New Climate Alliances

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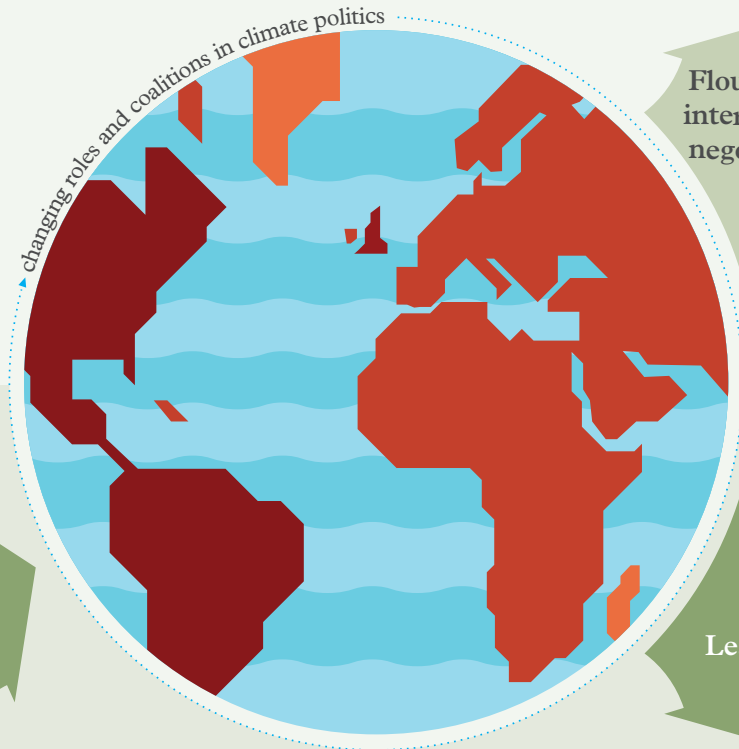University
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Contents

Tables and Figures

New Climate Alliances

Governments are no longer dominating climate change discussions. Environmental pioneers are emerging from different sectors and scales.

Floundering international negotiations

changing roles and coalitions in climate politics

Tomorrow

New climate leadership

Leads to...

Leadership is being shown with practical actions by city councils, industry and environmental non-government organisations to achieve ambitious emission reductions.

New climate alliances are emerging among business, civil society and regional governments, influenced by policy environments at local and European levels. These coalitions are driven by a combination of profit-making, competitiveness, environmental and social motivations.

Foreword

Linda McAvan, MEP

MEP for Yorkshire and the Humber, spokesperson on the environment and climate change for Labour and the Alliance of Socialists and Democrats (S&D) group in the European Parliament; member of the European Parliament's Environment Committee.

The European Union (EU) has played a leading role globally in the fight against climate change. It remains the only major economic block to pass legally binding targets for the reduction of carbon emissions. In 2008 MEPs and Ministers from the 27 EU member states passed a package of measures to tackle climate change by aiming for a 20% reduction in greenhouse gas emissions; improving energy efficiency by 20%; and by increasing the percentage of EU energy created from renewable sources to 20% by 2020 (compared to 1990 levels).

To meet these targets the EU has utilised a number of policy instruments including the Emissions Trading Scheme (ETS), a system of 'effort sharing' to set binding emissions reduction targets, and a fund of up to €1 billion to promote the development of Carbon Capture and Storage (CCS). However, action in tackling climate change has to involve the EU institutions working together with national governments and regional and local authorities as well as stakeholders in business and civil society and, of course, individual citizens.

The Yorkshire and the Humber region is undoubtedly affected by climate change but it is also in a position to reap significant economic benefits from decisive climate action. With its history of fishing, coal mining and heavy industry our region has the highest CO_2 emissions of any other UK region. But EU policies are driving investment in modern technology (such as the production of off-shore wind turbines). Our region is home to four proposed CCS power plants and proposals for the world's largest off-shore wind farm off the region's coast. If realised, these developments would put this region at the forefront of the new green technology industry.

This report makes a very important and timely contribution in highlighting some of the research being undertaken on climate change related issues in universities in this region and beyond. It rightly emphasises not only the challenges but also the opportunities provided by climate change, and the ways in which different societal actors (including businesses and NGOs), cities and governments are working together and are forming new alliances to respond to climate change.

Foreword

Jon Price

Director, Centre for Low Carbon Futures

In May 2013, Hawaii's Mauna Loa observatory reported that the concentration of climate-warming carbon dioxide in the atmosphere had passed the milestone level of 400 parts per million (ppm). In April 2013, prices in the EU's emissions trading scheme fell to record lows of below €3 a tonne of carbon dioxide. Up until mid-June, five months after its launch, not a single household in the UK has completed the process of making their home more energy efficient under the UK government's flagship Green Deal.

Not many years ago, the UK and the EU were seen as climate change pioneers, with ground-breaking climate legislation and emission trading schemes (the EU ETS) ensuring global leadership. If we are to believe the press, our collective actions on climate change appear to be in a mess So what's happened? Is it because of a combination of industry lobbying and recession swamping the market with permits to emit carbon "that prices have slumped and no longer impose any constraint on behaviour" (Financial Times, 17 April 2013), or is it because of a failure at a global scale? The annual United Nations Framework Convention on Climate Change (UNFCCC) Conference of Parties (COP) at Doha in November 2012 had probably the lowest profile of any COP since Nairobi in 2006. It re-established some legitimacy by ending in a deal comprising 26 decisions under the COP and 13 decisions under the 'Conference of the Kyoto Protocol' Parties – notably adopting a Second Commitment Period of the Kyoto Protocol (KPII) and moving the Green Climate Fund and the Technology Executive Committee to operational realities. Whilst this new agreement accounts for less than 15% of global emissions, it preserves a multilateral, rules-based structure through a second period of commitment.

But despite more than 20 years of accumulating evidence, our responses to climate change seem to be dismally inadequate. It's clear that carbon markets have partially failed to address the issue as they rely on political compromise, while the failures of the UK Green Deal are justified by policymakers because "it's only just starting". Should we instead be looking to new climate alliances, to local rather than national governments in managing growing urbanisation, and to greater roles for civil society in legitimising their national governments' climate change policy and regulations?

The context of the recent Mauna Loa observatory report of 400ppm "is a significant reminder of the rapid rate at which - and the extent to which - we have increased the concentration of greenhouse gases in the atmosphere….We must hope that the world crossing this milestone will bring about awareness of the scientific reality of climate change and how human society should deal with the challenge." (Prof Rajendra Pachauri, Chair of the Intergovernmental Panel on Climate Change).

This report, produced by the University of Hull, is therefore very welcome for its valuable insights into new climate alliances and links to further research.
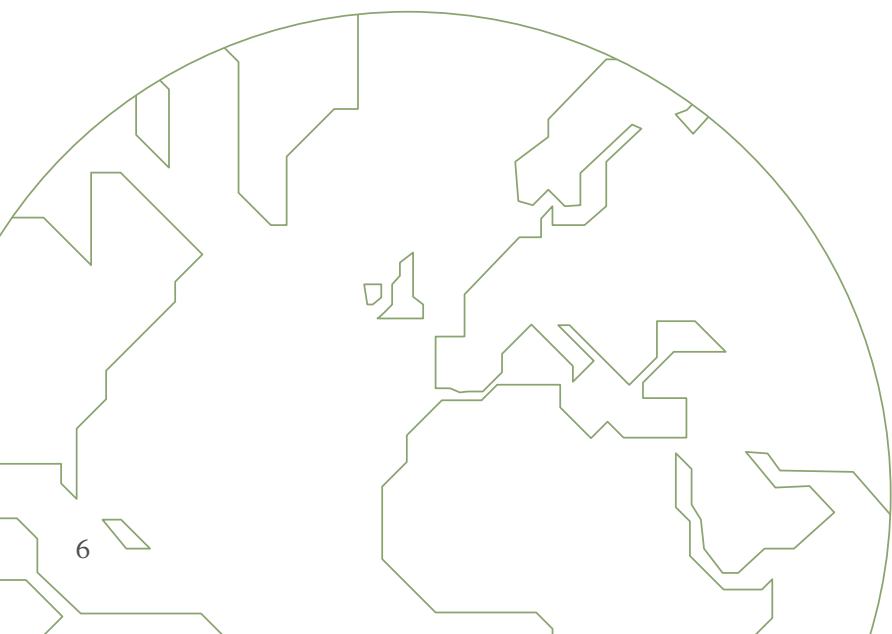
Introduction

Elizabeth Monaghan, Rüdiger Wurzel,
Andrew E. G. Jonas, David Gibbs,
James Connelly and Sally Eden,
University of Hull

In July 2012 researchers from the Departments of Politics and Geography at the University of Hull hosted an international, interdisciplinary workshop on European climate change governance. Supported by funding from the University of Hull and under the university's strategic research theme on Energy and Environment, the workshop brought together researchers and practitioners from across the UK and Europe, to discuss and analyse contemporary developments and challenges in climate change governance. This report presents some of the key discussions and findings arising from the workshop.

European climate change and energy governance aims to bring about a sustainable path towards low carbon societies. Governments have traditionally dominated international discussions about the nature of the climate challenge and the measures necessary to tackle it. However, the range of actors who encounter climate change adaptation and mitigation in their everyday experiences and the levels of scales at which climate issues are experienced and tackled, go far beyond governments acting at the national level. The starting point for the workshop and this report has been to examine the role and activities of businesses, civil society organisations, and regional and local authorities – and the alliances and coalitions within and between them – at local, regional, national, European and international levels.

The contributions to this report provide a snapshot of the research in progress in this area. As pieces of academic research they touch upon theoretical and conceptual as well as empirical questions, though the focus is mainly on the practical impacts and consequences of the research findings. Each contribution includes suggestions of related academic literature for readers who may wish to delve further into the issues. The report starts at the conceptual level with Liefferink, Veenman and Wiering developing the concept of an 'environmental pioneer' to encompass business, civil society and regional actors alongside governments. The next two contributions look at the role of non-state actors in climate change governance at the EU level: Grant focusing on businesses, and Monaghan, Wurzel and Connelly on civil society actors. Fairbrass reports preliminary findings from on-going empirical research on UK-based businesses and their coalition-building activities in relation to climate change policy. Sullivan and Gouldson then discuss the findings of their research on voluntary climate change mitigation actions of UK supermarkets. The third and final section focuses on the local level. Jonas, Gibbs and While assess the ways in which competitiveness and green agendas of cities have become increasingly aligned. Two case studies which highlight the potential for alliances at the local level complete the report: the first case study by Hall reports research findings on the strategies and alliances in securing green growth in Hull; the second by Edwards details the climate change mitigation and adaptation challenges facing alliances in the Humber Estuary.

Introduction

Much of the research discussed here remains on-going but a number of interim conclusions can be drawn at this stage:

— When analysing climate change governance the focus needs to be broadened from both the national level downwards to urban and regional scales and upwards to the supranational and international levels.

— Alliances can emerge and develop between different types of actors at both the same level/scale and at different levels/scales.

— The role of the state at local and European levels can shape the formation of alliances.

— Notwithstanding the differences in the national and sub-national political contexts, transnational alliances may be able to draw lessons from other territories and thus diffuse climate change policy initiatives.

— European Union (EU) policy continues to influence climate alliances both nationally and in urban areas.

— There is a need to consider not only economically competitive cities but also a range of other places which are sometimes subject to structural challenges, and where new climate alliances are forming.

— Climate change and the low carbon economy form part of a wide range of competing pressures on the local and regional governance levels.

— Action can be initiated from within civil society as bottom-up initiatives and through profit-making motivations of ecologically innovative businesses as well as by governments and EU actors.

— Many businesses now take climate change seriously which they tend to perceive as both a threat and a business opportunity.

— New alliances between progressive businesses, civil society actors and citizens have emerged. However, they often remain fragile and open to defection.

Pioneers revisited: broadening the pioneers concept in European Union environmental policy

Duncan Liefferink, Sietske Veenman and Mark Wiering, Radboud University Nijmegen, The Netherlands[1]

Scientific literature in the 1990s identified a small number of Member States (Denmark, Sweden, Finland, Germany, Austria and the Netherlands) as 'pioneers' in EU environmental policy making. By being ahead of other Member States, by giving an example and by actively pushing the policy process in Brussels, they acted as important forces behind the development of EU environmental policy.

Nowadays most, if not all, of the former pioneer countries have become both more hesitant and more selective for a number of reasons. At the EU level, there has been a 'dilution' of the influence of individual Member States due to enlargement and to institutional changes, notably the almost total shift to the co-decision procedure (which allows for qualified majority voting amongst Member States in the Council and grants the European Parliament decision-making powers, which are equal to the Council). At least equally important are domestic developments within the former pioneers such as increasing Euro-scepticism, severe problems with the implementation of EU environmental directives, decreasing priority given to environmental and sustainability issues, and a shift to more right-wing governments. The place of pioneering governments seems to have been taken over, at least partly, by a wide range of other actors operating in shifting coalitions.

This discussion explores how the roles of those new types of pioneers can be better understood. It first sketches out the original pusher/forerunner framework developed in the 1990s. It then explores how the concept of pioneers can be broadened to take into account a wider range of actors and a wider range of mechanisms employed in pursuing pioneer strategies. The final section attempts to outline a new, extended framework for analysing environmental pioneers in Europe.

Four types of environmental pioneers

The strategies of 'green' Member States operating in the 1990s could be distinguished along two dimensions (see Liefferink and Andersen, 1998 in further reading). First, a state could be a forerunner, i.e. having more advanced domestic policies than the other Member States, as either the consequence of a purposeful decision to take the lead, or the outcome of a more incremental, historical process. Second, these positions could be played out either by pushing the development of environmental policy in Brussels directly, or by exerting influence more indirectly, notably through the impact of higher domestic standards on the functioning of the internal market.

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The two distinctions combined lead to four ideal-type pioneers outlined in Table 1:

(a) Pusher by example: developing a domestic policy and presenting it as a 'good example' to be followed by the EU. In this strategy, conflicts with existing EU policies may be used to provoke EU action.

(b) Constructive pusher: trying to stimulate the development of EU environmental policy by supporting the Commission, building alliances with other Member States, etc.

(c) Defensive forerunner: developing a domestic policy that is known to be out of step with the EU and defending it against EU interference for domestic reasons. By affecting the functioning of the internal market, it may nevertheless have a considerable impact at the EU level.

(d) Opt-outer: trying to maintain a domestic policy that has been developed without a view to the EU, i.e. a situation in which a Member State more or less unexpectedly finds itself out of step with the rest of the EU. Dependent on the issue at stake, that opting out may eventually have an EU impact via the internal market.

New types of pioneers, new mechanisms?

Both domestic and EU-level changes have made the governments of the former pioneer states less eager to push environmental issues in Brussels than in the 1980s and 1990s. Instead – and reflecting trends towards increasing participation and stakeholder involvement in EU governance generally – other types of actors are increasingly involved in pushing EU environmental policies. These may be both sub-national governments (regions, provinces, cities, city networks etc.) and different types of non-state actors (business, business groups, NGOs, citizen groups etc.)[3]. For instance, city networks are active in propagating innovative solutions in the area of climate change, firms anticipate on resource scarcity, or companies gathering in the World Business Council for Sustainable Development (WBCSD) urge for stricter and more consistent environmental policies. These developments pose the question: which strategies may such new pioneers be expected to employ?

On the one hand, sub-national public actors and most private actors have less formal and informal access to the EU institutions. Hence, they generally have fewer opportunities than Member State governments to engage in influencing the regulatory process directly by constructive pushing or actively presenting 'good examples' in Brussels. Most of them also lack the capacity for such relatively resource-intensive lobbying strategies. On the other hand, they may have a considerable amount of freedom to develop innovative practices in their own specific fields of competence (for example in the case of sub-national authorities, in urban planning, sustainable building and so on), even if limitations set by the national and European regulatory context should not be underestimated. Thus, dependent on the policy area at stake, these actors may have better opportunities for developing policies

Table 1: Four types of environmental pioneers[2].

Forerunner: Pusher:	Purposeful	Incremental
Direct	(a) Pusher by example	(b) Constructive pusher
Indirect	(c) Defensive forerunner	(d) Opt-outer

2 Source: Liefferink, D. and Andersen, M.S. (1998), 'Strategies of the "green" member states in EU environmental policy making', *Journal of European Public Policy* 5 (2) pp254-70.
3 See for example the other contributions to this volume by Grant, by Monaghan, Wurzel and Connelly, and by Sullivan and Gouldson for more detailed accounts of the roles of other types of 'pioneers'.

'ahead of the others' than Member State governments. This can be done with a focus on achieving local goals, irrespective of their impact on other actors (i.e. defensive forerunner) or with the explicit aim to set an example to others (i.e. pushing by example). In the latter case, the target would be other similar sub-national actors (which may operate transnationally) rather than the EU.

If sub-national public actors or private actors engage in pushing by example or defensive forerunner strategies, several mechanisms may be at play. An indirect impact via the functioning of the internal market may of course not be ruled out, but various types of communication and policy learning are in fact likely to be much more important. Exchange of knowledge and practical experiences can take place in the context of, for instance, business associations, city networks, research programmes, consultancy firms or benchmarking exercises. It may lead to processes ranging from inspiration to copying and thus to diffusion of policy innovations. The cumulative effect of such processes may or may not eventually influence regulatory output at the EU level. Even if it does not, the impact on environmental policies and practices at national, sub-national or company level may already be significant.

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Towards a new conceptualisation of environmental pioneers

The original, purely state-oriented pusher/forerunner matrix is limited to strategies and mechanisms related to either regulation or the market. It does not accommodate the potentially large role of communication and learning. Therefore, as a starting point, we propose the scheme in Figure 1, which may have a wider applicability.

Figure 1: Pusher/forerunner strategies, mechanisms and policy impact at different levels.

Constructive pusher

Pusher by example

Opt-outer

Defensive forerunner

- Regulation
- Market
- Communication and learning

Policies:
- EU policy
- national policy
- sub-national policy
- policies and practices of business, civil society and individual actors

Strategies   *Mechanisms*   *Policy levels*
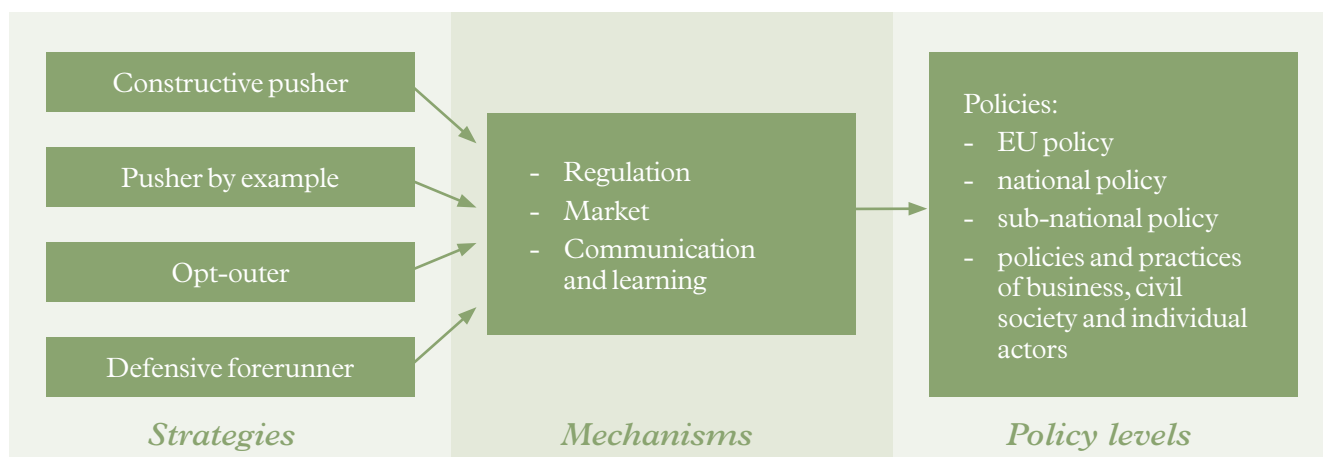
The scheme makes a distinction between strategies (constructive pusher, pusher by example, etc.), mechanisms employed in pursuing these strategies (through regulation, market or communication and learning), and their impact on policies at different levels (EU, national and sub-national as well as private, civil society and individual). As hinted at above, different strategies in the hands of different actors may employ different configurations of mechanisms and target different levels. The particular ways in which this occurs has to be elaborated in further research. One hypothesis could be that constructive pushing, involving direct influence on the EU regulatory process, tends to be limited to Member State governments and a relatively small number of powerful companies and associations with good access in Brussels. Pushing by example and defensive forerunner strategies, in contrast, appear to be more relevant for sub-national governments or private and civil society actors acting as pioneers. Although effects via regulation or the market cannot be excluded, the key mechanism here seems to be communication and policy learning although more extensive empirical research is needed to test this hypothesis. Sub-national governments or private and civil society actors may also be expected to bring about policy change with their counterparts in city networks, business associations, etc., possibly before having a wider policy impact at the national or EU level.

Further reading

Andersen, M.S. and Liefferink, D. eds. (1997), *European environmental policy: the pioneers.* Manchester/New York: Manchester University Press.

Liefferink, D. and Wiering, M. (2011), 'Environmental pioneers in retreat? The cases of the Netherlands and Denmark'. Paper presented at the 6th ECPR General Conference, University of Iceland, Reykjavik, 25-27 August 2011, available at: http://moodle.tau.ac.il/pluginfile.php/260496/mod_resource/content/0/Liefferink%20%20Wiering%20 2011.pdf, (visited 1 July 2013).

Liefferink, D. and Andersen, M.S. (1998), 'Strategies of the "green" member states in EU environmental policy making', *Journal of European Public Policy* 5 (2) pp254-70.

New climate change alliances at the European Union level - business

Wyn Grant, University of Warwick, UK [4]

This discussion evaluates the extent to which there might be scope for new climate change alliances between business and civil society groups, particularly those concerned with the environment, at the EU level. Given that there is a literature that suggests that there are limits to what can be achieved by 'command and control' actions, which is not to say that regulation and enforcement is irrelevant, alliances between business and environmental groups might offer scope for real progress in terms of effective measures to mitigate climate change. They might also contribute to public awareness of the existence of the problem and the need to tackle it without delay and counter some of the arguments of those who are sceptical about man-made climate change.

It is possible to identify four broad reasons why businesses might be motivated to engage in new alliances to combat climate change:

1. Because they are directly concerned with providing equipment or services designed to mitigate climate change (e.g., manufacturers and installers of wind turbines).

2. Because they are concerned that they might suffer reputational damage and/or experience new taxes or greater regulation because of a failure to combat climate change. The oil and motor vehicle industries come to mind here.

3. Because there is potential for efficiency gains, for example by reducing energy use, finding new uses for by-products, recycling or reducing energy consumption. This is essentially the ecological modernisation 'win-win' argument which, it has been claimed, amounts to the official ideology of the EU (see the contribution in this volume by Monaghan, Wurzel, and Connelly). In this respect, Sullivan and Gouldson argue in their contribution to this volume that the main driver for supermarkets has been a financial one.

4. Because they (or the industry to which they belong) are threatened in some way by climate change. The classic case is the insurance industry which faces both greater uncertainty and greater risk, making it more difficult to make predictable profits. More generally, business has an interest in uncertainty reduction.

Drivers for business-led climate alliances

It could be hypothesised that an industry's response is conditioned by how prosperous it is. If one is making substantial and reliable profits, like the multinationals in the oil industry, it is relatively painless to devote some of that surplus to image-building efforts in relation to climate change. In contrast, civil aviation is an industry in which it is notoriously difficult to make profits because of the challenge of filling flights at more than a break-even price. It could be argued that these profit pressures, along with a freedom from tax on its fuel, and a somewhat 'gung ho' philosophy in some parts of the industry, may explain why it has been particularly resistant to measures to deal with climate change.

One further factor has to be added in to a tentative model. The discussion up to now has been essentially structural, related to the characteristics of particular industries and how they might be affected by climate change. However, agency can also play a part. A particular chief executive may decide to prioritise combatting climate change and that will affect the company's policies.

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One can make a distinction between a small group of evangelical companies such as Unilever, Philips or Marks & Spencer for whom sustainability is a belief system, often driven by a CEO's views on long-term trends such as resource scarcity (see also Fairbrass in this volume). Then there are 'sustainability capitalists' such as General Electric or Siemens, which invest in ventures such as wind energy or technology to make water use more efficient because they see short-term growth opportunities. They are opportunists rather than advocates.

Paul Polman, the chief executive of Unilever, argues that companies have to act because of the looming strain of resource scarcity, coupled with the pressure of climate change and in the face of politicians held back by short-termism from undertaking effective policy initiatives[5]. This gives companies a unique opportunity to take the responsibility to offer solutions. They have to act because the policy space is not being adequately filled by government (see also the contribution by Liefferink, Veenman and Wiering in this volume). This has become more of an issue as the EU has understandably become increasingly preoccupied with finding solutions to the Eurozone crisis, another consequence of which is that public funds for environmental measures are necessarily constrained in a time of austerity.

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Further positive externalities may be created when global businesses such as Nestlé and Unilever decide to make their substantial supply chains as environmentally sound as possible. These in turn may underpin new alliances. Unilever reckons it has 1.3 million smallholders linked into its supply chain. It is focusing on agricultural training which it is hoped will improve sustainability emphasising that a focus on climate change resilience requires companies to be aware of the whole value chain, including workers.

In the United States we have seen the emergence of Ceres – a formal coalition of 130 investors and environmental groups. Ceres had its origins in the Exxon Valdez disaster in 1989 and includes among its members some of the leading environmental groups such as the Natural Resources Defense Council and the Sierra Group, along with churches, while the public pensions system in California appears to be a big player and is a potential source of pressure on companies. Another big business-led formal player is the World Business Council for Sustainable Development (WBCSD) in arguing for stricter and more consistent environmental policies (see also Liefferink, Veenman and Wiering who refer to the role of the WBCSD in their contribution to this volume). A further source of pressure for change is coming from some stock exchanges through the Sustainable Stock Exchange Initiative, a UN-backed group.

Limits to business-led climate change alliances

There are, however, limitations in the extent to which business can lead alliances aimed at tackling climate change. It may be that formal coalitions of the type that include Ceres and the WBCSD are a step too far, particularly for some top-rank companies, as they can entangle them in commitments that go beyond what they feel able to do or are difficult to disengage from. More ad-hoc coalitions with environmental groups on specific issues, which appears to be the favoured European model, may be seen as a better way to proceed.

In the context of the US it is also important to take account of global initiatives such as sustainability reporting as was discussed in the UN Rio 20 plus summit. Two-thirds of companies that do not report are in the US, and the US government has resisted moves in this direction. By contrast such schemes have the backing of many European companies: indeed, the UK included the insurer Aviva in its delegation. Aviva argues that more information on environmental impact is vital for shareholders as it can have material consequences for companies' financial results.

5 Quoted in Clark, P. 'Environment: Capitalist conservationists', *Financial Times*, 4 June 2012.

Although John Sauven of Greenpeace UK argues, "When you look at individual corporate behaviour, you do see some quite significant changes." Greenpeace continues to confront companies when their behaviour is seen to be unacceptable. Recently it has been in a row with JBS, the world's biggest exporter of meat, over a report in which Greenpeace accused JBS of sourcing beef from farms in the Amazon basin that fail to comply with environmental laws including those relating to deforestation. In turn JBS has threatened to sue Greenpeace over the report which has already cost it its business with Tesco (for more information about environmental NGOs see also the contribution by Monaghan, Wurzel and Connelly in this volume).

It has to be recognised that the corporate sustainability drive may be fragile. For its own part, Tesco retreated from a plan to put carbon footprint labels on products, advanced in 2007 before the global financial crisis. There is also, of course, the risk of greenwash; of public relations initiatives that lack real substance. The ultimate objective of companies is to make a profit and many resist any initiatives that lead to greater external intervention, bureaucracy and regulation. There is the risk of diluting EU initiatives to meet business concerns to the extent that they are no longer effective.

The commitment of a company to alliance building may be dependent on the personal commitment of a chief executive officer or other senior office holder. If that person leaves, the commitment may disappear. A change in ownership may undermine prior commitments. Ben Richardson suggests that this may have happened when Tate & Lyle's sugar division was sold to American Sugar Refining in 2010: "Quite possibly, the new owners have decided that 'being seen to be good, … is not a sufficient business priority." Finally, the pool of green champions among companies is, of course, still very small. They are estimated to make up only about 1% of companies with revenues above $1 billion.

Challenges and future developments

Clearly, there are a series of a practical challenges. However, many far-sighted companies are recognising the long-run implications of climate change for their profits and even their ability to do business at all. This necessarily encourages them to enter into a dialogue with environmental groups as part of the search for sustainable solutions. As Sullivan and Gouldson show in their contribution to this report, windows of opportunity may occur. When the views of stakeholders align, the resultant pressure may be greater than the sum of the parts. This happened in the UK supermarket sector in 2005-7 when media, consumer and NGO attention was being paid to climate change.

Finally, it takes two to tango. If environmental groups are seen to be unrealistic or intransigent in their demands, a company may be unwilling to continue to build a relationship with them. It's an exchange relationship and businesses need to gain something from it. More research is needed, including case studies, to map the extent of relationships of this kind what both parties gain from them and how they contribute to mitigating climate change.

Further reading

Dunn, S. (2002) 'Down to Business on Climate Change: an Overview of Corporate Strategies', *Greener Management International*, 39(3) pp27-41.

Grant, W. (2011) 'Business: the elephant in the room?' in Wurzel, R. and Connelly, J. eds, *The European Union as a Leader in International Climate Change Politics*, London, Routledge. pp197-213.

Strasser, K.A. (2011) *Myths and Realities of Business Environmentalism*, Edward Elgar.

New climate change alliances at the European Union level - civil society actors

Elizabeth Monaghan, Rüdiger Wurzel,
James Connelly, University of Hull, UK[6]

A relatively wide range of non-governmental organisations (NGOs) have – in a relatively short space of time – emerged to become important actors in EU climate change governance. This discussion examines the range of societal organisations, which represent environmental and social interests in EU climate change governance, the alliances that have emerged, and the factors underpinning these alliances. Moreover, it also aims to shed some light on the implications of these developments for democratic and effective EU climate change governance.

The emergence of civil society actors in EU climate change politics

Although the active involvement of interest groups has been seen as an increasingly important feature of EU policy-making, on an international level climate change has generally been viewed as a matter for states and intergovernmental bargaining. Traditionally only states have legal personality in international law and are thus capable of entering into international (climate change) treaties. However, after initial resistance, especially from newly independent states, the EU has been recognised as an actor which can sign international treaties. Most environmental treaties (including the Kyoto Protocol that deals with the reduction of greenhouse gas emissions) for which the EU is a signatory are so-called mixed agreements which have been signed by both the EU and its member states.

Alongside the EU institutions, societal actors have played an important role in EU climate change governance as well as, although to a lesser degree, in international climate change politics. In the past some EU member states (e.g. Sweden) even embedded NGO representatives into their national delegations in the UN climate change negotiations. The Brussels-based environmental NGOs (ENGOs) have played an especially prominent role in lobbying on EU climate change policy. Some of these actors are well-established. The European Environmental Bureau (EEB) set up its office in Brussels in 1974 and since then its membership has risen to more than 140 groups from more than 30 European countries. In the 1980s Friends of the Earth (FoE), Greenpeace, World Wide Fund for Nature (WWF) and Climate Action Network (CAN) all set up European offices in Brussels. The European offices of the EEB, FoE, Greenpeace and WWF quickly cooperated closely within the 'Gang of Four' or 'G4' (a parody of the G7 meetings held by the then 'great seven powers'). Since the late 1980s climate change as a specific environmental issue became a major campaign issue for the Brussels-based ENGOs. They decided to pool their resources and coordinate their strategies in the run up to the 1992 United Nations (UN) Rio conference because of limited staff and financial resources and a huge work load. The G4 gradually grew into the G10 (now known as the Green 10), comprising BirdLife International, CAN Europe, CEE Bankwatch Network, EEB, Health and Environment Alliance (HEAL) Environment Network, FoE Europe, Greenpeace Europe, International Friends of Nature (INF), Transport & Environment (T&E), and WWF Europe. Of these, CAN Europe, FoE Europe, Greenpeace and WWF quickly developed into the most important environmental NGO players for EU climate change policy.

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Climate change has developed into a cross-cutting policy of major political importance, which has attracted the interest not only of traditional ENGOs but also other organisations not hitherto associated with the issue. Especially in the run up to the 2010 UN Copenhagen climate change conference, development NGOs (such as Oxfam) became involved in climate change lobbying activities while forming temporary alliances with traditional ENGOs in Brussels. Think-tanks have emerged as another prominent non-state actor on climate change issues with several of the large Brussels-based organisations (including the Centre for European Policy Studies (CEPS), European Policy Centre (EPC), Friends of Europe, and Bruegel) running climate-focused activities. Some European foundations produce research and analysis, or otherwise provide funding for NGOs. The European Climate Foundation (ECF) which is the most important funding source also tries to help organise an overall climate change lobbying strategy between the different Brussels-based ENGOs. Consultancies such as Fleischman Hillard, Grayling and Milieu, and law firms, specifically Client Earth, have also been active. Finally, a number of local and regional associations, Eurocities being the prime example, have involved themselves in European climate change politics issues. The term 'NGO', therefore, masks a considerable range and variety of non-state actors.

The on-going and constitutive activity of alliance-building characterises the interactions of the actors. Indeed, some of the most active organisations can be understood as formalised alliances between various national and sectoral groups. The 'Green 10' is, as highlighted above, an alliance of ten of the biggest ENGOs in Brussels. Alliances are often informal and ad hoc, a feature facilitated by the fact that ENGOs have developed a close climate change 'community' in Brussels.

ENGOs find it useful to make alliances for a number of reasons. Most Brussels-based NGOs have relatively small offices with few staff and meagre resources, especially by comparison with large companies (see also the contribution by Grant in this volume). Co-ordination can lead to economies of scale, allowing organisations to pool resources, co-ordinate strategies, and avoid duplication. Intense competition for funding, supporters, media and public attention is less marked at the EU than the national level and therefore does not constitute a strong barrier to co-operation. In addition to its practical benefits, co-ordination also increases the chances of being taken seriously by EU institutions, as organisations acting collectively can signal consensus over their positions and demonstrate widespread support within broader European society. For their parts, the EU institutions, particularly the Commission in its role of initiator of EU policy, have favoured contacts with organisations that can claim a broad perspective and have therefore encouraged the formation of European-wide organisations and umbrella groups. Some MEPs are also very open to environmental NGO lobbying[7].

Co-ordination between NGOs in EU climate change politics is facilitated by the fact that, despite their heterogeneity, many of them have similar goals; this makes it easier to form coalitions. There also tends not to be so marked a distinction between moderate reformist environmental groups (typically adopting 'insider' lobbying strategies), and more radical so-called 'deep green' environmental groups (often adopting 'outsider' lobbying strategies. Brussels has been widely referred to as an 'insider's town' where moderate and consensus strategies are more effective than extreme or disruptive practices, although many Brussels-based NGOs argue that insider and outside strategies are not mutually exclusive.

In addition to co-operation between NGOs, there have also been some alliances between NGOs and business, challenging the traditional assumptions that social and environmental interests are necessarily opposed to corporate interests, as outlined by Grant, in this volume. Instead certain NGOs in Brussels have found it useful to join forces with, for example, environmentally progressive businesses (e.g. the renewable energy industry). The rationale for such alliances is sometimes underpinned by the concept of ecological modernisation which posits that ambitious environmental (and climate change) policies are beneficial for both the environment and the economy.

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7 Friedrich, T. and Wurzel, R. (2000), 'A New Approach to EU Environmental Policy-making? The Auto-Oil I Programme', *Journal of European Public Policy*, 7 (4) pp593-612.

Civil society organisations, climate change politics and EU governance

Since the 1990s, social and environmental actors have been expected to help contribute to EU governance, not only in the delivery of technical expertise and the creation of effective policy outcomes, but also in enhancing policy inputs by representing the voices of society and by mobilising support amongst European publics. This is particularly important in the context of climate change because of the EU's commitments as a signatory of the Aarhus Convention, which obliges authorities to inform and enhance the participation of citizens in the formulation of environmental policy.

However, in this respect civil society organisations face a number of challenges. First there is an emphasis on the ways in which groups utilise their membership structures to link citizens with EU politics. The Green 10 invokes this logic in its claim to reflect the views of 20 million citizens through its member organisations. However, it should be noted that only some of the societal actors in EU climate change politics can be characterised as membership organisations: some have members who merely pay subscription fees in exchange for certain informational and advocacy benefits rather than to participate in civic engagement; and others have no individual members at all. Even when an organisation has members there are often long chains of delegation between individual citizens and the Brussels-based organisation. Secondly, some of the above-mentioned organisations have very weak or non-existent grassroots foundations. Rather than formalised expressions of interests previously latent in society, the emergence of some of these groups arguably owes more to top-down formal and informal alliances between elites – in both the organisations and the EU institutions – than to spontaneous, voluntary, bottom-up civic engagement. Thirdly, some groups fail to facilitate the participation of ordinary members or citizens. Although many Brussels-based organisations

claim that they have procedures for (and a regular practice of) consulting their membership, what sometimes happens is that organisations anticipate or simply assume the preferences of their members because on most issues members will have little interest or will lack the expertise or resources to have an informed opinion.

Despite these challenges, civil society organisations have the potential to play a significant role in EU climate change governance. Realising this potential depends in part on the groups themselves as well as supporters and the EU institutions having an informed understanding of the capacities and willingness to engage in these areas.

Further reading

Long, T., Slater, L. and Singer, S. (2002) 'WWF: European and Global Climate Policy', in Pedler, R. ed. *European Union Lobbying: Challenges in the Arena*, Basingstoke: Palgrave, pp87-103.

Michaelowa, A. (1998), 'Impact of Interest Groups on EU Climate Policy', European Environment, 8, pp152-160.

Monaghan, E. (2013) 'Making the environment present: political representation, democracy and civil society organisations in EU climate change politics', *Journal of European Integration*, 35 (5) pp601-18.

Wurzel, R. and Connelly, J. (2011) 'Environmental NGOs: taking a lead?' in Wurzel, R and Connelly, J. eds., *The European Union as a Leader in International Climate Change Politics*, London, Routledge, pp214-231.

Natural allies or strange bedfellows? The emerging relations between business, civil society and government in response to the challenge of climate change.

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Traditionally, business and other non-governmental actors (such as Friends of the Earth, Greenpeace and others outlined in the contribution of Monaghan, Wurzel and Connelly to this volume) are considered to be adversaries in relation to public policy and policy-making in most areas of public life – including that of climate change policy and governance. That is, they have not been seen to be 'natural allies' and where they do work together, could be said to be 'strange bedfellows' (see also the contribution by Grant in this volume). This assessment has come about because we can observe business interests and their challengers actively (some might say ruthlessly) competing for access to, the attention of, and influence over public policy makers. In several areas of public life such rivalry appears to be directly born out of differing world-views and conflicting interests, given that many business organisations openly espouse a neo-liberal economic agenda whilst their opponents adopt and promote alternative perspectives such as a 'green agenda' or 'fair trade' or poverty eradication. Crucially, many observers believe that business interests are the 'victors' in this competition due to their superior resource-base. It may be for this reason that businesses, in the past, may not have had a powerful incentive to create alliances with other non-governmental actors – having no need – although they appear to have realised the value of building partnerships with governmental bodies. However, it is important to highlight that in recent years, we have witnessed a growing engagement on the part of individual business – both small and large – with the issue of sustainability and climate change. For many this is part of their shift towards strategic corporate social responsibility (CSR) programmes, developed in response to a growing pressure from their increasingly vociferous private, public and third-sector stakeholders (see also Sullivan and Gouldson in this volume). As a result, the evidence shows that some firms find themselves, willingly or grudgingly, making common cause with national and international public authorities and with environmental and social groups in seeking to combat climate change. Whilst relatively little few studies have examined the possibility of or the actuality of joint action between businesses and other actors, some recent research has uncovered alliances between business interests, environmental groups and others.

This discussion presents some of the findings of recent research into the interest representation behaviour of UK-based business in relation to climate change policy and the motivations underpinning this and it assesses the extent to which businesses have engaged in any coalition- or alliance-building and their perceptions on this activity. The research outlined here comprises two main components: two large-scale postal surveys of the top 250 UK-registered companies and elite interviewing of business, government and non-governmental bodies [9].

Climate change action: perceptions on the role of business

The first postal survey established the wider background to the research about CSR and climate change by gathering data about the participating firms' underlying assumptions, views and objectives. Respondents were asked if they perceived climate change to be 'a major economic, social and environmental problem'. All fifty-two (100% of the respondents) confirmed that they supported this view. When asked whether they saw action to combat climate change as part of the corporate social responsibility of a business organisation, the overwhelming majority (94.2%) answered in the affirmative. In many respects these responses were predictable, particularly because the composition of the respondent group was largely made up from senior managers whose organisational role focuses on CSR or environmental issues.

Delving further into the issue of the role of business organisations in relation to combating climate change, respondents were also asked to identify what sort of role they thought firms should play in this regard. Half of the respondents stated that firms should play a 'leading role', whilst a sizeable proportion stated that they thought that businesses should adopt a 'partnership role' along with other policy actors such as governmental bodies and other non-state actors. See Table 2 below for details.

When asked further about the role(s) of government or public bodies, the majority of the respondents did not think that public authorities (such as central or local government) should have the 'primary responsibility' for combating climate change. Over half stated that they did not think that the public sector should have such responsibility. This is consistent with the data above where a large percentage of the firms indicated that they should be the organisations that should take a leading role in combating climate change. See Table 3 for details.

Having established background business views, the next step in the research project was the administration of a second postal survey. This focused specifically on the United Nations Framework Convention on Climate Change (UNFCCC) summit in Copenhagen in December 2009, which further explored the businesses' attitudes and motivations. Respondents were asked whether they had participated in national and international climate change policy formulation prior to the COP-15 meeting in Copenhagen. Of those that replied, the majority had made contact with the UK government, either directly or via an intermediary. This compares to lower figures for contact with EU level public bodies and the UN. See Tables 4, 5 and 6 for further details.

Table 2: What is the role of business organisations in combating climate change?

		Frequency	Percent
Valid	Leading	26	50.0
	Supporting	4	7.7
	Equal partnership	21	40.4
	No data	1	1.9
	Total	52	100.0

Source: Postal survey 2008-9

Table 3: Should the public sector have primary responsibility for combating climate change?

		Frequency	Percent
Valid	Yes	19	36.5
	No	29	55.8
	Don't know	2	3.8
	No data	2	3.8
	Total	52	100.0

Source: Postal survey 2008-9

Table 4: Contact with UK government.

		Frequency	Percent
Valid	Direct contact	15	55.6
	Via intermediary	3	11.1
	No contact	9	33.3
	Total	27	100.0

Source: Postal survey 2010

Table 5: Contact with EU bodies.

		Frequency	Percent
Valid	Direct contact	5	18.5
	Via intermediary	4	14.8
	No contact	18	66.7
	Total	27	100.0

Source: Postal survey 2010

Table 6: Contact with UN or international bodies.

		Frequency	Percent
Valid	Direct contact	7	25.9
	Via intermediary	3	11.1
	No contact	17	63.0
	Total	27	100.0

Source: Postal survey 2010

The data are particularly revealing yet consistent with previous research about businesses' interest representation targets and routes. It suggests a greater use of direct contact with national policy makers and the preference for using intermediaries when seeking to contact EU or international bodies. These choices or decisions tend to be driven by the availability of both tangible (such as financial strength) and intangible resources (such as expertise) of the business organisations, along with their assessment about which governmental body is the most likely to be a 'worthwhile target' in terms of the returns or rewards (i.e. influence) that might be reaped from contact with them. Where the respondents did target the UK government, not surprisingly, the most often named government department was the Department for Energy and Climate Change (DECC) followed by the Department for Transport, the Department for the Environment, Food and Rural Affairs (DEFRA) and the department for Business, Innovation and Skills (BIS). A similar pattern emerged in terms of the EU, in so far as those that contacted EU level bodies focused on DG Environment and DG TREN within the European Commission.

In the second survey respondents were also asked to identify their main objectives with regard to participation in policy formation prior to December 2009. The most frequently cited objective was to 'influence policy' closely followed by wanting to 'demonstrate industry leadership'. The next most often mentioned objectives were to seek 'regulation' and 'share good practice'. The least cited objective was to 'gain information and understanding' of the policy area. To shed further light on the firm's objectives, the respondents were given the space to comment in more detail. Answers pointed to the importance of having clarity and some degree of long-term certainty about the regulatory and policy environment, for the purposes of making investments.

Perceptions of coalition-building

Subsequent elite interviewing with business, government and NGO staff revealed a distinct appetite for coalition-building in relation to climate change public policy-making. Even though business managers could clearly point to a number of possible problems and obstacles, those interviewed were keen to emphasise the pay-offs. They stressed their desire to create strong policy-making alliances with both (national) governments and national/international non-state actors pointing to the benefits for themselves and their potential allies. They also indicated that there had been changes in the ways that they related to NGOs over time. For example, one large energy company described their relations with NGOs in relation to climate change policy in the following terms:

"I think it's fair to say that, historically, we were […] picking and choosing which NGOs we would speak to on the basis of some would be more open […] and we saw [that] others would never agree with us […] now it's a case of bringing people together and saying: Well, these are our problems. Do you have any solutions? And, can we help you find solutions to your issues? There's now actually a proper engagement process going on." (Energy Company, 2010).

So, whilst business and others (such as environmental pressure groups) may have been thought of as 'strange bedfellows' in the past, the lobbying landscape in this policy area looks as though it will be increasingly characterised by groups of businesses and other societal groups working for a common cause and becoming 'natural allies' with respect to climate change issues.

Further reading

Fairbrass, J. (2011) 'Exploring Corporate Social Responsibility Policy in the European Union: A Discursive Institutionalist Analysis', *Journal of Common Market Studies,* 49 (5) pp949-970.

Fairbrass, J. (2006) 'Organized Interests' in Bache, I. and Jordan, A. eds, *The Europeanization of British Politics,* Palgrave Macmillan: London pp135-151.

Fairbrass, J. (2003) 'The Europeanization of business interest representation: UK and French firms compared', *Comparative European Politics,* 1 (3) pp313-334.

Governance beyond the state: Influencing corporate responses to climate change

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Over the past five years, interest has grown in the contribution that companies can make to reducing global greenhouse gas emissions. This interest has been driven by the significant proportion of the world's greenhouse gas emissions that can be attributed, directly or indirectly, to companies' activities, and has been further encouraged by the increasing number of companies that have set targets to reduce their greenhouse gas emissions.

This discussion, using evidence from the UK supermarket sector, analyses the potential contribution that voluntary corporate action can make to greenhouse gas emissions mitigation, and offers some reflections on the governance interventions that are likely to drive continuing improvements in the performance of the corporate sector.

The case of the UK supermarkets' response to climate change

The response of the UK supermarket sector to climate change is important for two reasons. First, the sector has a significant carbon footprint; its direct emissions (i.e. from operations, electricity consumption and transport) account for almost 1% of the UK's total greenhouse gas emissions, and its indirect emissions are estimated to be an order of magnitude higher. Second, while certain aspects of the sector's impacts (e.g. transport emissions, building energy efficiency) are the subject of detailed regulation, the sector's greenhouse gas emissions as a whole have not been heavily regulated. As such, the sector provides an intriguing case-study of how corporate action might evolve in the absence of strong governmental action.

The UK supermarkets' climate change strategies have evolved significantly over the past 10-15 years (see also the contribution from Grant in this volume). The late 1990s through to the early-mid 2000s were marked by companies professionalising their approach to environmental management, including publishing environmental (subsequently corporate social responsibility – CSR – or sustainability) reports and setting performance improvement targets. From the mid-2000s, the emphasis on climate change increased with companies starting to set three to five year (as opposed to annual) targets for their operations and activities, albeit with the focus of these targets continuing to be on relative rather than absolute performance.

From 2007 onwards, the supermarkets started to place much greater emphasis on absolute emission reduction targets, with many starting to look at wider supply chain and value chain-related emissions. For example, Marks & Spencer committed to making its UK and Republic of Ireland operations carbon neutral by 2012, and to working with its customers and suppliers to help reduce their emissions. Similarly, Tesco committed to reducing its own carbon footprint and to working with its suppliers and other organisations to deliver significant greenhouse gas emission reductions across the supply chain.

In terms of performance, since the late 1990s/early 2000s the retailers have managed to consistently improve their energy intensity by between 2 and 3% per annum[11]. This performance compares favourably to the annual improvements in UK economy-wide energy intensity (measured in energy intensity per unit of GDP) of approximately 2% per annum. However, in virtually all cases, absolute energy consumption and greenhouse gas emissions have continued to rise, as a result of business growth and business changes.

Drivers for action

Companies in the supermarket sector divide the drivers for action on climate change into those where there is a financial case for action and those where the benefits are 'non-financial' or, more precisely, where the benefits (e.g. brand, stakeholder relationships) are difficult to capture purely in financial terms.

The majority of actions that have been taken to reduce energy consumption and greenhouse gas emissions (in particular, those that involved significant capital investment or significant organisational resources) can be explained by considering the financial costs and the benefits of the actions taken. This does not mean that companies do not get other benefits from these actions (e.g. PR benefits from badging energy saving programmes as climate change initiatives), but these benefits are frequently ancillary to the primary financial drivers for action.

While the different companies have broadly similar expectations in terms of the rate of return (or payback periods) that they expect from their investments in greenhouse gas emissions reductions and energy efficiency, the business case analysis conducted by individual companies is strongly affected by their internal governance processes; by their beliefs and values; by their views on the current and future business landscape; by their capacity, and by their historic approach to and experience with energy efficiency and greenhouse gas emissions reduction efforts. Within this, one of the most important findings from our research is that companies that have experimented with energy saving technologies and have tested different approaches to energy saving and emissions management are likely to have a greater range of tested and proven options available to them. In the case of the UK supermarket sector, a number of the large supermarkets have committed significant time and resources to developing green stores and to intensively testing energy saving technologies in buildings and in transport. This has enabled them to develop significant competence and knowledge in energy management, as well as detailed cost curves for a whole variety of technologies and approaches. It has also given them access to a whole series of energy saving and greenhouse gas emission reduction opportunities that they can progressively deploy across their entire businesses.

Turning to non-financial drivers for action, the reality is that pressures from individual stakeholders for retailers to take action on climate change remain relatively modest. However, there is evidence that when the views of different stakeholders align (i.e. where they have a consistent message, when they express their views at the same time, when they maintain the pressure for a significant amount of time, when they have a degree of clarity about the actions that they expect companies to take), the pressure that can be exerted is frequently much greater than that of each of the stakeholders in isolation. This was seen most clearly in the period 2005-2007, which saw significant media, consumer and NGO attention being paid to the issue of climate change, the publication of both the Stern Review on the Economics of Climate Change and the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, and the introduction of the EU Emissions Trading Scheme. This alignment of pressures was critical in encouraging the UK supermarket sector as a whole to significantly strengthen its focus on climate change.

Companies that have experimented with energy saving technologies and have tested different approaches to energy saving and emissions management are likely to have a greater range of tested and proven options available to them.

Governance implications

The empirical evidence from the UK supermarket sector develops our understanding of the relationship between governance and CSR in a number of areas.

The first is that corporate behaviour is most frequently driven by analysis of the business case, and so governance interventions that alter the economics of investment decisions are critical. Of course, we need to acknowledge that the limits to action based on the business case are continually changing, and that fluctuating energy prices, advancing technologies and accumulated learning can all shape the business case.

The second is that while there is limited evidence that non-financial interventions alter the rates of return that are sought from investments in energy efficiency and greenhouse gas emissions reductions, these interventions are hugely important in focusing company attention on relevant issues and in stimulating the development of organisational capacity and potential investment opportunities.

The third is that different governance pressures conspire to shape outcomes. Even though it can be very difficult to predict the influence or impact of specific governance interventions, the alignment of different governance pressures is hugely important. While companies may be able to ignore individual pressures (e.g. a particular NGO campaign), where different pressures (e.g. from NGOs, consumers, the media) are aligned, the likelihood that companies will respond is significantly increased.

The fourth is that the vast majority of the improvements that have been achieved are based almost exclusively on incremental change and improved efficiency. Our research suggests that the boundaries of the business case and the limits of incremental change can be extended through learning and capacity building, but the reality is that if the business case dries up or if the opportunities for incremental change are exhausted, the scope for further progress is likely to be restricted. At present, there are very few signs that any of the retailers are considering radical changes in their business models, and none of them seem to see any alternative to business growth.

About the Non-State Actors and the Low Carbon Economy Project

The material presented here is based on information gathered as part of a wider project, Non-State Actors and the Low Carbon Economy, being run by the ESRC Centre for Climate Change Economics and Policy (a joint initiative between the University of Leeds and the London School of Economics). The project, which runs from 2010 - 2013, examines how corporate climate change performance has been influenced by non-state actors such as environmental non-governmental organisations (NGOs), investors, employees and customers.

Further reading

Gouldson, A. and Sullivan, R. (2013), 'Long-term Corporate Climate Change Targets: What Could they Deliver?', *Environmental Science & Policy,* 27 (March 2013), pp1-10.

Gouldson, A. and Sullivan, R. (2012), 'Ecological Modernisation and the Spaces for Feasible Action on Climate Change', in Pelling, M., Manuel-Navarrete, D., and Redclift, M. eds. (2012), *Climate Change and the Crisis of Capitalism,* Routledge, Abingdon, UK, pp114-125.

Sullivan, R. and Gouldson, A. (2012), 'Does Voluntary Carbon Reporting Meet Investors' Needs?', *Journal of Cleaner Production,* 36, pp60-67.

Sullivan, R. and Gouldson, A. (2013), 'Ten Years of Corporate Action on Climate Change: What Do We Have to Show for it?', *Energy Policy.* http://dx.doi.org/10.1016/j.enpol.2013.05.025.

Greening the competitive city: climate alliances and urban low-carbon transitions

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Figure 2: Barcelona's bicycle sharing scheme, Bicing, is indicative of recent efforts to green the competitive city (photo © Andy Jonas)

Research on urban environmental issues has frequently drawn attention to tensions between economic development and environmental goals. Whether it is local opposition to wastewater treatment facilities or the impact of urban sprawl on greenbelt land, urban economic development often seems to go hand-in-hand with environmental conflict and protest. Yet increasingly there are strong economic and political incentives for cities to become greener and cleaner, despite the potential for intense conflict especially when environmental regulation is felt to constrain economic competitiveness. There is now plenty of evidence that major cities, such as Barcelona in north east Spain, are seeking to integrate environmental and social sustainability principles into the provision of urban infrastructure and tourism, suggesting that competitive cities can also be green cities.

Indeed, the period since the 1970s has seen a concerted expansion of the scope and scale of state environmental regulation into many aspects of society and governance in cities across the world. Yet if anything the extension of environmental regulation has been characterised by its weakness and flexibility. In many respects urban sustainability goals have been secondary to promoting the economic competitiveness of cities. This is despite the recent flourishing of urban environmentalism in the form of growth control, environmental justice campaigns and green urban living. Urban environmentalism can – and should – be integral to the competitiveness of cities, but this in turn means thinking about urban competitiveness differently from the prevailing norms of urban governance in the 1990s and early 2000s, which tended to focus upon narrow conceptions of economic advantage from a neo-liberal perspective. So how can competitive cities become carbon neutral and green, and what are the implications of this transition for new climate alliances in cities?

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Climate governance: rethinking urban competitiveness?

The strategic context for urban governance is changing as climate change and the transition to low carbon economies exert growing influence over policy and investment priorities. On the climate mitigation side, global urban competition is increasingly associated with a raft of new development strategies and urban development projects broadly packaged under the theme of climate neutral, zero-emissions and outright carbon reduction. In cities at the forefront of inter-urban competition the urban political arena is fast becoming populated with innovative concepts and planning principles such as post-carbon transitions, low-carbon lifestyles, zero-carbon building, carbon footprints and so on. Carbon control in this sense signals the political imperative of low-carbon restructuring as a first order policy priority for governments, businesses and, crucially, cities too.

A simple explanation for the urbanisation of climate governance is down to the fact that the majority of the world's population lives in cities; but in addition, cities – especially the mega-urban agglomerations – underpin global economic competitiveness. So, if climate policy is increasingly urbanised and energy security becomes a growing urban concern for city leaders, then failure to invest in urban low-carbon energy transitions carries the risk of penalties for non-compliance with carbon reduction targets, added costs for citizens and business arising from carbon taxes, rising energy prices and falling behind in circuits of low-carbon competitiveness. Whilst some cities will struggle to adapt, others might gain from economic opportunities opening up around low-carbon 'cleantech' industries.

We have argued elsewhere that the new era of urban carbon control[13] will have profound implications for the ways in which cities are governed and regulated. Cities will want to find ways of marrying on-going urban redevelopment and inward investment strategies with new approaches for developing renewable energy alternatives, investing in low-carbon infrastructure and transportation, and reducing energy costs for urban citizens. Hence the drive to develop a low-carbon urban political economy is likely to involve new urban alliances and networks as various interest groups and actors seek to mobilise around specific projects and investments consistent with carbon reduction goals and outcomes. Our particular interest here lies in the differential capacities and capabilities of cities to respond to the challenges and opportunities of urban low-carbon restructuring and what this might mean for new alliances around urban competitiveness strategies.

Reflecting the drift towards market rationalities in wider governance systems, research on urban low-carbon restructuring initially focused on the willingness of politicians and growth regimes to act on climate change mitigation, with low-carbon initiatives being mainly about a moral concern for global climate change. There has also been interest in how cities market themselves as environmentally friendly and carbon neutral. However, attention has now turned to whether cities have the capacity to act on what is a pressing and necessary economic and social imperative. In a post-neoliberal era, cities now see the development of new alliances around low carbon futures as a necessary first step towards becoming more competitive.

Urban climate alliances and urban low-carbon transitions

Although there are powerful arguments that investment in low-carbon transitions in the present will be cost effective – and environmentally and socially beneficial – in the longer-term, the low-carbon retrofitting of cities will require significant upfront financial investment and a potential extension of state intervention in production, consumption and mobility. Crucially, the imperative for extended urban intervention sits uneasily with some of the broader currents of neo-liberal state restructuring, including the urban impacts of utility privatisation and liberalisation, the unbundling of urban services, the rolling back of state intervention, fiscal retrenchment and resulting regulatory deficits in post-Keynesian governance. In the case of the privatisation and unbundling of utility infrastructure this has not only widened socio-spatial inequalities within and between cities, it has complicated investment decisions, and made it more difficult for cities to co-ordinate and cross-subsidise across different aspects of public policy and retain the returns on growth and investment.

13 While, A., Jonas, A.E.G., and Gibbs, D.C., (2010) 'From sustainable development to carbon control: eco-state restructuring and the politics of regional development' *Transactions of the Institute of British Geographers,* 35 pp76-93; Jonas, A.E.G., Gibbs, D.C., and While, A., (2011) 'The New Urban Politics as a politics of carbon control' *Urban Studies,* 48 pp2537-2544.

There can be little doubt that in Europe and North America low-carbon restructuring poses significant investment, organisational and legitimacy challenges for localities in the context of state fiscal austerity, utility privatisation and intense place competition for private investment and diminished state resources. Addressing these deficits may come to depend on the extent to which durable new urban climate alliances can be formed between various business interests and community actors capable of influencing local carbon economies. Examples may include:

- The reorientation of urban economic development coalitions around the goals of low-carbon restructuring.
- New alignments between interests and actors within cities around low-carbon projects and initiatives.
- Supply-side local energy alliances that help support decentralised low-carbon energy initiatives and upgrade infrastructure.
- Enrolling citizens and firms into carbon reduction initiatives.
- Greater collaboration between cities through national and international urban networks.
- New city-regional collaborations around mass transportation, alternative fuel vehicles, and low carbon infrastructure.

Attempts to exploit urban carbon economies mean that the city and its potential assets are being seen differently, creating space for alternative economic imaginaries and new forms of economic and societal organisation. However, as low-carbon economies come to ground at the urban scale there are pressing questions about the differential capability of cities to engage in low-carbon transitions and the potential implications for economic development or social protection. At issue is the search for new institutional vehicles for promoting low-carbon solutions and, with these, building necessary alliances between government, business and community sectors within and between cities. Clearly, some cities are in a stronger position than others to take the lead on these issues.

Hodson and Marvin[14] describe the emergence of a new era of 'Urban Ecological Security' (UES), and demonstrate how already powerful places like London, Shanghai and New York are using their wealth to create enclaves of infrastructural security within which they can ward off the worst effects of climatic threats and energy insecurities. Accordingly Hodson and Marvin warn of the implications for cities and regions unable to securitise around energy and climate imperatives in terms of intensified socio-economic inequalities.

Future research

The low carbon transition demands new ways of approaching urban competitiveness in a post-neo-liberal era. This presents significant challenges for urban governments given the prevailing context of state fiscal austerity, diminished local regulatory capacities and reduced government authority. Addressing these shortfalls and deficits may come to depend on the extent to which new climate alliances coalesce around the challenges and opportunities of low-carbon urban transitions. Our on-going research is concerned with the impact of the 'carbon calculus' on the politics of urban development. Key questions with respect to new climate alliances include:

- What does climate policy mean for priorities and alliances in local governance?
- What new climate alliances are being formed in response to the urbanisation of climate change?
- How are those alliances helping to support different aspects of low-carbon restructuring in terms of economic, social and ecological place resilience and adaptive capacity?
- Are climate alliances challenging or reinforcing socio-economic and socio-spatial inequalities within and across cities?
- What needs to be done to help support the progressive potential of urban climate alliances?

Further reading

Jonas, A.E.G., Gibbs, D.C., and While, A. (2011) 'The New Urban Politics as a politics of carbon control' *Urban Studies* 48: 2537-2544.

While, A., and Whitehead, M. eds. (2013) 'Cities, urbanisation and climate change' (special issue) *Urban Studies*, 50 pp1325-1468.

While, A., Jonas, A.E.G., and Gibbs, D.C. (2010) 'From sustainable development to carbon control: eco-state restructuring and the politics of regional development' *Transactions of the Institute of British Geographers*, 35 pp76-93.

14 Hodson, M., and Marvin, S., (2010) *World Cities and Climate Change*, Open University Press, Buckingham

Securing the Green Economy, city strategies for exploiting green growth

Stephen Hall, Department of Geography, University of Hull, UK[15]

The 'Green Economy' is a loose term describing the jobs, services, investments, manufacturing and infrastructure associated with:

- **Decarbonising the energy system** – examples include the generation of renewable energy, new energy infrastructure or low carbon buildings.
- **Improving resource efficiency** – examples include recycling and reuse of waste or water, or sustainable products and materials.
- **Preserving and enhancing the natural environment** – examples include eco-systems and biodiversity, green infrastructure or sustainable agriculture.

The notion of the Green Economy also bridges the gap between traditional urban tensions over sustainability versus economic growth (see Jonas, Gibbs and While in this volume).

A 2011 report estimated that there were 51,900 green jobs in Yorkshire cities in 2009, which represented 3.1% of total employment. Of the 51,900 green jobs 21,700 were in the primary green economy, which has the potential to grow to 45,500 new green jobs by 2020 adding 23,800 green jobs and further similar increases in associated supply chain and services sectors[16]. In 2012, the report Mini-Stern Review for Leeds: The Economics of Low Carbon Development investigated the economics of investing in the low carbon economy and found a strong economic case for low carbon development. It identified commercially viable, cost neutral and technically feasible investments which would reduce energy spend in the city and deliver decarbonisation. Similar economic cases have been identified for the Humber region, Sheffield and Birmingham under the same programme[17].

This discussion describes on-going research which frames the issue of exploiting the green economy in Yorkshire cities, incorporating the cities of Hull, Leeds and Sheffield. The research investigates the direction of travel inferred by current strategies and policies that are being set by planners, economic strategists, politicians and business lobbies at the city level. By investigating the ways in which Leeds, Sheffield and Hull are positioning themselves to take advantage of the green economy and learning lessons from elsewhere in Europe and the US, we can ensure Yorkshire cities are adopting the right mix of policy, strategy and finance to deliver the benefits outlined in the above studies. This discussion focuses on the research on Hull where early results are shedding light on links between the way cities are run and the potential to bring the benefits of the 'Green Economy' to ground in those cities.

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16 Pearce, R., Crompton, P., Kythreotis, A., Hembury, G., Stolte, T., (2011) *The Prospects for Green Jobs to 2020*, Yorkshire Cities, July 2011.

17 Gouldson, A., Kerr, N., Topi, C., Dawkins, E., Kuylenstierna, J., Pearce, R., (2012) *The Economics of Low Carbon Cities A Mini-Stern Review for the Leeds City Region*, Centre for Low Carbon Futures.
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Case study: Hull

The Green Economy in Hull is characterised by strengths in chemical manufacture and processing, low carbon buildings retrofit, waste and recycling, fuel biomass manufacture and energy generation. The currently underutilised port estate to the east of the city has potential to service the off-shore wind industry by providing a location for the manufacture of wind turbines and to service the associated supply chains. There is also significant potential for the growth of the existing biomass industry, including novel waste and recycling processing in the same area. In-depth interviews conducted with business and civic leaders have highlighted a number of barriers to growing the green economy in the city:

- A shortage of skills to service the engineering element of the offshore wind and energy generation aspects of the green economy.
- The capacity of the transport network serving the port estate to the east of the city.
- Smaller firms are finding it difficult to secure long term contracts and break into established supply chains.
- The capacity of small firms to reach international standards of environmental management systems and quality management systems.
- Inconsistency in national renewable energy policy.

Figure 3: Biomass energy manufacture on the Humber (Image courtesy of Vivergo Fuels 2012).

Responses to the interviews illustrate these challenges. Several respondents emphasised transport:

> *"One thing that worries me about the developments down by the ports is the transport and the infrastructure. One of the roads is horrendous. Their big investments might be too late."*
> **(Local voluntary sector professional 2012)**

> *"It's common knowledge. Isn't it? To get to the Greenport Hull, you have to fight your way through the A63 and plough your way through, which is a bottle neck."*
> **(Local business professional 2012)**

Others referred to the issue of Standards:

> *"We're going for ISO 9001 quality assurance, and we're going for the environmental and the health and safety standards, because that's an expectation of the major multi-nationals that are coming in."*
> **(Local business professional 2012)**

On national policy one respondent stated:

> *"If the Government turns round to say: 'We are going to reduce the subsidy for renewable energy after a certain period', then I think there will be second thoughts as to whether they will build factories. I think Government policy is the issue."*
> **(Local business professional 2012)**

Developments in economic governance since the election of the Coalition Government in 2010 have significantly changed the economic strategy landscape. Where before the region's economic planning was coordinated by Yorkshire Forward (a pan-county development authority with significant funding), new arrangements across England in the form of smaller, Local Enterprise Partnerships (LEPs) rely on heavy representation of local business to deliver economic growth. The LEP also has a coordinating role to play in securing the green economy:

The Humber LEP has been designated a 'pathfinder' for the Heseltine Report on pursuing growth in cities. This includes the combining of disparate funding streams to create a central pot approach to economic development in the Humber. These developments firmly place economic development on a Humber scale, channelling increasing levels of funding to try to combat the skills, infrastructure and business capacity needs at a local scale.

The 'green economy' is being earnestly pursued in Hull and the wider Humber region. Infrastructure spending, political capital, business lending and city strategies are beginning to coalesce around exploiting the opportunities presented by the green economy.
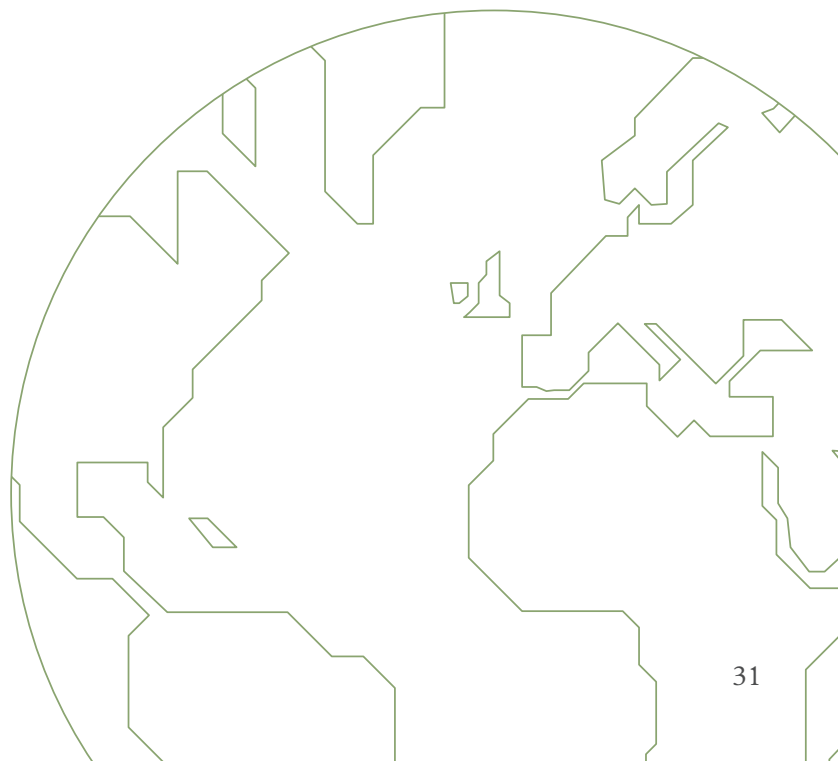
The city strategies for green growth

Findings from the research on the Hull case show significant barriers to overcome to secure the green economy in the city. These barriers, however, can and are being surmounted by new and innovative financing, funding and governance solutions. By negotiating new alliances around economic governance the Humber Local Enterprise Partnership was successful in being allocated one of the largest enterprise zones in the country to encourage the utilisation of the port estate to the east of the city for green economy development. Successive awards from the regional growth fund are specifically targeting the needs identified above and the municipal authorities of the Humber continue to focus on land use and economic development along the Humber Ports corridor.

Other cities in the UK are already learning from cities such as Manchester in raising large sums to unblock transport infrastructure issues. There is a strong sense that this kind of policy cannot simply be transplanted onto Yorkshire cities. Leeds is working on its own version of a transport fund that could realise £1 billion infrastructure investments over ten years, much of which will come from borrowing from financial markets and be recouped through property tax. The financial and legal implications for Hull and the Humber of such a move could lead to increased financial opportunities to secure new infrastructure that will ease infrastructure issues affecting the development of the green economy in the east of the city.

For economically larger city regions such as Leeds, new ways of financing energy and transport infrastructure are being trialled along with new structures of governance designed to reflect the functional economic area of the city region. New finance structures for infrastructure and new governance vehicles pose multiple challenges when raising new borrowing which will ultimately be repaid locally through property, land or business taxes or by the realisation of revenues from what are essentially speculative green growth opportunities. The challenge in these cases is to build strong local political and business support for these new approaches to financing green growth. In the new era of localism and the increasing fiscal responsibilities of local government, it is crucial that the local economic development community strikes the right balance between unlocking real barriers to green growth, and becoming overleveraged in its pursuit of the same.

Changes to the governance and finance landscape of English city regions provide opportunities to adopt new ways of addressing new problems. International research intelligence then, can contribute to effective realisation of the green economy. Evidence from North America, where infrastructure spending and municipal autonomy is more mature, can provide critical intelligence on the opportunities and pitfalls of new climate alliances pursuing the green economy.

Insights from research on new economic geographies, urban theory, political science and public/private finance all have roles to play in investigating the strategies and challenges posed by governing climate change challenges through the new networks and structures emerging in the case study regions, England under localism, the politically devolved United Kingdom and beyond.

Further reading

Goetz, A.R., Jonas, A.E.G, and Bhattacharjee, S. (2011) *Regional Collaboration in Transport Infrastructure Provision: The Case of Denver's Fas Tracks Rail Transit Program*. Final Report. National Center for Intermodal Transportation, University of Denver and Mississippi State University.

Jagger N., Foxon, T., and Gouldson, A. (2013) 'Skills constraints and the low carbon transition', *Climate Policy*, 13, pp. 43-57.

Jonas, A.E.G., Gibbs, D. and While, A. (2011), 'The New Urban Politics as a politics of carbon control' *Urban Studies* 48, pp. 2537-2544.

Sullivan, R., Gouldson, A., and Webber, P. (2012) 'Funding Low Carbon Cities: Local perspectives on opportunities and risks', *Climate Policy 13*, pp. 514-529.

Humber Estuary climate change mitigation and adaption challenges

Tony Edwards, Humber Environmental Managers' Network, UK[18].

Climate change mitigation and adaptation is an important consideration for environmental planning and the implementation of projects for the Humber Estuary. There are potential conflicts between low-carbon industrial developments (and associated port expansion) and other environmental objectives concerned with reducing flood risks and protecting and enhancing habitats, including with obligations of EU Directives. There is a long history in the Humber catchment of partnership working involving a wide range of organisations to address these issues; the arrangements continue to evolve.

The Humber is one of the North Sea's principal estuaries. Largely fed by the Trent and Yorkshire Ouse river systems, its catchment covers an area of 24,472 km2, which represents about one fifth of the land area of England. The catchment's population is 11 million with about 400,000 people living on land 'claimed' from the estuary over the centuries. This floodplain (Figure 4) is protected by defences and, in addition to the settlements, has large tracts of high-grade agricultural land and industrial assets that include chemicals, oil refineries, food processing, aerospace, and power stations. It has the country's largest port complex in terms of cargo handled - over 93 million tonnes in 2008.

The area is attracting renewable energy industries including biomass power stations, biofuel plants and the manufacture and assembly of wind turbines for the North Sea. In addition there are studies on tidal power generation and carbon capture from power stations, and possibly other intensive emitters of carbon dioxide for storage in depleted North Sea gas fields.
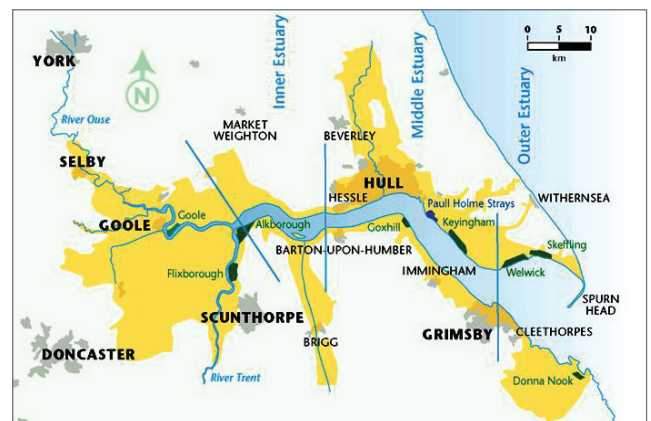

Figure 4. The Humber Estuary
(*Source: Environment Agency*)

The whole estuary is renowned for its water and intertidal habitats particularly the bird populations and the grey seal colony at the Humber's mouth. Its ecological importance is recognised by being a Natura 2000 site (Special Protection Area for Birds, Special Area of Conservation) and a Ramsar Site. These international designations form the Humber Estuary European Marine Site and ensure strict legal protection for the wildlife. The whole Humber catchment is a district for the EU Water Framework Directive and the first Humber River Basin Management Plan was published in 2009[19].

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18 Email: tonym.edwards@btinternet.com.
19 Defra and Environment Agency (2009) *Water for life and livelihoods: River Basin Management Plan Humber River Basin District* – main report, Environment Agency Bristol.

Reconciling competing environmental objectives

There are potential conflicts between the actions required to achieve environmental objectives, particularly the siting of renewable energy facilities and associated port developments near to the Humber European Marine Site and in the tidal floodplain. Measures to reconcile potential conflicts include:

- Protection of existing designated areas for wildlife.
- Careful location of new major estuary-related industrial developments, including environmental industries such as production of renewable energy technologies.
- Enhancement of wildlife on other land including some 'spare' industrial land.
- Creation of new habitat to compensate for losses when an 'imperative reason for over-riding public interest' (IROPI) has been determined.

Managed realignment of flood defences to create habitat is one of the measures in the Environment Agency's Humber Estuary Flood Risk Management Strategy; it has also been used to compensate for port expansion at Immingham and Hull. The wetlands created compensate for the loss of inter-tidal habitat by 'coastal squeeze'. Climate change results in the rise of sea level; with the estuary confined by floodbanks the protected mudflats and reedbeds would otherwise be degraded. There is considerable controversy over such projects due to the loss of farmland and perceived impacts on local communities. Working in partnership has aided the understanding of the issues and each organisation's needs leading to more acceptable, and sometimes novel, solutions.

One example is the Alkborough project[20]. Land was purchased and the flood defences were breached in 2006 to return the tide to 440ha of arable land reclaimed from the estuary at the beginning of the twentieth century. The scheme provides a variety of habitats, mostly intertidal wetland, plus areas of 'sustainable farming' also having benefits for wildlife. It is intended to compensate for habitat loss elsewhere in the Humber system due to sea level rise and engineering works. It also contributes to the UK's Biodiversity Action Plan targets and provides flood storage for surge tides. There are opportunities for bird watching, 'quiet' countryside recreation and projects for conservation volunteers. Such wetlands absorb carbon dioxide and, thus contribute to climate change mitigation as well as adaptation. The project was undertaken by a coalition of Associated British Ports (ABP), Environment Agency, Natural England and North Lincolnshire Council with much engagement with the local residents.

Working in partnership

Several other examples of partnership working between Humber stakeholders – local councils, environmental regulators, industry, agriculture, local communities and non-governmental organisations (NGOs) – are worth highlighting. The Humber Management Scheme which is required by the Conservation of Habitats and Species Regulations 2010 (previously the Habitats Regulations 1994) to ensure that all forms of management of the estuary maintain the integrity and 'favourable status' of the nature conservation designations was adopted in 2005 and subsequently updated[21]. It is the responsibility of 34 statutory organisations with responsibilities for navigation, dredging, drainage, flood protection, effluent discharges, abstractions, fisheries, land use and land use planning. Climate change is a 'cross cutting' issue. The Humber Estuary Relevant Authorities Group (HERAG) of organisations with statutory powers is responsible for the Scheme and is supported by the Humber Advisory Group (HAG) representing other stakeholders. HAG was involved in preparing the Codes of Conduct for recreation and other less regulated activities that supplement the Scheme.

Humber Industry Nature Conservation Association (INCA) is an alliance of industry, the public sector and civil society organisations. Its mission is 'industry and nature in harmony' and it aims to work with its members in helping meet their environmental obligations in an efficient manner. It has project managed intensive ecological surveys of the South Humber Gateway area zoned for estuary-related industry (including renewable energy) to provide data for environmental impact assessments and the strategic planning of compensation sites for habitat losses.

Networking between these groups helps integration and cooperation to achieve objectives for the Estuary and benefits for the community. The UK Government's White Paper, The Natural Choice, introduced Local Nature Partnerships[22]. Their aim is to gain economic and social value from ecological services. The Humber Local Nature Partnership is being established based on the work of the Management Scheme, Humber Advisory Group and Humber INCA.

20 Ashby-Crane, R., Keiller, D., Pygott, J., Richardson, H., Slaney, K., & Winn, P. (2004) 'The Humber Estuary Paull Holme Strays opened, Alkborough on the way', *Proceedings of 39th Defra River and Coastal Management Conference*, York.
21 Humber Estuary Relevant Authorities Group (2005) *Humber Management Scheme*, HERAG.
22 HM Government (2011) *The natural choice: securing the value of nature*, CM 8082 The Stationery Office Norwich.

Research input – TIDE

Successful management needs to be founded on an appropriate evidence base supported by research. The TIDE Tidal River Development project of the EU INTERREG IVB North Sea Region Programme[23] concerns the practical management of large North Sea estuaries with ports, cities, industry, flood risks and wildlife, and the potential effects of climate change. The aim is to make 'integrated management and planning a reality in the Elbe, Weser, Scheldt and Humber estuaries. Management must have the sole aim of maintaining ecosystem services while delivering societal benefits'.

There is a need to understand the physical, biological and socio-economic nature of the estuaries and to have an integrated approach to delivering effective management. Lessons are being learnt from the practices utilised in each estuary such as the adverse impacts on water quality, the creation of tidal wetlands to compensate for habitat losses and working with local communities. There will be a web-based 'toolkit' for practical management.

Conclusions

Climate change in the Humber area poses both opportunities and threats for businesses, communities and the environment. There is scope for business and employment growth through the development of renewable energy. There are threats of increased flood risk and habitat loss. Rising sea level will degrade inter-tidal habitats unless new wetlands are created to compensate.

An integrated approach to managing the ecosystem services of the Humber Estuary is required working with natural processes wherever possible. Alliances engaging industry, public agencies, NGOs and communities chart the way forward and help to deliver projects. There is a challenge to gain economic growth, new ports and industry whilst protecting the habitats and other environmental objectives.

Further reading

Defra and Environment Agency (2009) *Water for life and livelihoods: River Basin Management Plan Humber River Basin District – main report,* Environment Agency, Bristol (www.environment-agency.gov.uk).

Edwards, A.M.C., (2001) River and estuary management issues in the Humber catchment, in Huntley, D., Leeks, G., and Walling, D., (eds.) *Land Ocean Interaction - measuring and modelling fluxes from river basins to coastal seas,* IWA Publishing, London, 9-32.

Edwards, A.M.C., and Winn, P.J.S., (2006) The Humber Estuary, eastern England: strategic planning of flood defences and habitats. *Marine Pollution Bulletin*, v53, issues 1-4, 165-174.

Environment Agency (2008), *Planning for the rising tides: the Humber flood risk management Strategy,* Environment Agency, Leeds.

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23 TIDE (2013) TIDE: Tidal River Development - towards integrated estuarine management, Hamburg www.tide-toolbox.eu

Overview

The Centre for Low Carbon Futures is a collaborative membership organisation that focuses on sustainability for competitive advantage. Formed by the University of Birmingham, University of Hull, University of Leeds, University of Sheffield and University of York, we work across the EU, Asia and Latin America.

The Centre brings together engineers, natural scientists and social scientists to deliver high-impact research on our 2013/14 themes of Energy Systems, Green Growth and Smart Infrastructure.

We provide evidence to inform policy formation, encourage technological innovation and build capacity to improve resource efficiency and promote sustainable leadership in the food-energy-water nexus.

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About us

The Centre for European Union Studies (CEUS) was established to promote the interdisciplinary study of the European Union (EU) and wider Europe, and is based in the School of Politics, Philosophy and International Studies at the University of Hull. Since 1999 it has been designated as a 'Jean Monnet Centre of Excellence' in teaching and research by the European Commission.

CEUS researchers have a wide range of expertise and have produced a large number of well-regarded publications on European and EU governance and politics issues. Recent research and publications have focused, for example, on EU institutions (including the European Commission, European Parliament and the office of the Presidency), the Europeanisation of member states, EU external relations, new modes of EU governance, EU environmental policy and 'new' environmental policy instruments as well as other common policies. CEUS researchers have special expertise also on issues such as EU democracy and legitimacy issues, EU technology and industrial policies, the information society and European integration, the EU and e-governance, the EU's role as a global actor as well as on member state domestic politics (in particular the politics of Austria, Britain, France, Germany, Poland, Portugal and Sweden) and member state parliaments.

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