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Introducing climate capitalism

Never before has humanity as a whole embarked on a project to radically transform the way its societies work. Sure, there have been revolutionary projects, many national, some aiming at global transformation. Through empire and war, countries have sought to assert their view of the world in order to re-model it along new political lines. And revolutions have certainly happened, both political, and more importantly in the current context, social and technological. We can think of the inventions of agriculture, printing, the steam engine or the computer. All of these have wrought vast changes upon societies. But all of these were the result of initiatives by individuals, particular companies or countries. In responses to climate change, we have the first instance of societies collectively seeking a dramatic transformation of the entire global economy.

For that is the basic claim we want to make in this book. On the one hand, responding to climate change entails radical changes in how the global economy and daily life are organised. The term ‘decarbonisation of the economy’ is increasingly in common use. It refers to the process of taking the carbon out of the energy we use to run the economy. But its implications for how the economy is organised are rarely drawn out or understood – it is rather seen as simply a technical question. The result of decarbonising the economy is what we call *climate capitalism*: a model which squares capitalism’s need for continual economic growth with substantial shifts away from carbon-based industrial development.

On the other hand, we are not just making an idealist plea for this transformation, although we certainly believe it is necessary. We also claim that we are – at least potentially – currently in the early stages of this transformation. That is, the processes that might lead to decarbonisation, albeit still in their infancy, are being put in

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place. Often these processes are weakly understood, even by those participating in them. But the various elements we now see in climate policy, in particular the most innovative elements of the carbon economy, are those which *might* serve to effect the transformation most now recognise is necessary.

This is, however, where for many it gets scary. The world we are referring to is that of the financial markets (whose credibility is not currently at a historic highpoint) and large transnational corporations, who have been empowered to turn climate change into a question of trading and investment. This is the world of carbon trading and carbon offsets, about which many of us are confused and hold conflicting views, if we do not regard them with total hostility.

You may have thought that climate change was about sea-level rise, heatwaves, hurricanes and droughts, about scientific controversies and uncertainties, and perhaps about global inequalities and moral responsibility. So you can be forgiven for being confused when you see that major city banks are trading carbon just like dollars, oil, grain or sub-prime mortgages, and that this is seen as the cutting edge of responses to climate change.

How did we end up with this way of responding to climate change? And are efforts to buy and sell units of carbon little more than a scam, where business people and financiers get to make money without delivering real cuts on greenhouse gas (GHG) emissions? Or, do these new markets represent the start of the greening of the global economy, a serious attempt to mobilise those with power in the global economy to address perhaps the greatest challenge we have ever collectively faced? More specifically, can they lead to the decarbonisation we need?

CLIMATE CHANGE: FROM THREAT ...

Many people have increasingly come to realise that climate change is the issue of the age. It impinges on every aspect of the things that keep us alive – food and energy – as well as the ways we make money, such as trade, industry and transport. Whereas once climate change was a quirky subject discussed in obscure scientific journals or amongst people who get excited about technology, it is now part of everyday discourse. As these connections are understood, we recognise the need to mainstream action on climate change into policy on agriculture, transport, energy and trade. And we start to understand climate change not as a discrete environmental problem like forests

or acid rain, but as something that affects everything we do. It is not just an issue which will change how we live in the future, but how we live today.

Increasing evidence has transformed climate change from a potential, long-term issue of uncertain consequences, to an immediate issue of food production, heatwaves, hurricanes, water shortages and the loss of iconic landscapes such as alpine glaciers or species such as polar bears. Indeed, in the latter case we are in an unprecedented historical situation where we for the first time know that a species is probably in effect already extinct; what is left is the endgame as polar bears die out during the next 30–40 years, as the climatic impacts of emissions already produced reap their damage.

The anxiety associated with these events has been reinforced by the growing drip-feed of news stories which appear to confirm our sense that something has irrevocably changed. Each year there is a new piece of evidence. Even just regarding hurricanes, we have a new first almost every year – 2004 giving us the first hurricane ever in the southern hemisphere, 2005 giving us Katrina, the most destructive in modern history, 2007 the first year with two category 5 storms in the same year.

While no individual event can be attributed to climate change, extreme weather events provide timely reminders of what we can expect in a world of accelerated climate change. It may not be sensitive to say so, but it is probably true that unprecedented floods in the UK in 2007, which wreaked havoc across the country, including several deaths, brought home the severity of the issue to people normally protected from the effects of climate change. Certainly more so than the floods in Mozambique the same year, which, while shocking, were ultimately less visible to those in the rich North. Of course, the floods in Mozambique displaced many more than in the UK (the 2007 floods killed around 30 people, while earlier flooding in 2000 killed around 700). But while the rich can protect themselves better from the effects of climate change, they are less and less immune from its effects.

The pressure to recognise the seriousness of the climate crisis has also been built by a flurry of books and films which have summarised recent research and information on the subject for a broad public (and provoked increasingly hysterical responses from climate deniers such as Margaret Thatcher's former Chancellor of the Exchequer Nigel Lawson). With titles like *Fieldnotes from a Catastrophe*, *The Weathermakers*, *Six Degrees* and *Heat*, such books have deepened the already existing broad consensus for action on climate among public opinion (in

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rich countries at least), moving it centre-stage in political debates.¹ Al Gore's documentary *An Inconvenient Truth* has been the highest profile of these,² reflecting the dominance of screen over print in contemporary culture as well as Gore's particular profile as almost US President, long-time campaigner on environmental issues and co-recipient with the UN's Intergovernmental Panel on Climate Change (IPCC) of the Nobel Peace Prize in 2007.

These books and Gore's film summarise the ever-strengthening scientific consensus, but also put in place a number of key pieces in the puzzle that help us realise the severity of the situation. They more or less all talk about the slow-down of the Gulf stream (of course dramatised in the wildly exaggerated climate disaster movie *The Day After Tomorrow*), changes in El Niño patterns, the acceleration in the collapse of the Greenland ice sheet, melting of permafrost and rapidly diminishing Arctic ice (the cause of the extinction of the polar bears). The latest addition to this list has been the acidification of oceans, an issue which emerged on the scene in 2009. These sorts of changes, occurring more rapidly than anyone thought possible, have given credence to the concern that climate change may indeed make human life on the planet extremely tenuous. The polar bears may be the least of our worries.

To bolster this sense that climate change threatens human civilisation, these books also follow Jared Diamond's lead in re-investigating a series of civilisational collapses that can be associated with changes in climate – the failure of Vikings in Greenland, the collapse of the Akkadians of Sumeria or the Mayan civilisations, the Justinian plague from AD 536 onwards, among others. What is striking here is that all of these historical collapses occurred as a result of (among other things) climate changes significantly less serious than those we are currently in the early stages of. During the century after 1340, global average temperatures declined by only 0.2 °C – this was enough to force the hardy Norse to abandon Greenland. This shift is insignificant compared to the temperature increases already experienced in the twentieth century (around a 0.6 °C rise) and an order of magnitude

¹ N. Lawson, *An Appeal to Reason: a Cool Look at Global Warming* (London: Gerald Duckworth & Co., 2008); E. Kolbert, *Fieldnotes from a Catastrophe* (London: Bloomsbury, 2007); T. Flannery, *The Weathermakers* (Toronto: HarperCollins, 2006); M. Lynas, *Six Degrees* (London: HarperCollins, 2007); G. Monbiot, *Heat* (London: Penguin, 2007).

² Though at the time of writing the independently produced film *The Age of Stupid*, which takes a far more critical look at climate politics, is a success on the independent cinema circuit.

smaller than those projected for the twenty-first century (between a 1.5 and 4.5 °C rise, according to the IPCC).

The figure of 2 °C higher than pre-industrial temperatures has been widely talked about as a target for the maximum temperature change that human societies might be able to tolerate. The European Union (EU) has even made it a formal aim in its negotiations for the agreement to replace the Kyoto Protocol – the international community's main treaty to date designed to reduce emissions, agreed in 1997 – and they were joined in 2009 by the G8 declaration which said that 'global average temperature above pre-industrial levels ought not to exceed 2 °C'.³ Despite its various weaknesses, the 'Copenhagen Accord', produced at the UN Climate Change negotiations in December 2009, also affirmed this goal.

Two things here are sobering. First, unless you make the most optimistic assumptions about the sensitivity of climate to CO₂ changes, this threshold is basically *already passed* – to achieve this would require CO₂ concentrations in the atmosphere which are lower than current levels.⁴ The organisation 350.org was set up precisely to campaign for policies that aim to reduce overall concentrations to that level, 350 parts per million (ppm). If you make less optimistic assumptions about climate sensitivity and demanding but plausible emissions scenarios, then it's hard to avoid the conclusion that we are likely to be headed for more like 4 °C or even more.

Second, the last time the climate was 2 °C higher than the present was around 129,000 years ago (palaeoclimatologists call this the 'Eemian interglacial period'). At that point, sea levels were 5–6 metres higher than at present, much higher than the 60 cm increase that the IPCC's 2007 report suggested would be the likely maximum.⁵ So even

³ 'World powers accept warming limit', BBC News, see <http://news.bbc.co.uk/1/hi/world/europe/8142825.stm>, accessed 9 July 2009.

⁴ An excellent short explanation of the logic here can be found in A. Dessler and E. Parson, *The Science and Politics of Global Climate Change* (Cambridge: Cambridge University Press, 2006), pp. 155–8. Briefly, the logic is this: according to IPCC models, to achieve a maximum temperature rise of 2 °C, you can have a maximum CO₂ atmospheric concentration 510 ppm if you assume low climatic sensitivity to CO₂ concentrations, 370 ppm with a mid-range sensitivity assumption, and only 270 ppm if climate is highly sensitive to CO₂ levels. Given that CO₂ concentrations are currently at around 380 ppm, we are already past that threshold unless climate only has a lower sensitivity. That we don't yet have the temperature changes is because of the delays in how the atmosphere-ocean system responds to the CO₂ increases.

⁵ See Mark Lynas' summary of this evidence in M. Lynas, *Six Degrees: Our Future on a Hotter Planet*, (London: 4th Estate, 2007), pp. 71–3.

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if we manage to limit temperature increases to 2°C, we may be in serious trouble. At 4°C higher, even on the conservative IPCC assessments of a 60 cm sea-level rise (their minimum projected increase for that temperature rise), large areas of cities like London, Boston, New York, Alexandria, Mumbai and Shanghai will be inundated. But in the longer term (the only question is how quickly), with this amount of warming, sea level will rise by between 6 m and 25 m as the Greenland and Antarctica ice sheets melt (the variation depends on how much of Antarctica melts at this temperature). At a 6 m rise, London's flood defence experts suggest that much of London can no longer be defended. But again, the last time the world was 4°C warmer than today (around 40 million years ago), there was no ice at either pole, and sea levels were more like 50 m higher than today's.⁶ This is the science-fiction world of J. G. Ballard's 1962 novel *The Drowned World*, where Greenland is the most habitable part of the planet. The novel is set in London where the spire of St. Paul's Cathedral just manages to peak out above the water level.⁷

... TO RESPONSE

So recent evidence gives us good cause to believe that it is highly probable we are on course for a very bumpy ride, and that our window of opportunity for trying to achieve a soft climatic landing is there, but quickly closing. Writing in mid 2008, Andrew Simms of the New Economics Foundation claimed that we have '100 months to save the planet'.⁸

While this evidence is crucial in building a sense of the necessity of radical action on climate change, it tells us little about how societies are already both adapting to climate change and developing strategies to mitigate it. Apart from in George Monbiot's *Heat* and Anthony Giddens' *The Politics of Climate Change*, the best we get is a series of 'what you can do to help the fight against climate change', as in books like *The Climate Diet: How You Can Cut Carbon, Cut Costs, and Save the Planet* or *How to Live a Low Carbon Life* or former chief scientist for the UK government Sir David King's *The Hot Topic: How to Tackle Global Warming and Still Keep the Lights on*.⁹

⁶ M. Lynas, *Six Degrees...*, pp. 178–82.

⁷ J. G. Ballard, *The Drowned World* (London: Gollancz, 1962).

⁸ A. Simms, '95 months and counting', *The Guardian*, 1 January 2009. <http://www.guardian.co.uk/commentisfree/2009/jan/01/climatechange>.

⁹ J. Harrington, *The Climate Diet: How you can cut carbon, cut costs, and save the planet*. (London: Earthscan, 2008); C. Goodall, *How to Live a Low Carbon Life*,

In Gore's film, the question of what needs to be done is barely an after-thought – relegated to the credits – and left in the realm of the most individualised of actions – buying a hybrid car or turning down the thermostat or the air-conditioner.

The premise for this book is that we need to understand how societies might *collectively* address climate change. Dealing successfully with climate change entails a wholesale transformation so that the economy can be 'decarbonised'. Our central question is: 'What will determine whether, as a society, we can avoid the most dangerous aspects of climate change?' And our central argument is encapsulated in our title *Climate Capitalism*.

We are not endorsing a blind faith in capitalism to adequately address climate change. Those at all familiar with our other work would be surprised if that were the case. We are suggesting, however, that the origins of climate change are in the ways that the economy has been organised; the technologies, sectors, imperatives and patterns of growth that have led to increasing CO₂ emissions. These have all been also central to the growth of the capitalist economy as a whole over the last two centuries.

As a consequence, the attempt to decarbonise the global economy presents a huge and unprecedented challenge. The transformations involved are not easy to pursue, will not be smooth and most likely unpopular. There are plenty who would lose out from such a transformation – coal companies, miners, oil companies and exporting countries, those addicted to their cars, flying round the world or other aspects of high-consumption lifestyles, in particular. They can be expected to resist, and have already done so vociferously.

Behind the cosy language used to describe climate change as a common threat to all humankind, it is clear that some people and countries contribute to it disproportionately, while others bear the brunt of its effects. What makes it a particularly tricky issue to address is that it is the people that will suffer most that currently contribute least to the problem, i.e. the poor in the developing world. Despite often being talked about as a scientific question, climate change is first and foremost a deeply political and moral issue.

The origins of climate change are implicated in the choices we all make every day, throughout the day. From the moment you wake

(London: Earthscan, 2007); G. Walker and Sir D. King, *The Hot Topic: How to Tackle Global Warming and Still Keep the Lights on* (London: Bloomsbury, 2008); A. Giddens, *The Politics of Climate Change* (Cambridge: Polity Press, 2009).

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up in the morning and decide what to eat for breakfast (assuming you have that luxury) you are engaging, mostly unconsciously, in sets of choices about whether the food you eat is sourced locally or has been transported half way around the world to get to your breakfast table. How you heat the water for your shower implies a decision to use a particular source of energy which will have an impact (malign or benign) on climate change and how you decide to get to work also determines how much CO₂ you add to the atmosphere.

It is easy to see then why politicians talk about personal carbon allowances, making us individually responsible for our carbon footprints. But if decarbonisation of the economy is really to take off, the challenge has to be addressed at many more scales. The suppliers of our energy have to have incentives to switch to renewable options. We have to have transport systems that do not create incentives for individual and unnecessary car use, which in turn implies changes in planning systems for a carbon-constrained world.

This is not only an issue of ethical consumerism and individual choice. Persuading people to buy CFC-free deodorants may have worked in helping to address ozone depletion. Persuading people to fly less in a world of cheap flights, to leave their cars at home when their nearest shops are out of town is harder because food, energy and transport systems, currently organised, assume a world unconstrained by limits on carbon use. This is why capitalism as it currently operates is not working when it comes to tackling climate change. Fundamentally, capitalism does not have a concept of sufficiency, of how much is *enough*. If it doesn't continue growing, it implodes in crises such as those of the 1930s.

But if one premise for this book is that climate change entails an enormous transformation of how capitalism operates, then our other premise is that despite resistance, in fact an embryonic form of climate capitalism is already emerging. The chapters that follow elaborate how the ways that governments, corporations and non-governmental actors have responded to climate change are best understood as an effort to decarbonise the global economy. Of course this development is patchy – some governments are more active than others, some businesses much more entrepreneurial and far-sighted than others – but the foundations of such an economy are nevertheless in the process of being built. These foundations can be characterised as different types of carbon markets, which put a price on carbon, and thus create incentives to reduce emissions.

These sorts of response to climate change are also highly problematic of course. Many readers will already have prejudices against, or at least worries about, treating the atmosphere like a commodity to be bought and sold, or about buying carbon offsets to enable the rich to continue their high-consuming lifestyles with a clear conscience. We share these worries.

But there is something about climate change that makes it unique amongst environmental problems. The origins of climate change are deeply rooted in the development of the global capitalist economy. The ways the world has responded to climate change have been conditioned by the sort of free-market capitalism which has prevailed since the early 1980s. To respond to climate change successfully entails decarbonising that economy, to re-structure or dismantle huge economic sectors on which the whole of global development has been based. This is in sharp contrast to efforts to deal with ozone depletion, which involved the elimination of a relatively small batch of chemicals with specific uses by a handful of leading companies. Likewise, we can deal with most forms of water pollution by banning certain applications of fertilisers, dealing with human and animal wastes, and controls on what chemical industries can discharge into rivers and lakes. To ban these practices, while often inconvenient for the companies involved, is hardly a challenge to the whole edifice of global capitalism.

In contrast, to propose to ban all further coal and oil use, as some have done, is both unrealistic and deeply problematic. The use of these fuels is currently so widespread that simply to ban them would cause economic growth to collapse. And a lack of growth is something that the capitalist system in which we live simply cannot tolerate – it would collapse as a system.

So the challenge of climate change means, in effect, either abandoning capitalism, or seeking to find a way for it to grow while gradually replacing coal, oil and gas. Assuming the former is unlikely in the short term, the questions to be asked are, what can growth be based on? What are the energy sources to power a decarbonised economy? Which powerful actors might be brought on board to overcome resistance from the oil and coal companies? And for those worried (including us) about the image of unbridled free-market capitalism as managing the climate for us, then we are forced to address the questions: What type of climate capitalism do we want? Can it be made to serve desirable social, as well as environmental, ends? And what might it take to bring it about?

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In this context, a response that focuses on creating markets, where money can be made for trading carbon allowances within limits set by governments, is rather appealing. Against the backdrop of the problems of recalcitrant industries and reluctant consumers, it creates the possibility of economic winners from decarbonisation. What's more, those winners – financiers – are rather powerful, and can support you as you build the policies which might produce decarbonisation overall. Trading on its own clearly won't be enough, but it does provide a powerful constituency that benefits from climate-change policy, which is crucial politically.

Turning this into a successful project for decarbonisation requires constructing altogether different models of growth that do not depend on abundant and cheap fossil fuels, one that may actually reward reductions in energy use and its more efficient use. This means decoupling emissions growth from economic growth. The key question is whether capitalists can find ways of doing new business in a way that helps to achieve decarbonisation. They need to be able to do this in a way which brings on board those that will be doing less business in a low-carbon economy, or at least to provide enough growth overall for policymakers to be able to override their resistance.

What we try to do in the chapters that follow is elaborate the central elements in this emerging economy, and the central political dilemmas we face as it comes into being. Will it in fact enable us to decarbonise the global economy? Does it need to be regulated to do so or will climate capitalism arise 'naturally' out of the practices of corporations and markets? Will it come at the expense of the world's poor and marginalised, or could it rather enable redistribution of wealth from rich to poor countries at the same time?

At the end of the book, we draw out various possible scenarios for what sorts of climate capitalism we might end up having to live (or die) with. We invite you, the reader, to decide which one you feel is most likely and which one you would like to see. None are inevitable. All result from the complex interplay of a wide array of actors, institutions and decision-making processes. And the financial crisis of the last couple of years gives us unusual room for manoeuvre in shaping these responses. Getting involved as consumers, activists, entrepreneurs and concerned citizens will allow us all to shape the sort of future we want in a carbon-constrained world.