The Political Sustainability of the 2008 Climate Change Act

Matthew Lockwood

Abstract:

This paper assesses the forces working for and against the political sustainability of the 2008 Climate Change Act. The adoption of the Act is often seen as a landmark commitment by the UK to action on climate change, but its implementation has not been studied in any depth. Recent events, including disagreements over the fourth carbon budget and the decarbonisation of the electricity sector, shows that while the Act attempted to lock-in a commitment to reducing emissions through legal means, this does not guarantee political lock-in. The assumption, made by some proponents of a legal mechanism, that accountability of political leaders to a public concerned about climate change, via Parliament, would provide the main political underpinning to the Act is criticised. An issue-attention cycle in the mid-2000s helps explain why a Climate Change Bill was adopted, but the wider evidence on the salience of climate change relative to other issues, especially energy costs, suggests that this assumption is not justified. An analysis of alternative sources of political durability is presented, drawing on a framework for understanding the sustainability of reform developed by Eric Patashnik. It is argued that the Act has helped create major institutional transformations, although the degree to which new institutions have displaced the power of existing ones is limited. The Act has produced some policy feedback effects, especially in the business community, and some limited investment effects, but both have been insufficient to withstand destabilisation by recent party political conflicts. The Climate Change Act remains at risk.

Keywords: Climate change, climate policy, energy policy, public opinion, politics, UK

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"People often say 'Does anything change politics?' Well, it has here", Nick Robinson, BBC Political Editor, commenting on the inclusion of the Climate Change Bill in the Queen's Speech, 15 November 2006

1. Introduction

At the end of November 2008, the UK Parliament passed the world's first Climate Change Act (CCA), which has come to play a central role in the UK's image as a leader on climate change (Schreurs and Tiberghien 2010: 50-52). The Act provided for greenhouse gas emissions reductions targets that would be legally binding on current and future governments, including an 80% reduction from 1990 levels by 2050. It also created a new, independent Committee on Climate Change, with a remit of recommending five-yearly carbon budgets, and required government to propose policies that would meet those budgets. It was seen as important not only in itself, but because through the carbon budgets set under it, it would provide an umbrella for many other policies and laws aimed at producing a transformation to a low carbon economy in the UK.

During its passage through Parliament the legislation was widely seen as an historic step and enjoyed very broad political support. The Act was passed by the House of Commons by all but four MPs and was welcomed by both the Trades Union Congress and the Confederation of British Industry. At its adoption as a Bill in late 2006, the then Prime Minister, Tony Blair, called it a "revolutionary step" (Tempest 2007). In similar mode, an editorial in *The Guardian* on the eve of its passage called the legislation a "revolution in slow motion", and a "radical moment, unmatched by anywhere else in the world."[2] Friends of the Earth UK, which had led the campaign for a Climate Change Bill, described the CCA as "ground breaking" (FOE 2008b). Joining that campaign in

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[2] "Turning up the heat" Editorial, *The Guardian* 29 October 2008, available at: http://www.guardian.co.uk/commentisfree/2008/oct/29/climatechange-greenpolitics?INTCMP=SRCH

September 2006, the then leader of the Opposition, David Cameron called for a Bill that "will be remembered long after [Prime Minister Tony Blair]'s gone, long after I've gone".[3]

The CCA was originally conceived of as a way of creating greater pressure on politicians to deliver emissions reductions targets, and as a means to bind future governments into those targets. These outcomes were in turn aimed at giving confidence to investors in low carbon technologies and infrastructure, "safe in the knowledge that governments would sustain the battle against climate change over the medium to long term" (Friends of the Earth, n.d.).

However, less than four years after it was passed into law, it had become clear not only that the Act has so far failed to provide that confidence, but also that political commitment to future emissions reductions targets is not secure. While the first three carbon budgets were adopted without incident, in the spring of 2011 a major row erupted within the coalition Government about the potential economic costs of the Committee on Climate Change's (CCC) recommendation for the fourth carbon budget covering the period 2023 to 2027. The issue was eventually settled by the Prime Minister and the recommendation was adopted, but not before the Chancellor had imposed a review of the fourth budget to be undertaken 2014. The following year saw major open rifts within the coalition Government about the relative role of renewable energy and gas in electricity generation into the 2020s and a decarbonisation target for electricity, provoking a series of letters from the Chair of the Committee on Climate Change. Investors despaired at the increase in political risk these conflicts were producing. By the summer of 2012, the World Wildlife Fund was accusing the Government of allowing the CCA to "wither by neglect" (Allott 2012).

These events are a sharp reminder that "the passage of a reform law is only the beginning of a political struggle" Patashnik (2008: 3). It has long been recognised that policy change is not a single event, but a process over time (for an overview see Hill 2012: 153-55). In the case of a major transformation such as that of decarbonising an entire economy, this is likely to mean several decades. At least since Pressman and Wildavsky's seminal contribution (1973), the importance of the implementation phase of policy has been recognised in political science as of equal importance to agenda-setting

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[3] http://news.bbc.co.uk/1/hi/uk_politics/5304570.stm

and formulation.[4] However, while some observers have subsequently noted the gap between the ambition contained in the CCA and the difficulties of implementation (e.g. Helm 2010, Giddens 2009: 83-88), it remains the case that much political analysis of climate policy focuses mainly on *adoption* (e.g. Dolšak 2001, Compston and Bailey 2008, Harrison and Sundstrom 2010, Brown 2012), as does Rollinson's (2010) study of the politics of the CCA. By contrast, in this paper I examine the evolution of political dynamics *after* climate policy is adopted, and in particular assess the degree to which such policy in UK is currently at risk of retrenchment.

As the centrepiece of UK climate policy, underpinning more detailed policies in energy, transport and industry, the CCA is the main case study. Of particular interest here is the possibility of that, once formulated and formally adopted policy may subsequently be weakened, undermined or even reversed in its implementation phase. This can imply the formal repeal of law, although it need not, since it can take the form of retrenchment through subsequent instruments or secondary legislation, or simply weakening through partial or non-enforcement. In examining the possible threats to the CCA, I focus on two key issues.

The first is the nature of climate change as a public policy problem, and in particular its low salience in the British political arena. The low salience of climate change has been noted in passing (e.g. Carter 2008, 2010, Hale 2010, Harrison and Sundstrom 2010, Lockwood and Pendleton 2009, Lorenzoni and Pidgeon 2006, Ockwell et al 2009, Kuzemko forthcoming) but its political implications are rarely explored in any depth. Here, I argue that the CCA was constructed on an assumption about the relationship between public concern and political accountability in climate policy that is not borne out by the evidence. An important consequence is that the implementation of the Act is especially vulnerable where its implementation clashes with factors that have more salience, in particular energy costs.

The second issue concerns the effects of the CCA itself since it became law. Here I draw on the public policy process literature, and especially on Patashnik's (2008) framework for analysing the sustainability of reforms after adoption. His argument is that the durability of policy depends on the degree to which it reconfigures political

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[4] See also the related literature on "policy learning", e.g. Oliver and Pemberton (2004)

dynamics, by transforming the institutional landscape, reshaping political identities and incentives, and inducing new investments. Policy changes that fail to achieve such a reconfiguration, effectively making reform self-reinforcing, are at a high risk of retrenchment or even reversal. Assessed by these criteria, I conclude that it is clear that, while the CCA was a bold piece of legislation, it has largely failed to reconfigure the relevant political landscape, and is not yet secure. Although the risk of the Act being repealed remains remote, the risk that it may be significantly undermined over the next 5-10 years remains very real.

The next section provides an outline of the origins, adoption and implementation of the Climate Change Act to date. Section 3 considers the uniquely difficult nature of climate change as a public policy problem, the issue of low salience and the associated political implications. Section 4 assesses the risks and prospects for the CCA using Patashnik's framework, focusing first on institutional changes (both brought about under the Act and contemporaneous with the Act), on the effects of the Act on key interest groups, and how far the Act has led to the creation of new vested interests through investment. Section 5 concludes with an assessment of the risks of policy reversal.

2. A brief history of the 2008 Climate Change Act

As a preliminary, in this section I give a brief history of the CCA. This includes the climate policy situation in the early-mid 2000s, the campaign for a Climate Change Bill, the adoption of a Bill by the Labour Government, its passage and enactment, and events since. Some of this account is based on the recollections of the main protagonists in developing the Act, who were brought together recently by the Institute of Government (2012) to reflect on the reasons why they had been successful.[5]

2.1 The pre-reform situation

It is useful to see the Climate Change Act as a major reform, aimed at addressing failures of existing public policy aimed at reducing carbon emissions. The UK did not lack emissions reduction targets before the advent of the Climate Change Act. Official recognition of climate change as a problem goes back as far as Margaret Thatcher's

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[5] See also Rollinson (2010)

1988 speech to the Royal Society (Lorenzoni et al 2008: 110), and the first UK climate change programme dates from 1994, which aimed at a voluntary target of reducing emission of major greenhouse gases to 1990 levels by 2000. By the early 2000s, there were three domestic emissions reduction targets in place (Carter and Ockwell 2007: 63): a 12.5% reduction target for greenhouse gas emissions from 1990 levels by 2008-12 under the Kyoto Protocol; a tougher unilateral carbon dioxide emissions reduction target of 20% from 1990 by 2010; and a longer term 2050 target to reduce carbon dioxide emissions by 60% from 1990 levels.

The Labour Government had also developed a Climate Change Programme (CCP), launched in 2000, to deliver on these targets. The programme heralded a number of new policies, including the Climate Change Levy, a UK emissions trading scheme, the Renewables Obligation and a new energy efficiency commitment placed on energy companies. However, as early as 2003, it was becoming clear that the programme would not deliver its projected 19% cut in emissions, and in 2004 DEFRA initiated a review (IoG 2012: 112). As the Government struggled to grapple with what emissions reduction might mean for the economy, there were a series of reviews, white papers and action plans in key sectors over the middle part of the decade, including aviation (2003), energy (2003, 2006, 2007), energy efficiency (2004), aviation (2003), transport (2004) and planning (2007) (Carter and Ockwell 2007: 64, Lorenzoni et al 2008: 110-11).

But despite the multiple targets and a growing range of policy instruments aimed at reducing carbon emissions, criticism of the Government's approach grew as the decade progressed. First, there were an increasing number of voices calling for tighter long term targets, reflecting the fact that the climate science was changing, with the IPCC Third Assessment Report in 2001 being superseded by new modelling reported in a landmark 2004 conference in Exeter, the Stern Review (2007) and others. This research pointed to the need for a 2050 emissions reduction target nearer 80% or more rather than 60% (Lockwood et al 2007).

Even more importantly, carbon dioxide emissions (assessed on the Kyoto basis of emissions produced within UK boundaries) were not falling. There had been considerable success in bringing down *total* greenhouse gas emissions, which were already below the Kyoto target level by 2001. However, this reduction was largely due

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to cuts in emissions of methane, and the picture was very different from carbon dioxide, which makes up the bulk of the problem. Carbon dioxide emissions actually fell quite sharply in the first part of the 1990s, but this was mainly due to the "dash for gas" in electricity generation, rather than climate policy. From 1995 the decline stalled, and carbon dioxide emissions in 2005 were almost exactly the same as ten years previously.

Following an official review in 2006, disappointment in government was matched by that outside, and it was widely expected that the 2010 domestic target would not be reached (Grayling et al 2005, Darkin 2006, Carter and Ockwell 2007: 73). Indeed the projections in the 2006 climate change programme implied that it would not (Carter and Ockwell 2007: 65). Progress in other areas, notably renewable energy, was also slow, with the Renewables Obligation falling well short of renewable electricity generation targets (Woodman and Mitchell 2011: 3916).

2.2 The adoption of a Climate Change Bill

The idea of legislation to provide greater certainty and more ambition in climate policy originated with the Friends of the Earth campaign, The Big Ask. The approach of the Act was prefigured in an important report from Friends of the Earth in response to the review of the Climate Change Programme (Worthington et al 2005). The lead author on the report was Bryony Worthington, who later went on to draft parts of the Act. The innovation suggested in the FoE report was taking a top-down approach, setting overall targets and then working out policies to reach the targets, rather than the bottom-up approach in the CCP which started with a collection of policies and adding up their projected effects.

However, the response of Government in eventually adopting a Climate Change Bill was not simply because of a set of proposals. Theories of agenda-setting emphasise the importance of salience (Pralle 2009), and the period from 2004 to 2007 was for several reasons particularly fertile ground for more ambitious action on climate change in the UK.

One factor was that, in addition to writing reports, Friends of the Earth started its campaigning activities. FoE had a successful history of campaigning for legislation to protect the environment, which is one reason why the call was for a Climate Change Bill.[6] A sympathetic group of MPs put forward a model Bill and a Parliamentary motion in May 2005 calling for legislation with binding targets, which eventually gained signatures from over 400 MPs. However, the Big Ask campaign also mobilised a much wider constituency, with local meetings and a very broad coalition of civil society groups, including the National Federation of Women's Institutes, Christian Aid, the National Trust, Oxfam, UNISON and the RSPB. The Government adopted a Climate Change Bill in the Queen's Speech in November 2006, but campaigning continued throughout passage of the Bill. Approximately 50,000 letters had been written to MPs and Ministers by the time the Act was passed in late 2008.

FoE decided to place its full focus on the Climate Change Bill campaign because public interest in climate change had risen sharply, as did media coverage of the topic (see Figure 1 below) (IoG 2012: 114). It is unlikely that this upswing in interest was directly due to climate science, because the IPCC's Third Assessment Report was published in 2001, after which salience of environmental issues declined for 2 years. Rather, the key period dates from early 2004, when salience rose steadily from around 2% of respondents in the Ipsos-MORI tracker poll to around 12% in mid-2007. At the start of that year, the then Chief Scientist, David King, made the statement that climate change represented a greater threat than terrorism. In the spring of that year, Tony Blair, then Prime Minister, made a speech in which announced that he would be working to make climate change a priority issue for the 2005 G8, and established a new business-government organisation, The Climate Group. 2004 also saw the creation of the Corporate Leaders Group on Climate Change. In 2005, Blair commissioned Nicholas Stern to begin his review of the economics of climate change, which reported in late 2006. As discussed below, this level of public interest was not maintained, and in what became a classic issue-attention cycle (Downs 1972) and accompanying "media attention spasm" (Baumgartner and Jones 1993), attention had already passed on to new issues before the Act was passed. However, it was enough to give the campaign for the Bill an important groundswell of public interest and concern.

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[6] Interview with Bryony Worthington, 19 November 2012

A third factor was the decision by David Cameron to use the issue of climate change to "detoxify" the Conservative Party's identity with voters (Carter 2006, 2010; Rollinson 2010, IoG 2012), which began a phase of party competition on climate policy. Cameron began promoting climate change as a concern as early as 2005, before making a celebrated visit to Norway to highlight the issue in April 2006 and launching a new slogan: "Vote Blue, Go Green". In September 2006 Cameron shared a platform with FoE calling for a Climate Change Bill to be included in the Queen's Speech. Along with the clear support of the Liberal Democrats, this put considerable pressure on the Government. According to a former aide cited in IoG (2012: 115), the then Environment Secretary David Miliband commented that "Labour could not get into the position of being the only major party not in favour of the proposed bill". Sceptical Treasury advisers had to be overcome, although this process was helped both by the way in which the Stern Review process was changing thinking about the costs and benefits of mitigation, and by the politics.[7]

A further factor was the stances of major interest groups, especially business. A new Director-General of the Confederation of British Industry (CBI), Richard Lambert, had increasing concerns about the climate science, along with other CEOs (IoG 2012: 114), and in 2005 established a Climate Change Taskforce, which produced a report *Climate Change – Everyone's Business* in 2006. The report made it clear that the CBI took the issue of climate change seriously, and made the argument that it represented opportunities for (British) business, especially in low-carbon products and services as well as risks. The CBI has since institutionalised the Taskforce with the creation of a permanent energy and climate change department. Particular industries also saw the idea of a Climate Change Act as a strategic advantage, not only the still nascent renewables industry but also the nuclear industry, which was trying to re-establish the credibility of nuclear power after it had been rejected by governments since the 1990s.[8]

The Big Ask campaign, the heightened level of public awareness of and concern about climate change and party competition also meant that the passage of Bill was followed closely, with public debates on the 2050 target, the nature of the budgets and the inclusion of aviation and shipping emissions. When the draft bill was put for consultation in March 2007 there were nearly 17,500 responses. These factors also meant that the

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[7] Interview with Michael Jacobs, 23 November 2012
[8] Personal communication, Catherine Mitchell

Bill had a smooth ride through Parliament and a high level of cross-party support when it reached the final vote in late 2008.

2.3 The content of the Act

The Climate Change Act was passed into law on 26 November 2008. Its central pillar is a legally-binding target for reducing emissions of greenhouse gas emissions by 80% from the 1990 baseline by 2050.[9] Existing European legislation on emissions also effectively meant a target for 2020 of a 34% reduction. The route to these targets was determined by a series of five yearly carbon budgets, recommendations for which were to be made by a newly created independent Committee on Climate Change (CCC) made up of technical experts. The setting of budgets triggers a chain of actions required of the government, including putting forward policies and proposals to meet the budgets. Parliament scrutinises the implementation of the Act and holds the Government to account. The Act also makes provision for the creation of new emissions trading schemes, although these have not been used to date, and various other provisions, including mandatory carbon reporting for companies.

The key innovations in the Act are carbon budgets and the Committee on Climate Change. The CCC was officially established as a non-departmental public body (NDPB) in December 2008 with annual budget of £4.5 million and secretariat of 30 staff. It was initially headed up by Lord (Adair) Turner, previously Director-General of the CBI, which was seen by the CCC itself as "an important factor in establishing its status, credibility and independence." (Hill 2009: 23). The Government is allowed to give general direction to the Committee, but not to influence the content of any of its reports.

The Committee recommends carbon budgets to the Government, which must then decide whether to adopt them or not. If it does not do so, it must give an account of why it is rejecting the advice of the Committee. Carbon budgets are set for five year periods, at least 11.5 years in advance. The Act sets out a number of issues that must be taken into account, both by the CCC in recommending budgets and by the Government in setting them. These issues include the science, but also impacts on competitiveness of

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[9] The 2050 target was left open at the time the Act was passed, but subsequently the CCC recommended that the Government adopt a target of 80% reduction from 1990 levels, which it subsequently did.

particular sectors of the economy, fiscal circumstances and social circumstances (in particular the likely impact on fuel poverty).

According to Hill (2009: 6): "The core philosophy of the Act is [a] built-in series of duties, actions and reports will create the transparency, accountability and political pressure necessary to achieve the purpose of the legislation. The Act takes this approach in preference to an enforcement mechanism…" The Act creates a duty on the Secretary of State to ensure that carbon budgets and the 2050 target are met. The CCC reports on progress annually to Parliament, and the Government must then respond, and itself report on progress in reducing emissions. It must also respond to the setting of carbon budgets by giving an account of the "policies and proposals" needed to meet the budgets, plus a final statement for each five yearly budget.

2.4 The record since the CCA

The implementation of the Act initially went very smoothly. Recommendations from the CCC for the first three carbon budgets (2008-2012, 2013-2017 and 2018-2022) were agreed by the Government in 2009. A new Department for Energy and Climate Change (DECC) had been created in the autumn of 2008, and the Secretary of State, Ed Miliband, immediately set about developing a Low Carbon Transition Plan to deliver these budgets, which was published in the summer of 2009. The 2010 general election saw the formation of a coalition Government, which the new Prime Minister declared a few days later would be the "greenest government ever". Under changed leadership, DECC started to work on a new version of a delivery plan for the carbon budgets, published as the Carbon Plan in early 2011.

However, as mentioned above, the process for the fourth carbon budget, covering 2023-2027, was more difficult. This budget not only had important implications for upcoming investment decisions in the power sector, but also extended well into the 2020s and beyond any existing commitments by the European Union, unlike the first three budgets. The Business Secretary Vince Cable, who was supported by the Chancellor, George Osborne, wrote to the then Energy and Climate Change Secretary Chris Huhne arguing that the proposals for the fourth budget would impose too many

costs on the economy and could not be agreed as they stood.[10] According to some accounts, Cable was being lobbied by the steel industry (Spencer 2011). When this division within the Government became known, the directors of 15 large environment and international development organisations and the leader of the Opposition then wrote to the Prime Minister urging him to accept the CCC recommendations.[11] In the event, David Cameron did eventually do so, and the fourth budget was finally agreed in May. However, the Chancellor ensured that the decision could be revisited, by insisting on a review of the fourth budget in 2014, a move that was subsequently criticised by the Environmental Audit Committee for increasing uncertainty (EAC 2011).

Further rifts were to come. In October 2011, in a speech to the Conservative Party Conference, the Chancellor argued that "a decade of environmental laws and regulations are piling costs on the energy bills of households and companies" and pledged to prevent the UK from cutting emissions more quickly than other European countries. In March 2012, a new emissions performance standard for electricity generation was announced by the Treasury and DECC that would allow the operation of combined cycle gas turbines without carbon capture until 2045 (DECC 2012). This move prompted a letter from the chairman of the CCC warning that the standard risked undermining the decarbonisation of electricity generation sufficient to meet future emissions reductions targets.[12] Arguments about the role of gas escalated, and in the summer of 2012 the Chancellor wrote to the Energy Secretary demanding that the government send a "clear, strong signal that we regard unabated gas as able to play a core part of our electricity generation to at least 2030 - not just providing back-up for wind plant or peaking capacity", that the Government not set any new decarbonisation targets including a 2030 target for electricity emissions, and that a cap be set on the amount of costs that could be added to energy prices to finance decarbonisation policies.[13] This position provoked another letter from the CCC insisting that a target for electricity emissions was needed to "buttress the signal provided by the carbon budgets".[14] In the event the Energy Bill was published with a clear financial framework for renewable energy, but no decarbonisation target. At the same time, a gas strategy

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[10] http://blogs.ft.com/westminster/files/2011/05/vince-letter-jp2.pdf
[11] http://assets.wwf.org.uk/downloads/open_letter_to_david_cameron.pdf
[12] http://downloads.theccc.org.uk.s3.amazonaws.com/Letters/EdwardDaveyMP_Letter270312.pdf
[13] http://www.guardian.co.uk/environment/2012/jul/23/george-osborne-letter-ed-davey-gas-wind
[14] http://hmccc.s3.amazonaws.com/EMR%20letter%20-%20September%202012.pdf

emerged that seemed at odds with DECC's own projections for the role of gas in electricity generation in the 2020s.

Open conflict in government was alarming investors. Seven global electricity technology firms wrote to the Energy Secretary in September 2012 expressing concerns that the UK was in danger of undermining its reputation as a country with low political risk for energy investments, and calling for a binding 2030 target for power sector decarbonisation.[15] Ian Simm, chief executive of Impax Asset Management, told the Energy and Climate Change Select Committee that: "Investors are really worried that with the political debate that has come into the forefront in recent weeks, a future administration will simply change the rules of the game again." (quoted in Godsen 2012). By November 2012 it was reported that ministers were considering excluding aviation and shipping emissions from the carbon budgets.[16] According to industry sources, the uncertainty had pushed up the cost of debt on energy projects by 15%.[17]

3. Climate policy and the political salience of climate change

The Climate Change Act was intended to be a way of binding the hands of future governments to deliver on long term carbon emissions reduction. However, the history of the Act's implementation so far shows that even within a few years of its passing that legislation has not ended political debate over climate policy in the UK. While it is very unlikely that the Climate Change Act will be repealed in the near future, despite calls for this by some,[18] there are serious questions about whether its original ambitions will be weakened, through the watering down of budgets, changes of definitions, or simply through the failure of governments to deliver on budgets and targets.

In examining these risks, a key issue is where political support for and threats to the Act come from. At the time that the Bill was conceived, and especially by those who campaigned for it, a key assumption was that the principal cause of weak commitment to meeting emission reductions was a lack of political will amongst leaders, and that public concern about climate change, working through elected MPs in Parliament, would

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[15] http://www.telegraph.co.uk/news/politics/9593184/Businesses-threaten-to-withdraw-investment-if-Government-does-not-go-green-enough.html
[16] http://www.guardian.co.uk/environment/2012/nov/06/transport-emissions-carbon-budgets?INTCMP=SRCH
[17] http://greenallianceblog.org.uk/2012/11/16/whats-going-wrong-with-politics-and-energy-and-how-to-fix-it/
[18] http://repealtheact.org.uk/climate-change-act. While many of those supporting the "Repeal the Act" campaign are politically marginal, they do include the more influential *ConservativeHome* website.

play a critical role in holding future governments to account for setting and delivering challenging carbon budgets. For example, Tony Juniper, Director of Friends of the Earth and subsequently a senior adviser on the Big Ask campaign, argued in debate with Tony Blair in November 2006:

> "So if it is not solutions we are short of, why is it that so many responses express frustration at slow rate of progress to date? Largely because so far the political will to seriously tackle this problem just hasn't been there. One reason for this is the view of many in Government that there isn't the "political space" to attempt robust solutions. I think this debate shows that there has been a dramatic change in the public mood and it is now politicians who are lagging behind."[19]

There was also the suggestion that capture by vested interests is at work. For example, a Friends of the Earth factsheet for The Big Ask campaigners argued that: "[Politicians] aren't used to solving global problems, and they can be swayed by those with vested interests in polluting businesses." FOE (2008a: 10). Such views amongst environmental groups remain common.[20]

Some of these views can also be found in the academic literature. For example, Lorenzoni et al (2008) characterised the combination of high rhetoric and cautious policy implementation on climate change in the UK in the mid-2000s as "hot air and cold feet" and go on to argue that "there is a failure to reflect emerging evidence of public concern about climate change and calls for strong political leadership in national policy-making" (Lorenzoni et al 2008: 113-114). They conclude that there is a "disjunction between the government's weak positioning on climate change and emerging public concern about climate change" (ibid: 119).

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[19] http://www.foe.co.uk/news/blair_juniper_tony_juniper_response.html
[20] A recent example is provided by a press release from Greenpeace International, launching a report in November 2011 on the influence of corporates on climate legislation:
"'Our governments must work with and learn from the business sector but we will not avoid irreversible climate change impacts unless they listen to and act on the behalf of their citizens. In Durban, it's time for governments to listen to the people, not the polluting corporations', said Kumi Naidoo Greenpeace International Executive Director. The 'Who's holding us back' report helps to demonstrate why decisive action on the climate is being increasingly ousted from the political agenda. The report summarises the lack of action at a national level in several key countries to build the right reconditions to a global climate agreement, which stands in stark contrast to public opinion demanding change." (Greenpeace 2011)

In assessing such arguments, it is important to be clear about two aspects of public opinion and climate change. One is the distinction between valence and salience. It is certainly true that polling evidence shows that by the 2000s, a large majority of the UK public accepted the existence of climate change and expressed concern about it fairly consistently. Large majorities of respondents in surveys conducted by IpsosMORI (Spence et al 2010), the British Social Attitudes study and other surveys (e.g. Anable et al 2006, Downing and Ballantyne 2007, DEFRA 2010) since the early 2000s say they are concerned or very concerned about climate change.[21] Thus climate change in the UK has become what Stokes (1963) termed as a "valence" issue, i.e. an issue on which most people agree and on which they judge parties by their competence in delivery. However, Stokes also argued that what made an issue politically significant was not simply its valence, but even more crucially its *salience* – i.e. the degree to which it is uppermost in voters' minds, a factor that could vary between issues, and also across time for specific issues.[22] Others have subsequently argued that salience also plays a key role in driving particular issues up the policy agenda (e.g. Page and Shapiro 1983, Kingdon 1995, Stimson et al 1995, Burstein 2003, Hobolt and Klemmemsen 2005).

A common measure of salience is the percentage of people naming pollution or environmental concerns as "the most important" or "another important" issue facing Britain in tracker polls, such as that run by Ipsos MORI.[23] During the middle of the last decade, starting from early 2004, there was a surge in public attention to climate change, accompanied by a wave of media interest (Figure 1). This was an important part of the context for the adoption of the Climate Change Bill, as noted above, and may also have been as a result of campaigning for the Bill. There is no doubt that the tracker poll data capture a rapid move up the agenda for climate change in the period of the campaign, and Juniper's quote above reflects this change in public mood. Interestingly,

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[21] There was some evidence for a dip in concern immediately following the leaking of e-mails from the Climate Research Unit at the University of East Anglia ("Climategate") and the Copenhagen UNFCCC summit, about a year after the CCA was passed, but this has now been reversed, according to polling by ICM, (http://www.guardian.co.uk/environment/interactive/2012/jun/26/guardian-icm-poll-economic-climate-change), YouGov (http://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/0w8gg3rki9/YG-Archives-Pol-ST-results-22-240612v2.pdf), and Angus Reid (http://www.angus-reid.com/wp-content/uploads/2012/06/2012.06.27_Climate.pdf)

[22] Stokes' model explains voter behaviour in British elections particularly well (Whiteley et al 2005, Clarke et al 2010). Analysis of opinion and voting behaviour in general elections shows that: "voters have been consistently concerned about...the ability of governments to produce in those policy areas that matter most to people...with the vast majority of voters demanding strong economic performance…" (Whiteley et al 2005:   ).

[23] This evidence relies on responses to questions about what respondents identify as the "most important problems" (MIP) facing the country, data that Wleizen (2005) has criticised for eliding importance and whether an issue is a problem or not. Wlezien's conclusion is that the MIP question provides information on the importance of problems rather than issues. However, since we are concerned here precisely with how people view the climate change problem, this critique is less relevant.

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this upswing in salience appears to have been initiated by senior figures in the political establishment, including the Prime Minister, whereas historically the approach of political leaders to environmental policy in the UK has been preference accommodating rather than preference shaping (Carter 2008: 197).

Figure 1: Salience of pollution/environment and newspaper coverage of global warming/climate change, January 2000 – December 2011
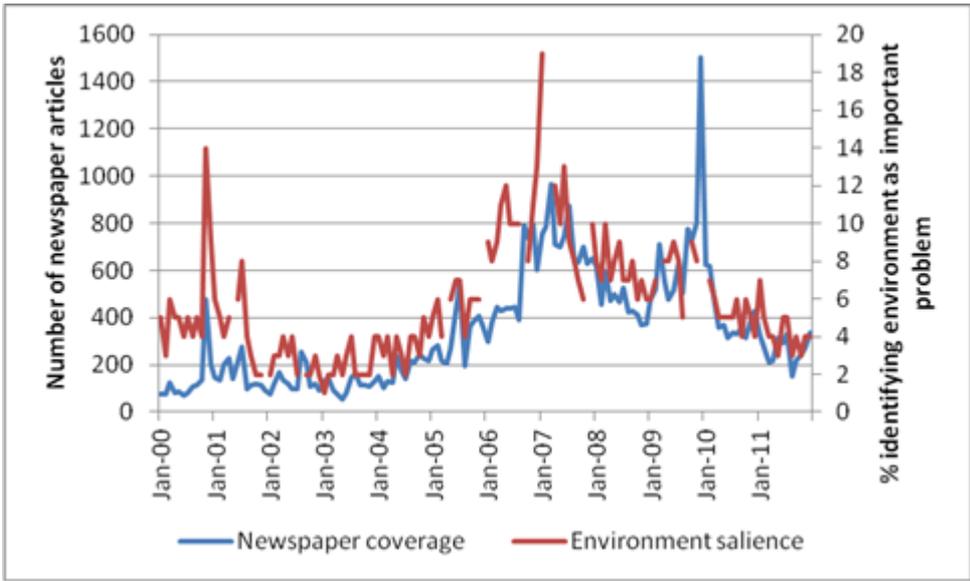
Sources: Boykoff, M. & Mansfield, M. (2012; Ipsos MORI Issues Index (http://www.ipsos-mori.com/researchpublications/researcharchive/poll.aspx?oItemID=56&view=wide)

However, the second factor that is relevant for assessing the argument that public concern will underpin the CCA politically is how salient climate change is *relative to other issues*. Even at its height in the period 2006-07, the salience of climate change was still comparatively low, and most people were far more concerned about crime, immigration and the NHS (Figure 2) (see also Carter 2008: 198). Indeed, the issue of climate change in many respects shows signs of following a classic but relatively small "attention cycle" (Downs 1972, see also Baumgartner and Jones 1993), in which both the media and the public first become interested in a new problem, and then lose interest as its complexity and resistance to easy solutions become evident. Ironically, the adoption of the Climate Change Bill in the autumn of 2006, near the peak of the cycle, may itself have contributed to attention moving on, since as Downs argues, once the public and media think that a government has responded to an issue, their concern and interest abates.

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Moreover, this effect was clearly reinforced by the emergence of the economy as a priority issue in the unfolding of the financial crisis in 2007 and 2008 (Scruggs and Benegal 2012). This applied not only to the public, but also to political leaders, most notably David Cameron, who quite quickly switched attention from climate change to the deficit in 2009. Overall, despite major developments in climate science and a massive increase in media coverage of climate change over the 2000s (Boykoff and Mansfield 2012), the salience of the environment in the UK was actually lower at the end of 2011 than it was in 1997, and over that whole period the percentage of people naming it as a priority concern rose only twice, very briefly, into double figures.

Figure 2: Most important and other important issues facing Britain today, 1997-2011
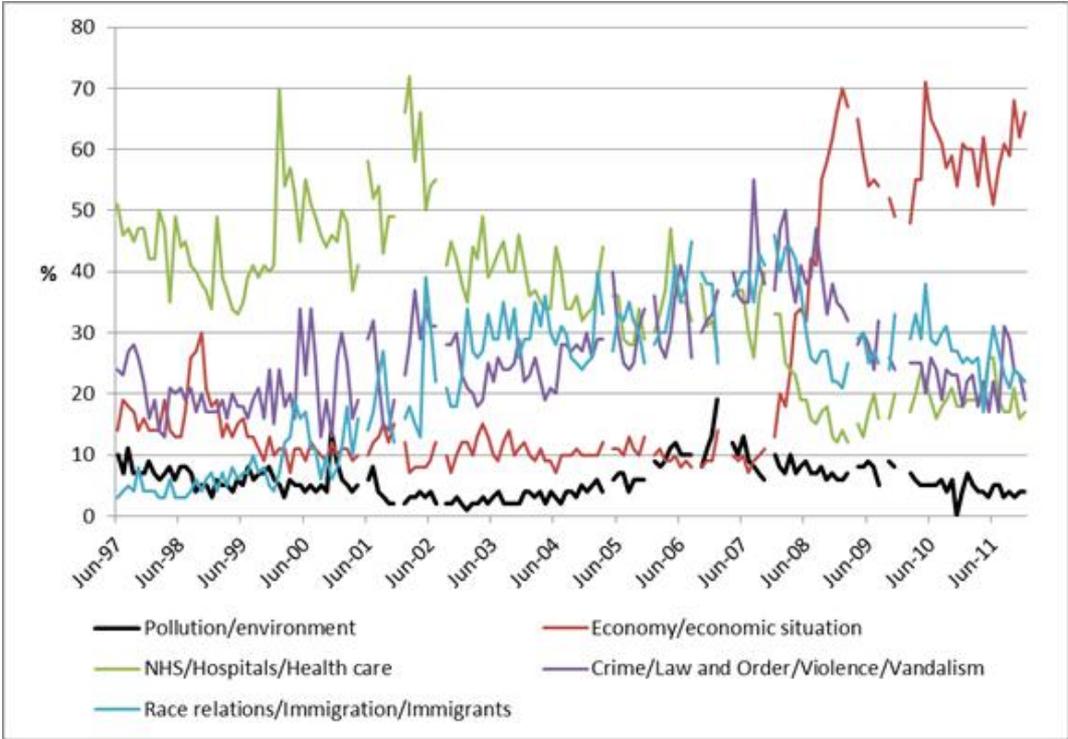
Source: Ipsos MORI Issues Index (http://www.ipsos-mori.com/researchpublications/researcharchive/poll.aspx?oItemID=56&view=wide)

Furthermore, the climate change issue-attention cycle of the mid-2000s failed to transform the role of environmental issues in UK electoral politics. Historically, political parties in Britain have tended to give more attention to environmental issues in the middle of the electoral cycle (Carter 2006, 2008), but returning to a more conventional focus on public services, crime and the economy in election years. Data from the largest available study of public opinion in the context of general elections, the British Election

Study (BES),[24] suggests that the relatively high levels of salience for climate change in the period between the 2005 and 2010 general elections had virtually no impact on its salience for voting choice. Only 2% of voters identified the environment as amongst the five most important issues facing the country in the lead up to the 2005 election (Whiteley et al 2005), but that figure had increased to only 3% in 2010 (Clarke et al 2010). As Carter (2010: 8) notes, "The bottom-line is that the environment is still not an electorally salient issue".

Figure 3a: Percentage of respondents citing issue as most important facing Britain today, British Election Study face-to-face pre-campaign survey 2005, by type of voter
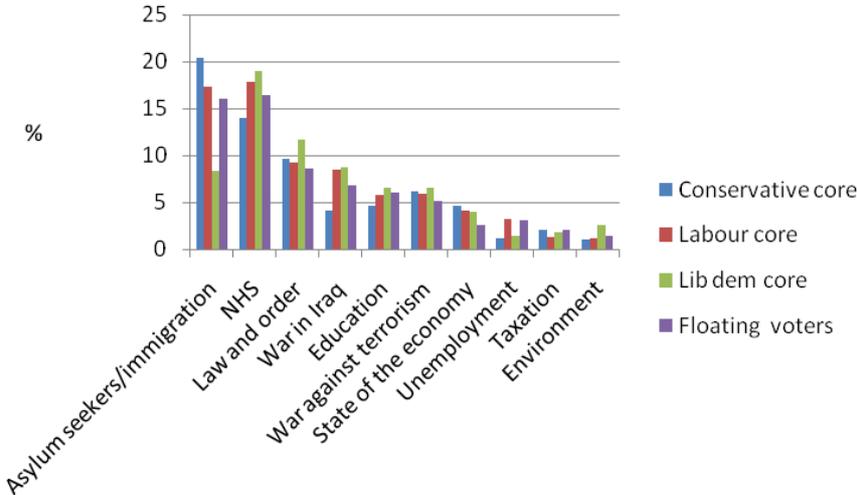
Figure 3b: Percentage of respondents citing issue as most important facing Britain today, British Election Study face-to-face pre-campaign survey 2010, by type of voter
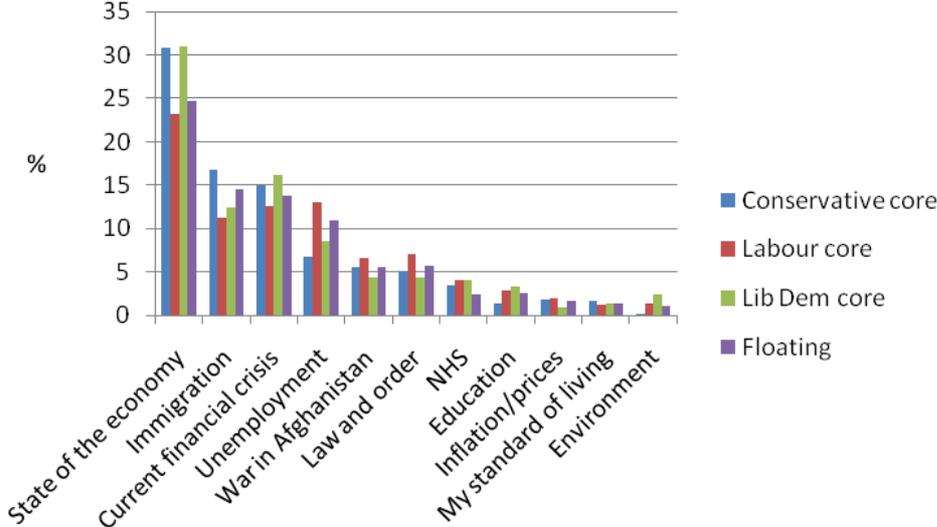
Source: Calculated from pre-election face-to-face surveys, data available at http://www.bes2009-10.org/

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[24] The BES comprises a number of pre- and post-election surveys from elections dating back to 1963, using a variety of methodologies and a consistent set of questions (http://www.essex.ac.uk/bes/)

There is also no evidence for claims that small groups of electorally important voters give higher (e.g. Helm 2010: 186) or lower (Morris 2008) salience to climate change. Political parties in the UK have become increasingly dependent on floating, i.e. unaligned voters to win election since the 1950s (Clarke et al 2010), and commit an increasing amount of attention and resources to this group (Fisher and Denver 2008, Lodge and Gottfried 2011), and to their issue agendas. However, analysis of BES data[25] shows that there was no significant difference between the salience accorded to the environment by floating voters[26] in the run up to general elections in 2005 and 2010 and that accorded by voters identifying with the main three parties (Figures 3a and 3b). Regardless of the type of voter, the environment was named as the first priority by a very small minority. Liberal Democrat core voters are slightly more likely to prioritise the environment, but even in this group, less than 3% did so in both elections.

A study based on a survey in marginal constituencies in September 2009 found similar results (Lockwood 2011). Climate change was named by 5% of respondents as the single most important issue in deciding who to vote for, as compared with almost 40% for the economy and 13% for immigration. There was no difference between all respondents and floating voters[27] in the ranking of the issues that respondents said were important for their vote in the 2010 election. Unemployment and the state of the economy dominated, while climate change/global warming ranked equal seventh, for both floating voters and all respondents.

It is true that in the 2010 general election, unlike 2005, "positive environmental commitments liberally adorned the manifestos of all the major parties" (Rootes and Carter 2010: 993). However, the election campaign itself was actually dominated largely by the economic crisis and immigration. Contrary to Helm's (2010) argument that parties competed to "go green", climate change was hardly mentioned in the televised leaders' debates, and a campaign by environment and development organisations specifically aimed at getting climate policy higher up the political agenda in marginal constituencies largely failed.

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[25] Based on pre-election face-to-face surveys, data available at http://www.bes2009-10.org/. Results of analysis available on demand.
[26] Floating voters were defined as those who declared no personal identification with or support for any political party, and core voters as those who did.
[27] Defined as those who intended to vote but said there was some chance they would change their choice

Scruggs and Benegal (2012) argue that in the US context, concern about climate change will rise again once the economic crisis is over.[28] However, there are strong reasons for thinking that low *salience* (possibly punctuated by further brief attention-cycles) will be the norm for climate change. While frequently described as the greatest threat we face, climate change is at the same time what Giddens (2009: 2) describes as a "back-of-the-mind" issue, because "the dangers posed by global warming aren't tangible, immediate or visible in the course of day-to-day life". Crucially, in this respect, climate change is different from an earlier generation of localised air and water pollution problems, which drove the creation and spread of environmental movements (Nordhaus and Shellenberger 2007: 112-113). Unlike these earlier forms of pollution, greenhouse gases are invisible and odourless, and their worst effects will largely be felt by future generations and in the developing world. As a result, there is a disjuncture between the objective importance of the problem on the one hand and the priority that the public give to it on the other.[29]

However, the political incentive for politicians to proceed cautiously with the implementation of climate policies does not arise simply from the low salience of climate change. Rather, it is the combination of low salience and fear that voters will "pay closer attention", in Harrison and Sundstrom's phrase (2010: 8), to some of the consequences of climate policies, especially environmental taxes and higher energy prices. A similar theme comes from Carter and Ockwell's review of UK climate policy based on interviews with a number of politicians and senior policy figures (2007: 155-157). They give examples – from fuel duty, to taxes on aviation, to domestic energy prices – where their interviewees acknowledge privately their fears that the environment can be "bad politics".

There is fairly consistent polling evidence that a large majority in the UK - usually above 60% - is opposed to increased taxes on motoring (YouGov 2006, Bird and Vigor 2006, ICM 2006, YouGov 2007, DEFRA 2010). In the last decade there have also been highly

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[28] In a related but distinct argument, Carter (2010) notes that while public attention has drifted away from climate change, climate policy has attained a permanently higher agenda position within political parties, as is evident from high profile disagreements over wind power.
[29] This point was neatly summarised by Tony Blair in a speech in 2004: "The problem and let me state it frankly at the outset - is that the challenge [of climate change] is complicated politically... its likely effect will not be felt to its full extent until after the time for the political decisions that need to be taken, has passed. In other words, there is a mismatch in timing between the environmental and electoral impact." (Blair 2004). Another way of thinking about this is in relation to the debate about discount rates that followed the publication of the Stern Review (Nordhaus 2006, Stern 2010). While applying only a low or zero discount rate to the welfare of future generations may be normatively correct for public policy, in political terms, both leaders and publics tend in practice to apply quite a high rate.

visible political crises related to such taxes, with major fuel duty protests in 2000 ending the fuel duty escalator and an e-petition against road pricing in 2006/07. Political opposition to increases in transport fuel taxes has remained strong, and in the 2011 Budget, a planned rise in fuel duty was cancelled and replaced by a small cut.

The affordability of gas and electricity for homes and businesses was a less contentious issue in the early part of the decade, as prices were low by historical standards, and the costs of policy measures were passed on through prices rather than through politically more visible taxation. However, by the time that the CCA was passed, this situation had already changed. Along with oil, the price of gas rose steadily through the 2000s, peaking sharply in 2008, 2011 and 2012, and controversy over household bills erupted. Polling during this period shows that energy prices are a salient issue for a significant proportion of the UK public. For example, this is captured, albeit imperfectly, in comparison of Ipsos MORI issue tracker data for those naming the environment or pollution as a priority concern, with those naming inflation (Figure 4). Concern about inflation, driven heavily by energy prices over this period, far exceeds that about pollution and the environment for most of the time between the beginning of 2008 and the end of 2012. The surge in concern in 2008 (which actually predates the CCA) is clearly visible. Again, other sources corroborate this picture. For example, in a YouGov/Bloomberg survey of household finances in October 2012, respondents were recorded as more worried about rising energy prices than unemployment, inflation and taxes.[30] The political impact of this data can be clearly seen in the action of politicians. By the time he became Prime Minister in 2007, Gordon Brown was obsessed with energy prices, according to his aides,[31] and in the autumn of 2012 David Cameron in turn felt it necessary to step in with demands that energy companies offer fairer tariffs.

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[30]
http://www.utilityweek.co.uk/news/news_story.asp?id=197584&title=Rising+energy+prices+the+'biggest+threat'+to+household+finances%2C+says+YouGov+poll
[31] Personal communication, Guy Lodge

Figure 4: Ipsos MORI issue tracker poll 2008-2012

Most important and other important issues facing Britain today: Percentage identifying inflation and environment/pollution
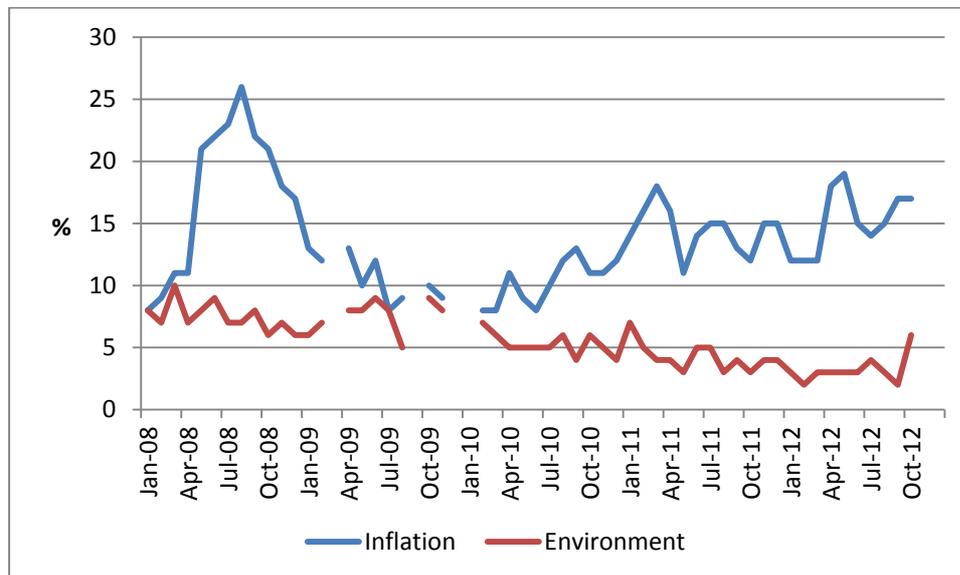
Source: http://www.ipsos-mori.com/researchpublications/researcharchive/2905/Issues-Index-2012-onwards.aspx?view=wide

At the same time, the costs of reducing the carbon intensity of electricity and developing low-carbon energy technologies passed through to energy bills have been made more visible to consumers, partly due to a focus on the issue by sections of the print media. As discussed further in section 4 below, the additional costs of renewable electricity, especially offshore wind, have become a particular focus for controversy. The point here is not whether claims of excessive costs for renewable energy policies are right or not, but rather that support for policies is liable to be vulnerable to such claims because of the combination of the low salience of climate change, and the higher salience of energy prices. In addition, there is also evidence for a limited willingness to pay for climate policy. For example, while there is consistent evidence for high levels of general public support for renewable energy in the UK – of the order of 80% and above (e.g. DTI 2006, Spence et al 2010) – there is also evidence for a limited willingness to pay more for such technologies. Thus Spence et al (2010) finds 36% of respondents unwilling to pay *anything* more for renewable electricity, and 88% unwilling to pay more than £10 a month. Eurobarometer surveys provide similar findings. In other words, most people would be happy to see renewable energy expanding in the UK, but they do not

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feel sufficiently strongly to ignore the costs.[32] This contrast between an interest in tackling climate change in general and unwillingness to make commitments to particular costs has been labelled "simulative ecopolitics" by Humphrey (2009: 148) and "cheap talk environmentalism" by McLean (2008)

Overall, the evidence on the comparative salience of climate change and other issues, especially energy prices, tends to support the "political space" argument put forward by politicians but criticised by Juniper above. The view of campaigners for the Climate Change Act that public opinion was ahead of political leadership reflects only part of the incentive structure facing politicians. A more complete view shows that the issue-attention cycle of the mid-2000s was not a permanent shift in the preferences of the public, and the political incentives to adopt preference accommodating policies which prioritise competitiveness and containing energy prices remain strong. Over time, the carbon budgets driven by the Act will become tighter, and costs may rise significantly, so the disagreements over the fourth budget may be mild in comparison with debates in the 2020s.[33] Under such circumstances, high levels of salience for climate change will be needed to make MPs hold future governments to account, but there are no reasons to believe that this will be the case in the next few years. The evidence suggests that electoral and political incentives for radical climate policy are weak. This is not an absolute constraint, but it is an important contextual driver for action. The concept of "lack of political will" cannot be understood without reference to it.[34]

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[32] In addition to economic costs, there are other perceived costs to some climate policies which can be politically significant. For example, while there is general support for renewable energy, there is often strong, if minority, localised opposition to wind farms on visual amenity and other grounds. For example in 2007 over one-third of planning applications for wind farms were rejected (BWEA 2008) and in 2009, 262 schemes representing capacity of 7.4 GW were tied up in planning (BWEA 2009).

[33] Interview with Bryony Worthington, 19 December 2012

[34] Without such an understanding, public opinion can appear contradictory and lead to confusion in its interpretation. For example, Lorenzoni et al (2008: 113-114) argue that: "the UK could be described as facing a climate governance 'trap' in that public(s) are increasingly expressing a desire for strong action whilst politicians remain wary of bold steps for fear of short-term electoral retribution." But if public opinion is conceptualised simply in terms of concern and calls for strong leadership, it is not clear why politicians should fear electoral retribution from implementing climate policies. Such a statement only makes sense from a perspective that recognises both the high valence and the low salience of climate change.

4. The politics of policy sustainability and the risks of retrenchment

In the previous section, I argued that the assumption that the political sustainability of the Climate Change Act would be ensured by a vigilant Parliament acting on behalf of an engaged public is not supported by the evidence. This then raises the question of which other factors, forces and interests will bear on that sustainability, and in particular, the risk of policy reversal.

The most comprehensive study of policy retrenchment to date has been made by Erik Patashnik (2003, 2008). His basic argument is that the sustainability of policy depends on the "reconfiguration of political dynamics" (Patashnik 2008: 3). The aim of a policy change must be that it becomes "so deeply rooted in political practice and culture over time that its dismantlement becomes all but unthinkable" (Patashnik 2008: 26-7). A paradigmatic example from British political history would be the creation of the welfare state in the 1940s, and especially the National Health Service. It is precisely this kind of political "gold standard" that climate policy advocates are seeking to establish. However, many policy changes fail to achieve such strong sustainability, and the evolution of a reform in any particular case depends crucially on the willingness and capacity of policy makers to encourage, extend or frustrate a policy's development.

Patashnik identifies three kinds of change that a policy must bring about in order for it to be durable: institutional transformation; the reconfiguration of political dynamics; and the creation of new interests through investment. In this section I assess how far the CCA has met these criteria for policy sustainability, and how far it remains open to the risks of retrenchment.

4.1 Institutional transformation

The first is change in the institutions governing the policy area in question. Policy change frequently involves the construction of new administrative, legal, financial, and accountability bodies and arrangements, but sustained reform will typically also involve the dismantling of existing arrangements (Patashnik 2008: 5). The destruction of old structures is better than the mere displacement of the management of an issue from one part of government to another that leaves the original structure intact. Thus Patashnik contrasts the failure of the US Tax Reform Act of 1986 to change legislative structures (and its eventual erosion) with the dismantling of the Civil Aviation Board in

the case of more successful airline deregulation (Patashnik 2008: 164-65). In the UK an example of institutional transformation contributing to the sustainability of policy change might be the creation of the Monetary Policy Committee of the Bank of England with the power to set interest rates and the dismantling of the group in the Treasury that had previously been responsible for that function.

The most obvious institutional change brought about by the CCA was the creation of the Committee on Climate Change (CCC). The idea of having an authoritative independent expert body helping to set targets was based in part on addressing the problem of time-inconsistency and credible commitment, well known in both monetary policy (Blackburn and Christensen 1989) and environmental policy (Abrego and Perroni 2002, Marsiliani and Renstrom 2000). The underlying issue is that politicians can promise to commit themselves to reduce emissions and create incentives for investment in low carbon technologies, but if politicians have an incentive to reverse policy in future (for example, because of cost or energy security concerns), then potential investors will not see that commitment as credible, will have concerns about stranded assets, and will not invest. In monetary policy, one widely adopted solution is to delegate decision making to an agent insulated from political pressures, i.e. an independent central bank (Rogoff 1985), and thereby "bind the hands" of policy makers. In the UK this has taken the form of the Monetary Policy Committee (MPC). Suggestions for a similar body for energy and climate policy were widely discussed in the period before the adoption of the Climate Change Bill (e.g. Helm et al 2003), and were also promoted by the then leader of the Opposition, David Cameron, in a speech in March 2007 (Cameron 2007).

However, those drafting the Act, and especially the team around David Miliband, rejected this model early on, believing that the range of policies involved in the low carbon transition was too wide and too political to delegate to a technical committee. The long list of issues to which the Committee had to give consideration in addition to climate science was included partly to give reassurance to sceptics in the Treasury. [35] In fact, the CCC is almost the exact opposite of the MPC, in that the MPC is trying to *meet* an inflation target given to it by government, whereas the CCC is *giving advice* on targets which are then expected to be met by government, which retains all instruments,

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[35] Interview with Michael Jacobs, energy and environment adviser to the Prime Minister 2007-2010, 23 November 2012

including taxes, subsidies and regulation.[36] McGregor et al (2010: 43) conclude that the CCC is in fact best viewed as an advisory body that provides a constantly updated analysis of the type that the Stern Review gave, i.e. a "Rolling Stern" model, which also incorporates an additional monitoring function. From this perspective, the CCC does not so much "bind the hands" of government to help create credibility, as stand over it watching carefully.[37]

This institutional arrangement is not without effect, but it is weaker than straightforward delegation of powers (Helm 2010: 193). Moreover, under the Act the CCC's recommendations to government for carbon budgets are not legally binding. There are differing views on how far the CCA can be used as the basis for legal challenge; for example, judicial review if government failed to meet targets, or tried to set targets that were questionable on scientific grounds. Some take the view that the Act provides a strong basis for legal challenge in such cases and indeed that this threat was taken seriously by officials in the debates over the fourth budget in early 2011.[38] Others, however, such as McGregor (2010: 48-49) argue that such cases are unlikely to be successful given the narrow grounds for judicial review.

The other issue is the extent to which previous institutions have been dismantled. At its creation in late 2007, the CCC entered an already crowded institutional landscape in relevant policy areas (Darkin 2006), including Ofgem as energy regulator, the Carbon Trust, the Energy Saving Trust (EST), the Environmental Audit Committee and the Sustainable Development Commission (SDC). However, while these bodies did provide analysis and advice on transition to a low carbon economy, none of them give recommendations for overall emissions reductions targets or carbon budgets. Moreover, the SDC was dismantled and the Carbon Trust and EST were weakened in the "bonfire of the quangos" held by the coalition Government after the 2010 election. A more relevant competitor institution in the target setting space is the European Commission. UK unilateral targets and budgets have to be consistent with European targets. This has effectively meant that the first three budgets were already set by the EU target of

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[36] As noted by McGregor et al (2010) there are also differences in the time scales that the two bodies are dealing with - the MPC working to a political and business cycle of a few years and with monthly opportunities to change interest rates while the CCC has a time horizon of several decades and works to annual reports and emissions data – and decision-making rules.
[37] Helm (2010: 192-93) has also been critical of the make-up of the CCC, arguing that its membership has a "strong academic element, with a track record of promoting ambitious climate change policies", implying that it may set budgets too tightly.
[38] Interview with Matthew Spencer, Director of Green Alliance, 8 November 2012

reducing emissions by 20% by 2020 from a 1990 baseline. In addition, the CCC is also constrained by European 2020 targets for renewable energy generation and energy saving, as well as by the cap on the EU emissions trading scheme. The relationship between budgets from 2023 onwards and future EU targets remains unclear and controversial.

A second significant institutional change that occurred at the time of the passage of the CCA, not as a result of the Act but related to it, was the creation of a Department of Climate Change (DECC) in October 2008 at the time of a Cabinet reshuffle. Although some within the incoming Brown administration had suggested this move as early as the summer of 2007, the final decision emerged from the frustrations of senior officials in the Cabinet Office trying to deliver a joined policy on energy and energy efficiency across two Departments (Business and Environment) with different priorities and cultures.[39] In the event, the creation of the new department in 2008 was linked explicitly to the CCA; in press reports at the time a "senior government source" was reported as saying that: "The climate change bill imposes legally binding carbon budgets on the whole of government - the department responsible for managing them needs to be able to deliver them." (quoted in Stratton 2008).

This move reinforced the argument, emphasised by the Prime Minister's energy and climate adviser at the time that, unlike a White Paper, legislation in the form of the CCA carried far greater force in driving action across the whole of the government. Previously, the lack of ownership of climate change targets outside DEFRA, in the actual departments required to deliver them (i.e. business and transport), had been a real problem. The CCA produced a real change in culture, not only because it was legislation, but also because it contained within the idea that a plan was required of every department for delivery. As such it was seen by some in the government at the time as unusually *dirigiste* in an era of liberal policy making.[40]

The removal of the energy policy veto over climate policy, in Compston's (2010) terms, led to rapid change. As described in section 2 above, the appointment of a radically minded Secretary of State soon led to a number of important policy moves that helped

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[39] Interview with Michael Jacobs, energy and environment adviser to the Prime Minister 2007-2010, 23 November 2012
[40] Interviews with Bryony Worthington 19 November 2012 and Michael Jacobs, 23 November 2012

shift energy policy in a lower carbon direction, including the banning of new coal-fired power plants, the creation of dedicated units for renewables, CCS and nuclear, the drafting of a comprehensive Low Carbon Transition Plan, and moves towards an overhaul of the electricity market. DECC is now firmly established as part of the UK government landscape. Although there are some voices calling for it to be broken up again,[41] this possibility has not been raised by the current Government. However, it also remains the case that other institutions with policy making powers in relevant areas have not been dismantled in the creation of DECC. The most important of these is the Treasury, which not only controls DECC's operational budget, but also retains decision making over taxation and subsidy. This can be seen in the Treasury's imposition of the Levy Control Framework for climate policies paid for on energy bills (HM Treasury 2011). At present, this framework constrains the amount available for subsidy to nuclear and renewable technologies in electricity generation, and is creating uncertainty for investors.[42]

Overall, the picture of institutional transformation brought about by the CCA is considerable, although not without limits. The Act created a new institution in the Committee on Climate Change, but as Patashnik notes, when it comes to the implication of the design of new institutions for policy durability, the devil is in the details (Patashnik 2008: 167). The CCC has influence based on reputation, authority and independence, but it is unclear whether, if and when there are sharp clashes between climate change and other policy goals, these will be enough to ensure that its recommendations are accepted in the absence of any real powers. This question is not an abstract one, since it has already been raised through the debates over the fourth carbon budget. At the same time, the creation of the CCC has not led to the removal of the other important body setting long term targets in climate and energy policy, i.e. the European Commission. Beyond the CCC, the Act has changed culture in the various departments, including Business and Transport, which are important for delivery of decarbonisation policies. Finally, the creation of DECC, while not actually part of the CCA, may have been the most important institutional change, by wresting policy control over energy away from a department mainly focused on competitiveness. Nevertheless, DECC still remains constrained by the continuing power of the Treasury.

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[41] http://www.thegwpf.org/fraser-nelson-breaking-up-decc-would-be-perfect-start-to-downsize-government/
[42] http://www.reuters.com/article/2012/10/30/column-wynn-energy-uk-idUSL5E8LU6QP20121030

4.2 Reconfiguration of political dynamics

Even more important for reform sustainability than change in institutional arrangements is the reconfiguration of political dynamics. According to Patashnik, to avoid retrenchment, policy changes must:

> "disrupt longstanding patterns of governance, recast institutions, upset existing power monopolies, and create policy feedback effects that render it difficult or unattractive for the government to reverse its course. Reforms that do not accomplish these things, or do so only superficially, can be expected to unravel." (Patashnik 2008: 17)

While there is often focus on bureaucratic sources of resistance, delay and tokenism, the emphasis here is on the actions of politicians. Of central importance is the idea that policy change must be self-reinforcing to be successful, which in turn means that it must transform political expectations and incentives, group identities and coalitional patterns from the situation preceding reform in such a way that they are supportive of the policy. This process by which policy can transform political dynamics is labelled "policy feedback", (Pierson (1993), Mettler and Soss (2004)).[43] One paradigmatic example is the creation of the welfare state:

> "reforms were popular with the mass public, especially the broadbased policies in the areas of pensions, education, and health care. . . . The support for policies quickly broadened once citizens enjoyed the benefits of the new policies, and thus the mass opposition to cutbacks in the policies was much broader than the mass support for their introduction. *Thus, the new policy regime fundamentally transforms the preferences of the population."* (Huber and Stephens 2001: 29)

According to Patashnik (2008), policy feedback can work through a variety of routes. As in the example above, it can create new constituencies. However, policy change can also increase or decrease the political cohesion of previously favoured sectors,

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[43] A closely related notion is "preference shaping", which hypothesises that policies can reshape the political preferences of the population (Dunleavy and Ward 1981). Stubager (2003) examines the effects of council house sales and sale of shares in privatised industries in Britain in the 1980s and 1990s and rejects the hypothesis that these changed political views.

changing their costs of collective action. Thus liberalising reforms under the Thatcher administration in the 1980s were self-reinforcing because (along with direct legal constraints on union power), they led to de-industrialisation, the erosion of producer identities and the decline of workplaces like large factories and mines that had previously lowered the cost of collective action by workers in opposition to those policies. Policy reforms may alter the "cognitive mindset" of existing groups, transforming their strategies or preferences. Thus some companies faced with the withdrawal of a subsidy may see a strategic advantage in being able to out compete rivals if they switch to focusing on raising productivity rather than trying to maximise rents. If well framed, policy changes can also transform the public image of politically important groups, for example tarnishing the public image of a group previously held in high esteem, see in the effects of public health policies on perceptions of tobacco companies.

In practice, many policy changes fail to build a clientele, a situation that Patashnik (2008: 168) characterises as "winnerless reform", that is "a reform whose benefits are scattered so widely that it generates no influential clientele-group defenders." An equally important barrier to the durability of policy change is failure to destroy or permanently neutralise the power of those opposed to reform. As discussed below, these are particularly important potential dangers for climate policy.

4.2.1 Mass policy feedback effects

For some major public policy reforms, such as the creation of the welfare state, policy feedback effects work partly through benefits to the mass of the public. In many others cases, however, such mass feedback effects are "too diffuse, invisible and distant" to be significant (Patashnik 2008: 30). This is especially true in the case of climate policy, where, as discussed in section 3 above, the main benefits of the reducing emissions will accrue to future generations and to people in developing countries. However, it is also often argued that reducing emissions will also involve co-benefits, especially reducing dependence on imported fossil fuels, the stimulation of economic growth and the creation of new jobs. On the other hand, it is also widely recognised that a low carbon transition will involve costs, which at present tend to fall mostly on energy consumers. In this section I briefly consider each of these potential policy feedback mechanisms in turn.

As a way of framing some low carbon policies, such as deployment of renewable energy, energy security may well be slightly more effective than climate change, especially for certain groups, such as Conservative voters, and older men (Lockwood 2009). Shortly after the passage of the CCA, the Conservative Party brought out a pre-election position paper on climate policy which framed the issue in terms of energy security (Conservative Party 2009). Environmentalist groups have also sought to deploy this framing from time to time,[44] although they are also aware that the energy security imperative has led to new non-conventional fossil fuel exploitation (e.g. tar sands, shale gas) in US.

The contribution of renewable energy, and especially electricity, to total energy use has grown sharply over the last 4 years. In 2008, less than 6% of electricity was generated from renewable sources, compared with 9.4% in 2011 (DECC 2012c: 161). Some of this generation uses imported biomass, but the majority displaces fossil fuel, of which in total over one third is now imported. In the case of coal for power production, around 60% is currently imported. This growth in renewable energy, however, has not been enough so far to offset the wider trend towards dependence on imports. In the case of coal imports, movements are still dominated by the coal-gas price differential rather than by renewable electricity generation.

Moreover, while polls frequently find high levels of concern about dependence on imported fossil fuels (e.g. Spence et al 2010: 12), it is not clear that energy security is any more salient with the public than is climate change. A recent tracker poll from DECC shows that similarly small proportions (2-3%) of people regard them as priority problems (DECC 2012b: 2). It is also the case that domestic shale gas production, whose appeal lies exclusively in energy security, is not a popular option in the UK.[45]

A second potential mass policy feedback effect might come through the generation of new employment that can be labelled as "low carbon". The effects of low carbon policies on employment are complex to capture, involving both job creation and destruction (Sorrell and Speirs 2010, Fankhauser et al 2008) and in the absence of accepted methodologies for defining low carbon employment, are open to controversy (Morriss et al 2009). Much of the debate to date has focused on what Fankhauser et al (2008) call

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[44] http://www.foe.co.uk/news/mps_govt_energy_security_33055.html
[45] http://www.guardian.co.uk/environment/2012/oct/23/wind-shale-gas-icm-poll

the "short-term effect", i.e. jobs lost in directly affected (high carbon) sectors and new jobs created in replacement industries. This is not surprising since these (and especially the latter) are the most visible and obviously attributable effects, and so the politically most significant in relation to climate policy.

In 2009, the Department for Business commissioned the first attempt at a comprehensive estimate of low carbon goods and services in the UK, developing a new methodology that the Government has now adopted. This put employment in the renewable energy sub-sector in 2007/08 at around 250,000 and employment in a separate low-carbon sub-sector at 432,000 (Innovas 2009). Subsequent government surveys using the same methodology show that, despite the wider economic downturn, job growth in these sectors has been running at 6-7% per year since 2007/2008 (BIS 2011, 2012), although is lower than was originally expected in 2009. The combined figure for low carbon and renewable energy employment in 2010/11, at around 735,000, represents some 2.5% of total UK employment.

Again, the absolute number of low carbon jobs matters less than their political effects. Certainly, the leaders of the main political parties have all attempted to use the creation of new low carbon jobs in political debate. By the time the CCA was passed, Peter Mandelson, the then-Business Secretary and a highly influential figure in the governing Labour Party, had thrown his weight behind the idea of a low carbon industrial strategy, and a policy document was launched in the summer of 2009. It is possible that had Labour stayed in power, the use of industrial strategy to link the low carbon agenda with new employment may have led to low carbon jobs playing a larger part in public perceptions of climate policy. However, Labour lost the 2010 election and the Business Secretary under the successor coalition Government has not given the issue the same prominence. Those supportive of the transition to a low carbon economy have continued to highlight the importance of jobs; for example, Green Alliance recently used the official data to compare low carbon employment totals favourably with that in financial services, and over four times more numerous than those in telecommunications (Green Alliance 2012). However, there is no evidence that new job creation in low carbon and renewable energy sectors is as yet a specific major driver of wider public support for climate policy.

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There is also little sign of collective action by workers in new low carbon industries. The active role played by manufacturing trade unions in Germany, as part of the coalitions that drove support policies for wind and solar energy (Jacobsson and Lauber 2006, Michelowa 2005) has not yet been replicated in the UK. The Trades Union Congress has been supportive of the CCA, but has balanced this support with a concern about workers who may lose jobs in high-carbon energy intensive industries (2008).[46] The low carbon transition has also been a low priority for the TUC, in relation to other concerns.[47] This may partly be because, notwithstanding the large headline figures given in the BIS reports cited above, UK employment in key sectors is still low. For example, Bird (2009) notes that in 2008, the entire wind industry in the UK employed between 4,000 and 5,000 people. This contrasts with the 64,000 jobs in the German wind industry by 2004 (Federal Ministry for the Environment 2006).

A third potential mass policy feedback effect is a negative one: the cost of climate policies for consumers. Since the mid-2000s, a combination of a squeeze on incomes for low-to-middle income households and a sharp rise in the prices of oil and gas has given energy costs high salience, as noted above in section 3. At the same time, the costs of reducing the carbon intensity of electricity and developing low-carbon energy technologies passed through to energy bills have been made more visible to consumers, partly due to the media. Policy costs include carbon pricing through the EU emission trading scheme, measures to support renewable energy including the Renewable Obligation and the Feed-In Tariff for smaller scale technologies, additional network costs including smart meters and energy efficiency programmes. Projecting climate policy costs for energy bills is not straightforward, partly because they will depend on assumptions about the future trajectory of fossil fuel prices. According to DECC, policy costs in 2010 amounted to £70-90 (8-9%) on the typical annual dual fuel household energy bill (DECC 2011). In the longer term, the Government argues that some measures will reduce energy bills, because they will lead to energy savings and avoid the use of fossil fuels, and a statement in July 2010 gave projections of very small net impacts of measures on energy bills (<1%) for 2015 and 2020 (DECC 2010). However, independent assessments differ. One of the most detailed studies, Preston et al (2010) project an 8.5% increase in the average energy bill as a result of climate policies by 2020.

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[46] See, for example, http://www.tuc.org.uk/industrial/tuc-19853-f0.cfm
[47] Climate change is not mentioned on the home page of the TUC website, for example.

In terms of media coverage and comment from some Conservative backbenchers (see section 4.2.2 below), climate policy costs have been the most highly visible form of mass policy feedback. The additional costs of renewable electricity, especially offshore wind, have become a particular focus for controversy (Powell 2011, Moore 2011, Moselle 2011, Helm 2012). Front page stories about "green taxes" on energy bills have become a fairly frequent occurrence for the mid-market right-wing newspapers the Daily Mail and the Daily Express. These often report figures that are wildly different from those discussed above. The broadcasting of a Panorama special on the issue of climate policy costs in electricity in November 2011 led to strong debate between commentators in the press and environmental groups.

The real wider political effect of this debate is hard to judge. For example, renewable energy remains popular with the public as a general proposition,[48] but as noted in section 3 above, reported levels of willingness to pay are low. However, it is clear that the effects of the cost debate have been sufficient to produce disagreements within the current Government, which in turn are having a chilling effect on investment, discussed below in section 4.3.

Overall, mass policy feedback effects from the CCA appear to be driven by the salience of the channels by which they work. Like climate change itself, energy security (in the form of reduced dependence on energy imports) is amongst the least pressing concerns for the public in the post-CCA period. In a prolonged recession, employment creation is more salient, but the idea of the low carbon and renewable energy sectors as major sources of new jobs has not yet developed sufficient credibility or scale to provide a major political shift, or new constituencies. The most salient issue, the cost of climate policies to consumers, is of course a negative feedback effect. Its political effects since the Act was passed have been sufficient to contribute to the undermining of confidence in low carbon investment.

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[48] A poll commissioned by Friends of Earth in April 2012 showed 85% of respondents saying they were in favour of the increased use of renewable energy
http://www.foe.co.uk/news/85_per_cent_back_clean_british_energy_35609.html

4.2.2 Group feedback effects

Beyond policy feedback effects that might work through a transformation of public opinion, a key issue is how far climate policy is reconfiguring identities and incentives amongst organised pressure and interest groups. Here I consider the potential direct and indirect effects of the CCA on environmental campaign groups, on business (including the energy industry), and on political parties.

Environmental campaign groups, and especially Friend of the Earth UK, played a central role as policy entrepreneurs (Hill 2012: 168-172) in the development and adoption of the CCA. A key question is whether the CCA itself has strengthened the position of such groups, further building the movement that produced the campaign for a Climate Change Bill. The most obvious – indeed, intentional – effect of the CCA has been to give environmental groups, in principle, a major new legal tool in pressing for action on climate change. As discussed in section 3 above, there is some debate as to how far legal challenge on the setting of budgets or the failure to meet budgets can be used, but there were signs during the discussion of the fourth budget that the threat of legal action was taken seriously by the Government.

Legal instruments have their limits however, and a more fundamental question is whether and how the CCA has transformed the political power of environmental campaign groups. In one sense these groups have been the victims of their own success. The period 2005-2008 saw a period of strong coordinated campaigning on climate issues. The Big Ask ran concurrently with a closely related climate campaign coordinated and funded by the European Climate Foundation aimed at stopping the construction of new coal-fired power stations in the UK. However, the nature of campaigning means there is a pressure to move on to new issues, because supporters, the wider public and the media constantly demand novelty. As the issue-attention cycle moves on, if pressure groups continue to repeat their campaigning, they risk losing relevance, and so they typically tend to move on to new campaigns and issues (Downs 1972, Patashnik 2008: 23). It has been impossible for FOE and others simply to continue a strong focus on the implementation of the CCA. In 2009, Friends of the Earth switched their attention to the role of local government in reducing emissions, while Greenpeace moved much of their energy to campaigning for a cut in nuclear arms. There was an attempt at a brief joint campaign again in the lead up to the 2010 general election called Ask the Climate Question, which encouraged supporters and member of

a range of organisations to put questions about climate change to candidates in 51 marginal constituencies,[49] but which had a limited impact.[50]

At the same time, the CCA did not lead to a large number of new supporters and members flooding in to the campaigning organisations. In fact all the major environmental campaigning groups were affected by the economic downturn, suffering a significant drop in income. According to annual accounts, Friends of the Earth itself saw supporter income fall from over £4.5 million in 2007 to just over £2 million in 2011.

Nevertheless, environmental campaign groups, and related advocacy organisations such as Green Alliance, remain an important line of defence for the CCA. The Green Alliance, in particular, coordinating both environmental groups and sympathetic businesses, has played an important role. For example, during the struggle over the fourth carbon budget, it coordinated a letter to the Prime Minister in early May 2011 calling for him to intervene, which he subsequently did.[51] However, the relevant point is that such groups are still needing to defend and protect the CCA (Allott 2012), and that the Act has not so far produced its own political momentum by swelling the ranks of the environmentalist movement.

A second key group to consider is business. As noted above in Section 2, business leaders began to come concerned about climate change in the period 2005-06, in part prompted by the climate science and the attention being paid to the issue by politicians. There was a potential split between two groups[52] (see also Jeswani et al 2008). At one end were those (often large corporates) that had embraced the seriousness of future climate change, not only for society but also for their own business models, and had become proactive in adapting these models. It is worth noting that in the period from the late 1990s to the start of the economic crisis in 2008, the only sector in the UK to significantly reduce its carbon emissions was business (DECC 2012d). Some of these

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[49] http://www.stopclimatechaos.org/ask-the-climate-question
[50] Personal communication,
[51] http://www.guardian.co.uk/politics/interactive/2011/may/14/david-cameron-green-letter-full
[52] Companies in or associated with the energy industry are a special case, since their core business is so affected by climate policy. This category includes the large, vertically integrated energy generation, wholesale and retail companies (i.e. the "Big Six"). To a varying degree between companies, as is discussed in section 4.3 below, they have started investing in new, low carbon forms of generation and to some degree in end-use energy efficiency, but the bulk of their assets and operations still lie in conventional, high-carbon energy production and retailing. These companies, which are the most exposed to policies in the electricity sector, expected to be in the lead in decarbonisation of the economy, tend to be cautious in taking public positions in relation to controversies on climate policy.

businesses have joined or work with groups such as the Climate Group (founded in 2003), the Corporate Leaders Group on Climate Change (founded in 2004), the Aldersgate Group (founded in 2006), and Forum for the Future (set up in 1996). This group of businesses has been cautiously active in advocating for stronger climate policy, for example through periodic letters to policy makers at key decision points.

At the other extreme were businesses with a more defensive approach to climate change, and are more concerned about the effects of climate policy on their costs and competitiveness. These tend to be businesses in energy-intensive industries, especially those exposed to international competition, such as iron and steel, cement, refining, chemicals, glass and ceramics (CCC 2008: 371-72), as well as the large fossil fuel corporations and many small businesses. Energy intensive companies have been pursuing technological routes to lower emissions, such as the European ultra-low CO_2 steel-making initiative, but they have also traditionally been an active lobby seeking exemption from or more lenient climate policy, for example in the setting of caps in the EU emissions trading scheme (Markuseen and Svendsen 2005, Wettestad 2008, Helm 2010).

The climate change task force set up by the Confederation of British Industry (CBI) in 2005 attempted to bridge these two groups, with representatives from both camps. Largely successfully, it aimed to get agreement on the recognition of climate change and the importance of high level long term targets, while also allowing for disagreement with the government and between members on particular policies. In this context the passage of the Climate Change Bill was initially welcomed by the CBI.[53] The Act offered the "long, loud and legal" signals on climate policy that business leaders frequently call for. At the time, the greater certainty that the Act appeared to provide strengthened the hands of those in the business community who saw emissions reduction as an opportunity. The Act thus helped to give confidence and momentum to many in the business community, and may have driven feedback effects especially via investment in low carbon and energy savings assets and business models.

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[53] See DEFRA (2007: 10)

However, these effects have become weakened, especially in the last two years, by two factors. One concerns the degree and type of certainty that the Act provides. Legislation provides some certainty at the level of targets and budgets, but particular investments depend on the details of policies. Policy uncertainty raises the cost of capital, and where investment planning and financing takes several years, frequent policy changes raise costs still further. For example, Mike Barry, Head of Sustainable Business at Marks & Spencer, speaking in November 2011, argued that: "When the Climate Change Act came in, we welcomed it. We said this is exactly what business wants. It's tough and demanding. It gives us long-term route maps. If you look at what has happened in the last couple of years, the certainty of the Climate Change Act has been replaced by the brief uncertainty of seeing the CRC [the carbon reduction commitment] come and be reinvented as a tax" (quoted in Vaughan 2011). At the same time, it is recognised that Parliaments are sovereign, and although the targets and budgets are legally binding, there is no enforcement mechanism on future governments other than the Secretary of State of the day having to give an account why they were not met. This recognition of the importance of politics has been heightened by disagreements within the coalition Government.

The second factor, which applies particularly to the fourth budget, is competitiveness, especially in the context of the absence of European-wide carbon targets for the 2030s, and the failure to get a global climate deal. In the UK the Energy Intensive Users Group has been active in representing concerns about competitiveness (e.g. Wye Waters Associates 2010). The iron and steel industry has been particularly active, warning in 2009 that:

> "it is vital government doesn't place additional burdens on industry.
> Already, the domestic 'interim' target (34% by 2020) could easily become
> meaningless given the lack of comparable effort elsewhere in the world.
> UK government must be alert to the fact that further burdens placed on
> industry risk irreparable damage." UK Steel (2009: 16)

However, these concerns go wider, as voiced by Neil Bentley, CBI Deputy Director General, speaking in October 2011:

"In the UK, we acted early and boldly. The government signed up to the EU-wide climate change framework, including emissions trading scheme and a renewables target. At home, it introduced a Climate Change Act, setting out binding carbon reduction targets. We wanted to show leadership. We said "you need to be green to grow." We wanted first-mover advantage. We acted on the expectation of a global deal to address our competitiveness concerns. We acted without realising what was around the corner economically… We find ourselves not ahead of the pack, but out on a limb. We've got no international deal, no global carbon price, no meaningful EU [carbon] price and the UK tying itself in costly green policy knots." (Bentley 2011)

The manufacturing industry association, the EEF, has also voiced concerns about competitiveness.[54]

The potential effects of climate policy on competitiveness on UK business are still restricted to quite a small group of industries (affecting about 1% of GVA), and there is a view in the business community that these can be compensated in various forms for differentials in effective carbon prices between the UK and the rest of the EU, and the rest of the world. However, if over the next ten years such differentials with Europe, China and the USA continue to grow, a larger and larger proportion of industry will be affected, and the support of the business community is at risk, or may become dependent on measures such as border carbon taxes.

Policy feedback through the business community, by investment effects and the transformation of objectives of businesses in relation to energy use, would be a major contribution to the political "locking in" of the CCA, so these weakening effects matter, not least because they leave the Act more vulnerable in the face of hostile groups. The most important of these is Conservative party backbenchers. Although David Cameron had chosen climate change as the issue with which to "detoxify" the Conservative brand, as his focus shifted back to traditional Conservative themes and deficit reduction from 2007 onwards, it became clear that large parts of his party had never been

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[54] See, for example, the EEF submission to the Environmental Audit Committee's enquiry into Carbon Budgets
http://www.publications.parliament.uk/pa/cm201012/cmselect/cmenvaud/1080/1080vw03.htm

convinced (Carter 2010: 2-3). Tim Montgomerie, editor of the influential *ConservativeHome* website, was quoted as claiming that at least six members of the shadow cabinet were sceptical about the party's position of climate change, and arguing that the issue could prove to be as divisive for the Conservatives as Europe: "You have got 80% or 90% of the party just not signed up to this. No one minded at the beginning, but people are starting to realise this could be quite expensive, so opinion is hardening." (quoted in Asthana 2010). A survey of Conservative MPs in July 2008 found that one third of them were not convinced about man-made climate change (Carter 2010: 7).

Not surprisingly then, the Climate Change Bill already faced considerable criticism from some backbench Conservative MPs (e.g. Peter Lilley[55]) and commentators on the right (e.g. Lea 2008, Booker 2008) even as it was passing through Parliament. Carter (2010: 7) notes that on the Conservative side, the final vote on the Act was made under only a low priority one-line whip "in order not to provoke a backbench rebellion that would have highlighted divisions in the party". Hostile commentary from the right continued through 2009 and into 2010 as the general election approached. In January 2010, the *ConservativeHome* website surveyed 141 prospective parliamentary candidates, finding that they collectively ranked reducing Britain's carbon footprint as the lowest out of 19 policy priorities (Montgomerie 2010). Since the election attacks on climate policy have increased. Hostile commentary has continued in the print media and on-line. Over one hundred Conservative MPs wrote to the Prime Minister in February 2012 calling for reductions in subsidies to wind power.[56]

Patashnik (2008) argues that successful reforms overcome opposition through policy feedback effects which neutralise opponents by changing perceptions of those opponents, transforming the way they see themselves or their objectives, or by removing their power. However, since the CCA was passed, none of these things have happened. In fact, perceptions and identities have become more entrenched and the Tory right appears to have more power.

This has happened for two reasons. One is that, while Conservative backbench MPs, and to some extent right wing commentators, were relatively restrained in voicing their

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[55] http://news.bbc.co.uk/1/hi/sci/tech/7746126.stm
[56] http://www.telegraph.co.uk/earth/energy/windpower/9061554/Full-letter-from-MPs-to-David-Cameron-on-wind-power-subsidies.html

views and criticism of David Cameron ahead of the 2010 general election, they have had no incentive to be restrained since. The rise of the right-wing populist (and climate sceptic-led) UK Independence Party in the polls has further strengthened the hands of Tory right. As they have become more vocal and restive (not only, or indeed mainly, on climate but on Europe and the economy), Cameron's strategy has been to try to placate them with a September 2012 reshuffle that favours them, for example placing an anti-wind MP, John Hayes, in the energy portfolio at DECC. Further, the right appears to have a strong ally in the form of the Chancellor, George Osborne. The Prime Minister has been willing to step in at key points, reassert his authority and impose more centrist decisions, but this dynamic has in fact been in place since 2006, and the passage of the Act has not meant that he no longer needs to.

The second is that supporters of the CCA have not so far been able to use the Act to successfully challenge the way in which the Conservative right has framed climate policy to their own constituency. Hostility to climate policy by the Tory right is not based simply on the idea that it incurs costs on households and British industry. The criticism of climate policy resonates so deeply with this group because climate policy is framed variously as a "green tax", as "subsidies", as an unwarranted intervention by the state, and sometimes as associated with Europe – all frames which connect with wider political values at the core of the Tory right identity. Supporters of climate policy have so far struggled to reframe the issue – for example as one of job creation, innovation and growth - with many Conservative politicians and voters (see e.g. Shipman 2011).

Carter (2010: 11) argues that even though the salience of climate change has fallen away, the issue is likely to remain politicised, because the position of the right wing of the Conservatives provokes disagreement both within and between parties. The Conservative right ultimately benefit from the fact, not that most of the public agree with them on climate policy (which they do not), but rather that as discussed above, climate change is a low salience issue for most people. Even for Conservative voters, what they dislike, according to focus groups, is not so much Cameron's actual policy positions but rather him "just going on about the environment all the time" (cited in Carter 2010: 8). As also discussed above, the low salience of climate policy makes it vulnerable to cost critiques, a fact that Conservative critics of the CCA have utilised to the maximum. In opposition, the Labour party has mirrored this set of political signals. Its energy policy

focus has been on prices rather than carbon, and the shadow chancellor, Ed Balls, has been a strong proponent of freezing fuel duty. The strongest defenders of action on climate change since 2010 have been the Liberal Democrats, who have held the DECC brief and have constrained the influence of the Conservative right on policy.

4.3 Investment effects

A third condition for sustainable policy is that it should bring about substantial investments based on the expectations that reform will be maintained. Such investments, especially material investments in low-carbon energy infrastructure, literally create new vested interests in the post-reform economy, which can act as a counter-weight to vested interests that lose out under policy change. Here I focus on the electricity sector, since it expected to be the lead sector in decarbonisation and because it produces a significant share (about 40%) of carbon emissions measured on a production basis. Low carbon investments in the electricity sector are also particularly dependent on policies that will be driven by long-term decarbonisation targets.

In terms of existing assets, the sector is still dominated by fossil fuel plants (Figure 5). However, around 12 GW of coal and oil-fired assets are due to close by 2016 at the latest, under European law controlling non-greenhouse gas emissions. There may be further closures of such plants before 2023. At the same time, up to 7.4GW of nuclear plant are due to be retired, mostly by 2016, under current timetables

Figure 5: Available electricity generating plant, UK (MW)
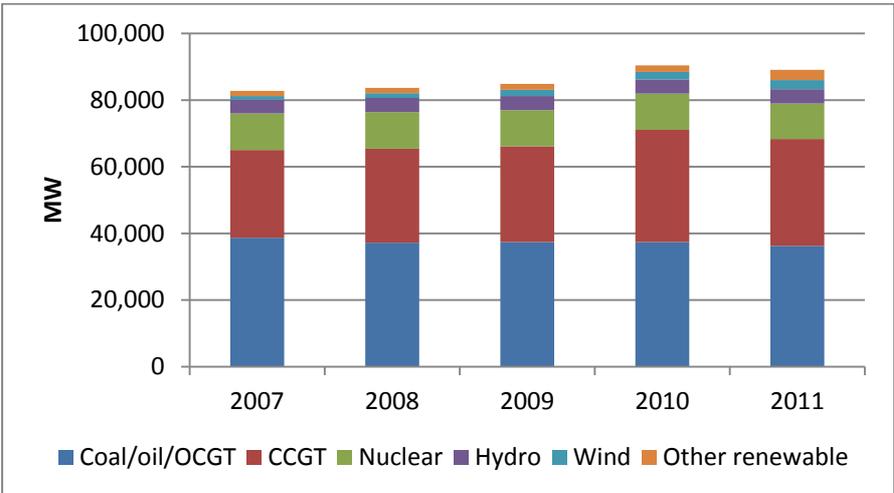
Source: DECC (2012c) Table 5.7, Note that de-rating factors of 0.365 for small scale hydro; 0.43 for wind and 0.17 for solar PV are applied

Existing assets give only a very partial view of vested interests, however, because older plants are largely amortised. In terms of understanding potential investment effects arising from the CCA, the trend in new investments is particularly significant. Investment in the sector generally has been increasing since the mid-2000s, although growth has slowed in the last two years. Table 1 shows new build in capacity since 2006 by type, and estimates of financial investments by type by the "Big Six" utilities since the passage of the CCA, i.e. the end of 2008. Investments include both new build and acquisitions.

Table 1 shows that the Big Six have made major new investments in both renewable electricity capacity (almost all wind) and thermal capacity since 2006. Since the construction of new coal-fired capacity is currently not permitted in the UK, this latter is all gas-fired. In terms of capacity, Big Six investments in gas are actually larger than in renewables, but in financial terms, investment in renewables since the CCA has been more than double that in gas.[57]

Table 1: Estimates of recent electricity sector investments

	Gross build since 2006 (MW)		Gross investment since CCA (£m)	
	Renewable	Thermal	Renewable	Thermal
Centrica	410	895	500	260
E.On UK	651	1,417	815	450
EDF Energy	435	1,300	365	600
RWE npower	1,822	3,700	1,650	1,400
Scottish Power	1,490	0	1,200	0
SSE	1,732	826	2,000	50
Total Big 6	**6,540**	**8,138**	**6,530**	**2,760**
Others	6,000	1,300		
Total	**12,540**	**9,438**		

Source: Bloomberg New Energy Finance (2012)

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[57] It should also be noted that EDF Energy disposed of a large coal plant in 2010, while E.On, SSE and RWE all invested in environmental upgrades to coal plant to allow them to continue to operate.

However, large scale investments in electricity generating plant have long lead times, and those shown in Table 1 will have largely been made on the basis of the policy and political environment preceding or just after the passage of the Climate Change Act. The potential effects of the Act are better assessed by the near-term pipeline for investment. In theory, a large amount of new low carbon capacity should be built over the next decade. The European 2020 renewable energy target implies a rapid growth of renewable electricity capacity over the next 8 years. A background study for the 2011 Renewables Roadmap has central projections of 11 GW and offshore 9 GW (taken together almost three times capacity in 2011) and 22.5 GW of biomass (a seven fold increase) by 2016, and 33.5 GW of wind and 27 GW of biomass by 2020 (AEA Technologies 2010). The Government also hopes that a new generation of nuclear plants will be built, and Centrica and EDF are committing potentially large sums (£200m and £1bn respectively) to preparations for nuclear new build.

But in practice, the broad picture is one of an investment freeze for both renewables and nuclear created by policy uncertainty. According to the analysis by Bloomberg New Energy Finance in April 2012, investment by the Big Six is due to fall off a cliff after 2012 (BNEF 2012: 11). Uncertainty is being created partly by the Electricity Market Review, which started in late 2009 but the details of which have yet to be finalised. But it is also being generated by the open conflict within the coalition Government on policy for investment in new capacity, and in particular the balance of incentives between gas and renewables, especially wind. It is possible that a lot more new gas-fired capacity will be built, not only for purposes of balancing intermittent renewables but also for running base load well into the 2020s. Certainly, since the CCA became law at the end of 2008, applications for investment in almost 13GW of gas-fired capacity has been consented, as opposed to just over 2.5 GW of wind (mostly offshore) and some 2 GW of biomass. Applications awaiting decision as of November 2012 were for 666MW of onshore wind and 2GW of gas-fired capacity.[58]

Thus in terms of impact on political sustainability, the potential investment feedback effects of the CCA remain uncertain. This uncertainty has led to the call by many for a specific 2030 decarbonisation target for the electricity sector. Upstream electricity technology firms have explicitly lobbied for this target, because their decisions about the

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[58] https://www.og.decc.gov.uk/EIP.htm

location of manufacturing capacity have even longer lead times and larger scales of investment than generating capacity.[59] The CBI has spoken against the risk of too high a degree of dependence on imported gas. By contrast, although the Big Six utility companies have repeatedly pressed for greater policy *certainty*, they have tended to avoid high profile public lobbying for a particular *direction* of policy. It is also possible that the Big Six will not form a unified interest group, as there are already some signs that their investment strategies are diverging. Scottish Power (owned by Iberdrola) and SSE have a much clearer lead in the proportion of renewables in their new build. EDF Energy and Centrica hope to invest in new nuclear. RWE npower is making the largest investments in new gas-fired capacity.

Finally, it is worth noting that while the Big Six have a 76% share of all generation capacity, they have only a 47% share of renewable capacity (BNEF 2012: 4). A large amount of investment in renewable capacity has been made by others. While small in overall terms once adjusted for availability, this includes almost 350,000 household solar PV systems, mostly installed after the introduction of a generous feed-in tariff introduced in April 2010. The emergence of mass ownership of low carbon assets such as solar PV is a significant development, although representing only around 1.5% of households in the UK, and a much lower number than in Germany or Spain. The political impact of solar PV ownership is hard to assess. On the one hand, many small actors find it harder to organise for collective action and be an effective lobby group, and even collectively, owners of solar PV household systems have far less strategic power than large power firms. On the other hand, those same householders may have better political leverage than energy companies disliked by politicians and the public alike.

Overall, it is still possible that investment effects may go in either direction, with different possible self-reinforcing equilibrium-like outcomes. One scenario would be that, despite the time-inconsistency problems that arise from the fact that low carbon electricity will probably be more expensive over the next ten years than conventional generation, policy is clear and consistent, and there is increasing investment in low carbon generating capacity, which creates a vested interest in the continuation of supporting

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[59] http://www.telegraph.co.uk/news/politics/9593184/Businesses-threaten-to-withdraw-investment-if-Government-does-not-go-green-enough.html. In a statement in the print media in December 2012 (*The Times* 4 December 2012) by a large number of businesses and NGOs calling on the Chancellor to agree to a binding decarbonisation target for electricity, none of the biggest six energy providers were included
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policies that will be needed to meet carbon budgets. This process would probably reach a point of no return within ten years or sooner. A second scenario is that political risk continues to dominate, and a lot more gas-fired capacity is built than renewables or nuclear. In this case, vested interests would be opposed to carbon and renewables policies that would strand those assets, and would oppose the attainment of the budgets in the CCA.

The slow progress of the EMR and arguments over renewables and gas in late 2012 prolong uncertainty, which drives firms to invest in options rather than plant, which in turn actually postpones the development of vested interests of any kind. The carbon budgets in the CCA, backed up by the authority of the CCC, were intended to provide the initial policy impetus to create vested interests that would then provide political underpinning for the sustainability of that policy. However, some four years after the CCA became law, this process has progressed so little that a new decarbonisation target is now being called for to shore up certainty. In itself, the CCA has failed to provide sufficient investment effects to ensure political sustainability.

5. Conclusions

In this paper I have aimed to provide a comprehensive and systematic analysis of the forces working for and against the political sustainability of the 2008 Climate Change Act. The Act was intended to lock emission reduction targets in through legal means, and this approach had many strengths. In a sense, the fierce debate about the fourth carbon budget in 2011 show the worth of the Act. This debate, fundamentally about the costs and risks of unilateral action, was presaged in the Treasury during the process of adopting the Bill and will undoubtedly be revisited again. It is quite likely that without a law with long term targets and an institution like the Committee on Climate Change standing behind the budget, targets for emissions reduction in the 2020s would ever have been agreed by the government.

However, it is also the case that legal lock-in is never complete. Legislation increases the costs of complete policy reversal, because it requires repeal, which is time-consuming. However, it is still possible for the intention of legislative reform to be undermined through "death by a thousand cuts" (Patashnik 2008: 32). Ultimately, while the Act's targets and budgets are "legally binding", there is no enforcement penalty,

except for the requirement for the Secretary of State of the day having to justify to Parliament the failure to meet them. If there are no reasons why such a situation is politically difficult, then this is a weak form of enforcement. Thus political lock-in remains crucial for the long term sustainability of the Act. The conclusion of this review is that this has not yet happened; policy reform has not yet been landed politically.

The campaigners for a Climate Change Bill, and the architects of the Act in government, framed the legislation in terms of climate change, on the basis of an issue-attention cycle that was at its height at that time. As Patashnik (2008: 23) notes, all policy adoption strategies have their limits, and in the case of climate change, the attention of the public soon moved on and salience fell back. I have argued here that the assumption that there had been a permanent, major shift in the salience of climate change (as opposed to a background concern) for the public, especially relative to other issue such as energy costs, was wrong. This conclusion means that the political sustainability of the Act will not work through political leaders being held to account via public concern as represented by MPs, especially as carbon budgets tighten and if costs potentially rise.

Instead, the sources of political sustainability must be sought elsewhere. In his comprehensive study of policy reversal, Patashnik (2008) argues that these sources will be found in institutional transformation, and in policy feedback effects, where policy change itself creates the political conditions for its own durability. In this process, the Act was not helped by timing, which is important for establishing the durability of reform. New policies (and new political configurations) take time to bed in. But by the time that the Act had passed through Parliament, the largest financial crisis since the 1920s had already begun, and a general election followed within a year and a half.

The creation of the Committee on Climate Change and the related development of the new Department for Energy and Climate Change have had a major impact on the institutional landscape. However, while these new institutions themselves are not under threat, there are some important limits to their power vis-à-vis existing institutions. The strength of the Committee as an institution lies in its authority rather than formal powers. The Act requires it to take into account a range of issues (including competitiveness and fuel poverty) that were necessary to get the Act passed, but provided a potential

opening for future critics to exploit. For its part, DECC cannot expect to automatically override the Treasury.

The transformation of political interests and identities through wider feedback effects has been even more limited. A mass feedback effect via "low carbon jobs", which has been effective for renewables policy in Germany, has not yet taken hold in any major way politically. Low carbon policy costs are in danger of causing a *negative* mass feedback effect. Amongst specific group feedback effects, that via the business community is perhaps the most important so far. Here the main risk relates to concerns about the effects of unilateral action (as represented in the fourth carbon budget and beyond) on competitiveness, and also cross-contamination from uncertainty arising from party political disagreements. The strength of support from business matters because the strength of hostility from the right wing of the Conservative party and associated commentators has not been abated by the passage of the Act, indeed rather the opposite.

A final set of feedback effects may be expected to work through the creation of vested interests via physical and financial investments. The area where we would expect to see this happening first is in electricity generation. Here the picture is one of substantial new investment in new low-carbon capacity (i.e. renewables) up to 2012, but then a stalling due to policy and political uncertainty. This stalling, and the call for a specific electricity sector decarbonisation target, shows that high level targets and budgets are not enough, on their own, to create investment feedback effects.

The difficulties faced in the political establishment of the Act should not necessarily be read as a criticism. The Climate Change Act was a major innovation, and there may well have been no feasible better way to try to bind in action. The key question is what its future may be, given that that future is still uncertain.

Some have argued that reaching the targets in the Act simply technically feasible, given historical trends (Pielke 2009). However, the past is not necessarily a good guide to the future in an area of induced technical change like climate policy, and the achievement or otherwise of targets is more likely to be a matter of political contingency. As Pierson (2000) notes, politics is particularly subject to increasing returns, which implies that

there is more than one possible outcome to an initial reform attempt, but also that pathways diverge and tend to lead to self-reinforcing regimes.

The analysis presented here suggests that there are broadly two scenarios for future political dynamics. One would involve a resolution of the uncertainty generated by the EMR and continuing feedback effects through business and via low-carbon investments in the electricity sector, both of which have the potential in turn to create further mass feedback effects through job creation. This scenario might politically be further strengthened by more opportunities for households, community organisation and small businesses to gain direct ownership of low carbon electricity (or energy) assets. This positive scenario would also have to be buttressed by the adoption of carbon emissions reduction targets in the EU emissions trading scheme that produced a carbon price broadly matched by that in the UK's carbon floor price.

An alternative scenario would see poor judgements on the details of the EMR, and continued political polarisation of the choice between gas and renewables. These are likely to extend the freeze on investment for renewables, with companies defaulting to lower risk gas-fired plants. Combined with signals of weak or no forthcoming carbon policy for the 2020s coming from the European Union and no progress in UNFCCC negotiations, this path would lead to a scaling back of the fourth budget in 2014, with a longer-term downgrading of political ambition on future budgets and commitment to the long term target.

It is clear that many protagonists in current debates are aware of these possibilities. One of those originally involved in the political birth of the Act characterises it as currently "on a knife edge".[60] As do many major policy reforms, the Climate Change Act remains at risk.

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[60] Interview with Michael Jacobs, 23 November 2012

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