 2008–2012. But Northern

pressure, especially from the US, opens loopholes that allow the target to be met partly by global trading in emissions allowances and carbon project credits, as well as growth of domestic forest cover.

1998: Increasingly worried about the costs of domestic emissions reductions and, in the face of industry pressure, unable to make enough progress on common regulatory policies and taxes,⁸¹ the EU begins to develop an internal emissions trading scheme. But it insists on limits to global carbon trading, demanding that permits bought in from abroad be used to meet no more than 50 per cent of any country’s emissions targets. The US opposes any limits on global trading and threatens to form a pact with Canada, Japan, Australia and New Zealand to meet all emissions targets by buying meaningless Russian credits created by the use of 1990 (before the post-Soviet economic collapse) as a ‘baseline year’.

1999: The World Bank sets up a Prototype Carbon Fund (PCF) to generate cheap credits from Southern carbon-saving projects that can ‘reduce the costs of emissions reductions for industrialised countries’.⁸² The PCF quickly attracts investment from Mitsubishi, BP, and other companies, as well as several governments. The International Emissions Trading Association, a corporate lobby group, is established through the cooperation of UNCTAD and the World Business Council for Sustainable Development.⁸³

2000: The EU rejects a compromise that would have allowed the US limited credits for its own forest carbon sinks, allowed

it to buy credits for carbon sinks abroad, lifted the 50 per cent limit on the use of trading to meet domestic targets, and not punished it if it failed to meet any targets. European industrialists step up efforts to erode European opposition to unlimited carbon trading. Denmark experiments with domestic carbon dioxide trading.

2001: The US withdraws from the Kyoto Protocol. With carbon trading freed of the stigma of being associated with US intransigence, the EU reverses its opposition to the extensive use of trading.⁸⁴ Now holding the balance of power over whether the Protocol will be ratified, Japan and Russia demand extra carbon credits for their domestic forests. Desperate to hang onto the Protocol as a way of asserting EU leadership in global climate policy,⁸⁵ and already committed to its own emissions trading scheme and other climate legislation, the EU capitulates. Most NGOs celebrate an agreement they would have condemned a year previously, justifying it as a 'necessary compromise'. A 'rule book' for CDM and other Kyoto Protocol trading mechanisms is adopted after much wrangling, protecting loopholes that essentially cancel out the Protocol's minimal emissions cuts.

2003: Northeastern states of the US begin to develop a Regional Greenhouse Gas Initiative that would use trading to cut the costs of a proposed 10 per cent cut in emissions from power plants by 2020.

2004: Defying environmentalist objections, the EU decides to allow countries to use credits from carbon projects outside the EU to meet EU emissions targets.⁸⁶

2005: The EU Emissions Trading Scheme comes on line with broad backing from NGOs. The Kyoto Protocol comes into force after being ratified by Russia in 2004, again with broad NGO support. It becomes obvious that many industrialised signatories will not meet their 2008–2012 emissions targets. New procedures are adopted for speeding the flow of CDM credits into the system. Kyoto signatories 'agree to discuss' emissions targets for the second compliance period beyond 2012. Countries without targets such as the US and China agree to a 'non-binding dialogue' on their future role in curbing emissions. The US proposes an Asia-Pacific Partnership for Clean Development and Climate to seek technological fixes for global warming.

2006: The EU carbon market crashes, due partly to governments having given their corporations too many property rights in the earth's carbon dumps for the commodity to be sufficiently scarce (see Chapter 3). Projects expected to deliver some 420 million tonnes of carbon dioxide credits by 2012 are registered with the CDM by mid-year, injecting still more assets into global carbon trading systems.

Early history of the market fix

The market fix for global warming could not have become so dominant if it came out of nowhere. Part of its success is owed to the fact that it is part of a larger, more longstanding historical wave of neoliberalism.

Internationally, neoliberalism is a movement using institutions such as the World Bank, and the World Trade Organisation, along with various treaties, to establish new forms of globally-centralised control over far-flung resources. Attempting to integrate trading systems worldwide, neoliberalism reorganises property rights systems and fights regulation in an attempt to reduce the power of national governments, labour unions and local communities over corporate activity.

Justifying neoliberalism is an ideology of ‘efficiency’ developed over decades, largely in the think-tanks, academic economics departments, international agencies and government ministries of Anglo-America. The ideology revolves around the claim that society as a whole will benefit if it ‘makes the most’ out of whatever stuff is available to it.

That seems reasonable.

Sure – as long as everybody agrees on what it means to ‘make the most’ out of the stuff you have.

How do you tell when you’ve made the most out of what you have?

On a neoliberal view, you first divide all your stuff into a lot of different bits. This isn’t always so easy. The categories the bits are divided into don’t always reflect the categories people use to live their lives.

For example, you might be forced to divide your land into ‘permanent forests’ and ‘permanent fields’ even if you’re a member of an indigenous group that doesn’t demarcate land this way and instead uses some areas as woodland during some periods and as fields during others.

Or you might be forced to divide your activities into ‘labour’, ‘housework’ and ‘leisure’, even though you’re not used to looking at things that way either.⁸⁷ Or you might have to divide your state welfare institutions into pieces that can be more easily managed for profit.

It’s a bit like taking a picture and sawing it into a jigsaw puzzle. You wind up with a lot of odd-shaped pieces with a bit of blue sky and cloud here and half an eye or a piece of a house over there.

So what's next?

You transform all these jigsaw puzzle pieces into 'resources' and 'commodities'. A resource is something whose value lies in being a 'source' of something else, usually an abstraction called wealth.⁸⁸ A commodity is something whose value lies in what it can be swapped for or what price it can fetch. So you wind up treating your bits not as pieces of a picture that happened to get separated from each other, but as things that are on their way to being something else, something to do with industry and wealth.

And then?

Now you shuffle all the pieces together with a view to finding out who should get them and what new thing can be made out of them as a whole. Crudely speaking, you see which way of distributing, using, keeping or destroying your bits makes the most money. That's how you find out how to make the most out of the stuff you have.

Neoliberals say not only that dividing and redistributing all your stuff into these interchangeable bits is a good idea, but also that what will tell you how to make the most of them is a special computer called the 'perfect market'. Feed your bits into the perfect market and the result will be that everything gets used or destroyed in a way that maximises total production.

Wow. But what does all this have to do with climate change?

Economist Ronald Coase, who insisted that a polluter should not be seen as someone 'doing something bad that has to be stopped'. According to Coase, '[P]ollution is doing something bad and good. People don't pollute because they like polluting.

*They do it because it's a cheaper way of producing something else. The cheaper way of producing something else is the good; the loss in value that you get from the pollution is the bad. You've got to compare the two. That's the way to look at it.'*⁹⁰

That's the contribution of Ronald Coase, a University of Chicago economist who wrote a series of influential articles in the middle of the last century. In a way, Coase is the grandfather of pollution trading (and thus of the Kyoto Protocol). In some ways, he's also the presiding economic spirit of the 1992 Earth Summit and the international environmental agreements that followed.⁸⁹

Coase's idea was that a pollution dump is just another jigsaw puzzle piece – just another resource or commodity. The right to pollute is a factor of production just like the right to use land. In both cases, exercising your right naturally entails that some losses will be suffered elsewhere.⁹⁰ The only question is how significant those losses are.

To find out how best to use a pollution dump, you put it on the market together with the other bits you've created – like real estate, water, labour, rice, silver, forests, jet planes and mobile phones. You measure them all by the same yardstick and treat them all in the same way.

If the market is a perfect market – if it has no 'transaction costs', as Coase called them, and is inhabited by properly calculating, maxi-

missing economic agents with perfect information – the pollution dump will wind up being used in the way that contributes the most to society’s ‘total product’.⁹¹

If that means a lot of pollution, so be it. But there’s no need to worry that there will be ‘too much’ pollution, because if the society got too polluted, you wouldn’t get the best value out of other goods – your labourers might die, for example – and ‘total product’ would decline. The perfect market will select against that, automatically ‘optimising’ pollution so that there’s neither too little nor too much.

I think I’ve heard this line of thought somewhere before...

It certainly made headlines back in 1991. That’s when Larry Summers, former US Treasury Secretary and former president of Harvard University, built on Coase’s view in a famous memorandum he wrote to colleagues when he was chief economist of the World Bank. ‘The economic logic of dumping a load of toxic waste in the lowest wage country is impeccable, and we should face up to it,’ Summers said. ‘Underpopulated countries in Africa are vastly underpolluted.’⁹²

Now I remember.

But if it’s poor economics simply to say that pollution is ‘bad’ without looking at ‘total product’, it follows that it’s also poor economics to say that polluters must be held liable for damages, or that they must internalise all costs, or that certain types of pollution have to be reduced ‘whatever the cost’, or that regulation or taxes should be based on that assumption.

To do that, Coase thought, would be to fail to ‘optimise’ pollution or maximise the ‘value of production’. A tax that penalised both polluters and pollutees for losses to ‘total product’ might be a good thing (although Coase thought such a tax would be impossible to calculate), but not a tax that was based on the idea that some level of pollution was simply unacceptable.

Which is, as you’ve been saying, the idea now emerging from the science of climate change.

Yes. But bear with Coase at least until you hear what he had to say. Because what he said now dominates a great deal of world climate politics.

The idea of responsibility, Coase concluded, is of no use economically: ‘Whether someone is liable or not liable for damages that he creates, in a regime of zero transaction costs, the result would be the same...

[and] you can expand that to say that it doesn't matter who owns what; in a private enterprise system, the same results would occur.' The important thing is to create property rights and reduce impediments to bargaining so that 'affected parties themselves can decide whether to restrict activities through private trading of rights'.⁹³ In a perfect market, pollution rights would gravitate into the hands of whoever could squeeze the most money out of them.⁹⁴

But where are you going to find a perfect market? They don't exist.

No. And nobody knew that better than Coase himself. As he rightly stressed, a perfect market is only a figment of the imagination. But the conclusion he drew was that, in the real world, the state and the courts would have to lend a hand in giving rights to pollute to those who could make the most out of them.

Coase's successors, such as the economist J. H. Dales,⁹⁵ modified pollution trading theory further. While continuing to emphasise the importance of giving polluters rights to pollute, they avoided Coasean talk about 'optimising' pollution through trading. It should be up to the government, they said, not an imaginary 'perfect market', to set the best overall level of pollution.⁹⁶ In their hands, pollution trading became merely a way of finding the most cost-effective way to reach an emissions goal that had been set beforehand.

And when did all this begin to be put into practice?

The first major emissions trading programme was adopted in 1976 by the US Environmental Protection Agency. It allowed new polluting plants to be built in exchange for 'offsets' that reduced air pollution by a greater amount from other sources in the same region. A 1979 policy allowed polluters to meet emissions targets through any combination of on-site emissions reductions. Then, in the 1980s, academics advocated market fixes as cost-effective alternatives to regulations that would have required more technological change. A backlash against the environmental regulation of the 1970s encouraged business to team up with some Washington-based NGOs to formulate trading legislation.⁹⁷

In the increasingly strident neoliberal political climate of the 1980s and 1990s, pollution trading became more and more fashionable.⁹⁸ Finally came the Clean Air Act Amendments of 1990, which set up a national sulphur dioxide trading programme to save power plants money in the effort to control acid rain, as well as encouraging states to use emissions trading to reduce urban smog.⁹⁹ That paved the way for later US trading programmes in water pollution, wetlands

destruction, biodiversity depletion and so on. By the early 1990s, with the blessing of the Clinton regime, pollution trading was poised for its leap into the climate arena. In an atmosphere of privatisation, the thing to do seemed to be to privatise the atmosphere.

‘All that is solid melts into air’

The neoliberal approach that currently dominates global warming politics does more than just reorganise the earth’s carbon-absorbing abilities. At a time when ‘oil and state’ are merged at the highest levels of US government,¹⁰⁰ it is also helping dissolve most of the conventional boundaries that used to divide private corporations, governments, the UN, scientists, academics, consultancies, think-tanks, non-government organisations and even artists. As institutional borders disappear, so do checks and balances that could have restrained the blunders and excesses of carbon trading.

Pollution trading itself is no corporate conspiracy, but rather a joint invention of civil society, business and the state. Non-governmental organisations (NGOs) have been nearly as prominent in its development as private corporations.

Are you serious?

Completely. Although pollution trading derived from the theories of economists working in universities and think tanks,¹⁰¹ it was written into the 1990 US Clean Air Act Amendments by Environmental Defence, a corporate-friendly NGO that subsequently pushed for it to be included both in the Kyoto Protocol and in Chinese environmental programmes.¹⁰² The Washington-based NGO World Resources Institute (partly bankrolled by government and UN agencies, international financial institutions and corporations such as Monsanto, TotalFinaElf, Shell, BP, and Cargill Dow) tirelessly lobbied for carbon trading alongside the World Business Council for Sustainable Development and other corporate pressure groups. The World Wide Fund for Nature (WWF), an organisation with an annual budget 3.5 times that of the World Trade Organisation, meanwhile joined the European Roundtable of Industrialists (UNICE) and the US think tank-inspired Centre for European Policy Studies in support of the EU Emissions Trading Scheme.¹⁰³ WWF also helped develop an eco-label for the Kyoto Protocol’s Clean Development Mechanism projects (see Chapter 4). Greenpeace, for its part, has moved from being critical of corporate lobby groups and carbon trading to complete acceptance.

As forest conservation NGOs such as the Nature Conservancy and Conservation International move in to mop up corporate and World

Bank finance being offered for 'carbon sinks', other NGOs confine themselves to trying to reform or 'contain the damage' done by trading programmes such as the Clean Development Mechanism (CDM). Most Northern members of the largest NGO grouping on climate change, the Climate Action Network, have thrown their support behind the carbon market, often demoting themselves to the role of advisers to governments on such matters as national emissions allocations. Critical NGOs, to borrow the words of Daphne Wysham of the Institute for Policy Studies, are being continually urged 'to unite behind an entirely bizarre, incomprehensible, and totally corruptible system of carbon trading'.¹⁰⁴ Even well-meaning artists such as sculptor Damien Hirst and rock group Coldplay have got into the act as both clients and spokespeople for carbon marketing firms.¹⁰⁵

What's the UN's role in all this?



Business meets and greets in exhibition and conference spaces at UN climate meetings.

As carbon trading moved into the centre of international climate policy, UN climate conferences began to resemble trade fairs more than international environmental negotiations. From the start, umbrella groups such as the International Petroleum Industry Environmental Conservation Association, the Transatlantic Business Dialogue and the Emissions Marketing Association have been in touch with national governments to promote market approaches to global warming, and corporation executives even sit on country delegations.¹⁰⁶ At today's UN climate negotiations, carbon traders, consultants, manufacturers associations, fossil fuel, mining, nuclear and forestry companies, together with lobbyists and other corporate representatives of all kinds, easily outnumber both government delegates and environmentalists.¹⁰⁷

Early on, the rot also spread to UN agencies other than the UNFCCC as well.

Such as?

The World Bank, which provides billions of dollars in public money to fossil fuel companies for their production and transport expenses, profitably expanded its remit to host seven different carbon funds aimed at providing cheap credits to corporations to allow them to continue to use fossil fuels.¹⁰⁸

In addition, in the late 1990s, the UN Development Programme (UNDP) put its head together with the World Business Council on Sustainable Development to get companies involved in CDM projects¹⁰⁹ and, together with the Food and Agriculture Organisation, sponsored research into carbon sinks and carbon accounting.¹¹⁰ By 2006, UNDP was pushing for an international pollution permit trading system that

it claimed could deliver USD 3.64 trillion in global wealth.¹¹¹ The cash-strapped UN Environment Programme meanwhile infuriated many environmentalists in 2000 by trying to position itself as a broker for CDM projects, including carbon ‘offset’ forestry projects in Africa.¹¹²

Is there more?

A lot, but it’s not always visible to the naked eye. A good deal of corporations’ work with the UN goes on behind the scenes. One example involves the International Chamber of Commerce (ICC), a powerful corporate lobby group that has played a huge role in global negotiations since the 1992 Rio Earth Summit. Shortly before the 1998 climate talks in Buenos Aires, the ICC, together with Shell, Texaco, Mobil and Chevron, sent a 30-person team to Senegal to round up support for the CDM from the energy and environment ministers of more than 20 African countries. In return, the companies offered technology transfer and foreign investment.¹¹³ Similar efforts with forest-rich Latin American nations have helped recruit nearly all their governments to the cause of carbon forestry.

As carbon-trading businesses fused with the UN climate apparatus, revolving doors between the two became jammed with profiteers moving in both directions. In 1991, the UN Conference on Trade and Development (UNCTAD), an agency charged with ‘assisting developing countries’, brushed aside other regulatory or tax alternatives to set up a department on greenhouse gas emissions trading. UNCTAD later helped form the International Emissions Trading Association (IETA), a corporate lobby group dedicated to promoting emissions trading. Frank Joshua, who served as the UN Head of Greenhouse Gas Emissions Trading and led several expert groups including the UNCTAD Earth Council Emissions Trading Policy Forum and the UNCTAD Expert Group on the Clean Development Mechanism, went on to be the first executive director of the IETA, Global Director of Greenhouse Gas Emission Trading Services at Arthur Andersen, and managing director of US-based carbon trader Natsource – all of which are cashing in on the accounting rules Joshua himself helped to enshrine in the UN.¹¹⁵ James Cameron, a lawyer who helped negotiate the Kyoto Protocol, later became Vice Chairman of Climate Change Capital, a carbon-trading merchant bank.¹¹⁶

At the same time, staff of corporations and other organisations in a position to benefit financially from carbon trading occupied positions on UN expert panels that decided on the rules that would determine their future profits.¹¹⁷



Sticker on the window of a London chain store that buys carbon credits from the Carbon Neutral Company (formerly Future Forests). The credits are claimed to ‘neutralise’ the store’s greenhouse gas emissions. The Carbon Neutral Company is the secretariat of the UK Parliament’s All-Parliamentary Climate Change Group, which numbers over 100 Members of Parliament from all three major parties. The Group counts promotion of the Carbon Neutral Company’s ‘carbon-neutral’ idea among its objectives.¹¹⁴ Chairman Colin Challen, MP, defends the sponsorship deal as standard parliamentary practice.

Globalisation and Carbon Trading: Two Complementary Views

'The response of global business to new legal frameworks is creating new relationships ... the carbon market can be easily grafted onto powerful financial markets that can bring amoral scale... Consider colleagues of mine at Climate Change Capital, an Australian woman who built experience in the carbon market at the World Bank, a Hungarian educated in the US who founded an organisation in his twenties to work on the climate change issue, working together with a Chinese plant manager in a hard hat during endless dinners with unusual foods, vast amounts of alcohol, explaining how international law works and why we must have English law govern the contract and at the end there is opportunity for wealth to be created here in cosmopolitan London and the rapidly developing world.'¹¹⁸

*James Cameron, Vice Chairman,
Climate Change Capital, 2005*

'A lot of "offsets" are produced by consultants. Example: you own a steel plant in a poor country that turns scrap metal into new steel. It is an old-fashioned basic oxygen furnace (BOF), and it is finally com-

pletely worn out. A rebuild won't do this time; it needs to be replaced. There is hydroelectric power in your area. You can save a lot of money by buying an Electric Arc Furnace (EAF) and using that for processing your scrap metal. But you know that EAF is a lot cleaner and greener than your old BOF. Isn't there some way you can get paid for this? Why, yes, there is. Call in a certified carbon market consultant and pay him a nice fee. He will produce a study certifying that you could have gotten ten more years out of that old BOF, and that the only reason you are investing in a new EAF is carbon credits. *Voilà!* The carbon market will examine the report, find it convincing, and a new annual producer of offsets is born – which a "green" rock band can buy to justify burning petroleum in planes and buses. "Mommy, where do carbon offsets come from?" "Well, you see, honey, when a polluter and a consultant love money very, very much, they come together in a very special way to produce an extremely long piece of paper."¹¹⁹

*Gar Lipow,
systems analyst and peace activist, 2006*

In addition, the small circle of private carbon consultancies that help design and, with the permission of the UN, validate, verify and certify greenhouse gas-saving projects in the South have little incentive to question the effectiveness of the carbon projects they work on, since to do so would be to jeopardise their chances of getting future work. It could also jeopardise their relationships with their other clients. For example, the Norwegian-based Det Norske Veritas (DNV) consultancy, under contract to the World Bank's Prototype Carbon Fund (PCF), recommended the controversial Plantar scheme (see Chapter 4) as a CDM project. Yet DNV also has significant consultancy contracts with two of the PCF's investors, Statoil and Norsk

Hydro. One validator, which had not even visited the project it was validating, was actually part-owned by a parent-company that was an investor in the CDM project. After a meeting with the CDM Executive Board in 2005, validators agreed to take measures to avoid such incidents in the future, without specifying what such measures would consist of or how they would be enforced. ‘We must establish self-justice internally,’ said Einar Telnes of DNV.¹²⁰



Advertisement for DNV Climate Change Services, Milan, December 2003.

Hasn't anyone at the UN ever heard of conflict of interest?

Sometimes it's hard to say. Conflict of interest has become so routine in international climate politics, as elsewhere under neoliberalism, that the concept has virtually disappeared. Despite being prodded by NGOs such as the World Rainforest Movement, the UN has declined to acknowledge the issue. To try to keep vested interests out of the rule-making process for carbon trading, said John Houghton, a member of the IPCC Bureau which appointed the land use review team, would 'cut out important experts'. In his view, 'It's impossible to flush out everybody.'¹²¹

Three in one

This chapter has suggested that a market fix, a technological fix and a knowledge fix have come to be intertwined in climate change politics in an intimate way.

The recent US neoliberal innovation known as the pollution market, growing largely out of academic theory, NGO advocacy and an anti-regulation backlash among corporations, moved with startling speed into international climate politics in the 1990s. Fed by a corporate-friendly reading of climate science and economics, as well as research into technological fixes, it drew UN agencies and activists alike into its gravitational field, eventually triumphing over early Southern and European opposition through complex and still partly obscure political processes. An astonishing range of institutions from private companies to UN agencies, university departments and NGOs are now aligned around an agenda characterised by rejection of precaution, inability to come to terms with indeterminacy and irreversibility, insistence that tradeoffs are always possible, and support for growth in corporate power.

The market fix, the technological fix and the knowledge fix have come together to encase international climate politics in a debate in which almost the only questions spoken are the narrow ones large corporations most want to hear. Is there or is there not human-caused climate change? If there is, what might make continued fossil fuel use possible? How can more subsidies be channelled to technologies corporations can profit from? How can privatisation and 'efficiency' be furthered in a way most acceptable to the public? Such questions are uniting the most cynical corporate hack and the most innocent environmental activist in a single agenda. The consequences of bypassing the central issues of fossil fuel overuse, ownership, corporate power, free enquiry and democracy will be explored in the next chapter.

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- 116 Climate Change Capital website, <http://www.climatechange-capital.com/pages/senior.asp>.
- 117 Lohmann, *op. cit. supra* note 28.
- 118 James Cameron, lecture to the Royal Society of Arts, 15 May 2005, <http://www.climatechange-capital.com>.

- 119 See Real Climate website, <http://www.realclimate.org/index.php/archives/2006/05/buying-a-stairway-to-heaven/#more-313>.
- 120 Carbon Trade Watch, 'Hoodwinked in the Hothouse', www.sinkswatch.org/pubs/hothousebw.pdf.
- 121 Lohmann, *op. cit. supra* note 28, p. 26.