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The Politics of the Carbon Economy

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INTRODUCTION

Climate politics are increasingly conducted by, through and for markets. Business and financial actors have become central in the construction and management of an elaborate and increasingly intermeshed system of climate governance. Central to these are a series of markets, constructed to facilitate investment in carbon abatement and to create incentives for states and firms to limit their carbon emissions. Emissions trading systems, the Kyoto flexibility mechanisms, voluntary carbon offset projects and projects by investors to get other companies to disclose their carbon emissions are the key elements in this governance system. All amount to the creation of what is sometimes called the carbon economy; they all subject climate change to a market logic. They do this by allocating property rights to carbon emissions, by getting firms to incorporate their carbon emissions into their routine calculations of profit and risk, and by subjecting firms to a logic of transparent information by which investors and consumers can make decisions through the market that are compatible with the goal of reducing greenhouse gas emissions.

This way of responding to climate change is increasingly hegemonic, gaining a taken-for-granted character. Two things are worth noting, though, which we address in this chapter. First, that as with all forms of hegemony, it is highly contested: many people object fundamentally to the idea of 'commodifying the atmosphere', and those involved in carbon markets thus have to work hard to legitimize their practices. This contestation and response is fundamental to the politics of the carbon economy, as we show later on. Second, the hegemony of these ways of dealing with climate change (or any other environmental problem) is only a recent phenomenon. Had climate change become seen as an acute problem in 1950 rather than from the late 1980s onwards, anyone proposing emissions trading as the principal means to deal with it would have been subject to ridicule. Even in the late 1980s, as the international community was responding to ozone depletion, market-based policies only played a minor role in the response. The rise of the carbon economy, as one manifestation of a broader trend towards the 'marketization' of environmental governance (Newell 2005), evolves alongside and is a product of the entrenchment of neo-liberal politics throughout the 1990s (Harvey 2005).

What we claim in this chapter is that we may be in the early stages of witnessing the emergence of what we call climate capitalism. We refer to this as a form of capitalism that is based on a fundamental and transformative shift away from the use of fossil fuels to underpin economic development in which decarbonization is defined as an opportunity to reconcile capitalist accumulation with the requirements of climate change mitigation. It is still capitalism—organized through markets, private property, wage labour and so on, and with economic growth as imperative to its survival. It is, of course, possible that such a world is impossible to achieve (Kovel 2002). But if it is possible, and effective climate policy genuinely entails the reorganization of global capitalism towards decarbonization, the scale of the challenge—not only in narrow economic and technological terms, but more importantly in political terms—should not be underestimated.

Our claim is not only a normative one; that we need such a transformation of capitalism to occur. This much is fairly obvious. We also claim that a wide range of contemporary climate governance activities, from the Kyoto system to the voluntary offset markets, are starting to imagine and aim for such an economic transformation, and that such a transformation is thus, at least potentially, in its early stages of emergence. Given the time frame within which sweeping action to forestall the worst effects of climate change have to take place, it is clear that, like it or not, neoliberal capitalism(s) will provide the context and historical moment in which action has to take place. This implies engagement with prominent actors in neoliberalism from business and finance, whose strategies need to be aligned with the goal of climate protection.

What matters, then, is to understand how it is that such a potential decarbonization of the global economy is being shaped. What we seek to explain in this chapter is why it is that the construction of carbon markets has become the preferred mode of governing climate change, and the extent to which they *may* drive a process of decarbonization. If it would have been unimaginable even 50 years ago to deal with a large policy problem in this way, what has changed to make it seem normal now? Telling this story of a historical change also enables us to identify which political forces underpin climate governance, how those forces are contested, and what the consequences might be for future responses to climate change.

A BRIEF HISTORY OF NEOLIBERALISM

Our answer to the first question is that the character of responses to climate change has been conditioned principally by the way in which the global economy is organized. This is, of course, general to most environmental problems; but climate change is also unique in how its origins are embedded in almost all practices that underpin contemporary economic development: most obviously through energy use but also, for example, transport and agriculture. This means powerful economic actors have had much more direct influence on the sort of regime than they have in other environmental issue

areas which do not touch on the core operation of the global economy so strongly (Newell and Paterson 1998).

The organization of the global economy is widely understood to have undergone a massive shift from the mid-1970s onwards, from what was called a Fordist-Keynesian model to a neoliberal one. This transformation was effected in the aftermath of the various economic crises of the 1970s, including the oil crisis and the end of the Bretton Woods system of pegging currencies to the dollar and the high levels of indebtedness faced even by leading industrialized countries. These events of the 1970s had four key consequences.

One is the shift rightward in economic ideology. There was a political struggle to identify the main causes of the various economic problems of the period, but the version that won was best exemplified by Thatcherism (from British Prime Minister Margaret Thatcher) and Reaganomics (from US President Ronald Reagan), usually known academically as 'neoliberalism'. This was promoted by a group of economists at the University of Chicago (the 'Chicago boys') who went on to hold influential positions in governments and international institutions (Harvey 2005). The broad argument was that the crisis occurred because the state had become too involved in the detail of economic management and the 'natural' effects of markets had thus been distorted. The solutions proposed were thus an emphasis on free markets, on 'rolling back the state', privatization of publicly owned industries, and the retrenchment of the welfare state in what has been known as the 'Washington consensus'. This sort of economic management, though started in the USA and the United Kingdom, has progressively become the norm across the world, in part because of the dominance of those countries in the global financial markets (and on the growing power of finance, see below), and in part because of their use of the International Monetary Fund (IMF) and World Bank to promote neoliberal reform agendas in developing countries and after 1989 in the so called 'economies in transition'. This ideological preference for markets provided the frame of reference for the sorts of climate change policies being proposed from the late 1980s onwards.

The second consequence is the shifts in power between different elements of business produced by this liberalization of markets. In the Bretton Woods period (after the Second World War, through to 1971 when US President Richard Nixon unilaterally ended the fixed exchange rate system), finance was tamed through direct controls on the movement of money around the world, and the major firms in the global economy were those associated with manufacturing, in particular petroleum and car firms. The regulatory systems at both international and national levels were designed to enable them to flourish—for example the fixed exchange rate system that removed a key source of uncertainty for investors. Neoliberalism aimed to set finance free and stimulated an extraordinary expansion of global financial markets. Thatcher and Reagan, followed by other governments, deregulated financial markets, removing controls on the movement of money, as well as on who can operate in financial markets, and blurring boundaries between different types of

financial institutions. This has had well-known consequences in terms of global volatility (the various currency crises induced by speculation, for example in Brazil, Russia and East Asia) and crises of corporate governance (classically Enron). However, the other key element that becomes important to understand climate politics is the shift in the power among different sectors of business. As Kees van der Pijl establishes, whereas in the 1970s the key firms in the global economy (as measured not only by size, but their place in the networks of interlocking directorships of the large transnational companies) were oil and car firms, by 2000 or so the key firms were in finance and information technology (IT) (van der Pijl 1998). This shift in the balance of power manifested itself in climate politics in the way in which firms in the financial sector positioned themselves to benefit from the creation of carbon markets as carbon traders (such as Eco-securities and Climate Care), and latterly as investors (such as JPMorgan and Barclays).

The third consequence of neoliberalism is that the world became a significantly more unequal place between and within nations. This was part of deeper and multi-faceted historical processes described in more detail in Chapter 7, borne of European colonialism and entrenched North–South conflicts, but levels of global inequality became dramatically more acute after 1980. One of the immediate consequences of neoliberal management was a dramatic rise in interest rates. Part of the neoliberal diagnosis of the problem of the 1970s was that governments had not paid enough attention to the problem of inflation, or had attempted to manage it by highly intrusive measures such as direct controls on wages and prices. The neoliberal solution was to ‘control the money supply’ (hence the name monetarism) on the basis of the idea that if you reduced the amount of money in the economy you would reduce the rate that prices could increase. In a deregulated system, however, where banks and other institutions are much freer to lend money (in effect to create it), the main, if not the only, way to do that is to use interest rates. If you raise the interest rate, you make borrowing more expensive, so people won’t do so much, and thus won’t be able to spend so much. A further move to limit unnecessary ‘interference’ in the setting of interest rates was to hand over control of them to a central bank. One of the first policy announcements of the incoming ‘New Labour’ government in the United Kingdom in 1997 was to seek to reassure the markets of the credibility of their handling of the economy by handing over control of interest rates to the Bank of England.

However, the immediate effect of increased interest rates was what became known as the debt crisis. In a period of two years, ‘real’ interest rates (actual interest rate minus inflation) in the USA and United Kingdom went from 1.4% to 8.6%. In the meantime, developing countries had borrowed significant amounts of money in the 1970s, in part spurred on by the rise in raw material prices like those of oil and the availability of ‘petro-dollars’, and by investment in their economies by Western firms looking for profitable investments during the stagnation of that decade. The repayments on these debts soared simply because of the rise in interest rates, and many economies were

plunged into crisis. Mexico made the crisis a global one when it threatened to default on its debt in 1982, prompting emergency action to reschedule its debt and shore up the world’s banking system. Many other developing countries during this period ended up paying the majority of their export earnings just to service the interest on their debt. To add insult to injury, many had to go to the World Bank and the IMF to get emergency loans to stabilize their economies, and those institutions used this new-found power to force neo-liberal ‘structural adjustment’ and austerity measures on them, frequently making their crisis worse, and almost always turning the economic crisis into a social one. For example, forcing the removal of subsidies on basic foodstuffs provoked ‘food riots’ against the IMF in a number of places (Walton and Seddon 1994), while in Argentina, once the ‘star pupil’ of the IMF for following its policy proscriptions to the letter, the IMF found itself the target of widespread protests when it was in part blamed for the economic crisis that hit the country in 2001–2.

The debt crisis and its management by the Bretton Woods institutions produced a dramatic reorganization of power between North and South. It also contributed to increasing complexity in the patterns of growth and inequality among countries in the South. Those countries that escaped the IMF’s clutches (as well as one or two that did not) were able to set in train a strong process of growth (Stiglitz 2003). This started with the East Asian tigers, but in the climate change context what is most significant is the rapid growth of the People’s Republic of China, from around 1980, and India, from around 1990. These two, the most populous countries in the world, have experienced 9.4% and 5.4% average growth rates, respectively, since those dates. The power shift produced by this growth has both had the obvious knock-on effects on carbon emissions (keeping the overall trajectory of global emissions going up, while also changing the global distribution of emissions between different regions), but also changed the diplomatic landscape on climate change as elsewhere, in ways we come back to later.

The fourth consequence stimulated by the events of the 1970s is in the way that organizations operate. If globalization has changed the nature of international inequalities, it is also frequently described through changing forms of organizations (for different ways of understanding this, see Harvey 1989, Castells 1996). Business, governments, non-governmental organizations (NGOs) and others have all undergone shifts in the ways they work, both on their own and with others, both as cause and consequence of globalization. These changes can be characterized as shifts from clear bureaucratic hierarchies, organized through rules and clear procedures, towards much more fluid forms, such as networks and partnerships. Boundaries between different parts of firms, between different firms, between firms, governments and NGOs, are broken down as actors seek new ways of solving problems. For firms, this is often both a response to the (perceived) competitive pressures produced by globalization, but also serves as a means to globalize their operations, as they build partnerships with other firms globally in the search

for novel sources of economic advantage. The story of these organizational changes is often told through the language of the 'new economy', but it is important to recognize that the changes are not to be associated narrowly with the emergence of information and telecommunications, as among the most dynamic areas of the economy. It is also necessary to understand the claims about a 'network economy' as having an ideological component—business has presented itself as organized through networks for branding reasons.

At the same time, for governments, traditional regulatory and bureaucratic solutions are increasingly seen as ill adapted to the accelerated pace of economic life or to the resolution of problems of ever-greater complexity, of which environmental problems are almost paradigmatic. The discourse of 'governance' is in large part due to an attempt to reorganize government in ways that go beyond trying to pursue the goals of government through simple bureaucratic fiat. They are forced to reorganize themselves internally as well as build partnerships with firms and other social actors to achieve their goals. We find evidence of this in the plethora of public-private partnerships and other similar arrangements, not only at the national level, but also at the international level in the form of the Renewable Energy and Energy Efficiency Partnership or the Asia-Pacific Partnership on Clean Development and Climate. In the case of finance, the move to embrace voluntary codes of conduct is evident with the Equator Principles, which stipulate how and why financial institutions should consider environmental and social issues in their project finance operations (Wright and Rwabizambuga 2006). This emphasis on partnership can also be understood as an ideology—classically, in former British Prime Minister Tony Blair's 'Third Way', partnerships are presented as a way of overcoming 'old' social conflicts and political divisions, but also at a strategic level as a way of managing opposition.

These changes in governmental practice may well be regarded as an extension of neoliberal politics, notably the revived power of business, especially finance. Certainly the language of partnerships often serves to obscure the lack of will on the part of governments to regulate powerful firms. Indeed, self-regulation is often a convenient way for governments to lighten their regulatory load and outsource responsibilities to the private sector. 'Voluntary agreements' are a weak substitute for clearly set rules, though they often try to pre-empt them, as we have seen in the case of climate change with car companies in Europe arguing that regulation should be invoked as a last resort after their own voluntary programmes to increase fuel efficiency have failed.

Whatever their merits or otherwise, partnership approaches have been influential in the way that actors have responded to climate change—as we will see below. This is not only because they fit with dominant neoliberal logic, but because climate change itself exemplifies the sorts of new complex problems that require novel organizational forms focused more on 'problem-solving', 'puzzling through', or 'learning by doing', than the rule-setting that is the focus of more traditional organizations. Enrolling different actors,

public and private, with diverse capacities, across scales creates in its wake, nevertheless, other problems of accountability, transparency and legitimacy (Bäckstrand 2008; Newell 2008a; Pattberg 2007).

NEOLIBERALISM AND CLIMATE CHANGE: CONSTRUCTING CARBON MARKETS

As with many other environmental problems (see for example Mansfield 2008; Heynen et al. 2007; Castree 2008), the character of neoliberal capitalism has fundamentally shaped how we have responded to climate change. Four key elements—its ideological fixation with markets, the dominance of finance in neoliberal capitalism, the widening global economic inequalities, and the focus on networks as means of organizing—have all combined to shape the character of responses to climate change.

When people started to talk about climate in political and policy terms in the late 1980s, there was a great proliferation of proposals as to how to respond. Much of this was at the technical level—the prospects for different energy technologies, for renewable energy, whether there was a role for nuclear, and so on. How might societies best promote these various options? Here we see that, from early on, the debate reflects this broad shift in the global economy towards the power of finance and neoliberal ideology. In environmental policy debates more generally, there were changes during the 1980s towards the idea of using economic analysis and markets to achieve environmental goals. People talked of the 'New Politics of Pollution' (Weale 1992) and 'ecological modernisation' (Mol 2003), which argued that economic growth and environmental protection could be made compatible. This was important in seeking to discredit earlier claims made by the Club of Rome and echoed by environmentalists from the 1970s onwards that there existed environmental limits to economic growth. Markets, in other words, could be made to work for the environment. Cost-benefit analysis, it was argued, could allow us to weigh up the pros and cons of particular paths to pollution control, and allocate values to them accordingly. In this way, governments could calculate the optimal rate of pollution. United Kingdom economist David Pearce was a key figure here, promoting the idea that rather than develop policies that specified what technologies business and individuals must use, or to simply ban particular substances or processes (through so-called 'command and control' policies), it would be better to use markets to achieve environmental goals ('market mechanisms'). His book 'Blueprint for a Green Economy', published in 1989, widely known as the 'Pearce Report', advocated basing policy on the criterion of 'sustainability', valuing environmental effects and making use of market incentives (Pearce et al. 1989). The two key pillars of this approach are environmental taxation measures (where the government imposes taxes on particular pollutants like carbon dioxide) and emissions trading schemes (where permits are distributed to actors to meet an overall emissions limit, and then actors are allowed to trade the permits among

themselves). With both, the main rationale is that it leaves the decisions about how to achieve particular environmental goals up to individuals and firms; governments set either general incentives (in the cases of taxes) or overall limits to pollution levels (in the case of emissions trading) and leave markets to work out who will reduce emissions. In climate change, emerging in the late 1980s as a political issue, we find these neoliberal ideas leave a powerful impact. Their legacy can be seen by focusing on emissions trading and asking ‘why did emissions trading become the preferred policy approach?’

Proposals for emissions trading (ET) were made as a means to respond to climate change as early as 1989, in a paper by Michael Grubb (1989) and subsequently picked up by others (Lunde 1991). His original ET proposal and its trajectory encapsulates many of the big economic changes going on at that time. In Grubb’s hands, and those of many who took it up, like Michael Hoel, Scott Barrett or Frank Joshua at the United Nations Conference on Trade and Development (UNCTAD), it was designed both to be efficient and equitable. The former was fast becoming the most important value in neoliberal ideology, while the latter is the legacy of a dominant framing of global environmental politics since the Stockholm Conference in 1972 and emblemized in the Brundtland Commission’s report of 1987. ET systems, in Grubb’s or UNCTAD’s hands, would enable North–South transfers of wealth and technology, and thus respond to the challenge of growth in countries like China and India. Their assumption was that a principle of per capita emissions would be the only legitimate principle for allocating emissions, and thus countries in the North would be short on permits, while those in the South would have excess, and thus earn income by selling permits to the North.

Once it became a formal part of the negotiations, however, it became clear that the emphasis on equity was to be marginalized. In part this was a result of the diplomatic impasse it provoked—Northern countries balked at the financial transfers implied, while Southern countries resisted steadfastly the implicit limit on their emissions. The legacy of widening inequalities produced this impasse in climate diplomacy (see Chapter 7). However, it also reflects two other elements in our dynamics of neoliberal politics. On the one hand it reflects the ideological priority of efficiency and the way that markets are assumed to produce such efficiency. This also explains the way that ET came to be favoured over carbon taxes. Such taxes have also been proposed and debated (and implemented in countries such as Sweden and the Netherlands, and the United Kingdom’s climate change levy is a quasi-carbon tax), but have failed to get off the ground elsewhere, even in the European Union (EU), for example, where a long carbon tax debate was stalled by industry opposition (Newell and Paterson 1998). In the UN Framework Convention on Climate Change (UNFCCC) process, occasional proposals for harmonized introduction of such taxes never got anywhere. Everyday political processes of interest groups defending their interests is important here—big firms successfully resisted on the grounds of the increased costs, and new taxes are not popular anywhere. In a more open global economy the prospect of relocation

also meant that ‘carbon leakage’ might occur, where a tax would simply have the effect of driving the most polluting companies or parts of the production process overseas, resulting in no overall reduction in emissions. This was an argument successfully used by industry groups to prevent taxes from being used in the first place. In the economic debates though, purists also argued that ET systems are more efficient than taxes, in part because they permit the setting of an absolute limit on emissions (and thus act on a determination of the optimal rate of pollution), and in part because they entail the actual creation of a market, rather than the attempt by governments to affect behaviour within existing markets. So by contrast with the stagnation of proposals for carbon taxes, the establishment of emissions trading systems is expanding rapidly. At the latest count, there are now 34 sites at which such systems have been seriously considered, and a substantial number of these have been, are, or are in the process of becoming operational (Betsill and Hoffmann 2008).

ET became the preferred solution because of its ideological fit with neoliberal logic, but it was also successful because of its fit with the interests of newly dominant financial actors. The USA first formally proposed ET in the UNFCCC process in December 1996, though it met with widespread resistance at the time. The USA’s rationale was initially to create flexibility for countries in implementing their commitments. The political resistance to emissions reductions in the USA was considerably stronger than in Europe, and the Administration of President Bill Clinton, while favourable itself to action, was heavily constrained by a Congress that was hostile. Economists in the USA also insisted that the costs of reductions to the US economy were very high, and Clinton was, in any case, a strong proponent of market-based mechanisms. These combined to make the USA propose ET as a means to pursue reductions in a manner that minimized the costs associated with them.

In the Kyoto negotiations, countries ended up agreeing to ET mostly because of the USA’s determined support for the idea, and the desperate desire of others to keep the USA on board. The interesting period, though, was the next three years, to around 2000. In this period, there was a dramatic transformation in ET’s fortunes. The Kyoto process plodded on slowly because of the many unresolved questions about its various innovative elements, but the EU changed its mind about ET shortly after Kyoto, during 1998–99. In the period before Kyoto, most EU countries had been of the view that countries ought to reduce their own emissions domestically and that flexibility mechanisms were a distraction from this goal. The EU shifted its position after Kyoto, becoming a proponent of ET in the Kyoto process, but also starting to plan its own system. It did so in part because of personnel changes in key positions in the Commission, in part because of a continued desire to accommodate the USA (through to the President George W. Bush Administration’s withdrawal, at least), and in part because of an increasing realization of the potential of ETS to help with achieving the EU’s internal greenhouse gas reduction goals. Individual European countries like the United Kingdom and Denmark started also to plan their own ET systems.

Most importantly, a whole range of private market actors started to emerge. New firms were created, such as EcoSecurities (1997), CO2e.com (2000) and Point Carbon (2000). They became key actors in the voluntary carbon markets. Existing banks, such as Barclays or Dresdner Kleinwort, developed their own carbon trading offices. Annual carbon finance and carbon market conferences were started, and a Carbon Expo has been held every year in Cologne since 2004. In 2005 alone emission reduction purchase agreements for more than 100 projects were signed or reached advanced negotiations at Carbon Expo according to the organizer's website (www.carbonexpo.com). New associations of actors, like the International Emissions Trading Association (IETA) or the Emissions Marketing Association, and more recently the Carbon Markets and Investors Association, were created or expanded considerably in reaction to the growing momentum of ET systems. IETA is now one of the most active organizations at UNFCCC negotiations, organizing substantial numbers of side events. They haven't only reacted to the pressure from politicians, however; they have become crucial to why politicians didn't abandon ET in the face of various pressures—notably the ongoing difficult negotiations in the Kyoto process and the withdrawal of the USA from the process in 2001.

ET thus became almost unstoppable once the newly dominant financial actors realized its potential as a new market, with its derivatives, options, swaps, insurance and so on, and thus as a profitable enterprise. While the key period of take-off of this dynamic was 1996–2000, after that date the process continued to mushroom. The point to underscore here is that ET 'gained traction' because of this alignment between the need that policy-makers had for flexibility in meeting commitments and the realization by financial firms that the emissions market could be the source of significant growth and profits.

Some financial actors also became interested in climate change for another reason. Insurance companies started to worry in the early 1990s about large-scale payouts to extreme weather events (principally hurricanes and flooding), which had already increased by that point, and were projected in many models to become even more frequent and intense. Jeremy Leggett at Greenpeace International was particularly active in courting insurers to persuade them to get active in climate politics. They started to act through the 1990s, in conjunction in particular with the UN Environment Programme (UNEP), and then their activity exploded in the 2000s, particularly through the Carbon Disclosure Project (CDP). Insurers were joined by banks and pension funds during this period. The CDP is a project whereby investors attempt to shape the activities of other firms by getting them to disclose their carbon intensity and their strategies to limit emissions. The CDP now has US \$57 trillion of assets behind it. It claims:

The CDP provides a secretariat for the world's largest institutional investor collaboration on the business implications of climate change. CDP represents an efficient process whereby many institutional investors collectively sign a single global request for disclosure of information on

Greenhouse Gas Emissions. More than 1,000 large corporations report on their emissions through this web site. On 1st February 2007 this request was sent to over 2400 companies.

(CDP 2007)

Financial firms, thus, have complicated interests in relation to climate change. They are exposed to all sorts of risks from climate change itself—direct insurance risks to homes and businesses, but also indirect risks to banks of loans going bad because of weather-related risks. However, they have also become the power brokers in contemporary capitalism, capable of moving money around, putting pressure on manufacturing firms, governments and other social actors. Their power has become a crucial element in the politics of climate change.

Similarly, public financial institutions like the World Bank became interested in climate change as a new means to extend their influence and secure a role for themselves in the new carbon economy. The World Bank has been important in North–South dimensions of climate politics for some time through the Global Environment Facility, but increasingly seeks to position itself as one of the main players in carbon markets through its portfolio of Climate Investment Funds (Newell et al. 2009; World Bank 2008a; World Bank 2008b). Just as its role in development has attracted considerable controversy and critique in the past, so too there is some evidence that its role in funding climate projects in the South similarly transforms climate policy into social crises—as, for example, in those Clean Development Mechanism (CDM) or Prototype Carbon Fund projects, which displace indigenous or marginalized communities (Bachram 2004), working on a logic of what Bumpus and Liverman (2008) call 'accumulation by decarbonization'.

The final thing to note about the way that neoliberalism has shaped climate politics has to do with the organizational forms many of these projects take. Neoliberal capitalism is often described as being organized through networks and partnerships. Climate governance reflects this tendency well. From the approach of Greenpeace's Jeremy Leggett to insurers, through to the fully-fledged CDP, collaborative partnerships have been formed across a range of actors to identify means of pursuing common goals. The CDM, for example, has often been described as a huge 'public–private partnership', while the World Bank's Prototype Carbon Fund (PCF) is described by Streck (2004) as an 'implementation network', bringing together interested parties from North and South under the rules set out by the CDM. In some ways it functioned as a learning network, providing participants with an opportunity to learn about the CDM and Joint Implementation. It was also intended to have demonstration effects that project-based investments under the Kyoto Protocol could earn revenue for developing countries and increase the profitability of cleaner energy options. Other governance experiments have brought together cities, firms and NGOs to produce climate action plans that go above and beyond the formal forms of institutional response (Betsill and Bulkeley 2004). The

general point is that climate governance operates less in terms of traditional hierarchical authority relations, but through more horizontal relations between diverse actors, seeking both to learn with others and to influence them to their advantage.

At a national level, many organizations have emerged that operate in this fashion. Sometimes arm's-length organizations (like the Carbon Trust in the United Kingdom), which are used by governments to implement policy, also act as sites of collaboration among firms and between them and NGOs, as bodies which aim to foster learning about best practices and enable the exchange of ideas. Many transnational groups have emerged that defy conventional categorization. The Climate Group, for example, is a body which is technically a non-profit organization based in London, but which cannot be understood as a traditional NGO organized around research and lobbying. Rather, it has members that are transnational firms and subnational government units, which apply to join in order to be regarded as 'leaders' in their CO₂ reductions strategies, to use the Climate Group both to promote their public image but also to gain access to a network of other such organizations. The group acts then to promote CO₂ reductions among other firms and subnational actors. The group's close ties to Tony Blair have also provided a high-profile national platform for projecting their ideas into global policy debates on climate change.

These sorts of networks are highly fluid, expanding and changing focus rapidly, aiming to mobilize people in ways that neither traditional regulation nor exhortation from governments can. It is certainly the case that some of these can be understood as the result of efforts by private firms to avoid such regulation—to show their 'good behaviour' to prevent a stricter form of action imposed by governments. Climate change has become a leading CSR issue for firms, but given that climate change presents such fundamental challenges to the organization of capitalist economies, flexible networks, focused on 'learning by doing' are surely a necessary component of strategies for reducing CO₂.

POLITICAL DYNAMICS OF THE CARBON ECONOMY

What, then, of our second question, about the politics and consequences of this neoliberal way of organizing responses to climate change?

Like the neoliberalism more generally out of which it has grown, the carbon economy is constantly contested. In fact, some of the movements contesting emissions trading, the CDM and the voluntary carbon markets, have grown out of the anti-globalization movement, resisting neoliberal globalization, and identifying the similarities between the development of carbon markets and the more general operation of finance-led, market-fetishizing neoliberalism. Indeed the current financial crisis of 2008–9 has led many critics of carbon markets to draw parallels with the lack of regulation of the financial system and its consequences, referring to 'sub-prime carbon', 'the

carbon crunch' and 'toxic carbon' for example. Protest groups like Rising Tide, Climate Justice, Carbon Trade Watch (part of the anti-neoliberal Transnational Institute), Plane Stupid!, and more loose networks of activists organizing protests such as those at The Hague Climate Summit in 2000 or the climate camp in the City of London in 2009, frequently make the connection between the weak response to climate change and the domination of the world by neoliberal capitalism. Some look at the history given above, the close link between energy use and growth, and conclude that to deal with climate change means an end to economic growth and, by extension, to the capitalist way the world is organized. To act on climate change is, for many activists, to oppose capitalism, or at least its current form.

Unsurprisingly, then, the 'climate crisis' increasingly features in broader critiques of neoliberalism, testimony to which is the profile the issue has received in European and World Social Forums. Activists have made links to unjust North–South relations, globalization and long-standing traditions of environmental justice campaigning centred on the disproportionate exposure of poorer communities to pollution. In the latter regard, groups have invoked the notion of 'climate justice' to contest their role as the 'social sinks' for the externalization of environmental costs. More generally, Pettit notes, 'By and large, the framing of "climate justice" reflects the same social and economic rights perspectives voiced by global movements on debt, trade and globalization' (2004, 103). The Durban Declaration on Carbon Trading produced by the climate justice movement, for example, makes explicit links between current attempts to turn the earth's 'carbon-cycling capacity into property to be bought and sold in a global market', and historical 'attempts to commodify land, food, labour, forests, water, genes and ideas' (CNE 2004). Groups signing up to the declaration claim, 'Through this process of creating a new commodity – carbon – the Earth's ability and capacity to support a climate conducive to life and human societies is now passing into the same corporate hands that are destroying the climate' (Durban Declaration 2004).

The groups adopting these more critical positions under the umbrella of climate justice held a summit by this name at the eighth Conference of the Parties (COP-8) in 2002 in Delhi. The event was attended by hundreds of activists from throughout India, including farmers, fisherfolk, indigenous peoples and the urban poor. The Delhi Climate Justice Declaration reveals the essence of these groups' concerns about climate change, and the current nature of policy responses to the threat:

We affirm that climate change is a rights issue – it affects our livelihoods, our health, our children and our natural resources. We will build alliances across states and borders to oppose climate change inducing patterns and advocate for and practice sustainable development. We reject the market based principles that guide the current negotiations to solve the climate crisis: Our World is Not for Sale!

(India Climate Justice Forum 2002)

Beyond the general activist critiques of the neoliberal foundations of the carbon economy, specific campaigns have been directed at the carbon offset markets, both in the CDM and in the voluntary carbon market. To the charge of 'carbon colonialism' is added that of 'climate fraud'; that many of the projects double-count emissions paid for by other clients, or that the scale of the emissions reduction is exaggerated or non-existent (Lohmann 2006). Indeed, the allocation of projects under the CDM and the popularity of carbon sink schemes have each given rise to watchdog activism aimed at scrutinizing the conduct of these carbon deals, and exposing what activists consider to be phony projects where environmental gains are unlikely to be forthcoming or the social costs high or ignored (Lohmann 2006). SinksWatch, for example, an initiative of the World Rainforest Movement set up in 2001 and implemented by FERN (Forests and the European Union Resource Network), monitors the impact of the financing and creation of sinks projects in order to highlight the threat they pose to forests and other ecosystems, to forest peoples as well as to the climate. A particular concern is the exclusion of marginalized groups from their own forest resources once they become the property of a distant carbon trader for whom they represent a valuable investment opportunity. For example, Heidi Bachram notes the case of a Norwegian company operating in Uganda that leased its lands for a sequestration project which allegedly resulted in 8,000 people in 13 villages being evicted (Bachram 2004).

Nevertheless, dilemmas of how to engage the carbon economy have divided climate activists between those who believe carbon markets can be effective if constructed within the right regulatory environment and those who oppose outright the logic of commodification and the practices that flow from it. The 'big 10' Washington-based groups such as Environmental Defense and the Natural Resources Defense Council see important potential in market mechanisms to achieve much-needed emissions reductions. They are aligned against more critical groups such as Carbon Trade Watch and Sinks Watch who view carbon markets as a distraction from the need for the largest polluters, primarily in the North, to reduce their own emissions through actions at home rather than projects sponsored in developing countries (CNE 2004). Their critique is informed by a broader position adopted by many environmental NGOs on this issue that such practices 'distract attention away from the fundamental changes urgently necessary if we are to achieve a more sustainable and just future' (CTW 2004).

This sort of activism clearly questions and contests the commodification of carbon and exposes 'fraudulent' practice in carbon markets. However, they also force advocates of market approaches to legitimize themselves by, for example, restricting the sorts of projects that can be included within the CDM, or by creating forms of private carbon governance such as the Voluntary Carbon Standard (VCS 2008) or the Gold Standard. These certification schemes set higher standards than the basic CDM rules (or simply create rules in the case of the voluntary market), enabling buyers and sellers of

emissions reductions to distance themselves from the scandals and controversy that activists have created around 'climate fraud' and 'carbon colonialism'. In so doing, they clearly seek to safeguard the profits they make from such markets as well as secure a role for carbon markets as a legitimate response to climate change by deflecting or accommodating criticism of them.

CONCLUSION

In this chapter we have sought to make sense of the nature of the rapidly expanding carbon economy. We provided a brief historical overview of how the world of contemporary capitalism and climate politics became increasingly intertwined. We observed how existing actors, institutions and technologies of governance at work in the capitalist economy have been brought to bear on the problem of climate change. These have aimed, first, to render the problem manageable through enrolling a diverse range of actors in networks with distinct capacities to address the problem; by measuring emissions through accounting and disclosure (CDP); and by ensuring that market and voluntary-based over command and control measures prevail (as with emissions trading). Second, they have sought to create opportunities to make profit. This has occurred through efforts to ensure that responses are either non-threatening to, or compatible with, existing accumulation strategies, as well as through attempts to create new sites of accumulation (through offsets and emission trading). However, what is as interesting as the parallel and mutually constituting nature of neoliberalism and climate governance in historical and contemporary terms, is the latent potential for the carbon economy to develop into a larger-scale transition to 'climate capitalism' where successful accumulation strategies are to be found in decarbonizing the economy.

We have tried to show that neoliberalism has specific features which have played a key role in structuring climate capitalism. The four key elements we outlined above—its ideological fixation with markets, the dominance of finance in neoliberal capitalism, the widening global economic inequalities, and the focus on networks as a means of organizing action—have all combined to shape the character of responses to climate change. First, the fetishization of markets and market mechanisms as a means to govern the economic activities that produce climate change drove the creation of the 'flexibility mechanisms' central to the Kyoto Protocol, as well as similar initiatives at national and regional levels. They have also favoured various forms of private governance, including self-regulation by market actors, supported by a market-enabling rather than market-restricting state. Second, the extraordinary dominance of finance within different fractions of capital has favoured emissions trading and market access policies, which principally benefit traders in the markets. This also accounts for the emergence of a range of private governance arrangements, many of which are organized by financial actors. The spectacular success of carbon markets in attracting interest from finance in climate policy is precisely a condition for the possibility for

decarbonizing the economy, as this bloc is necessary, politically, to sustain action on climate change. Third, we noted the economic inequalities that create opportunities for emissions savings at lower costs, which compliance and voluntary offset markets have sought to capture by globalizing carbon markets. Presenting carbon markets as a development opportunity for poorer nations has also enabled actors such as the World Bank, among the leading architects of neoliberalism, to subject climate action to the logic of broader neoliberal (environmental) reforms such as payment for ecosystem services. However, we also noted the ways in which such inequalities give rise to sites of contestation around claims of climate colonialism and demands for climate justice. Fourth, we noted the networks that have been created by a growing array of public and private actors operating across scales to produce new forms of climate and carbon governance within and beyond the market. Finally, we showed that future forms of climate governance will also be shaped, just as they have been to date, by a range of actors critiquing the equity, efficiency and effectiveness of marketized solutions in tackling climate change. This criticism is unlikely to force powerful actors to abandon such marketized governance, but it will shape the way that carbon markets are governed. Doubts will remain about the contribution of emissions trading and other facets of the carbon economy unless and until they hold out the prospect of engaging with and transforming capitalism as usual into climate capitalism: a system of wealth generation that is truly compatible with a low-carbon future.

We suggest that despite its problematic character, finance may in fact be able to drive strategies of decarbonization in the economy, extending its role beyond the creation of discrete carbon markets to broader forms of transformation. Such an outcome is far from guaranteed and has to be secured through forms of public and private regulation, coalition building and social practices, which enrol an array of actors in realizing governance through and for the market. For this reason the future of climate capitalism is open-ended even if we can anticipate a prominent role for certain key actors. This indeterminacy leaves open the possibility of various scenarios for the future direction of the carbon economy. There is potential for scenarios of unregulated, barely credible 'cowboy climate capitalism', a more regulated and state-managed 'climate Keynesianism', or a scenario in which new modes of accumulation are hugely successful, and set up positive incentives and feedback mechanisms that link finance and productive capital in ways which de-couple growth from increased emissions of greenhouse gas emissions.

It is clear that the unregulated 'cowboy' version entails very significant risks. It requires enormous faith in 'markets' to be able to reshape incentives (through carbon prices) and investment across the entire global economy to produce decarbonization—a faith that many carbon traders hold dear, but about which we are much more sceptical. It may well also produce a highly unequal form of climate capitalism, where the rich pull up the ladder, offsetting their high emissions in an eco-colonial fashion in the South, locking the latter even further into dependent and unequal relations.

The 'climate Keynesian' approach is significantly more promising, though, involving the use of state power (nationally and internationally) to direct investment, make sure carbon prices are stable, and creating meaningful incentives for consumers, producers and investors that reach those parts of the economy that carbon markets fail to reach (home energy efficiency measures are a classic problem here). There are also some signs that such an approach may be possible to pursue. There has been much recent discussion about the possibility of a 'green New Deal' in the context of the current economic crisis. In the USA, in particular, there has been talk about 'Obamanomics' (from President Barack Obama) entailing a shift towards a more state-centred approach both to the economy and to climate change specifically (although there is always more continuity in US politics than official rhetoric reveals). Finally, civil society engagement, both from those criticizing carbon markets per se, and those attempting to regulate them (for example, through certification standards and limits on which sectors and projects are subject to inclusion in the market), has already shaped carbon markets to make them more regulated than traders might want, towards a more 'Keynesian' version of climate capitalism. We expect this sort of political dynamic to continue.

Whichever version of climate capitalism emerges over the next few decades, its capacity to deliver decarbonization will be determined by the ability to direct investment into low-energy and non-carbon energy sources, while managing the legitimacy challenges that are inevitably posed by this reliance on global finance as a means to manage carbon emissions. As global climate change governance develops, both within the UNFCCC regime and beyond, the key measure of its success will be whether it manages to create an enabling environment for the transformation of the global economy into a system of climate capitalism compatible with addressing climate change, or whether carbon markets are to exist as isolated sites of accumulation in an economy whose orientation is incompatible with serious efforts to address the climate crisis.

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