

# Business

**Book or Report Section** 

**Accepted Version** 

Okereke, C. (2015) Business. In: Bäckstrand, K. and Lövbrand, E. (eds.) Research Hand Book on Climate Governance. Edward Elgar Press., Cheltenham, pp. 127-133. ISBN 9781783470594 Available at http://centaur.reading.ac.uk/62916/

It is advisable to refer to the publisher's version if you intend to cite from the work.

Publisher: Edward Elgar Press.

All outputs in CentAUR are protected by Intellectual Property Rights law, including copyright law. Copyright and IPR is retained by the creators or other copyright holders. Terms and conditions for use of this material are defined in the <a href="End User Agreement">End User Agreement</a>.

# www.reading.ac.uk/centaur

# CentAUR

Central Archive at the University of Reading

Reading's research outputs online

# **Business and Climate Governance**

Chukwumerije Okereke

### Introduction

One of the most distinctive features of the global governance of climate change is the prominent roles played by non-nation states actors (NSAs) (Hoffmann 2011, Newell 2000, Okereke et al. 2009). These include businesses, environmental NGOs and civil society organizations, which, unlike national governments do not have coercive authorities or decision-making powers.

Of these different types of NSAs, businesses are generally known to command the most significant influence (Leggett 2000, Levy and Newell 2005). Through their central role in economic development, influence on behavior, investment and innovation, businesses have enormous power to facilitate or hinder low carbon societal transformation (Bumpus et al. 2014). The unique power of business to shape the direction of global environmental change is aptly captured by the World Wide Fund for Nature (WWF) in 1998 when it stated, that 'while business represent perhaps the single biggest threat to society and the natural world; it can also represent one of our greatest allies in our mission to safe guard it and provide for its sustainable development' (WWF 1998, cited in Marsden 2000, p. 9).

Relevant scholarship has provided comprehensive descriptions of business climate activities with analysis suggesting that while corporate action on climate change is increasing in scope, the pace of change still falls far short of what is required to curb rising carbon emissions (Hoffman 2006, Kolk and Pinkse 2004, 2005, Okereke 2007, Okereke et

al. 2011). There remains, however, significant gaps in the understanding of the broader logic that explains collective business attitude towards climate change and relatedly how best to catalyse corporate sustainability transformation.

How, for example, does one account for the consistent mismatch between rhetoric and action? Are businesses deliberately refusing to deploy the enormous resources at their disposal to help society shift towards a low carbon future, and if so, why? Are businesses desirous to lead societal low carbon transformation but are constrained by wider structural forces? Who is to blame when businesses do not do their fair share to address climate change – is it managers, market forces, governments or profit seeking shareholders? And, critically where exactly does the momentum for change lie and how can this be activated? With notable exceptions (e.g. Levy and Newell 2002, Levy and Egan 2003, Okereke et al. 2009), scholarship on business climate governance has dwelt more on descriptions and less on theoretical exposition.

This main argument of the chapter is that the explanation of the slow pace of business action requires a socio-cultural theory that transcends the narrow premises of dominant corporate social responsibility (CRS) and business management approaches. I assert that only a critical political economy approach which captures the complex interplay between cultural ideas, power, politics, and economic interests can provide basis for explaining the prospects and limits of corporate climate governance. My argument, which draws from similar existing works (Levy and Egan 2003, Levy and Newell 2002, Okereke et al. 2009) is focused on carbon-intensive multinational companies (MNCs) whose activities are generally considered crucial in shaping societal response to climate change (McKibben 2012).

To begin, I first provide a quick overview of business climate actions followed by a short account of the four broad epochs in big business orientation towards climate change – covering from 1980 till present.

## **Corporate climate strategies: An overview**

Scholarship on business activities on climate change has generated a detailed list of the actions and categories of activities that businesses take in response to climate change. Hoffman (2006) and Okereke (2007) have both compiled a very long list of categories of actions that business take on climate change, which range from basic technological changes (e.g. installing low energy light bulbs) through medium-cost activities (e.g. installing waste heat recovery facilities); to fundamental process or product innovation changes.

Kolk and Pinkse (2005) provided a three-by-two classification of business responses to climate change based on organizational level of action and the 'orientation' of the action. In terms of organizational level of actions, the typology distinguishes between actions centered on: (i) internal firm activities; (ii) supply chain of companies; and (iii) collaboration with firms or entities in other sectors. Concerning orientation, the model makes a distinction between developing emission reducing technologies or services ('innovation') *versus* buying or using emission reducing technologies developed by others ('compensation').

Based on the inclusion of activities that cover not only climate mitigation but also climate adaptation, Okereke et al. (2011) have grouped business climate activities along four categories namely: (i) capabilities (climate measurement, reporting and accounting); (ii) culture (eg waste recycling); (iii), structure (organizational or infrastructural change);

and (iv) processes based changes (new technology, feed stock or production practices). It is obviously difficult to rank business climate activities according their impact because what a firm can do often depend on its size and sector. However, there is a strong recognition (Bumpus et al. 2015) that some of the most significant contribution of business to climate change mitigation will come through product and technological innovation that help to drive broad low carbon societal transformation.

#### The four eras in business climate activities

Looking at the history of the market and political climate activities of big carbon intensive business, it seems possible to identify, four distinct if overlapping eras. These are the eras of: (i) opposition, (ii) reluctant support, (iii) backtracking, and (iv) ambivalence.

# Era of denial and opposition (1985-1999)

Although the rise of climate change as a subject of public policy concern in the mid to late 1980s at first provoked mixed reactions from big business (including hope, optimism and caution) (Levy 1997) it was the attitude of denial and negativity that eventually dominated the landscape (Leggett 2000). The business group that epitomized this negative reaction was the Global Climate Coalition (GCC) created in the US by the petroleum and automotive industries. At its peak, the GCC had over 50 companies and trade associations in the oil, coal, utility, chemicals, and auto industries as active members and were spending nearly US\$ 1 million a year on its campaign to convince governments against strong climate action (Levy 1997, p. 58). It is also reported that the group 'spent \$US13 million on television, newspaper and radio advertising in the three months leading up to the Kyoto

conference to promote public opposition to the treaty' (Beder 1999, p. 120). Apart from the GCC, other notable anti-climate groups included the European Steel Association (EUROFER) and the Climate Council, which worked closely with oil exporting countries such as Kuwait and Saudi Arabia as well as with oil and coal companies.

The main strategy of this "rejectionist" coalition of industry interests' (Levy 1997, p. 60) was mostly to cast doubt on the integrity of prevailing climate science indicating human induced global warming as well as the socio-economic and environmental merits of strong climate action. Together, they sort to portray climate change as an anti-growth agenda of environmental organizations like Greenpeace and caricatured proposed climate mitigation measures as portending a return to antiquity. They also spent large sums of money funding climate skeptic scientists in the US and around the world in order to create evidence to discredit strong action (Beder 1999).

Levy (1997) has suggested that the success of these rejectionist energy intensive businesses in deflecting strong climate action at global level and the in the US was due a range of factors including, well-funded campaign machinery, the structural powers of the industries involved, and crucially the support received from some governments. Many recent analysis continue to indicate that a set of powerful anti-climate industry lobby groups are primarily responsible for undermining effort to create strong climate regulations both globally and in specific industrialized countries (Böhm et al. 2012, Meckling 2011).

## Era of indecision and reluctant support 2000-2008

The next era that can be identified in the orientation of big businesses towards climate change is that of indecision and reluctant support. Within this period many big business

appeared to have changed approach from opposing climate policy as they made gestures towards engaging with various mitigation actions. A clear evidence of this apparent shift in mood was the rate at which business withdrew their membership from the notorious GCC between 1997 and 1999; forcing the group to disband in 2000. One of the notable companies to first show real sign of direction change was British oil giant, BP. Following its withdrawal from GCC in 1997, BP spent US\$ 45 million to fully acquire a solar energy company called Solarex which it then integrated with its own BP solar division to create what was then the biggest solar company in the world. Subsequently BP launched a US\$ 200 million public relations campaign branded 'Beyond Petroleum' to reposition the company as being in favor of strong action to address climate change (Beder 1999).

Shell, was another high profile business which in addition to pulling out from GCC also made considerable investment in renewable energy portfolio where the company is reported to have committed around US\$ 1.2 billion between 1999 and 2006 (Bergin 2009). Shell was also one of the first companies to launch an international trading scheme which it said was deigned to build experience and crucially to persuade governments that emission trading was a feasible option to tackling climate change. In the automobile industry companies such as Ford, Daimler-Chrysler and General Motors who were founding members of GCC also defected and initiated various actions to respond to climate change (Jones and Levy 2007). Similarly, notable signs of progress were seen in the steel (Kim and Worrel 2002), cement (Okereke and Küng 2010) and chemical (Hart 1997) industries.

This period was also the era of the proliferation of multi-stakeholder partnerships involving businesses, governments and NGOs (Pattberg 2010). It has also been described as 'the decade of sustainability reporting' (Kolk 2004) with the most famous example being

the Carbon Disclosure Project (CDP) – a voluntary initiative which publishes annual data disclosing the greenhouse gas emissions of a large number of companies around the world.

It is generally believed that a major factor responsible for the change in strategy of business towards climate change was the agreement of the Kyoto Protocol in December 1997, which sent a clear signal to industry that governments will act to limit climate change in their respective jurisdictions (Hoffman 2006). Other factors often cited include rise in public concerns and criticisms from environmental NGOs some of which began to run national divesture campaign targeting the climate skeptic companies (Meckling 2011).

# Era of cooling off and backtracking (2006-2009)

The short period from 2006 to 2009 can be described an era of cooling off and eventual backtracking in corporate climate orientation towards climate change. This era which coincided with the onset of the global economic crisis, saw several proactive companies quietly toning down or even completely retracting their climate commitments.

Shell offers a good illustration of this swift tactical shift. Having previously made a huge public campaign deal of their investments in renewables and its commitment to low carbon transformation more broadly, Shell in 2006 spun off its solar business which had over 600 staff and manufacturing plants in Germany, US and Canada. Then in 2007 it quietly sold off its photovoltaic operations in Indonesia, India, Philippines and Sri Lanka which had a combined total of over 260 staff in about 28 offices (Bergin 2009).

Furthermore, in 2008 Shell defied public outcry and pulled out from a major wind farm project (London Array offshore scheme) which it had agreed to fund (Ibid 2009).

Commenting on this action environmental activist, George Monbiot reported that in fact

'Shell's spending on renewables – except biofuel – appeared to have fallen from US\$ 200m a year to zero' in years between 2000 and 2009 (Monbiot 2009, n.p).

Interestingly, it was about the same period that Shell announced that it was investing heavily into oil tar sand oil extraction in Canada - a move which BP promptly replicated in matter of weeks. It was also within this period that carbon price crash and along with it, the once high hopes that the EU ETS will spur radical innovation in renewable technology (and societal low carbon transformation). Broadly speaking, with the onset of the financial crisis, the attention of business as well as governments and the general public shifted away from climate change towards a concern to 'reboot' the conventional economy (Wittneben et al. 2012).

# Era of ambivalence and incongruity (2010 to present)

The current era can be perhaps described as a period of ambivalence and incongruity. This era is characterized by a simultaneous growth in business climate activities and rapidly rising carbon emissions.

On the positive side, modern renewable energy now provide an estimated 10 per cent of global final energy consumption with the most significant growth having 'occurred in the power sector, with global capacity exceeding 1560 gigawatts (GW), up more than 8 per cent over 2012' (REN21 2014). Furthermore, the global prices of key renewables such as solar and wind have continued to fall as the percentage of renewables in energy portfolios are rising in both the US, and Europe (Feldman et al. 2014). A report by the Solar Energy Industries Association (SEIA 2014) found that the average price of a

residential PV installation in the second quarter of 2014 dropped 41 per cent from 2010. Since the second quarter of 2010, the average price of a solar panel dropped by 64 per cent.

The number of hybrid and purely electric car are rising steadily in the US and other parts of the world (Bianco et al. 2014). To date, there are now an estimated 405 000 electric cars globally with some figures suggesting that electric car sales increased 228.88 per cent in 2013 compared to 2011 figures (Ibid). Equally notable is the fact that many more MNCs (about 3000) are now reporting their emissions under the CDP; and that the number of institutional investors backing the voluntary reporting project has grown to 767 with a net worth of US\$ 92 trillion in assets (CDP 2014).

But at the same time as these initiatives are increasing, carbon emission continue to rise steadily. In May 2011, the International Energy Agency (IEA) announced that global carbon dioxide (CO<sub>2</sub>) emissions from energy use in 2010 reached its highest in history. Critically, the IEA estimated that 80 per cent of projected emissions from the power sector in 2020 are already locked in, as they will come from power plants that are currently in place or under construction today (International Energy Agency [IEA] 2010). Moreover, the Carbon Tracker (2011) estimates that the amount of carbon in proven oil, gas and coal reserves which the fossil-fuel industry is committed to burning is 2795 Gigatones – over three times the amount required to keep the global mean temperature below 2 degrees Celsius.

A number of big companies (eg Shell) which are openly calling for stronger climate mitigation targets belong to industry groups that oppose policies seeking to undercut efforts at carbon emissions (e.g. the American Legislative Exchange Council (ALEC)). Oil companies are investing in sand tar an intensely polluting fuel source which as Monbiot

once said, 'makes conventional petroleum extraction look green' (Monbiot 2009, n.p). Despite trumpeting green economy just about 10 per cent to 20 per cent of the several trillion dollars expected to be spent on fiscal-stimulus packages around the world to low-carbon infrastructure would be a triple win. Global subsidy on conventional oil is US\$ 1 trillion compared to US\$ 200 million subsidy spent on renewable energy related subsidies. The result, says McKibben (2012, p. 7) is 'there's simply too much money to be made on oil and gas and coal to go chasing after zephyrs and sunbeams.'

Public concern with climate change has declined in both the US and the EU with 'the economic insecurity caused by the Great Recession' being cited as the principal reason (Scruggs and Benegal 2012). Restarting growth has become the priority following the economic decline and climate skepticism is again on the rise (Grundmann this volume). Green economy has become a mantra in policy making circles but the expectation that green stimulus will help to create green jobs, diversify economic activity away from oil and lead to greater social equity has failed to eventuate, at least thus far (Ehresman and Okereke 2015).

# Explaining the incongruity: Towards a socio-cultural theory of corporate climate governance

The apparent mismatch between the scale of climate change and the pace of business transformation has been a subject of much commentary in literature. Pointing at the discrepancy between proclamations and actions, some accuse businesses of 'green washing', hypocrisy and deception (Hart 1997, Laufer 2003). Yet others (including some firms) have defended business' contribution to climate mitigation and suggested that the

blame for the slow pace of action lies in national governments for not putting in place stronger and more long term climate policies (Foxon and Pearson 2015, Lye 2015).

Although there are notable exceptions, a major limitation of scholarship on corporate climate governance has been that the growth of fairly comprehensive descriptions of business climate activities has not been matched by robust conceptual treatments.

Specifically, neither of the two leading theoretical approaches – Corporate Social Responsibility (CSR) and business management – provides enough tools for understanding the complexity of the business climate strategies, the reasons for prevailing inertia and clear options for propelling the needed change (cf. Le Menestrel and de Bettignies 2002, Wittneben et al. 2012).

Corporate Social Responsibility based accounts generally tend to suggest that business' actions on climate change (and other environmental issues) are strongly linked to morality and common good (He and Chen 2009). It is true that from a narrow perspective of 'being good citizens', CSR approaches have more recently widened to include many other variations including critical strands that accommodate a measure of instrumentalism (Garriga and Mele 2004, Windsor 2006). Nonetheless, a key idea remains that, just like ordinary people, businesses ought to view themselves as good citizens, with moral obligations to contribute to societal good (Klintman this volume). Even the critical strands of CSR literature still tend to stress the 'win-win' philosophy or the notion that a core motivation for business engagement with climate change is to do well (financial) by doing good (sustainability). It is this commitment to ideological holism and related ethical ideals like 'common good' which led Friedman (1970, n.p.) to insist that CSR at its core remains 'an explicitly collectivist doctrine'.

Now, there is no doubt that businesses can be a major force for good in societies. There is in fact evidence that a lot of business activities on climate change at the early period may have stemmed from the ethical (CSR) perspective. For example Okereke (2007) found that an overwhelming majority of the 100 largest companies in the UK by market capitalization (FTSE 100 companies) reported their carbon management as part of their corporate social responsibility with many citing duty of care to environment and society as a motivation. It also seems to be the case, even currently, that while most big business now say they recognize the strategic importance of climate change (Okereke and Russel 2010), there remains a tendency to treat it as an exogenous peripheral concern.

The main problem with the CSR approach, however, is that the win-win mantra (which may well apply in select cases) glosses over pervasive trade-offs between carbon polluting processes and self-interested consequences inherent in many major decision of big businesses (Le Menestrel and de Bettignies 2002). For example the CRS win-win thesis grossly under-appreciates the chronic tensions between undertaking expensive climate action for potential long-term benefits and coveting immediate short-term gains by sticking with 'business as usual' approaches. It goes without saying that the primary concern of business is not environmental morality but how to survive in a cut-throat competitive market world. Hence while business may not be uninterested in environmental sustainability, it is very difficult to see how any climate activity that would not result in immediate or long term financial advantage can gain mainstream attention.

The above does not imply an endorsement of some Marxist or firm-theory-based accounts that seek to portray business as heartless greedy monsters incapable of appreciating anything other than short-term profit maximization. Yet it is hard to escape the

conclusion, that 'a leitmotiv of wealth creation' (Windsor 2001, p. 226) will forever dominate the managerial conception of responsibility (Friedman 1970).

Some have suggested moving away from depicting business climate action as a matter of CSR towards emphasizing the business strategic implications (Hoffman 2006, Le Menestrel and de Bettignies 2002). The argument is that incorporating climate change 'as an explicit aspect of strategic business management and as an endogenous component of business model is crucial in making progress towards a carbon neutral economy' (Okereke 2007, p. 477). However, it is not clear how far such a shift in practice can be expected to occur if it is not accompanied or perhaps even predicated on wider social and structural changes.

Some scholars have drawn from institutional theory – a popular strand of thought in business management – to show how the social and institutional contexts within which companies operate creates varying constraints and motivations that shape corporate climate behavior (Kolk et al. 2008). Institutional theorists (DiMaggio and Powell 1983) argue that managerial decisions are strongly influenced by three institutional mechanisms: coercive, mimetic and normative pressures. Coercive pressure results mostly from the prevailing regulatory environment; mimetic pressure originates mostly from membership of industry organizations; and normative pressures stem predominantly from NGOs, civil societies, and the wider public. These mechanisms, it is argued, create and diffuse shared sets of values, norms and rules that eventually produce similar practices across organizations that share a common organizational field, creating greater 'isomorphism'.

Several analyses have indeed found that business climate activities are driven by multiple factors prominent among of which are regulations, public pressure and

competitive dynamics (Kolk and Pinkse 2004, 2005). Moreover studies have consistently shown that companies operation in same institutional settings display plenty of similarities in their approaches to climate strategies; while those operating in different institutional environment tend to show greater diversity (Levy and Newell 2000, Skjærseth and Skodvin 2001).

However, despite its obvious appeal, institutional theory harbors the important weaknesses of not explaining the underlying logic that shapes these coercive, mimetic and normative pressures (Wittneben et al. 2012). As a result it is very weak as a means for understanding conditions for, and barriers against societal transformation. It is no doubt important to know that regulatory and societal pressures will make business act, but what is perhaps more important is to understand under what conditions these pressures will be exerted and in what direction. Granted that business will act if pushed by governments; the question that is more pertinent at least from an investors perspective is whether governments will in fact push business and under what conditions are this likely to happen?

To say anything meaningful about the core dynamic of corporate climate governance and by implication its prospect and limits, one must focus one's mind on the fundamental *structures* and *ideas* that govern modern societies. Concerning structures, a good starting point is the recognition of the intimate and reciprocal connection between the political, social and economic domains. In other words, that the market is not a separate domain operating in isolation but rather is mutually co-constitutive with the social and political spheres (Levy and Egan 2005). This does not completely void the often repeated observation that companies' behavior are ultimately fixed by the market. However it undercuts the business management theories that tend to focus solely on market forces as a

way of explaining corporate climate activities by recognizing that competitive dynamics are hugely shaped by a web of political and social forces.

Furthermore, it is critical to understand that the social organization of production is actively structured and reproduced according to relations of power. Accordingly, neither politics nor market is a natural phenomenon resulting from spontaneous interactions.

Rather, these are both arenas for power contestations and tools for distributing and redistributing material and political resources. On the one hand, power and self-interested politics play key roles in shaping the structures within which 'free' exchanges take place; and on the other hand, market structures and relations of production confer power and other advantages which in turn are used to sway political process. The above implies that corporate climate strategy must be understood in terms of fierce contestations for social power, profit and political gains. Insofar as effective climate response demands some form of societal transformation, the key question is who wins and who loses in such a new socio-political order. It is about who gets what, when and how?

In terms of ideas, it needs to be better recognized the extent to which the hegemony of free market capitalism have conditioned the behavior, expectations and the perception of interest of large segments of the society along a path that reproduces the existing social order while undermining conditions necessary for the emergence of a radical alternative. They key here is to underscore the point that while businesses as a collective may indeed represent a central force in shaping the direction and pace of climate response, business will not act radically on climate change unless there is strong alignment between civil society, consumers and business interest. Hence, transformation is only possible by altering the broader culture, politics and incentives that shape the action of business and larger

society. Levy and Spicer (2013, p. 259) put this point across very forcefully when they observe that in each society, there is a dominant 'imagery' and set of 'shared sociosemiotic systems that structure a field around a set of shared understandings of the climate' and what constitutes responsible corporate climate behavior (see Neimanis et al. this volume). Hence, it would for example, seem futile to expect businesses to transform their ways towards sustainability while the larger societal culture is steeped in greed, consumption and materialism.

The forgoing suggest that rather than look towards business managers and technology innovation for 'climate salvation', focus should probably be on the institutions of civil – media, church, academia, NGO groups, etc. – which philosopher Antonio Gramsci (1971) long identified as the crucial site for both the maintenance and successful challenge of hegemonic ideologies. It is in these arenas, Gramsci argued, that the moral and intellectual leadership required to recast the interest calculations of the ruling elite and initiate a new social order, can be found. It is now increasingly recognized that climate change is not as much a technical problem as it is a political problem imposing essentially the difficulty of deciding what type of social order that will be created in the context of a low carbon societal transformation, and crucially the implications of such a new order on how resources and power and are (re)distributed.

Hence, rather than looking naively looking up to individual businesses or the unseen hand of market forces to bring about the desired change, the society must face up to the reality that only a strategic and concerted challenge of the *status quo* through intellectual, discursive and democratic revolution holds the prospect of bringing about a societal low carbon transformation. It may well be that market is the most efficient way to

address climate change; but accelerated technological innovation will not happen unless governments around the worlds individually and collectively provide the right framework of incentives. This in turn is unlikely to happen until climate change becomes a matter of serious electoral consequences for politicians. But none of these is likely to occur insofar as the general public continues to believe that their long term interest is best served, by propping up a system that is fundamentally designed to reproduce the dominance of a coalition of the 'carboniferous bloc' (Dalby and Paterson 2008) and their allies in government. A politics of vested interest which transcends the collectivist premise of corporate social responsibility is therefore crucial to instigate critical engagement of both governments and businesses with climate change.

### **Conclusions**

Businesses occupy a central place in the quest for societal transformation in the face of climate change. It is not possible to envisage a sustainable transformation that did not implicate business in significant ways. So far the climate strategies of business have oscillated from opposition through reluctant support to ambivalence. The ultimate result is that societal change to the extent that it can be said to be happing is mostly incremental. Understanding the direction, dynamics as well as the prospects and limits of corporate climate governance requires looking beyond narrow focus on social responsibility and competitive dynamics to the capitalist logic of the current society and how that locks governments, business and civil societies into a framework that reproduces the current order. Only by recognizing 'the embeddedness of markets in contested social and political structures' (Levy and Egan 2003, p. 803), is it possible to more away from the narrow view

of ethics and competitive dynamics in explaining the prospects and limits of corporate climate governance.

# **Bibliography**

Bäckstrand, K. (2008), 'Accountability of networked climate governance: The rise of transnational climate partnerships', *Global Environmental Politics*, **8** (3), 74-102. Carbon Tracker Initiative. (2011), 'Unburnable carbon: are the world's financial markets carrying a carbon bubble?', *Carbon Tracker Initiative*.

Beder, S. (1999), 'Climatic Confusion and Corporate Collusion: Hijacking the Greenhouse Debate', *The Ecologist*, 119-122.

Bergin T. (2009), 'Shell goes cold on wind, solar, hydrogen energy'. *Reuters*, 17 March. Bianco, N. et al. (2014), 'Seeing is Believing: Creating a New Climate Economy in the United States', Working Paper. Washington, DC: World Resources Institute, available at http://www.wri.org/publication/new-climate-economy.

Böhm, S., M.C. Misoczky and S. Moog (2012), 'Greening capitalism? A Marxist critique of carbon markets', *Organization Studies*, **33** (11), 1617-1638.

Bumpus, A., J. Tansey, B.L.P. Henríquez and C. Okereke (eds.) (2015), *Carbon governance, Climate change and business transformation*, Abingdon: Routledge.

Carbon Disclosure Project Report (CDP) (2014), available at <a href="www.cdproject.net">www.cdproject.net</a>.

Dalby, S. and M. Paterson (2008), 'Over a barrel: Cultural political economy and "oil imperialism", in F. Debrix and M. Lacy (eds.), *Insecure States: Geopolitical Anxiety, the War on Terror, and the Future of American Power*, London: Routledge.

DiMaggio, P.J. and W.W. Powell (1983), 'The Iron Cage Revisited: Institutional

Isomorphism and Collective Rationality in Organizational Fields', *American Sociological Review*, **48**, 147-160.

Dunlap, R.E. and A.M. McCright (2011), 'Organized climate change denial', *The Oxford handbook of climate change and society*, 144-160.

Feldman, D., G. Barbose, R. Margolis et al. (2014), 'Photovoltaic System Pricing Trends', NREL/PR-6A20-62558, available at energy.gov/sunshot.

Foxon J.T. and P. Pearson (2014), 'The UK low carbon energy transition: prospects and challenges', in A. Bumpus, J. Tansey, B.L.P. Henríquez and C. Okereke (eds.) (2014), *Carbon governance, Climate change and business transformation*, Abingdon, UK: Routledge, pp. 158-174.

Friedman, M. (1970), 'The Social Responsibility of Business is to Increase its Profits', *The New York Times Magazine*, 13 September.

Gramsci, A. (1971), *Selections from the Prison Notebooks*, New York: International Publishers.

Ehresman, T.G. and C. Okereke (2015), Environmental justice and conceptions of the green economy', *International Environmental Agreements: Politics, Law and Economics*, 1-15.

Hart, S.L. (1997), 'Beyond greening: strategies for a sustainable world', *Harvard business* review, **75** (1), 66-77.

He, M. and J. Chen (2009), 'Sustainable development and corporate environmental responsibility: Evidence from Chinese corporations', *Journal of agricultural and environmental ethics*, **22** (4), 323-339.

Hoffmann, M.J. (2011), Climate governance at the crossroads: experimenting with a global response after Kyoto, Oxford University Press.

Hoffman, A.J. (2006), *Getting Ahead of the Curve: Corporate Strategies that Address Climate Change*, Prepared for the Pew Centre on Global Climate Change.

Jones, C.A. and D.L. Levy (2007), 'North American business strategies towards climate change', *European Management Journal*, **25** (6), 428-440.

Kim, Y. and E. Worrell (2002), 'International comparison of CO2 emission trends in the iron and steel industry', *Energy policy*, **30** (10), 827-838.

Kolk, A. (2004), 'A decade of sustainability reporting: developments and significance', *International Journal of Environment and Sustainable Development*, **3** (1), 51-64.

Kolk, A. and D. Levy (2004), 'Multinationals and global climate change: issues for the automotive and oil industries', *Multinationals, environment and global competition*, **9**, 171-193.

Kolk, A. and J. Pinkse (2004), 'Market strategies for climate change', *European Management Journal*, **22** (3), 304-314.

Kolk, A. and J. Pinkse (2005), 'Business responses to climate change: identifying emergent strategies', *California Management Review*, **47** (3), 6-20.

Kolk, A. and J. Pinkse (2007), 'Multinationals' political activities on climate change', *Business & Society*, **46** (2), 201-228.

Kolk, A., D. Levy and J. Pinkse (2008), 'Corporate responses in an emerging climate regime: the institutionalization and commensuration of carbon disclosure', *European Accounting Review*, **17** (4), 719-745.

Laufer, W.S. (2003), 'Social accountability and corporate greenwashing', *Journal of Business Ethics*, **43** (3), 253-261.

Leggett, J. (2000), *The Carbon war: Global Warming at the end of the oil era*, London: Penguin Books.

Le Menestrel, M. and H.C. de Bettignies (2002), 'Processes and Consequences in Business Ethical Dilemmas: The Oil Industry and Climate Change', *Journal of Business Ethics*, **41** (3), 251-266.

Levy, D. L. (1997), 'Business and international environmental treaties: ozone depletion and climate change', *California Management Review*, 39, 54-71.

Levy, D.L. and D. Egan (2003), 'A Neo-Gramscian Approach to Corporate Political Strategy: Conflict and Accommodation in the Climate Change Negotiations', *Journal of Management Studies*, **40** (4), 803-829.

Levy, D.L. and A. Kolk (2002), 'Strategic responses to global climate change: Conflicting pressures on multinationals in the oil industry', *Business and Politics*, **4** (3), 275-300. Levy, D.L. and P.J. Newell (eds.) (2005), *The business of global environmental governance*, MIT press.

Levy, D.L. and P. Newell (2000), 'Oceans apart? Business responses to global environmental issues in Europe and the United States', *Environment: Science and Policy for Sustainable Development*, **42** (9), 8-21.

Levy, D.L. and A. Spicer (2013), 'Contested imaginaries and the cultural political economy of climate change', *Organization*, **20** (5), 659-678.

Lye, G. (2014), 'Business as Low Carbon Transformation Driver?', in A. Bumpus, J.

Tansey, B.L.P. Henríquez and C. Okereke (eds.) (2014), *Carbon governance, Climate change and business transformation*, Abingdon, UK: Routledge, pp. 55-79.

Marsden, C. (2000), 'The new corporate citizenship of big business: Part of the solution to sustainability?', *Business and Society Review*, **105** (1), 8-25.

McKibben, B. (2012), 'Global warming's terrifying new math', Rolling Stone, 19, 43.

Meckling, J. (2011), Carbon coalitions: Business, climate politics, and the rise of emissions trading, MIT Press.

Michaelis, L. (2003), 'The role of business in sustainable consumption', *Journal of Cleaner Production*, **11** (8), 915-921.

Monbiot, G. (2009), 'Shell's subtle switch from renewables to the murky world of 'alternative' energy', Guardian Blog, available at

http://www.theguardian.com/environment/georgemonbiot/2009/mar/18/shell-renewable-energy-biofuels (Accessed 20 January 2015).

Newell, P. (2000), *Climate Change: Non-State actors and the Politics of the Greenhouse*, Cambridge: Cambridge University Press.

Newell, P. and M. Paterson (2010), *Climate capitalism: global warming and the transformation of the global economy*, Cambridge University Press.

Newell, P. and M. Paterson (1998), 'A climate for business: global warming, the state and capital', *Review of International Political Economy*, **5** (4), 679-703.

Okereke, C. (2007), 'An Exploration of Motivations, Drivers and Barriers to Carbon Management: The UK FTSE 100', *European Management Journal*, **25** (6), 475-486.

Okereke, C., H. Bulkeley and H. Schroeder (2009), 'Conceptualizing climate governance beyond the international regime', *Global Environmental Politics*, **9** (1), 58-78.

Okereke, C. and K. Küng (2013), 'Climate policy and business climate strategies: EU cement companies' response to climate change and barriers against action', *Management of Environmental Quality: An International Journal*, **24** (3), 286-310.

Okereke, C. and D. Russel (2010), 'Regulatory pressure and competitive dynamics: carbon management strategies of UK energy-intensive companies', *California Management Review*, **52** (4), 100-124.

Okereke, C., B. Wittneben and F. Bowen (2011), 'Climate change: Challenging business, transforming politics', *Business & Society*, 0007650311427659

Pattberg, P. (2010), 'Public–private partnerships in global climate governance', *Wiley Interdisciplinary Reviews: Climate Change*, **1** (2), 279-287.

Solar Energy Industries Association (SEIA 2014), available at www.seia.org (accessed 17 December 2014).

Scruggs, L. and S. Benegal (2012), 'Declining public concern about climate change: Can we blame the great recession?', *Global Environmental Change*, **22** (2), 505-515.

Skjærseth, J.B. and T. Skodvin (2001), 'Climate change and the oil industry: Common problems, different strategies', *Global Environmental Politics*, **1** (4), 43-64.

Veal, G. and S. Mouzas (2012), 'Market-Based Responses to Climate Change: CO2 Market Design versus Operation', *Organization Studies*, **33** (11), 1589-1616.

Windsor, D. (2006), 'Corporate social responsibility: three key approaches', *Journal of management studies*, **43** (1), 93-114.

Wittneben, B., C. Okereke, B. Banerjee and D. Levy (2009), 'Organization Studies Special Issue on "Climate Change and the Emergence of New Organizational Landscapes", *Organization Studies*, **30** (8), 917-919.