

Chapter 5

Ways forward



In which the claim that ‘there is no alternative’ to carbon trading is dissected and set aside, and emerging alliances for a more democratic and effective climate politics are explored.

This special report has argued that the carbon market is getting in the way of solutions to the climate crisis.

Yet many environmentalists – especially in the North – say that carbon trading is unavoidable. Citing the Kyoto Protocol, the EU ETS and other trading schemes, they argue that, like it or not, it’s impossible to imagine any future national or international climate regime that does not include carbon markets. ‘The only policy measures with teeth involve cap and trade’, goes one often-heard refrain. ‘And the only way of overcoming US opposition to climate action is through carbon trading; to criticise carbon markets is to play into the hands of George W. Bush and the oil companies.’

There’s no time to start all over again, many environmentalists add, so the best we can do is roll up our sleeves and pitch in to try to make carbon trading a little less unworkable, a little less counterproductive and a little less unfair than it would be otherwise.

I can see you think this is the counsel of despair. But what’s the alternative?

That’s a question that’s often asked – again, especially in the North. Let’s start by trying to appreciate what a very strange question it is.

Pollution trading is a completely new idea, recently pushed on the world by a small circle of neoliberal institutions in the US. (The quarrel between George W. Bush and carbon trading advocates such as the framers of the Kyoto Protocol is in part merely a friendly dispute between two overlapping factions of US business.) Pollution trading’s main appeal is that it promises to save money for the rich over the short term. As a pollution control policy, it has a bad to indifferent record in the very few places it’s been tried, and is sure to fail elsewhere if the pollutant involved is that slippery, ubiquitous compound called carbon dioxide.

By contrast, many so-called ‘alternative’ approaches are of extremely long standing, have a range of beneficial effects, and have a prior

record of some success across a range of societies and issues. Most striking of all, many are already being widely used.

That raises the question: why should anyone use the word ‘alternative’ to refer to these approaches, while speaking as if carbon trading were a ‘mainstream’ strategy? Carbon trading is not, in fact, part of most climate policy proposals. It is not what people are mainly relying on in their efforts to tackle climate change. It’s not the only initiative that has teeth and not ‘what we have to work with’. On the contrary, it’s a dubious sideshow that’s wasted a great deal of time because it’s been treated as a main event. It may appeal to Northern advisers at international financial institutions under pressure to offer single ‘silver bullet’ solutions to global problems.¹ But it’s not working, and clearing it out of the way would be one good first step towards more constructive action.

I’m confused. Could you give some examples of the more established and successful strategies you’re talking about?

Well, you could start with a package of approaches that’s currently getting a lot of attention in Northern countries, where immediate steep cuts in fossil fuel emissions are most crucial. Roughly speaking, this package consists of

- large-scale public works
- subsidy shifting
- conventional regulation
- green taxes and other non-trading market mechanisms
- legal action

– all backed and monitored by popular movements and evaluated against ambitious short- and long-term targets.

Sounds like a complicated blueprint to implement.

Actually, it’s not a blueprint. Neither is carbon trading. Political action isn’t the implementation of blueprints. The future isn’t decided by planners sitting in rooms by themselves and then slotting their plans into a black box of default political institutions. It’s more a matter of alliance-building, of move and counter-move. The package mentioned above isn’t a theory but a historical observation of the current state of an ongoing process of discussion, conflict, consultation and bridge-building in which a lot of political institutions themselves come into question. Proposals for action flow out of such processes; the processes do not flow out of them.

All right, no need to go on about it. But could you spell out the thinking surrounding the strategies you mention?

First, sweeping public works programmes could help reorganise Northern societies' infrastructure away from fossil fuel dependency in a way that pollution trading and taxes are incapable of doing. Such programmes could, for example, revamp transport systems; decentralise electricity networks to make them more efficient, reliable, secure and receptive to solar, wind and micro-hydro power;² and help overhaul inefficient heating systems.

'Tinkering around the edges won't solve the problem. Just beating the carbon lobby won't solve the problem. Full social pricing and better information distribution are not enough. Using resources wisely will require institutional change.'

Gar Lipow, 2006

Phasing out subsidies for fossil fuel exploration, extraction, refining, transport and use is a second climate-friendly structural shift that cannot be made through trading schemes but only through collective decision-making. The subsidies in question underwrite a huge range of activities from domestic and foreign pipeline development to superhighway construction, airport expansion, long-distance shipping, military operations, tax exemptions for aviation and bunker fuel users, low-cost credit and insurance for fossil fuel firms and consumer rebates for sports utility vehicles.³ Powerful enough political movements could shift such towards a coherent programme of, for example: renewable energy development; community-based planning for lower-carbon lifestyles; support for local movements protecting land, forests and smallholder agriculture; better insulation and heating; promotion of public debate and exchange on climate change; and just treatment for those who would otherwise suffer from the transition to less carbon-intensive industry, including fossil fuel workers and the poor. If coordinated regionally, increased support for renewable energy development could well spur global change more rapidly than negotiations at the United Nations, since it would threaten the competitiveness of countries that continued to insist on extreme fossil-fuel dependence.⁴ Cutting off public subsidies for the export of climate- and people-unfriendly technologies would have the virtuous side effect of supporting local efforts to defend low-carbon life-ways against large-scale and often corruption-ridden projects involving fossil fuels.⁵

But wait a minute. Aren't fossil fuels the cheapest source of energy for Southern countries?

It's not so simple – not when the history of subsidies is taken account of, costs such as health impacts, crop losses, and pollution damage are factored in, and fuel price risks are acknowledged.⁶

Moreover, most foreign-backed fossil fuel projects in the South don't provide cheap energy to the South itself, but rather result in fossil

fuels being exported and consumed in the industrial North. For example, Nigeria, the world's eighth largest oil exporter, imports 76 per cent of its petrol, and 34 per cent of its kerosene, at a cost of USD 3.6 billion. In the oil-producing Niger delta region, firewood is the primary energy source for 73 per cent of the people.⁷

In addition to shifting subsidies away from fossil fuel development, it's also important to curb subsidies for deforestation provided by national governments, export credit agencies, the World Bank and others. These include subsidies for pulp mills, industrial monoculture plantations, mining in forested areas and other enterprises that result in displacement, impoverishment and ecological degradation.⁸ Such a move would help in both slowing down and adapting to climate change. Shifting subsidies away from military budgets, particularly that of the US, would also free up money for tackling climate change.⁹

A third element of a strategy for structural change in the North, in addition to public works and subsidy shifting, would be more serious conventional regulation setting efficiency and carbon use standards for buildings, vehicles and urban development and land-use planning. As noted in Chapter 3, such regulation is often capable of improving efficiency faster, at a lower cost, and in a less coercive way than market mechanisms such as trading or taxes.¹⁰ It can do things that trading, taxes and voluntary programmes cannot do.¹¹

Fourth, as structural change provides more low-carbon choices (better public transport, more efficient machinery), carbon taxes and taxes on material intensity (focusing on unnecessary or throwaway use of metals, water, wood, plastics and so forth) come to have a greater effect.¹² Revenues from such taxes could then be used to reduce taxes on labour, fund low-carbon energy and increase efficiency, or offer rebates to buyers of greener, more efficient equipment.

Further market instruments that do not demand impossible types of quantification could then be applied in the service of innovation. 'Environmental competition statutes' that require polluters to pay costs that their competitors incur in reducing pollution are a good example.¹³

The courts provide yet another important arena for action beyond the trading floor. 'If generally accepted scientific assessments are accurate, global warming is likely to be the most expensive environmental problem ever', explains US law professor Andrew Strauss. 'Determinations are going to have to be made about who is going to bear these costs...[and] litigation will very likely play a role.' Oxford climate modeller Myles Allen and others advocate the use of public nuisance, product liability and human rights law against greenhouse gas polluters.¹⁴ Allen's colleague, science and technology scholar Steve Rayner,

suggests that the ‘threat of civil liability may prove to be a much more powerful’ incentive to the US electricity utility industry to reduce its emissions’ than the threat of regulation.¹⁵ International law may provide still further avenues for action against global warming, through lawsuits against banks and export credit agencies for corruption and human rights violations connected with fossil fuel projects.¹⁶

Getting reacquainted with what works

In the South as well as the North, community-level or popular strategies of proven worth in fostering climatic stability also need to be better recognised by environmentalists and systematically strengthened instead of being penalised and undermined by national governments, the World Bank, export credit agencies, the World Trade Organization and so on. For example:

- Networks protecting community forests, other local commons and low-input swidden or integrated farming systems (increasingly supplemented with biogas energy production) are a powerful force against climatically destabilising land clearance, commercial logging, high-input intensive agriculture and long-distance food transport.
- Movements against trade liberalisation, privatisation and commodification worldwide help to slow growth in unnecessary transport and protect local subsistence regimes against threats from fossil fuel-intensive sectors.¹⁷
- Popular movements against oil wars, gas and oil pipelines, fossil fuel extraction, power plant pollution and airport and highway expansion also help curb extraction of fossil fuels.
- It is increasingly clear that small renewable energy sources over which local communities have power, whether off-grid or on-grid, are becoming a cheap alternative to fossil fuel-oriented centralised generating systems in many areas of the South.

Insofar as they defend local resilience and promote community solidarity and organisation, such strategies are crucial not only in slowing climate change but also in adapting to it.¹⁸ As scholars Elizabeth Malone and Steve Rayner observe, ‘fostering flexibility means fostering power at the local level’.¹⁹ As emissions trading expert Ruth Greenspan Bell explains in an article on sulphur dioxide trading in China, fostering that power requires closer attention to realities on the ground than pollution trading advocates have usually been willing to pay:

In their enthusiasm for efficiency over other values, the advocates for market-based instruments for environmental control have re-

versed the order in which environmental solutions are found. They have given their prescriptions without first doing a physical examination of the patient; in other words, they have first recommended environmental instruments and secondarily tried to bend institutions to support the already identified cure... . Those who advise governments to adopt reforms for which the institutional basis does not yet exist put the cart before the horse, a costly mistake that directs weak countries in the direction of solutions they have little hope of implementing. Instead, the donors and advisers should...take into account existing capabilities and institutions [and] find examples of small, albeit imperfect, efforts that seem to be working and building on them.²⁰

Well, this is all very interesting, but is any of it really going to happen?

A lot of it already has happened, or has clear precedents. A lot of the strategies mentioned above have a far longer record of use than pollution trading – and a more successful one. Public works and subsidy-shifting have been used for millennia to change societies' energy-use patterns – cases range from the ancient irrigation systems of Asia to the US's undermining of rail travel and subsidisation of interstate highways and suburban sprawl following the Second World War.²¹ Taxation was used during the Xia and Shang Dynasties in China, in ancient Aksum and Ghana, ancient Egypt, Greece, Rome, and in the Aztec and Inca empires. Conventional pollution and energy regulation has been around for at least 150 years and has many achievements to its credit, including in the US from the 1970s onward at both national and state levels.²²

Local forest or water commons regimes, meanwhile, have played a climate-stabilising role for decades or, in many cases, centuries.²³ Popular movements against privatisation and resource wars have been achieving concrete results for just as long. Hundreds of communities on at least four continents have been successfully protecting their local areas from oil drilling for decades.²⁴ In Costa Rica, the government has halted efforts by US oil companies to explore and extract hydrocarbons from some of the country's richest ecosystems.²⁵

Many of these strategies are already being explicitly directed at climate change. Climate-related regulation and climate-related tax codes are already on the books in many countries. In 2000, the Caribbean nation of St. Lucia announced a unilateral plan for a fossil fuel-free energy future.²⁶ Following the lead of the city of Växjö,²⁷ Sweden is also planning to abandon the use of oil within 15 years and ultimately other fossil fuels as well.²⁸ Although its claim to have cut emissions from 1997 to 1999 is questionable,²⁹ China's government has introduced taxes and targets promoting efficiency and renewable energy

more stringent than those in the US, including laws allowing energy from renewable sources to be sold into the grid at a higher price and encouraging more energy-efficient buildings.³⁰ Even in the US, universities, towns, cities, states and companies are taking their own actions against fossil fuel overuse, often without even mentioning carbon trading.³¹ Understanding that strict regulation is inevitable and worried about losing out when it comes, even many large US corporations are pressing their government for stronger intervention.³²

Shifting subsidies away from fossil fuels, similarly, already has a lot of support. Backers range from grassroots groups in the South to Greenpeace to student organisations, the Climate Crisis Coalition, Platform, the US Climate Emergency Council and the government of Sweden.³³ The Kyoto Protocol itself commits its signatories to 'progressive reduction or phasing out' of damaging subsidies for fossil fuels. The Organization for Economic Cooperation and Development estimates that removing such subsidies would alone reduce emissions by 18 per cent by 2050 while increasing world income by 0.7 per cent.³⁴ Oilwatch has proposed that nation states halt oil and gas extraction in protected areas and that they be compensated by countries that pledge to reduce drastically their carbon dioxide emissions.³⁵ Roughly 90 per cent of the US voting public now favours more subsidies and government regulation to encourage renewable energy.³⁶

Demonstrators take to the streets in Montreal in December 2005 on the occasion of the 11th Conference of the Parties of the UNFCCC.



Calls for more sweeping taxes on carbon use are also reverberating worldwide.³⁷ In addition, movements demanding institutional divestiture from banks investing in fossil fuels are getting under way, and there are growing links between movements concerned with carbon trading and those concerned with related forms of privatisation in health, water, education, transport, energy and genetic information, and with biotechnology and nuclear energy. Legal action, too, is already being taken. In Nigeria, local communities have challenged oil companies as well as their own government in the courts over gas flaring and pollution.³⁸ Environmentalists are also suing US and German export credit agencies for funding fossil-fuel projects abroad.³⁹ In December 2005, Alaskan and Canadian Inuit peoples sent a petition to the Inter-American Commission on Human Rights claiming that the US was violating their human rights by refusing to cut greenhouse gas emissions.⁴⁰ In July 2004, eight states filed a tort-based suit against electricity generators in a court in New York on global warning nuisance grounds. In June 2006, the US Supreme Court agreed to consider a demand by 12 states, together with various cities and environmental organisations, that the George W. Bush regime regulate carbon dioxide to combat global warming.⁴¹

In short, the question ‘what’s your alternative to carbon trading?’ needs to be turned on its head. Carbon trading itself is an ‘alternative’ – although it’s perhaps too marginal, academic and parochial, when considered in a global context, to deserve even that title. Strategies such as those detailed above have a better claim to be considered part of a living mainstream. To treat the two as if they were on a par signals a catastrophic loss of political and historical perspective.

Choosing allies

OK, I take your point. But if so many of the non-trading approaches you mention are well-established and widely-supported, why aren’t they achieving better results? Carbon trading may be a waste of time and resources, but the strategies you mention don’t seem to be doing so well against global warming, either!

That’s true, but it’s important to remember that strategies such as those detailed above are not only ‘technically’ more realistic than carbon trading, but politically more realistic as well – provided that environmentalists and other activists fulfill their responsibility to help build alliances that can help make them so.

In what ways are they more realistic?

In many ways. Unlike carbon trading, these approaches are built on the basic truth that most fossil fuels will have to be left in the ground.

Unlike carbon trading, they recognise irreversibility and the differences between risk, uncertainty, ignorance and indeterminacy and don't try to calculate the incalculable. Unlike carbon trading, they acknowledge explicitly the real-world functions and limitations of conventional development institutions. Unlike carbon trading, they take into the account the realities of international politics. Crucially, unlike carbon trading, they make no bones about the fact that dealing with the climate crisis is going to involve democratic political organising and an uphill political struggle.

But does dealing with the crisis have to involve democratic political organising? Realistically, there may be no time for that. Maybe environmentalists should just try to make a quick deal with governments and business to solve the problem.

That's the working assumption of many carbon trading supporters in the North. The idea is that environmentalists should throw their support behind policies that offer corporations or rich-country governments the short-term cost savings associated with emissions trading, plus property rights in the atmosphere, plus a flow of cheap credits from carbon projects and new opportunities for investment. In return, corporations or rich-country governments will back emissions cuts while channelling funding and green technology to the South.

One difficulty with this plan is that many corporations have understood from the start that carbon markets are structured in a way that will allow them to take the gravy while leaving environmentalists with nothing. They know that rent-seeking under the EU ETS or horse-trading under the UNFCCC will enable them to delay emissions cuts indefinitely (see Chapter 3). They know that carbon trading often takes the teeth out of other, existing forms of regulation.⁴² They know that every pollution trading scheme to date has involved rewarding polluters with free assets. They know the system can be gamed. They know that 'giving carbon a price' need not be an inducement to structural change, especially if they can control that price. And they know that carbon 'offset' projects offer still further opportunities to entrench 'business as usual'. Firms are often delighted when environmentalists support the colonialist claim that the global green future lies in an expanded export of machinery and expertise from North to South and lose no time in setting up mechanisms that allow industry and the World Bank to reap new rewards from a parade of methane-burning schemes, large hydro-electric dams, coal-fired generating plants and expanded monocultures that benefit the world's rich while leaving the course of climate change untouched. Many polluters like carbon trading not because they think it will pay for a just transition to a low-carbon future, but because they are convinced it won't.

While the refrains ‘there is no alternative’ and ‘it’s too late to turn back now’ play in the background, environmentalists following this plan are now running through a predictable repertoire of salvage attempts: schemes for ‘certifying’ carbon projects, efforts to persuade governments to auction allowances rather than giving them away, toothless complaints about officials’ ‘lack of political will’ to set adequate emissions caps, press releases seizing on small concessions as ‘major victories’. The more committed environmentalists become to this dynamic, and the more they slot themselves into roles as market verifiers, monitors and corporate consultants and trainees, the less they’re able to face the extent to which they’ve been snookered. The harder it has become, too, to acknowledge that they’ve made political alliances with the wrong parties and that in the end, the fight against global warming has to be part of the larger fight for a more just, democratic and equal world.

But why should anyone have to choose their allies? Aren’t we all in this together? Global warming is, after all, global. It’s going to hurt everyone. You make it seem as if there’s some kind of class war going on. It sounds so ideological.

In climate politics, as in everything else, different sides have different stakes, different vulnerabilities, different backgrounds, different commitments, different interests and different kinds of power. That’s largely what this special report has been about. For the sake of a viable future, these differences need to be explored and understood, not ignored. Too often the peremptory exclamation ‘You’re just being ideological!’ – like the peremptory question ‘But what’s your alternative?’ – functions merely to shut down a conversation that needs to be continued and expanded.⁴³

I’m still not convinced. In Chapter 3 you made fun of carbon trading by saying that it could only function effectively and equitably in an ideal world in which every political problem had already been solved and every institution transformed virtually into its opposite. Now it seems like you’re saying that the same is true for any strategy for contending with global warming.

No. Climate activists who are realistic about politics – and politicians who are realistic about climate change – must start from where the world is today and contend with the institutions that exist today. That means choosing political allies to whom global warming is more than just a new threat to or opportunity for profit and market share, and who will have an interest in defending and building the institutions capable of coping with it.

If carbon trading, *per impossibile*, could be carried out the way its environmentalist proponents claim to want it to be carried out, it would

hold little appeal for the biggest polluting businesses. If it is carried out as it is today, then its environmentalist proponents have lost their battle. Either way, environmentalists are deceiving themselves if they think that carbon trading is going to ‘jiu-jitsu’ ruling elites into serious action on climate change. There are no detours around political organising.

No Detours around Politics

Q. At the talks you give to American audiences, you are often asked the question, ‘What should I do?’

A. Only by American audiences. I’m never asked this in the Third World. When you go to Turkey or Colombia or Brazil, they don’t ask you ‘What should I do?’ They tell you what they’re doing... These are poor, oppressed people, living under horrendous conditions, and they would never dream of asking you what they should do. It’s only in highly privileged cultures like ours that people ask this question. We have every option open to us, and have none of the problems that are faced by intellectuals in Turkey, or *campesinos* in Brazil... But people [in the US] are trained to believe that there are easy answers, and it doesn’t work that way... You want a magic key, so you can go back to watching television tomorrow? It does not exist. Somehow the fact of enormous privilege and freedom carries with it a sense of impotence, which

is a strange but striking phenomenon... There is no difficulty in finding and joining groups that are working hard on issues that concern you. But that’s not the answer that people want. The real question people have, I think, is, ‘What can I do to bring about an end to these problems that will be quick and easy?’... But that’s not the way things work. If you want to make changes in the world, you’re going to have to be there day after day doing the boring, straightforward work of getting a couple of people interested in an issue, building a slightly better organisation, carrying out the next move, experiencing frustration, and finally getting somewhere... That’s how you get rid of slavery, that’s how you get women’s rights, that’s how you get the vote, that’s how you get protection for working people. Every gain you can point to came from that kind of effort.⁴⁴

Noam Chomsky, 2005

Indeed, no aspect of the discussion on global warming can be disentangled from debates about colonialism, racism, gender, exploitation and the democratic control of technology. What, for example, is to be done about the fact that the world – and mainly the rich minority – uses the energy equivalent of 400 years of plant growth every year thanks to being able to burn the ‘buried sunshine’ of fossil fuels?⁴⁵ To switch enough of the world’s energy production from fossil fuels to biomass so as to stabilise atmospheric concentrations of carbon dioxide without cutting energy use would require more land than is currently used for all of the world’s crops. To switch enough energy

production from fossil fuels to centralised production of wind power without cutting energy use would require devoting a parcel of 210 million hectares, or a land area bigger than Mexico, to wind turbines; converting entirely to solar would mean covering an area of 14 million hectares, the size of Bangladesh or Greece, with solar panels.⁴⁶ Yet to resort to nuclear power would be disastrous for global security and disastrous for future generations. There's no way around it: fossil fuels or not, keeping the rich supplied with the same amount of energy they use now implies resource takeovers with deep colonialist and anti-democratic implications.

But by the same token, surviving global warming is not only a political problem but also a technical problem, no?

Of course. The real difficulties, however, as experts from all sides of the political spectrum tend to agree, are more political than technical.

So we don't need a technological revolution to deal with the issue?

No. A wealth of studies have already traced out, in some theoretical detail, enforceable pathways that industrialised countries can take towards a non-colonialist, safe and convivial non-fossil future – pathways that neither require nor would benefit from emissions trading.

In the US, for example, Amory Lovins and his colleagues at the Rocky Mountain Institute have charted a non-nuclear 'roadmap for getting the United States completely, attractively, and profitably off oil' while creating jobs, improving security and rebalancing trade, featuring efficiency, biofuels, saved natural gas, and, optionally, hydrogen.⁴⁷ Lovins' proposals rely on a suite of government policies that would allow more decentralised power generation; cut fossil-fuel subsidies; decouple profits from utility electricity sales; let utilities profit from customers' lowered energy use; tax aviation, driving and petrol; impose a tax on inefficient products while giving rebates for efficient ones; encourage 'smart growth'; promote research and development; provide information about available efficiency improvements; invest in energy supply infrastructure and greener equipment; and help retrain workers for lower-carbon commerce. Systems analyst Gar Lipow reckons that in 30 years the US could phase out fossil fuels entirely, at an annual cost of less than a third of the country's current military budget, or less than the tax breaks given to the very rich over the past 40 years: 'it is a myth that global warming is a technical rather than a political problem'.⁴⁸

In Europe, Friends of the Earth England, Wales and Northern Ireland has documented how a 48–71 per cent reduction in carbon dioxide

Waiting their Chance

Enormous reserves of common sense and ingenuity worldwide are awaiting proper opportunities to be tapped in the service of minimising and coping with climate change.

The great bulk of this shrewdness and inventiveness is of course to be found in the ordinary people of the South. But in the North as well, huge potential is waiting to be unblocked.

In the US, opportunities for efficiency abound that can ‘pay for themselves in an extremely short time’,⁵¹ provided that government does not shy away from regulation. These include control systems that reduce energy consumption in irrigation systems by up to 99 per cent, super-adobe construction,⁵² houses and commercial buildings that save up to 90 per cent of heating and cooling costs, ultra-light rail, and so on. The Intergovernmental Panel on Climate Change estimates that if good design and insulation were extended globally, greenhouse gas emissions could be cut by up to 40 per cent.⁵³

Zero-carbon housing is already up and running in the UK and Germany. Woking Borough Council near London has re-

duced carbon emissions in council buildings and properties by over 77 per cent since 1990 through more localised power sources, financed by energy efficiency savings. Architects Atelier Ten have designed a way of keeping buildings cool without air conditioning, using a termite mound as their model.⁵⁴ Even the big corporate sector is waiting its chance. In Britain, 74 companies’ emissions reduction efforts have already yielded USD 11.9 billion in gross savings, largely from efficiency.⁵⁵

Technological change can be swift, given the right context. During the Second World War, it took US car manufacturers only six months to convert to military production, and the country took only 12 years to switch from steam to diesel/electric locomotives and from uncontrolled automotive emissions to catalytic converters. During 1975–2000, the US used 3.43 per cent less water per year per dollar of GDP, and, during 1977–85, helped by regulation, made very rapid oil and energy savings. Thanks in part to building and appliance efficiency standards, per capita electricity use in California has remained virtually flat since the mid-1970s, while it has risen by more than half in the rest of the US.⁵⁶

emissions could be achieved in the UK by 2020 in the all-important electricity sector, without any new nuclear power or geo-sequestration, and with a decline in the use of natural gas.⁴⁹ As noted in Chapter 3, consultant Roger Levett estimates that fuel use in the UK could be cut by 87 per cent and carbon-based fuels eliminated altogether using existing technologies. Levett points out that ‘near-zero carbon’ housing is possible now, without any new technological breakthroughs, together with a 90 per cent reduction in automobile carbon pollution and improvement in the quality of life – provided that the

state undertakes planning and regulation to help establish new ‘virtuous circles’ including community restructuring, better public transport and higher vehicle occupancy.⁵⁰

Markets, states and freedoms

I'm still suspicious of all this talk about government action. Economists and political leaders, particularly in the Anglo-American world, like to say that markets promote freedom and choice while state regulation amounts to ‘command and control’. Some Northern environmentalists even claim that to criticise the carbon market is to embrace coercion and ‘totalitarianism’. What do you say to that?

Merely that it reflects another serious loss of perspective and a lack of acquaintance with life outside the economics classroom. Turning things into commodities has always made possible some freedoms only by precluding others. During the Industrial Revolution in Europe, many people gained the freedom to move around and sell their labour but lost the freedom to raise their animals on the commons. Today, pension fund managers have the freedom to shunt massive investments from country to country with one or two clicks on a computer mouse, while the citizens of those countries may not have a choice of affordable medicines. Similarly, having the option of driving wherever you want to go can preclude having the choice of getting access to amenities without a car, and eliminates the choice of keeping urban areas distinct from rural areas.⁵⁷ It may also narrow the choices of ordinary people in the Niger delta or herders along the Chad–Cameroon oil pipeline. As Michael Jacobs quips, the market is not always Adam Smith’s ‘invisible hand’ but often an ‘invisible elbow’ instead. The question always needs to be asked: Whose choices are we talking about, and which ones?

Markets transform and centralise coercion in certain ways; they do not get rid of it.⁵⁸ Every market is suffused with ‘command and control’: policing of property and contracts; foreclosure; dispossession; surveillance; registration; standards; bureaucracy. Every market, too, entrenches the historical ‘command and control’ that was used to establish its physical infrastructure and price-setting or bargaining systems, whether those controls were exercised through law or brute force.⁵⁹ The other side of the coin is that regulation’s constraint of consumer choices, together with multiple, systemic investments in public works, can often expand the range of other choices available to people and their freedom to enjoy public goods.⁶⁰

Similarly for climate change. The Kyoto Protocol and other trading-oriented approaches limit present and future choices in far-reaching

ways – many of which have been explored at length in this special report – at the same time they open up new opportunities for big business. Approaches stressing the sort of structural change that trading can't achieve, meanwhile, feature other kinds of restraint, distributed among other groups, but also other kinds of freedom. As the late Ivan Illich observed nearly 35 years ago, a low energy policy allows for a wide choice of ways of life. If, on the other hand, 'a society opts for high energy consumption, its social relations must be dictated by technocracy and will be equally distasteful whether labeled capitalist or socialist'.⁶¹

You've made a great deal of the hazards of turning over control over the atmosphere to business through carbon markets. But isn't it just as dangerous to turn over control of the atmosphere to governments? Governments are often poor stewards of the public interest. They dispose of common assets below market value, ensure that their distribution makes the rich richer and the poor poorer, use the proceeds for private gain, and so forth. Look at the way governments hand out commercial concessions or indigenous peoples' lands. In addition, even if it's true that carbon markets allow corporations to seek gigantic unearned rents, surely more conventional forms of regulation give them similar openings to 'capture' the regulatory apparatus,⁶² or influence legislators voting on tax laws. So what's the difference? You distrust market incentives and market forces, but do you really think there are such things as benign, omniscient governments, and that they are capable of solving the climate crisis? And if not, how are you going to organise so as to bring about the kinds of government action you describe?

That's a useful question. But let's start by challenging the dichotomy between 'market mechanisms' and 'government regulation' that it implies. Carbon markets themselves are a complicated new form of government regulation. As Karl Polanyi would have been the first to point out, they require what he called an 'enormous increase in continuous, centrally-organised and controlled interventionism' and 'deliberate state action' (see Chapter 3). They expand the power over the atmosphere not only of business but also, necessarily, of state agencies. They are no more neutral, technical 'instruments' for attaining external, political goals than the state itself is.

Anybody worried about the powers, clumsiness and corruptibility of the state and its regulators – and who isn't? – accordingly ought to be worried about carbon markets for the same reasons. The difference is that, with carbon markets, there are a lot of additional reasons for concern. As Chapter 3 has detailed, carbon trading, in addition to granting large corporate polluters new powers over the earth's ecosystems, introduces so many further complications, centralised controls, and opportunities for fraud that it makes democratic scrutiny and oversight virtually impossible.

What is required is for the political support behind some of the movements and approaches mentioned above to be deepened, extended and encouraged, not to be undermined and overshadowed by a set of little-trying, regressive gimmicks destined to fail in any case.

Who said anything about overshadowing? I'm not against any of the activities you mention. I acknowledge the importance of public investment. I know regulation and taxes are necessary. I can understand the central role of commons regimes, of greater self-sufficiency and all sorts of local initiatives. But isn't there a role for carbon trading in supplementing and supporting all these approaches? Trading is the wave, not the water. It's merely one part of what will make a global climate regime work. Let a hundred flowers bloom!

Let's review the situation. Since 1997 or so, carbon trading has come to usurp the great bulk of the UN's work on climate change, with experts, diplomats and politicians devoting endless hours to trying to work out the insoluble complexities of a system that in the end functions primarily to shore up fossil fuel dependence. Carbon trading rewards the worst polluters with huge free public assets, depriving climate-friendlier enterprises of both money and human brainpower. Carbon trading undermines the impetus for regulation, taxation and reduced consumption in countries such as the UK, Sweden and the US; slows innovation in both North and South; provides greenwash for climate-unfriendly practices such as coal mining, industrial tree plantations and large hydroelectric dams; and hogs the time of Southern civil servants who could be far more beneficially engaged. Perhaps most important, carbon trading mainly benefits and empowers precisely those institutions most active in blocking and interfering with low-carbon lifeways and climate-friendly industrial change.

Take, for instance, one of the biggest players in the carbon market, the World Bank. The Bank itself admits that 'renewable energy technologies – wind, mini-hydro, and biomass-electric – are the least-cost option...for off-grid electrification'⁶³ of the sort needed by many of the world's 1.6 billion people who do not have access to electricity, as well as being crucial to climate change mitigation. As noted in Chapter 1, the Bank's own internally-commissioned Extractive Industries Review recommended that it get out of coal immediately and get out of oil by 2008. Yet the institution continues to champion large-scale, centralised fossil-fuel projects at the expense of renewable energy – the Chad-Cameroon pipeline, the Baku-Ceyhan pipeline and many others.⁶⁴ Eighty-two per cent of its oil projects are for export to the North. Its carbon credit portfolio extends the life of fossil-heavy technologies in the North while providing only derisory support for climate-friendly initiatives in the South. The Bank's top two

energy-loan beneficiaries are oil contractor Halliburton and oil company Shell; number five is Exxon-Mobil and number 12 is Enron.⁶⁵ The main victims of the Bank's infrastructure and market-first policies, on the other hand, are ordinary people with low-carbon livelihoods – who often achieve their results in the teeth of the institutions that support trading – as well as the commons that support them.⁶⁶

Carbon trading's main private sector beneficiaries, whether oil companies, plantation firms, or electric utilities, share a similar orientation. By their own admission, private banks involved in carbon trading 'can't deal with communities', while brokers point out again and again that 'the carbon market doesn't care about sustainable development'. In addition, a global carbon credit market divides communities from each other in a way that impedes, rather than helps, the search for common solutions. Villagers near a carbon project in Chile are unlikely ever to see firsthand how the project's credits might help perpetuate pollution in Japan, drown villages in Bangladesh, or keep motorways clogged in Canada. Well-off buyers of 'offsets' from wind farms in New Zealand are unlikely to investigate what might link their 'green' purchases to the havoc wreaked by pipelines pushed through Nigeria or Alaska.

In what ways, then, does carbon trading 'supplement' or 'support' other approaches to climate change? If carbon trading isn't undermining and overshadowing genuine solutions to climate change, it's hard to imagine what would.⁶⁷

All right, but does that necessarily have to be the case? After all, mightn't carbon trading be helpful in financing a just transition to a non-fossil future?

How?

Well, first of all, suppose – just suppose – that Northern governments could be forced by popular pressure to auction off tradable allowances instead of giving them away free to business. Couldn't the revenues be used to support the most vulnerable sections of society through the transition to a non-fossil economy?

Maybe. But just as the question arises of who gave European Union governments the right to give away so much of the earth's carbon-cycling capacity to some of their largest corporations under the EU ETS, so too does the question of who would give governments the right to auction it.

There are also a lot of other possible sources of support for the vulnerable during that transition. For example, part of the subsidies now being given to fossil fuel development could be put towards a just transition. The need to support the fuel-poor and retrain the jobless is hardly by itself an argument for carbon trading.

What about the international level? If global warming is to be addressed, the North is going to have to pay the South not to use fossil fuels. Not only is the North in debt to the South for centuries of ecological and social appropriation; it also needs to help out for the sake of its own future. Who's going to put up the cash for this if not Northern carbon credit buyers?

Are you suggesting that the Clean Development Mechanism is helping to 'decarbonise' either the North or the South? Chapters 3 and 4 have shown that that's not going to happen.

OK, but maybe something like the CDM could provide the necessary funds.

What exactly would something *like* the CDM be? Again, let's review the situation. In today's international carbon project credit market, the Northern polluters who are supposedly paying for 'green development' in the South are in fact getting paid themselves. They get to continue using fossil fuels at a bargain price. And they get to profit from exporting goods and expertise to enterprises most of whose contribution to alleviating climate change is, to put it charitably, questionable. Instead of supporting community-driven renewable energy projects, for example, coal, oil and hydrofluorocarbon corporations are making money from end-of-pipe technologies that they develop themselves. If the North is genuinely interested in paying for a renewable future in the South, that's hardly the way to go about it.

But suppose you had a rule, as the Centre for Science and Environment proposed back in 1998, that no CDM trade could take place that did not involve a 'transition to the use of non-carbon or biomass energy sources'.⁶⁸ That could create a huge market for solar energy and other renewable technologies in the South.

To what extent could a mechanism like the CDM ever involve a transition away from carbon-based energy? Remember the basic principle of the CDM market: finance goes to projects only at the cost of licensing and supporting continued extraction and use of fossil fuels elsewhere. Nor have eight years of environmentalist pleading resulted in much demand for renewable energy projects from CDM credit buyers. These are not projects this market supports (see Chapters 3 and 4).

That's not to say that the ideal of global equity, reparations and funding for renewable technology isn't important. But it's not going to be achieved through trading; nor by elite institutions that have played such a large part in the stupendous widening of the gap between rich and poor over the past 50 years,⁶⁹ such as the World Bank. Effective reparations and a transition away from fossil fuels will have to be achieved through a broader-based political struggle, not an elite-to-elite commercial deal.

From an Open Letter by Oilwatch

‘Never before have the limits of the current development model based on hydrocarbons been so clear or close.

‘Never before has the relationship between oil and the networks of power that control the world been so clearly understood, nor have the relationships between oil and the main causes of misery that affect humanity been so evident...

‘For the Southern part of the world, the oil model has meant the perpetuation of inequitable exchange, technological dependence, indebtedness, and impoverishment. The ecological debt between North and South, which began during the colonial years, rose with unequal economic and ecological exchange.

‘We have accepted separately each one of these aggressions. Or worse still, fought among ourselves: inhabitants of one country fighting against another, oil workers against indigenous communities, people from the North against those from the South, the poor of the cities against indigenous and peasant peoples, those ill from

consumption against pacifists, those that propose against those that criticize... And the list goes on and on.

‘What are the organizations and networks with whom we can start a positive collaboration in the fight against the oil civilization? What are the social, local and global movements that cannot be ignored in our efforts? What are the international agreements and programs that can best help us in this process? What are the new initiatives that we could and should devise?

‘To answer these and other needs, Oilwatch is inviting sympathetic networks to initiate a joint dialogue on our struggles and launch a global campaign against a civilization based on oil.

‘We invite you to share your opinions, comments, suggestions and ideas, to build a new path together...where we can reflect each and every one of our struggles. This way, each and every one of our battles will gain a new dimension.’⁷⁰

Oilwatch, 16 September 2005

What institutions could conceivably play a part? There are no pat answers, but the question needs to be raised *before* going too far with proposals for paying ecological debt or funding a non-fossil transition in the South.

In the meantime, it might be useful to keep in mind how strange the demand is that the North make up for its historical overuse of the earth’s carbon-cycling capacity by paying for clean development in the South, at a time when few moves are being made to curb that overuse. It’s a little like demanding reparations for slavery without abolishing slavery. The demand is incontestably legitimate, but it raises the question of whether the problem is being addressed at its root.

All right, but I'm still troubled by the feeling that the various non-trading approaches for structural change that you mention aren't – well – global enough. Don't global problems such as global warming need global solutions? The 'alternatives' I really want to see are global alternatives, not the hotchpotch of local, regional, and national institutions, movements and initiatives you seem to have been talking about so far. Global warming is not going to be stopped by an uncoordinated and piecemeal attack, but only by a global regime.

What do you mean by global? In what sense is the Kyoto Protocol, say, global? In what sense are movements supporting local forest commons, say, not global?

The distinguished political journalist Neal Ascherson once referred to what he called the 'dumbbell world' in which Anglo-American foreign policy was most intensively discussed and defined. One end of the dumbbell, in Ascherson's whimsical vision, consisted of a circle enclosing a few government offices, posh neighbourhoods and airports in London. The other consisted of a circle enclosing a few government offices, well-off neighbourhoods and airports in Washington. The two were linked by the contrails of jets flying back and forth across the Atlantic.

Often, what people refer to when they use the word 'global' is something like Ascherson's 'dumbbell world' – a diplomatic and political community residing in very thin but very long habitats consisting of buildings and luxury homes in capital cities around the world, together with the reclining seats on the jet aircraft that link them.

What makes this community and what it does global? Its interests are neither universal nor neutral, but particular to the group. The language it speaks is not a global language spoken by everyone, but merely the provincial dialect of UN offices, state documents and neo-classical economics; and its institutions are local institutions like all other local institutions. Like some other communities, this community does have some frightening powers and friends, and some useful powers and friends. There are certain valuable things it can do; the Montreal Protocol on the ozone layer is perhaps one example. But its territory, while very long, is also very thin, and the community's understanding of and influence over an issue as complex and intercultural as climate change is limited, even when it is able to organise its own members around something like the Kyoto Protocol.

Any approaches to climate change that are 'globally effective' are going to have to be organised, fairly independently, in a great many communities outside the 'dumbbell world'. That means treating the 'hotchpotch' of local, national and regional initiatives with a good deal of respect. The question 'What's your alternative?' must always

be answered in the first instance with another question: ‘Alternative for whom?’ The alternative that a denizen of the ‘dumbbell world’ is looking for may not be the one that a corporate executive is likely to accept – nor a villager in India.

Defining the climate crisis, in good ‘dumbbell world’ fashion, as a problem to be solved through indefinite capital accumulation, state subsidies for large corporations and consultants, transnational capital flows, international trade and national ‘development’, makes it almost impossible to connect top-down emissions targets with support for effective actions at the local level. It also tends to threaten the reserves of flexibility many communities will need to preserve in order to adapt to the degree of climate change that is already inevitable. As researcher R.W. Kates puts it: ‘If the global poor are to adapt to global change, it will be critical to focus on poor people and not on poor countries as does the prevailing North-South dialogue. The interests of the poor are not always the same as the interests of poor countries, since in the interests of “development”, the poor may grow poorer.’⁷¹

Anthropologist and development specialist Michael Thompson and his colleagues put it in slightly different terms: ‘...the only frameworks that can tell you *anything* about the likely efficacy of a policy are those at the most local level... What is needed is...an approach that places the “mere details”...at the very centre of the stage and relegates to the wings the alarm bell-ringers and their immaculate prescriptions...’⁷²

Conclusion: decentring climate politics

Radical university scholars are sometimes ridiculed for the funny words they use. But behind some of their words lurk useful ideas. One such word is ‘decentring’.

The old standard elite university curricula, many radical academics say, should perhaps not be thrown out, but rather ‘decentred’: modified and expanded to include suppressed voices and achievements. Traditional fields of study should not be abandoned, but supplemented and opened up to critique from outsiders with different stakes in the issues, in the way Indian thinkers have been able to ‘digest’ colonialism,⁷³ Colombian peasants to rework early European economic thinking for their own purposes⁷⁴ and feminists to get under the skin of the biases shaping the work of a Locke or Malthus.

This is perhaps the way that the climate change literature now spilling onto the pages of newspapers worldwide has to be thought about.

Insofar as this literature has been digested only by people of a single social background, it has inspired only limited – and sometimes self-contradictory – political thinking. Its shocking conclusions have led all too often merely to empty calls for political leaders to ‘do something’ or to the technical and market fixes that have been the subject of this special report.

The results are often as disturbing as the climate crisis itself. Confronted by climatologists’ observations, for example, James Lovelock, the renowned scientist who created the concept of Gaia, the self-regulating Earth, has advocated nuclear power as a way of saving ‘our’ electricity. Urging his readers to prepare for future climatic surprises in the same way that ‘travellers from the north’ take anti-malarial drugs before going to the ‘tropical south’ or ‘check how the local war is progressing’ before going to the Middle East, Lovelock concludes that a ‘small permanent group of strategists’ unswayed by the ‘noisy media and special interest lobbies’ is needed in order to ‘act fast enough for an effective defence against Gaia’.⁷⁵

It would be easy to dismiss Lovelock for his advocacy of dictatorship, for his nuclear enthusiasms, or for the staggering if unconscious racism that sees conflict in the Middle East – host to bands of colonialists and imperialists since long before Standard Oil made its first deals in the region – as a matter of ‘local’ wars. But other figures with similar backgrounds and institutional loyalties draw similarly narrow and dangerous conclusions from their understanding of the crisis. Robert Watson, the ozone specialist who, with admirable devotion, helped organise scientists worldwide around a consensus emphasising the seriousness of climate change while deftly countering George W. Bush’s climate misinformation campaign, now works to undermine renewable energy by defending an expansion of the ‘clean coal’ industry from his post at the World Bank.⁷⁶ The IPCC, the source of the canonical summaries of climatic trends, generally bypasses serious study of the social roots of the crisis in favour of economic modelling and rubber stamps for carbon trading. Sir Crispin Tickell, who early on raised consciousness with moving essays on global warming, now sits on the board of a carbon ‘offset’ firm, Climate Care. Despairing of the possibility of keeping fossil fuels in the ground, Paul Crutzen, one of atmospheric science’s elder statesmen, now advocates using balloons or artillery shells to sow sulphur dioxide particles into the stratosphere to reflect sunlight and slow down the planet’s warming.⁷⁷

Every individual showing concern over the climate crisis deserves respect. But respect also involves acknowledging that different people have different backgrounds, loyalties and understandings. The notion that the ideas of a Lovelock, a Watson or an IPCC should go uninter-

rogated by Indian villagers, Peruvian fisherfolk, or poor communities across the fence from Louisiana oil refineries is simply irrational. Such ideas need to be evaluated by people who know from experience what commodification of land, water and air mean to the poor, what the effects of nuclear contamination are, and how the World Bank's climate policy works on the ground – and who have their own interests and are evolving their own contributions toward dealing with the crisis. The initiatives of organisations and networks such as Oilwatch, Palang Thai, Platform, Friends of the Earth, the Centre for Science and Environment, Rising Tide, the New Economics Foundation, the Durban Group for Climate Justice and tens of thousands of other groups, many of them located at the grassroots in both South and North, already go far beyond the default thinking of global elites. But work on climate change and the search for ways out of the crisis can't be carried forward fruitfully without an even more thoroughgoing decentring of the debate.

Any study of 'alternatives' must begin with this truth – not with a call for yet more formulas to feed to, and nourish, the institutions that bear so much of the responsibility for the climate crisis and many others. This special report has been a modest plea for greater understanding of that truth.

- 1 Ruth Greenspan Bell, 'Choosing Environmental Policy Instruments in the Real World', Organisation for Economic Cooperation and Development, Global Forum on Sustainable Development, OECD, Paris, 11 March 2003, pp. 4-5: 'countries most in trouble are not getting a well-rounded picture about what is achievable . . . trading is not the dominant approach to US environmental protection, even in a fully developed market system'.
- 2 Walt Patterson, 'Decentralising Networks', *Co-Generation and Onsite Power Production*, January/February 2005, <http://www.chathamhouse.org.uk/pdf/research/sdp/WParticle0105.pdf>; Mae Wan Ho et al., *Which Energy?*, Institute of Science in Society, London, 2006; Amory B. Lovins et al., *Winning the Oil Endgame*, Rocky Mountain Institute, Snowmass, CO, 2004, http://www.rmi.org/images/other/WtOE/WtOEg_72dpi.pdf.
- 3 Lovins et al., *op. cit. supra*, pp. 19-22.
- 4 Steve Rayner, Testimony in House of Commons Environmental Audit Committee, *The International Challenge of Climate Change: UK Leadership in the G8 and EU. Fourth Report of Session 2004-5*, The Stationery Office, London, 2005, Ev 136.
- 5 Bretton Woods Project, "'Cleaning" Energy: Ambiguous Framework Proposes Coal and Large Hydro', 19 June 2006, <http://www.brettonwoodsproject.org/art.shtml?x=538529>. According to some estimates, the money the World Bank lends every year for fossil-fuel projects would be enough to provide small-scale solar installations supplying electricity to 10 million people in sub-Saharan Africa with electricity (Christian Aid, *The Climate of Poverty: Facts, Fears and Hope*, London, May 2006, p. 22).
- 6 See, e.g., Chris Greacen, 'Inexpensive, Secure Electricity? Coal vs. Clean Energy', 2005, <http://www.palangthai.org>.
- 7 These figures are due to Greg Muttitt of Platform, <http://www.carbonweb.org>.
- 8 See, for example, <http://www.wrm.org.uy>.
- 9 The Progressive Forum, 'Interview with Lester Brown', 26 April 2006, <http://www.energybulletin.net/15705.html>.
- 10 Gar Lipow, *Cooling It! No Hair Shirts Solutions to Global Warming*, forthcoming, 2006, <http://www.nohairshirts.com>; Ross Gelbspan, 'Toward a Global Energy Transition', *Foreign Policy in Focus*, January 2004, <http://www.fpi.org/pdf/petropol/ch5.pdf>.
- 11 For example, corporations often invest in control over labour rather than energy-saving equipment that, given tax incentives, saves more money (Lipow, *op. cit.*). In the UK, many investments in waste minimisation, water conservation and other efficiency measures that began to yield positive returns to industry in three years or less were not made until government regulation required them, and would have taken much longer for industry to get around to if the only incentive was taxation. See <http://www.envirowise.gov.uk/page.aspx?o=168584>.
- 12 Lipow, *op. cit. supra* note 10.
- 13 David Driesen, *The Economic Dynamics of Environmental Law*, MIT Press, Cambridge, 2003, pp. 139-201.
- 14 Fred Pearce, 'Take Greenhouse Polluters to the Cleaners', *New Scientist* 2519, 1 October 2005, p. 42.
- 15 Rayner, *op. cit. supra* note 4, Ev 136.
- 16 Roda Verheyen, *Climate Change Damage and International Law*, Martinus Nijhoff, Leiden, 2005.
- 17 See, e.g., New Economics Foundation, *Collision Course: Free Trade's Free Ride on the Global Climate*, London, 2000.
- 18 See, e.g., Working Group on Climate Change and Development, *Africa - Up in Smoke?*, New Economics Foundation, London, 2005; Larry Lohmann, 'Democracy or Carbocracy? Intellectual Corruption and the Future of the Climate Debate', Corner House Briefing Paper No. 24, October 2001, <http://www.thecornerhouse.org.uk>; Neil Adger, 'Social Vulnerability to Climate Change and Extremes in Coastal Vietnam', *World Development* 27, 2, 1999, pp. 249-69.
- 19 Elizabeth Malone and Steve Rayner, 'Ten Suggestions for Policymakers', in Malone and Rayner, eds, *Human Choice and Climate Change*, Battelle Press, Seattle, 1998, vol. 4, p. 114.
- 20 Ruth Greenspan Bell, *op. cit. supra* note 1, p. 3.
- 21 See, e.g., Robert A. Caro, *The Power Broker: Robert Moses and the Fall of New York*, Knopf, New York, 1974.
- 22 For 'extraordinarily effective' but often 'forgotten' energy-saving regulation by US states during the 1970s and 1980s, see Lovins et al., *op. cit. supra* note 2, p. 216.
- 23 On commons regimes, see, e.g., E. P. Thompson, *Customs in Common*, Free Press, London 1990; Ivan Illich, *Gender*, Pantheon, New York, 1983; James Acheson and Bonnie McCay, *The Question of the Commons*, University of Arizona Press, Tucson, 1990; Simon Fairlie et al., *Whose Common Future? Reclaiming the Commons*, Earthscan, London, 1993; Elinor Ostrom, *Governing the Commons*, Cambridge University Press, Cambridge, 1990.
- 24 Communities in Burma, Malaysia, Nicaragua, Colombia, Nigeria, Chad, Thailand, Bolivia and Ecuador have won the revocation of fossil fuel concessions in their territories. In doing so, they

- argue, they've helped to keep some 3.655 billion tonnes of carbon in the ground (Oilwatch, Position Paper: *Fossil Fuels and Climate Change*, The Hague, November 2000).
- 25 See <http://www.grupoadela.org>.
 - 26 Kenny Anthony, Prime Minister of St. Lucia, presentation at the Sixth Conference of the Parties of the Framework Convention on Climate Change (UNFCCC), The Hague, 16 November 2000.
 - 27 Swedish Society for Nature Conservation, *The Challenging Communities*, Stockholm, 2000.
 - 28 John Vidal, 'Sweden Plans to be World's First Oil-Free Economy', *The Guardian*, 8 February 2006.
 - 29 D. Knight, 'US Unrivaled as Top Carbon Polluter', Third World Network, July 2001, citing research by the World Resources Institute.
 - 30 Roddy Scheer, 'China Considering Increasing Renewables Commitment by 50 Per Cent', *E Magazine*, 12 September 2005; Victor Mallet, 'China's Chance to Save our Overheated Planet', *Financial Times*, 6 July 2006.
 - 31 Fred Pearce, 'Cities Lead Way to a Greener Planet', *New Scientist* 2502, 4 June 2005; Dan Worth, 'Accelerating toward Climate Neutrality with the US Government Stuck in Neutral', *Sustainable Development Law and Policy* 5, 2, Spring 2005, pp. 4-8; Eli Sanders, 'Rebuffing Bush, 132 Mayors Embrace Kyoto Rules', *New York Times*, 14 May 2005.
 - 32 Miguel Bustillo, 'A Shift to Green', *New York Times*, 12 June 2005; Canadian Broadcasting Corporation News, 'Business Leaders Call for Climate Change Action', 17 November 2005.
 - 33 Point Carbon, 'Sweden Aims to Ban Fossil Fuel Subsidies', 19 June 2006; 'Swedish Parliamentary Committee Calls for EU Ban on Fossil Fuel', 2 June 2006, <http://www.pointcarbon.com>. For more information on subsidies, see <http://www.earthtrack.net/earthtrack> and <http://www.priceofoil.org>. See also Doug Koplow and John Dernbach, 'Federal Fossil Fuel Subsidies and Greenhouse Gas Emissions: A Study of Increasing Transparency for Fiscal Policy', *Annual Review of Energy and the Environment* 26, 2001, pp. 361-89; Doug Koplow and Aaron Martin, *Fueling Global Warming: Federal Subsidies to Oil in the United States*, Greenpeace, Washington, 1998 and Norman Myers et al., *Perverse Subsidies: Tax Dollars Undercutting Our Economies and Environments Alike*, International Institute for Sustainable Development, Winnipeg, 1998.
 - 34 OECD Economic Outlook, *The Economics of Climate Change*, Brussels, June 1998, p. 198, <http://www.oecd.org/dataoecd/58/50/29173911.pdf>. The figure does not count transition costs.
 - 35 See http://www.oilwatch.org/doc/declaracion/decla2005_montreal-ing.pdf.
 - 36 'Massive US Support for Renewable Energy', STAT Communications, 9 March 2006, <http://www.statpub.com>. Public support for action on global warming is also very high in other countries whose governments hold a backward position, such as Australia. See Peter Christoff, 'Policy Autism or Double-Edged Dismissiveness? Australia's Climate Policy under the Howard Government', *Global Change, Peace and Security* 17, 1, 2005, pp. 29-44. In the UK, the Science and Technology Committee of the House of Lords found 'deplorable' the government's lack of commitment to supporting renewable energy and recommended large increases: 'We could find no one at the executive level whose responsibility it was to ensure continuity of supply. We were told simply that market forces would solve the problem. We are not convinced...' (House of Lords Science and Technology Committee, 'Renewable Energy: Practicalities', 4th Report of Session 2003-04, Volume 1, The Stationery Office, London, 2004, p. 8).
 - 37 Paul Brown, 'Government's Climate Change Policy is Failing', *The Guardian*, 16 May 2005.
 - 38 Stefania Bianchi, 'Ethnic Communities Challenge Level of Greenhouse Gases', Inter Press Service, 20 June 2005, <http://www.gasandoil.com/goc/company/cna52977.htm>.
 - 39 'Global Climate Change to Spawn Future Lawsuits', *Rednova News*, 29 May 2005, <http://www.rednova.com/news/science>.
 - 40 Juliette Niehuss, 'Inuit Circumpolar Conference v. Bush Administration: Why the Arctic Peoples Claim the United States' Role in Climate Change has Violated their Fundamental Human Rights and Threatens their very Existence', *Sustainable Development Law and Policy* 5, 2, Spring 2005, pp. 66-67.
 - 41 See <http://www.msnbc.msn.com/id/13554243/from/ET/>.
 - 42 See, for example, Steve Radley, 'Energy Climate Changes for the Worse', *The Guardian*, 1 August 2005: 'Longer-term, there must be questions as to whether emissions trading makes the [climate change] levy redundant'. See also 'Advisors Wary on EU Aviation Climate Trading', *Environment Daily* 1879, 17 May 2005: 'The "real danger", according to [an EC advisory] forum, is that adding aviation to the [EU] trading scheme from 2008 "would be seen as a sufficient commitment by the industry... so that other policy measures would no longer be pursued."' The EU statistical agency Eurostat suggests that environmental taxation may have peaked in Europe due to an increasing fashion for instruments such as the EU Emissions Trading Scheme. See *Environment Daily* 1975, 4 January 2005.

- 43 See Ecoequity, 'Cutting through the Smoke on Trading', http://ecoequity.typepad.com/ecoequity/2005/12/cutting_through.html#comments. See also Nina Eliasoph, "'Everyday Racism' in a Culture of Political Avoidance: Civil Society, Speech and Taboo', *Social Problems* 46, 4, November 1999, pp. 479–502.
- 44 Noam Chomsky interviewed by David Barsamian in *Imperial Ambitions. Conversations on the Post-9/11 World*, Metropolitan Books, New York, 2005, p. 39.
- 45 Jeffrey S. Dukes, 'Burning Buried Sunshine: Human Consumption of Ancient Solar Energy', *Climatic Change* 61, 2003, pp. 31–44.
- 46 Stephen Pacala and Robert Socolow, 'Stabilization Wedges: Solving the Climate Problem for the Next 50 Years with Current Technologies', *Science*, 13 August 2004, 968–72; Robert Socolow *et al.*, 'Solving the Climate Problem: Technologies Available to Curb CO₂ Emissions', *Environment* 46, 10, 2004, pp. 8–19. See also Mae Wan Ho *et al.*, *op. cit. supra* note 2.
- 47 Lovins, *op. cit. supra* note 2.
- 48 Lipow, *op. cit. supra* note 10.
- 49 Friends of the Earth, 'Bright Future: Friends of the Earth's Electricity Sector Model for 2030', London, March 2006, p. 3.
- 50 Roger Levett, 'Infrastructure: Prevention is Better than Palliation', presentation to the TCPA Commission on England's Future, 18 March 2005, http://www.tcpa.org.uk/reg_futures/roger_levett-englands_future.pdf. Starting from the assumption that a 60 per cent emissions cut is necessary by 2050, the Tyndall Centre's *Decarbonising the UK: Energy for a Climate-Conscious Future* also explores various 'technically and economically viable' low-carbon scenarios, stressing, as do many other analysts, that lower energy consumption means more resilience, more security and less need for wasteful large infrastructure (http://www.tyndall.ac.uk/media/news/tyndall_decarbonising_the_uk.pdf). Britain's Royal Commission found that elementary energy efficiency measures such as high quality insulation of new buildings could cut energy use in the service sector by 18 per cent within a few years, and that proper insulation, good design and using combined heat and power plants to provide local hot water and electricity could together slash energy use in homes by between 25 and 34 per cent in a few years (www.rcep.org.uk). The Institute for Science in Society (Mae Wan Ho *et al.*, *op. cit. supra* note 2) meanwhile stresses the benefits in reduced food miles and fossil fuel use from a more self-reliant, organic agriculture – which must be promoted for other reasons as well.
- 51 Lipow, *op. cit. supra* note 10.
- 52 'Super-adobe' is a refinement on rammed-earth construction in which wet soil under pressure (mixed with a little cement) is pumped into bags that are coiled together and bound with barbed wire. The technique is low-impact and results in sturdy, earthquake-proof buildings. See California Institute of Earth Art and Architecture, *CalEarth Forum*, July 2005, <http://www.calearth.org/>.
- 53 China reported large reductions in emissions in the late 1990s, attributed partly to technical improvements in boiler technology. But recent analysis suggests that these 'reductions' may be mainly due to bureaucratic changes in who was doing the reporting. Pre-1996 emissions figures may have been inflated by coal mine officials eager to show they had met production targets, which were later discontinued. See Knight, *op. cit. supra* note 29; Fred Pearce, 'Kyoto Promises are Nothing but Hot Air', *New Scientist* 2557, 22 June 2006, p. 10.
- 54 See <http://www.atelierten.com/ourwork/profiles/0513-federation-square.pdf>.
- 55 See The Climate Group, *Carbon Down, Profits Up*, London, 2005, http://www.theclimategroup.org/assets/CDPU_2005_v2.pdf.
- 56 Lovins *et al.*, *op. cit. supra* note 2, pp. 6, 170–72.
- 57 Levett, *op. cit. supra* note 50.
- 58 Timothy Mitchell, *Rule of Experts*, University of California Press, 2002.
- 59 Arthur MacEwen, *Neoliberalism or Democracy? Economic Strategy, Markets and Alternatives for the 21st Century*, Zed Books, London, 1999.
- 60 Levett, *op. cit. supra* note 50. For a different perspective, see David M. Driesen, 'Is Emissions Trading an Economic Incentive Program? Replacing the Command and Control/Economic Incentive Dichotomy', *Washington and Lee Law Review* 55, 289, 1998.
- 61 Ivan Illich, *Energy and Equity*, Marion Boyers, London, 1974.
- 62 M. E. Levine and J. L. Forrence, 'Regulatory Capture, Public Interest, and the Public Agenda: Toward a Synthesis', *Journal of Law, Economics and Organization* 6, 1990, pp. 167–198; Ralph Nader, *Cutting Corporate Welfare*, Seven Stories Press, New York, 2001; Dexter Whitfield, *Public Services or Corporate Welfare: Rethinking the Nation State in the Global Economy*, Pluto Press, London, 2001.
- 63 World Bank, 'Clean Energy and Development: Towards an Investment Framework', World Bank, Washington, 2006, [http://siteresources.worldbank.org/DEVCOMMINT/Documentation/20890696/DC2006-0002\(E\)-CleanEnergy.pdf](http://siteresources.worldbank.org/DEVCOMMINT/Documentation/20890696/DC2006-0002(E)-CleanEnergy.pdf), p. 91. For a critique see Peter Bosshard, 'Business as Usual will not Achieve Climate and Development Goals', International Rivers Network, Berkeley, April 2006:

- 'The US alone accounts for nearly 25 per cent of the global carbon dioxide emissions. In comparison, meeting the basic human needs for electricity of all the 1.6 billion people who presently have no access to modern energy would only increase global carbon emissions by 2 per cent.'
- 64 For a useful list of extraction projects only, see Jim Vallette and Steve Kretzmann, *The Energy Tug-of-War: Winners and Losers of World Bank Fossil Fuel Finance*, Institute for Policy Studies, Washington, 2004, pp. 27-31.
- 65 Daphne Wysham, 'Fossil Fuels and Foreign Aid for Energy Sector Projects', Institute for Policy Studies, Washington, November 2003.
- 66 Jules Pretty and Hugh Ward, 'Social Capital and the Environment', *World Development* 29, 2001, pp. 209-227, provide some perspective on the numbers of the people thwarted or left out. In the best traditions of academic bean-counting, Pretty and Ward estimate that the number of new local groups protecting watersheds, irrigation systems and forests and working in microfinance, integrated pest management, and farmers research in 25 countries emerging in the decade to 2001 alone comes to around 408,000-478,000.
- 67 Douglas Kysar points out that, on one view, the US has deliberately undermined various international environmental agreements as a prelude to pointing to their 'inefficacy' as a reason for adopting 'market liberalism'. ('Sustainable Development and Private Global Governance', *University of Texas Law Review* 83, 2005, pp. 2109-2166).
- 68 Centre for Science and Environment, CSE Dossier Factsheet 6, New Delhi, 1998, p. 4.
- 69 The income gap between the fifth of the world's people in the richest countries and the fifth in the poorest took 30 years for the ratio to double from 30 to 1 in 1960 to 60 to 1 in 1990 and only seven years to jump to 74 to 1 in 1997. See <http://www.wcc-coe.org/wcc/what/jpc/dossier.html>. According to Andrew Simms of the New Economics Foundation, during the 1980s, USD 2.20 out of every USD 100 worth of economic growth reached society's poorest. In the 1990s, this figure fell to USD 0.60.
- 70 See <http://www.indymedia.no/newswire/display/19605/index.php> for the full text.
- 71 R. W. Kates, 'Cautionary Tales: Adaptation and the Global Poor', *Climatic Change* 45, 2000, pp. 5-17. Wolfgang Sachs adds that a 'claim for equity on the basis of conventional development' - a perennial interest of ruling elites in the South as well as the North - 'is simply not credible', since development doesn't lead to equity (interview in *Climate Equity Observer*, 12 May 2001, www.ecoequity.org/ceo/ceo_3_4.htm).
- 72 Michael Thompson et al., *Uncertainty on a Himalayan Scale*, Milton Ash, London, 1986, pp. 71, 87-88, 106.
- 73 Ashis Nandy, *The Intimate Enemy: Loss and Recovery of Self under Colonialism*, Oxford University Press, New Delhi, 1989.
- 74 Stephen Gudeman and Alberto Rivera, *Conversations in Colombia: The Domestic Economy in Life and Text*, Cambridge University Press, Cambridge, 1990.
- 75 James Lovelock, *The Revenge of Gaia: Why the Earth is Fighting Back and How we can Still Save Humanity*, Allen Lane, London, 2006, pp. 155, 153. For more on environmentalists supporting nuclear power, see, e.g., Felicity Barringer, 'Old Foes Soften to New Reactors', *New York Times*, 15 May 2005 and Pew Centre on Global Climate Change, 'Pew Centre on Global Climate Change Releases First Comprehensive Approach to Climate Change', press release, Washington, 8 February 2006.
- 76 Bretton Woods Project, *op. cit. supra* note 5.
- 77 'Top Scientist Offers Way out of Global Warming', *Times of India*, 1 August 2006, <http://timesofindia.indiatimes.com/articleshow/1833408.cms>.