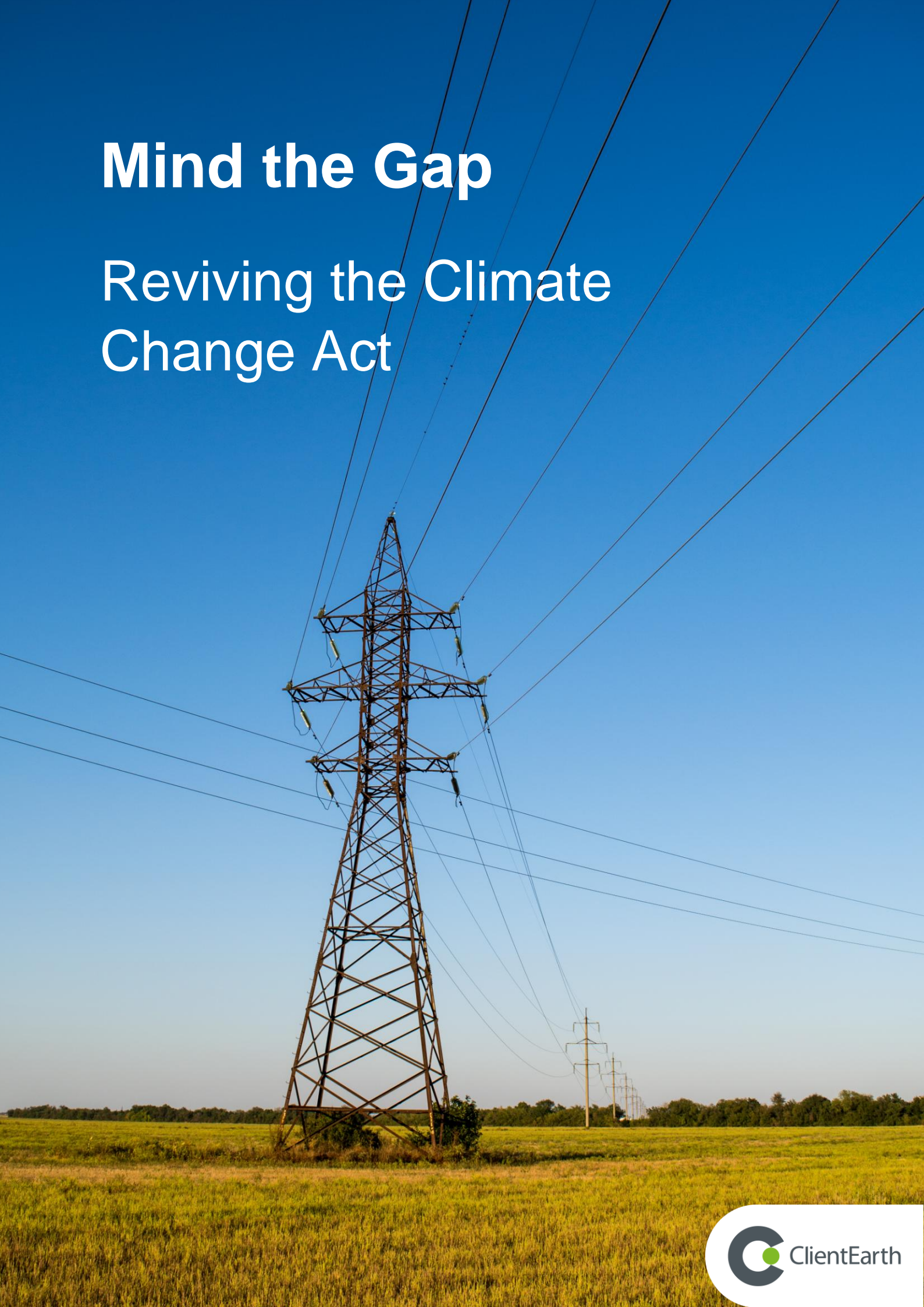


Mind the Gap

Reviving the Climate Change Act



“Previously the UK Climate Change Act has been regarded as a world-leading climate policy but critics say that accolade is now seriously in doubt.”

– *Roger Harrabin, BBC Environment Analyst, July 2015*

“We are committed to the UK Climate Change Act 2008.”

– *Nick Hurd MP, Minister for Climate Change and Industry, September 2016*

“Failing to prepare is preparing to fail.”

– *Boy Scout motto*

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Summary of recommendations



Summary of recommendations

This report finds that the Climate Change Act - the UK's groundbreaking law, now eight years old - has in practice been dangerously neglected. The Act is a living law, and it must be treated as such. Successive governments have failed to close the policy gap for the UK to meet the fourth carbon budget in the 2020s, a gap which has persisted for five years. Dramatic shifts in policy have been to the detriment of investor confidence. The operational and decision-making machinery that make the Act work across government and over time have fallen by the wayside.

Unless government now changes substantially the way the Act works in practice, there is a very real risk that we will miss future carbon budgets.

Political commitment to the Act remains high. Likewise, the UK has signalled its commitment to making good on its international climate leadership, having expressed its firm intention to ratify the Paris Agreement by the end of the year.

2016 is the year that the UK must demonstrate its commitment with real action. Government has the flexibility, within the framework of the Act, to determine a preferred course for the UK's sustainable and cost-effective transition to a low-carbon economy. As it does so, it must take a consistent, coherent and transparent approach to implementing that new program and the Act more broadly.

ClientEarth recommends that government acts urgently to put the Climate Change Act back on track by taking the following actions:

The government should publish a new Emissions Reduction Plan by the end of 2016 in accordance with previous commitments. It should, in line with best practice and its stated intentions, develop the Plan openly and with the engagement of as wide a range of stakeholders as possible.

The Emissions Reduction Plan needs to:

- set out a single, intended policy path which is coherent, sustainable and projected to ***close the fourth and fifth carbon budget policy gaps***;
- ***describe in sufficient detail and clarity "proposals and policies"*** that ***will*** (not just *can*) deliver the necessary emissions reductions, showing how the expected emissions savings of each contributes to meeting future carbon budgets;
- ***be a 'living' document***, updated annually and in a form which allows for direct comparison from year to year;
- re-establish a system of clear and realistic ***policy milestones*** to guide the efforts of individual government departments and against which progress can be judged;

- ***integrate with complementary elements of governance*** as they evolve, and describe clearly how they will function together.

At the same time, it is important that government renews and restores the machinery of the Act, to make it work across government and from year to year, as follows:

- ***Active and transparent carbon budget management*** according to key policy decisions.
- Updated emissions projections published frequently in a clear, user-friendly and timely manner - perhaps through a '***carbon budget transparency platform***'.
- ***Climate policy integrated across government***, including establishing a ***new national emissions target (NET) Board*** (or equivalent).
- ***Policy milestones*** regularly updated and progress accounted for.

Introduction

The need for a revival



Introduction: The need for a revival

For all of the Climate Change Act's strengths, it ultimately depends for its success on the governments that implement it. This report describes how in this respect there is reason for real concern. Even though the Act enjoys firm and broad political support; even though targets are set and deadlines are met; nonetheless successive governments have persistently failed to plan to meet future targets and to put in place the policies needed to drive underlying emissions reductions. This is now damaging investor confidence, and these failures cannot be sustained any longer.

What we see, over recent years, is a gradual but serious failure of a range of governance mechanisms critical to the success of the Act. Indeed, if the government's approach to the Act is not reinvigorated, if these underlying failures are not addressed, we run the risk that, in time, the Act could fail. This would be a disaster for the UK's efforts to tackle climate change and have serious repercussions globally.

The conclusion of this report is that, at this important juncture – when the world is rapidly adjusting to the opportunities of Paris, and a new government and a new department are assessing afresh the progress made and the challenges we face - we have both an opportunity and an urgent need for the UK to put the Climate Change Act back on a firm footing for the crucial years ahead. In recent years, the Act's foundations have been neglected. We have no time to waste in reviving the Act and getting back on track.

The report begins, in **Section 1**, with a reminder of the international and domestic legal and political context. **Section 2** introduces how the Act itself works and why it is so valuable in the UK's transition to a low-carbon economy. **Section 3** describes in some detail the nature of the Act's neglect: first, superficially, as witnessed by unstable policy-making and falling investor confidence; and then by examining deeper and long-established government failures that are undermining the ability of the Act to deliver smooth, transparent and long-term policy planning. Following this is a brief consideration, in **Section 4**, of a breach of the Act that has been allowed to persist over a number of years: the fourth carbon budget policy gap. **Section 5** considers why the failures identified in this report have, so far, not been addressed. Finally, **Section 6** describes what is needed to get the Climate Change Act back on track before it is too late. In this endeavour, the coming months will be critical.

1. Building on Paris



1. Building on Paris

In December 2015, the world community reached agreement on the need to limit global average temperatures to "well below" 2°C or 1.5°C above pre-industrial levels - and on a mechanism aiming to deliver those reductions. Described as "the world's greatest diplomatic success"¹ and a "major leap for mankind"² the Paris Agreement establishes a legal framework that gives real hope that the worst effects of climate change can be avoided.

The Paris Agreement works in five-yearly periods; establishing planning and reporting obligations to enable countries to meet targets that ratchet up over time. For those in the UK, this mechanism is familiar: it derives from our own Climate Change Act, passed in 2008. The similarities in design mean the UK is in a particularly good position to translate Paris into domestic law³ and, as an important first step towards doing so the government committed to implementing a net-zero emissions target in domestic law.⁴ It has also committed to ratifying the Paris Agreement before the end of the year.⁵

The Climate Change Act is itself an amplifier of the UK's international climate diplomacy, and Paris was no exception, where the UK participated in the "high ambition coalition" that pushed for the inclusion of the 1.5°C target. As Amber Rudd, then Secretary of State at the Department of Energy and Climate Change (DECC) (and now Home Secretary) said in July 2015, referring to the Act:

"... our carbon budgets are much admired by other countries in terms of having that structure in place. // ... nobody raises with the UK internationally concerns about us because we are so far ahead of most other countries in terms of our commitment, our structure, our investment in this area."⁶

The Act has indeed been a powerful force for good internationally, not only amplifying the UK's relatively progressive voice on climate change, but also inspiring other countries to pursue similar emissions reduction laws.⁷ The Act remains a world-leader and should - provided it lives up to its promise - continue to bolster the UK's positive influence in this area in the years to come.

Domestically, support for the law has remained strong across the political spectrum.⁸ David Cameron cited the Act approvingly on numerous occasions, noting that "Britain has probably some of the most advanced climate change legislation and targets and system of climate change carbon budgeting of any country anywhere in the world."⁹

The importance of the Act was evident when the government confirmed in June that its 2030 target - its "fifth carbon budget" - would be set at a level that keeps the current 2050 goal in sight. This was testament to the power of the Climate Change Act to rise above the political turmoil of the time and continue to do what it is designed to do: lay out a long-term pathway for

reducing emissions that is as cost-effective as possible, thus giving stakeholders and investors confidence in that transition.

Theresa May's new government has confirmed that it understands the value of the Act and is committed to making it work.¹⁰ The disappearance of the words "Climate Change" in the new architecture of government set some alarm bells ringing. But, with climate change rolled into the new Department for Business, Energy and Industrial Strategy (DBEIS), there are valuable opportunities too: a stronger department should be capable of elevating and integrating climate change considerations across government in a way that a more specialised department was almost bound to struggle to do. On this, the government's explanatory note on the establishment of DBEIS sets a promising tone:

"The merger [of the Department of Energy and Climate Change and the Department for Business, Innovation and Skills] will enable a whole-economy approach to delivering our climate change ambitions".¹¹

Subsequent statements by Ministers at the department have also been encouraging. Indeed, on Jesse Norman MP's optimistic account, the department's creation "shows that climate change has become an absolutely mainstream part of our political life."¹² Time will tell.

The new government is by no means the first to champion the importance of the Climate Change Act. But good intentions are not enough. Through the Paris Agreement, the countries of the world have finally, unambiguously, awoken to the urgent need for concerted action on climate change. In this endeavour, the UK has been a first mover. It still has the great benefit of its world-leading climate law, which should help ensure that its transition to a low-carbon future is cost-effective and sustainable. But that law it is no longer working as it needs to.

The Climate Change Act must be a *living* law, and the recommendations in this report are intended to assist government in reviving it.

2. The Climate Change Act and why we need it



2. The Climate Change Act and why we need it

An introduction to the Act

The Climate Change Act establishes legally binding emissions targets – for 2050 and for the five-yearly binding carbon budgets leading up to that date.

Budgetary period	Years covered	Carbon budget (GHG emissions, MtCO ₂ e)	Average annual reduction (cf.1990)
1	2008-12	3,018	- 23 %
2	2013-17	2,782	- 29 %
3	2018-22	2,544	- 35 %
4	2023-27	1,950	- 50 %
5	2028-32	1,765	- 57 %
6	2033-37	<i>Set by 30/06/21</i>	...
...
...	2050	159	- 80 %

Equally important - but more often overlooked - are the parts of the Act that aim at the complementary purpose of driving progress towards meeting those targets.

This second pillar of the Act - the "Governance Framework" - is constructed from a web of planning and reporting obligations, placed primarily on the government and the independent expert body established by the Act, the Committee on Climate Change ("CCC"). These duties produce a kind of transparent dialogue that invites political accountability.

In particular, the Governance Framework expressly requires government:

- to put into place policy plans that allow future carbon budgets to be met.¹³
- to publish, shortly after each new carbon budget is set:
 - details of current policy plans (capable of meeting the new carbon budget);¹⁴ and
 - "indicative annual ranges" of emissions according to the policy plans (specifically in relation to the new carbon budget).¹⁵
- to release statements of emissions annually.¹⁶

Each year, the CCC must produce a report assessing "the progress that has been made towards meeting the carbon budgets that have been set", and the government must publish its formal response some three months later.¹⁷

The CCC has other duties under the Act to make recommendations to government on a range of specific issues, not least the appropriate level for the carbon budgets that are set every five years. There are also numerous provisions in the Act relating to adaptation, not considered in this report.¹⁸

The Governance Framework is hugely important because, even against the backdrop of legally binding targets, the low political salience of climate change – its tendency to be lost among more tangible and familiar concerns – can undermine consistent and committed efforts to decarbonise. The requirement to regularly reappraise progress ensures that climate change remains on the radar of government and Parliament. And the long-term perspective of the Act seeks to remove climate policy-making from the short-term politics of a parliamentary cycle.

The result - if the Act is working as it should - is a mechanism that delivers a smooth, coherent and credible transition to a low carbon economy: a transition that makes economic as well as environmental sense.

Climate policy as a sound investment

The Climate Change Act, if functioning properly, can be seen as an instrument for minimising the cost of, and maximising the economic opportunities that come with, tackling climate change.

Globally, reducing carbon emissions early is expected to prevent comparatively huge financial losses being suffered from the future effects of climate change.¹⁹ The UK specifically will find economic value in setting and adhering to ambitious climate targets: deriving from reduced future environmental impacts (national as well as global), job creation and higher wages and improvements in health and local environmental quality associated with lower emissions.²⁰

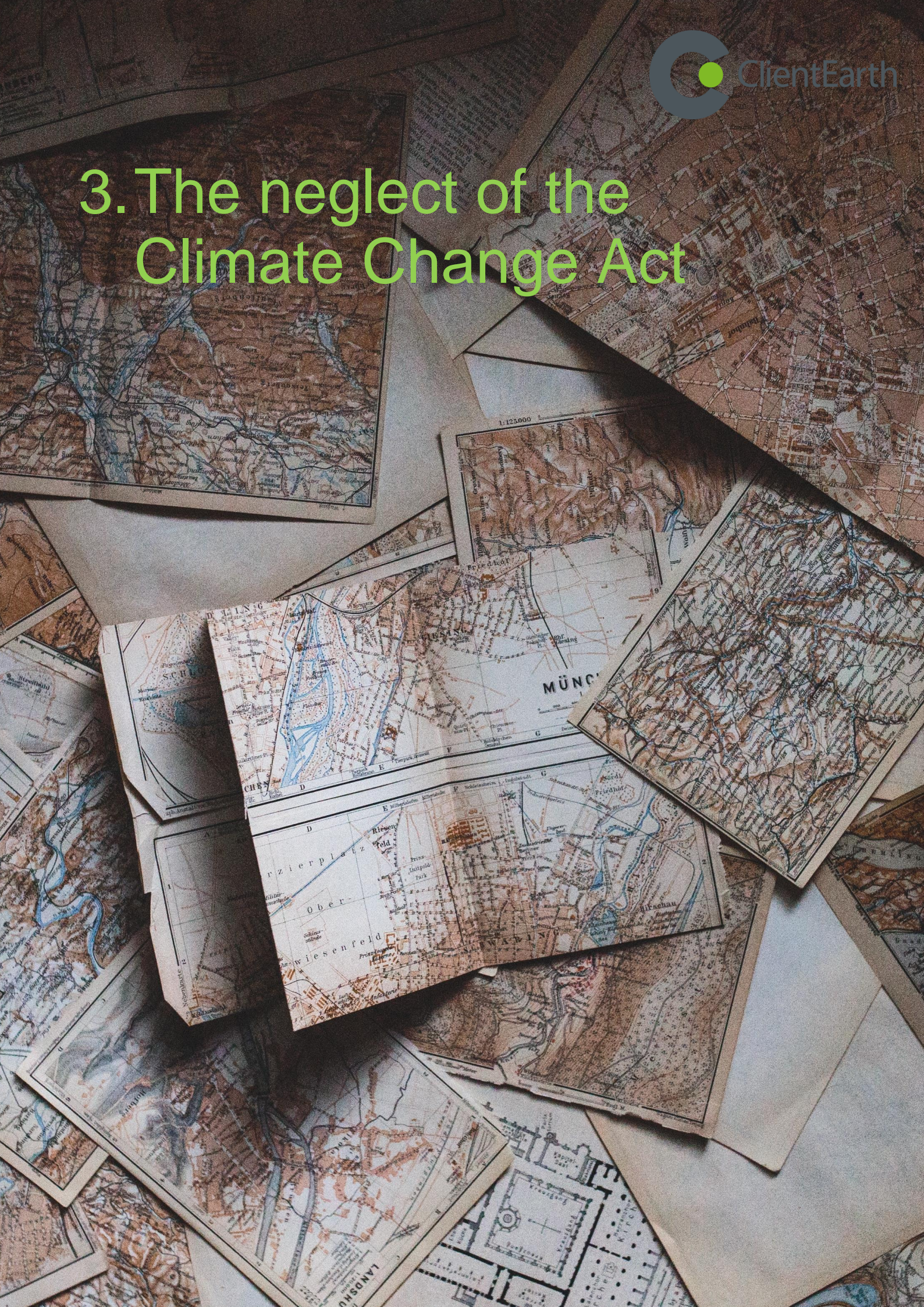
Lord Bourne, until July a Minister at DECC, underlined in April how "[s]ince Paris, the message to businesses and investors has been clear: the future is low carbon."²¹ This low carbon future needs innovation and investment, and the emissions targets in the Climate Change Act signal to investors - *should* signal to investors, if backed up by action - that the UK is committed to realigning its economy towards this future. Mark Carney, Governor of the Bank of England, describing recently the drivers of the transition to a low-carbon economy, said: "governments will establish the frameworks, and the private sector will make the investments."²²

In the same speech, Mr Carney noted the "major opportunity" represented by green investment - "for both long-term investors and macroeconomic policymakers." The UK's green economy is already worth an estimated £46.2bn²³ - by an alternative measure, many times larger than the UK's aerospace, pharmaceuticals or chemicals industries.²⁴ A recent Grantham Institute report concludes that "The UK is well-positioned to benefit from a global transition to a more resource-efficient and renewable economy, provided flexible structural policies allow it to utilise its comparative advantages."²⁵

In addressing climate change, governments always face the temptation to take action *later*, but it is more cost-effective to take early action - provided that action is not too abrupt.²⁶ The Climate Change Act helps in these respects: countering short-sighted politics, encouraging long-term planning and a stable policy environment, and charting a smooth, cost-effective, trajectory to reduce emissions, through carbon budgets set in line with the advice of the expert Committee on Climate Change (CCC).²⁷ This incentivises investment and supports the development of the green economy.

On the benefits of meeting the fourth carbon budget specifically (2023-2027), the CCC has concluded that doing so offered "a cost saving of over £100 billion versus a scenario that delayed action beyond the 2020s, alongside improvements in the UK's energy sovereignty and wider health and environmental benefits, such as improved air quality."²⁸

3. The neglect of the Climate Change Act



3. The neglect of the Climate Change Act

Credible targets need consistent policies

The emissions targets in the Climate Change Act are as credible as any legal target could realistically be. First, they are legally binding on government. Secondly, as noted, progress towards meeting the targets is encouraged by the Act's Governance Framework.

Credible targets are necessary, but they are not on their own sufficient to drive the economic transition that is needed. Ultimately, large-scale investment shifts occur only when sufficiently strong signals are given to the market by consistent and long-term policy-making. Likewise, uncertain government action can undermine investor confidence. As Professor Mariana Mazzucato puts it: "The fact that business only invests when there are clear signals about future returns means that those countries that fiddle too much with such signals discourage investment or miss out on it entirely."²⁹ Consistency in policy-making is particularly necessary in energy and energy-intensive industry given the inertia in those systems once built.³⁰ Consistent and long-term policymaking is needed across the economy, to ensure that "the entire infrastructural network that the UK is locking into ... is consistent with the government's decarbonisation commitments."³¹

In the context of the Climate Change Act, a lack of strong policy signals has long been problematic. By 2013, this was already evident. According to Dr Matthew Lockwood of the University of Exeter:

"The Act provided some certainty on high-level targets and budgets, but particular investments depend on the details of policies, and heightened uncertainty at this level since 2011 has had a corrosive effect [on those in the business community who see opportunities in the low carbon transition]."³²

The situation since 2013 has, if anything, deteriorated.

Inconsistent climate policy and its consequences

Recent government action on climate policy-making has been widely criticised.³³ Commonly, the criticism is of the *substance* of policy: that decisions taken by government are likely to increase emissions and make carbon budgets more difficult to meet.

In November 2015, an 'energy policy audit' carried out by the BBC found that, of 16 planned policy changes then announced to date by the new government, 15 were judged likely to increase emissions (and the effect of the 16th was unclear).³⁴ This audit was undertaken before further decisions were taken that were expected to harm decarbonisation efforts, such as the relaxation of restrictions on fracking and the withdrawal of funding for the development of carbon capture and storage (CCS).³⁵ (The CCS decision, unless a new approach is quickly adopted, is expected to be particularly damaging to the UK's prospects for meeting future carbon budgets.³⁶)

It goes without saying that governments may, from time to time, make decisions that on their own are expected to lead to an increase in future carbon emissions. This need not be problematic provided those decisions are consistent with a broader, coherent vision of future progress.

But such a vision has been sorely lacking. Government has made poor decisions in this area in part because it has *failed to approach decision-making in the right way*. In approaching climate policy-making, government has not given sufficient regard to how the chances of meeting carbon budgets will be impacted by proposed decisions. It has made policy changes suddenly and in isolation, without proposing alternative means of reducing emissions or placing them in the context of a wider, coherent plan which reduces emissions overall.

These failures are now described in turn.

A. Sudden changes to policy

As noted, the government's withdrawal of support for CCS was not only damaging in substance. That the decision was taken without consultation or warning is a problem in itself - and can only make investors more cautious about committing capital to future projects.³⁷

As the House of Commons Energy and Climate Change (ECC) Committee heard, the CCS announcement was so sudden that some stakeholders from the sector "had five minutes' notice. In fact, one of the carbon capture parties said they found out on Twitter."³⁸ Shell - involved in one of the two CCS projects competing for the funding - had "worked tirelessly" to develop plans for the Peterhead CCS project but, following the government's decision, saw no future for the project in the near term.³⁹

As a whole, the series of policy announcements made in 2015 were described in a later report by the ECC Committee as "dramatic", "unexpected" and "abrupt".⁴⁰ Such changes are not conducive to high investor confidence. Nor are they compatible with the emphasis placed on sustainable, long-term policy planning by the Climate Change Act.

B. Failure to present replacement measures or to put the impact of decisions in context

Given the need to remain on track to meet future carbon budgets⁴¹ we should expect that "if certain things [i.e. climate policies] are taken out, something else needs to be put back".⁴² As Lord Deben, Chair of the CCC, said of the end of subsidies to onshore wind, announced in June 2015:

"This is a political step by the government, and it is perfectly reasonable for them to do – as long as they are prepared to allow people to know ... what they are going to do instead [to meet climate targets]."⁴³

It is not only perfectly reasonable, but necessary. Indeed, in a 2009 report on the implementation of the Act, the government highlighted "the need to ensure that the effects of any new policies that could increase emissions are carefully considered, and *corresponding reductions found elsewhere if this is necessary to meet the budget*."⁴⁴ However, the government does not now (if it ever did) appear to do this as a matter of course. This again undermines the confidence that investors can have that the UK's low carbon transition will remain on course.

We do not see what 'gains' will mitigate the 'losses' when damaging decisions are made. Nor do we see what those losses are. The impact of climate policy decisions is not clearly quantified to allow the overall progress towards meeting carbon budgets to be kept in perspective. As the House of Commons Environmental Audit Committee (EAC) has asked: "If you were to introduce a new policy or change direction, how could the normal person measure or see what that would mean for emissions reductions?"⁴⁵

There is no satisfactory answer to this question. Government does publish Impact Assessments in relation to proposed policies, and these include the expected impact on carbon emissions. Annual Updated Energy and Emissions Projections are also published that present emissions data by policy and, importantly, include the government's expectations of overall emissions in the years ahead. Both are essential, but - as they are currently constituted - neither allows the "normal person" (to quote the EAC) to see how an individual policy decision or a change of direction relates to our legally binding carbon budgets.⁴⁶

These failures can be brought into focus by considering as an example the tests devised by the CCC under its statutory duty to ensure that any fracking in the UK is consistent with the Act's targets.⁴⁷ The third of the tests developed by the CCC is that "Additional production emissions from shale gas wells will need to be offset through reductions elsewhere in the UK economy".⁴⁸

The government's response implies that in practice it could not be otherwise: "The government's commitment to meeting carbon budgets means that any additional emissions from shale gas production would be accommodated within carbon budgets and offset by lower emissions in other sectors."⁴⁹ Unfortunately, current practices cannot justify such assumptions. And experience suggests that additional emissions in one sector are not even routinely - let alone systematically - offset by savings elsewhere. Without clear information relating individual decisions to overall emissions projections, the government's adherence to the test set out by the CCC simply cannot be monitored.

C. Failure to present a coherent policy picture

While individual decisions can undermine investor confidence, equally damaging is a failure to adequately explain those decisions; to show stakeholders that they form part of a credible overall plan for emissions reductions.

Perhaps in response to accusations about its increasingly disjointed climate policy decisions and the lack of "a clear statement about what improved measures will be put in place"⁵⁰ in November 2015, the last government presented a "policy reset". This included a welcome commitment to

ensure coal power would be phased out by 2025, and it offered qualified encouragement for offshore wind.⁵¹

However, the policy reset fell far short of what was needed. First, it was too narrow in scope. Aside from the announcements mentioned, there was "very, very little detail."⁵² Secondly, the reset made no attempt to ensure existing carbon budgets would be met.⁵³ And thirdly, the reset said nothing of the failures in government's *decision-making processes* that continued to hamper the development of coherent climate policy. Finally, any impression of a new-found stability and longsightedness in policy-making was undone when the CCS decision was made without warning only one week later.

The need for a 'wider reset' of how the Climate Change Act works is discussed further in Section 6.

The impact on investment

Disjointed, erratic and short-term policy-making is precisely what the Climate Change Act is designed to avoid. Indeed, it is possible to say there has been "*too much*" policy-making.⁵⁴ When mixed signals are given, investor confidence suffers. And this, in turn, can harm the effectiveness of specific policies in need of investment.

In January 2016, David Cameron defended his government's record:

"I totally disagree with anyone who says that on the one hand Britain helped to pioneer this climate change agreement [in Paris], and on the other hand that it is somehow backsliding on its green commitments."⁵⁵

But investor confidence tells a different story. This was clearly signalled in Ernst & Young's (EY's) 2015 Renewable Energy Country Attractiveness Index⁵⁶ in which the UK fell from 8th to 11th place (from 5th place in 2013), under the headline "UK policies unravel". In EY's May 2016 Index, the UK fell again, to 13th place, and the overall assessment by EY was stark:

"The UK government's noncommittal, if not antagonistic, approach to energy policy continues to go against the grain of almost universal global support for renewables. Not only stalling project development and investment inflows, this is arguably jeopardizing UK energy security."⁵⁷

This uncertain environment can be expected to increase the overall cost of the UK's transition to a low-carbon economy; undermining rather than contributing to affordability.⁵⁸ This was a point underlined by the chair of the CCC in a letter to the DECC Secretary of State in September 2015:

"The uncertainty created by changes to existing policies and a lack of replacement policies up to and after 2020 could well lead to stop-start investment, higher costs and a risk that targets to reduce emissions will be missed."⁵⁹

In March 2016, an ECC Committee report into "Investor confidence in the UK energy sector" reaffirmed these messages.⁶⁰ The Committee "heard that policy uncertainty was weakening the case for investment in energy in the UK",⁶¹ and in its report quoted a pension Fund Manager as follows:

"The criteria for investment decisions will vary depending upon the nature of the specific transaction, but as a general matter **policy stability** is one of the key investment drivers. **Long term visibility is especially important** here given the nature of infrastructure investment and its close ties to regulation."⁶²

The ECC Committee found policy stability and long-term policy visibility to be suffering. Yet the Climate Change Act should guard against this. Why is it not doing so? It is proposed, in Section 5 of this report, that the Act has been read too narrowly, and also that unrealistic expectations of the CCC's ability to compel government action may have caused parliamentarians and civil society to be too relaxed in holding government to account.

More directly, however, the problems of policy incoherence and instability are a result of government failing to implement the governance practices that are needed to make the Act work. These failures are described below, after a brief consideration of government's performance as assessed against the Act's carbon budgets.

Neglecting the future now

In January, David Cameron described the government's progress under the Act as follows:

"We have made good on not only having those [carbon budgets] but actually meeting the budgets time after time. As I say, we have reduced greenhouse gases by 15% since 2010 and we are over-delivering against the budgets."⁶³

This rosy picture of over-delivery is misleading. So far, only the first carbon budget period (2008-2012) has been completed. The second and third budgets (2013-2017; 2018-2022) are currently expected to be met. However, for all the genuine progress that has been made in reducing emissions since 2008,⁶⁴ it is wrong to take "the key benchmark of our success [as] are we hitting our carbon budgets".⁶⁵

For one thing, success in meeting the first carbon budget can be attributed at least in part to the economic crisis of 2007-08.⁶⁶ And, as the CCC confirms, "Overall, meeting the second and third

carbon budgets is not an indicator of being on track for meeting the fourth and fifth carbon budgets and the 2050 target."⁶⁷

More fundamentally, the Act is structured to provide for long-term planning as well as monitoring progress at the current time. Meeting the longer-term goals is a function of planning under the Act now. Focusing only on past or current emissions reductions will result in failing to meet the longer-term targets, and having no time to remedy these failures.

The UK's progress under the Act when judged against future targets is far less positive than Mr Cameron suggested. For example:

- In each of the CCC's annual progress reports since 2009, concerns have been expressed about underlying progress towards decarbonisation remaining stubbornly inadequate.⁶⁸
- The CCC's most recent annual progress report (2016) was little different: "Whilst emissions have fallen by an average of 4.5% a year since 2012, this has been almost entirely due to progress in the power sector There has been **almost no progress** in the rest of the economy [including heating, transport, industry and waste], where emissions have fallen less than 1% a year since 2012 on a temperature-adjusted basis."⁶⁹ The report lists 25 areas where new policies or stronger implementation of existing policies is required if future targets are to be met.⁷⁰
- The likelihood of meeting the fourth carbon budget (2023-2027) appears no greater now than when that budget was set in 2011.⁷¹ This longstanding "policy gap" to meeting the fourth carbon budget is discussed in more detail in Section 4.

Why is the UK failing to make adequate progress? The immediate answer, as described above, is that government has been too willing to take short-term decisions which set back the UK's low-carbon transition - and too willing to do so without placing those decisions within a broader framework of policies that inspire long-term political and investor confidence.

But these practices have their roots in failures of governance that undermine the Act by impeding joined-up climate policy-making. Many of these issues were first highlighted in 2013 in reports by the National Audit Office and the House of Commons Environmental Audit Committee. The latter found, for example, that "[a]rrangements for managing and reporting progress against the carbon budgets have not been working as intended and improvements are needed to enhance transparency."⁷²

Three years later, no progress has been made. The following section identifies four key areas of neglect which must now be addressed.

Government failures

1. **A deficient and obsolete Carbon Plan.** The Carbon Plan is a detailed report that government is required to publish periodically.⁷³ It establishes a framework to ensure proper progress is made towards meeting all carbon budgets that have been set. It is an absolutely key instrument: guiding long-term climate policy-making, facilitating public scrutiny and compelling timely course-correction.⁷⁴

Yet the current Carbon Plan was deficient even when it was first published, in 2011:

- a. It presented a number of "illustrative scenarios" for how the fourth carbon budget could be met, none of which was emphasised over the others, despite the Act's requirement that government identify the proposals and policies that it ***intends to follow***.⁷⁵
- b. The illustrative scenarios that were set out provided insufficient detail and clarity as regards the fourth carbon budget, such that they failed to constitute proposals and policies as required by the Act.⁷⁶
- c. The Carbon Plan's proposed policies were insufficient to meet the fourth carbon budget.⁷⁷ This 'policy gap' constitutes a further legal failure; discussed in Section 4.

Since 2011, the Carbon Plan has not been updated and has fallen into neglect:

- a. The deficiencies described above have not been remedied.
- b. Each Carbon Plan should be regularly updated to remain current and effective.⁷⁸ In 2011, the government committed to updating the Carbon Plan annually, describing how it would be a 'live' document.⁷⁹ But by 2013 no update had been published. The EAC found that the Carbon Plan had become "out of date and requires revision" and recommended annual updates.⁸⁰ At that time, the government said that the illustrative scenarios would be updated "in due course" and the EAC understood that "a revised Carbon Plan ... was due 'very soon'".⁸¹ Neither has been produced.
- c. The failure to update the Carbon Plan means that even those emissions savings, by policy, that *were* set out in the Carbon Plan for the first three carbon budgets⁸² - have not been reproduced in the same format in the years since. This has impaired scrutiny of progress, which is particularly damaging in the context of the other failures highlighted in this report.
- d. The Carbon Plan is central to securing *public accountability* under the Act. From this perspective, claims made in 2013 that the Carbon Plan was still being used *within government* "to track progress" are not exculpatory.⁸³

2. **A system of policy milestones abandoned.** The Carbon Plan included an action summary consisting of “124 ‘milestones’ for delivery by departments and devolved administrations against which departments will be held to account.”⁸⁴

Arguably the milestones were inadequate from the start, being heavily 'front-loaded' towards the first 18 months.⁸⁵ This is not necessarily a problem, however, provided those milestones are regularly updated over time but, in spite of government promising "additional milestones" in 2013,⁸⁶ none have ever been produced.

Successive governments have also failed to properly appraise progress against the milestones. As the Carbon Plan itself described: "The government as a whole ... reports progress against the actions in the Carbon Plan on a quarterly basis via the Number 10 website, to support Parliament and the public in holding government to account."⁸⁷

Yet, strikingly, these quarterly reports simply ceased in 2012.⁸⁸ In 2013, the government stated that reporting had been "paused" to bring the milestones up to date, and that the quarterly reports "will resume early in 2014."⁸⁹ Neither has happened. Instead, the milestones have effectively been abandoned for four years. Some 67 of the milestones have never been reported on.⁹⁰

3. **Ineffective co-ordination across government.** The National Emissions Target (NET) Board was established as "the principal governance mechanism for co-ordinating action [in managing carbon budgets] across government and ensuring that departments are accountable for their share of emissions reductions."⁹¹

This body was clearly envisaged to play an important role in the development and implementation of climate policy. Detailed information about the Board is hard to come by, however a 2013 report by the National Audit Office made a number of implicit criticisms.⁹² It noted how infrequently the Board met, that attendance of senior officials was rare and also the absence of evidence of the Board "taking action to hold Departments to account on progress against individual policies in the Carbon Plan."⁹³

Through 2014 and 2015, the NET Board met approximately every two months.⁹⁴ But after September 2015, it ceased to be.⁹⁵ In its place the government set up the "Interministerial Group on Clean Growth" (IGCG), in response to the VW emissions scandal and chaired by Oliver Letwin. Climate policy, now being considered by the IGCG alongside air quality, no longer had a devoted cross-departmental body.⁹⁶

In spite of the importance of transparency in the Act, details of the IGCG's work have been closely guarded.⁹⁷ But, judged according to the stated aims of the NET Board - to ensure that "legislative requirements are met" and that "policies to deliver carbon budgets are identified and delivered and to challenge policies that could potentially make budgets harder to reach"⁹⁸ - the IGCG and its predecessor appear to have failed.⁹⁹

In light of the recent changes to government departments, the future of the IGCG is now highly uncertain. What is not in doubt is the need for a cross-departmental body devoted to

managing progress across government towards meeting carbon budgets. As noted below, the new departmental arrangements offer important opportunities for improved integration across government. But a 'new NET board' - giving due prominence to climate targets, operating more transparently and carrying greater weight and bite than it has in the past - must be a key driver of this integration.

- 4. Failure to actively and transparently manage progress towards carbon budgets.** As the government stated in its 2009 Low Carbon Transition Plan (the predecessor of the 2011 Carbon Plan): "Every major decision now needs to take account of the impact on the carbon budget as well as the financial budget."¹⁰⁰ This reflects a key aim - even a requirement - of the Act.¹⁰¹

Again, however, standards appear to have slipped. In July 2015, "a spokesman admitted [the government] hadn't calculated the likely impact on emissions of the change to subsidies and taxes [which were expected to detrimentally affect the deployment of renewable energy]."¹⁰²

A failure to account *internally* for how decisions will impact the prospects of meeting carbon budgets impedes good, long-term decision-making. Just as financial budgets are used as a key tool in decision-making, so government must use emissions projections.

Such a failure has another consequence: it limits the quality of 'outward-facing' projections published by government. (Published projections may also be undermined by a deliberate failure to disclose internal projections that *have* been made.¹⁰³) The government's annual Updated Energy and Emissions (UEE) Projections are the primary means by which progress is intended to be publicly accounted for. As DECC described them, the UEE Projections are -

"the primary mechanism for holding Departments to account for performance against carbon budgets."¹⁰⁴

Yet, for all their undoubted value (not least in allowing the government's overall expectations of progress and the existence or otherwise of 'policy gaps' to be understood¹⁰⁵), the UEE Projections as currently constituted suffer from important shortcomings.

These problems are illustrated in more detail in the Annex ("Problematic Projections"). But, in summary, the UEE Projections do not allow for easy policy-level scrutiny of progress towards meeting carbon budgets. Even though they break down the contributions of different policies to overall emissions savings, it remains very difficult to understand the contribution of specific policies towards meeting (or not) future carbon budgets. Moreover, UEE Projections are effectively static - they are updated only annually so cannot be related to policy decisions on political timescales. Nor are the UEE Projections revised when significant changes in circumstance occur, even though doing so would help to keep them as accurate as possible.

All this means that, as currently constituted, the UEE Projections can only have limited utility in fulfilling their remit as a "primary mechanism for holding Departments to account" - and in allowing the "normal person" to understand the climate implications of key policy decisions.

Reforming the UEE Projections might not be the best way to resolve this problem. The UEE Projections pre-date the Climate Change Act and include a wealth of invaluable data which do not relate directly to the requirements of the Act.¹⁰⁶ The quality or breadth of this information would inevitably suffer if the UEE Projections were recast to facilitate full and frequent scrutiny of progress under the Climate Change Act. How else might government projections fulfil their remit?

One solution would be for government to establish a parallel online portal - perhaps a '**carbon budget transparency platform**' - focused on fulfilling the (narrower) functions needed by the Climate Change Act. This platform would publish up-to-date emissions projections relating key decisions directly to future carbon budgets in a user-friendly manner. Under such a model, emissions projections published on this platform would be regularly updated - whether in response to proposed decisions, decisions just taken, significant changes in circumstances, or material methodological refinements - to allow the impacts to be understood on political timescales. As noted, such projections should *already* form part of government's decision-making process. Making these processes transparent to enable the kind of accountability envisioned by the Act should not be unduly burdensome.

Given the neglect of the mechanisms intended to manage progress towards carbon budgets, it is no surprise that the coherence and adequacy of climate policy is faltering. The new Carbon Plan - the "Emissions Reduction Plan" - is an opportunity for a "wider reset" - not only of policy, but also the underlying problem that government is not fully absorbing the implications of the Climate Change Act. Recommendations on what is needed from this reset and the Emissions Reduction Plan are made in Section 6.

The following section focuses, first, on what has served in recent years as a prominent and persistent expression of government's failure to address the problems described above: the policy gap in respect of the fourth carbon budget.

4. The fourth carbon budget policy gap



4. The fourth carbon budget policy gap

As explained, the government's 2011 Carbon Plan failed to show how government intended to meet the fourth carbon budget (2023-2027). In other words, the proposals and policies at that time prepared by government were projected, if implemented, to deliver an insufficient reduction in emissions: a "policy gap".

This failure reveals a breach of section 14; something alluded to in a Parliamentary question to the DECC Secretary of State in May this year.¹⁰⁷ But section 14 focuses only on Carbon Plans.

A more general duty is set out in section 13, which requires government at all times to avoid the existence of a policy gap in relation to any carbon budget that has been set.¹⁰⁸ Section 13(1) reads:

"The Secretary of State must prepare such proposals and policies as the Secretary of State considers will enable the carbon budgets that have been set under this Act to be met."

With respect to the fourth carbon budget, the government has been in breach of this legal duty for a number of years already.

The emissions projections described in the Carbon Plan¹⁰⁹ have been succeeded - in 2012, 2013, 2014 and 2015 - by UEE Projections which show that government continues to consider that the proposals and policies it has prepared - if they deliver "in full"¹¹⁰ - will not enable the fourth carbon budget to be met.

The existence of the fourth carbon budget policy gap has consistently been acknowledged by government.¹¹¹ As the December 2015 UEE Projections state:

"[T]here is currently a shortfall against the fourth carbon budget where our emissions are projected to be greater than the cap set by the budget. This challenge was acknowledged when the budget was set in 2011..."

...

"the shortfall we have over the fourth carbon budget has increased, from 133 MtCO₂e last year [2014] to 187 MtCO₂e."¹¹²

It may be noted for comparison that the projected shortfall as described in the 2011 Carbon Plan was "around 181 MtCO₂e over the fourth budget period."¹¹³

These projections, therefore, evidence a continuing failure on the part of government to discharge its legal duty under section 13(1).

In the years since 2011, the fourth carbon budget policy gap has simply not been addressed. And its continued existence may also impede effective scrutiny of government action by

diverting attention from *how* future budgets are to be met to *when* (or even *if*) the policy gap will be closed.

The Act provides for some limited flexibility to allow carbon budgets to be met: by purchasing international carbon credits or by rolling-over excess progress from earlier carbon budgets.¹¹⁴ However, neither affects the section 13 duty to have plans in place now that are sufficient to meet future carbon budgets.¹¹⁵ This is of course the philosophy of the Act: to ensure that governments plan clearly and *plan early* so the right signals are given to investors and decarbonisation is smooth and cost-effective.¹¹⁶ It is a philosophy that Amber Rudd, DECC Secretary of State until July, appreciates:

"I think the carbon budget system of having these windows where you have to plan 15 or 20 years ahead is the right way to do it ...".¹¹⁷

Yet, only *six* years ahead of the start of the fourth carbon budget period, those plans are absent. Putting the Climate Change Act back on track is long overdue. And closing the policy gap to meeting the fourth carbon budget is most pressing of all.

5. Safeguarding progress under the Act



5. Safeguarding progress under the Act

What role for the Climate Change Act?

Given the failures identified in this report, it is natural to ask: Isn't the Climate Change Act designed to guard against this? To ensure early and consistent action to meet future carbon budgets? That climate policy is coherent, transparent and joined-up?

It is. As noted, the Act places specific legal duties on government - for example, to produce adequate Carbon Plans which specify a single intended route to meeting future carbon budgets. The Act also - through its Governance Framework - places a range of duties on government which, though procedural in nature, are legally enforceable and which are intended to bring about consistent government and policy outcomes.

Furthermore, as ClientEarth found in its 2009 review, it is the "core philosophy of the Act ... that this built-in series of duties, actions and reports will create the transparency, accountability and political pressure necessary to achieve the purpose of the legislation."¹¹⁸

These principles of transparency and accountability run through the Act and will assist in the interpretation of the Act's provisions. And because the Governance Framework may be considered an example of what is termed 'new governance'¹¹⁹, the effect may be that novel practices and rules emerge under the Act and that they themselves must meet certain standards.¹²⁰ The Climate Change Act is then seen as a kind of '**living**' law, "generated through usage", and not simply laid down from above."¹²¹

An expansive reading of the Act is consistent with the government's and the CCC's interpretation of it to date.¹²² Such a reading also suggests that some of the important failures of governance identified above - concerning, for example, how policy decisions have been taken, what information is disclosed publicly and even, to some degree, the substance of those decisions - can be *legal* failures. Stated otherwise, effective forms of governance and accountability are seen to be not merely important, but legally required.

The Committee on Climate Change: not a policeman

As noted, the Committee on Climate Change has consistently expressed its concern about structural progress to reduce emissions. Its system of traffic light indicators in 2014 scored only 5 out of 23 areas as being "on track" or better. Why then, it might also be asked, has it not been able to compel improvements from government?

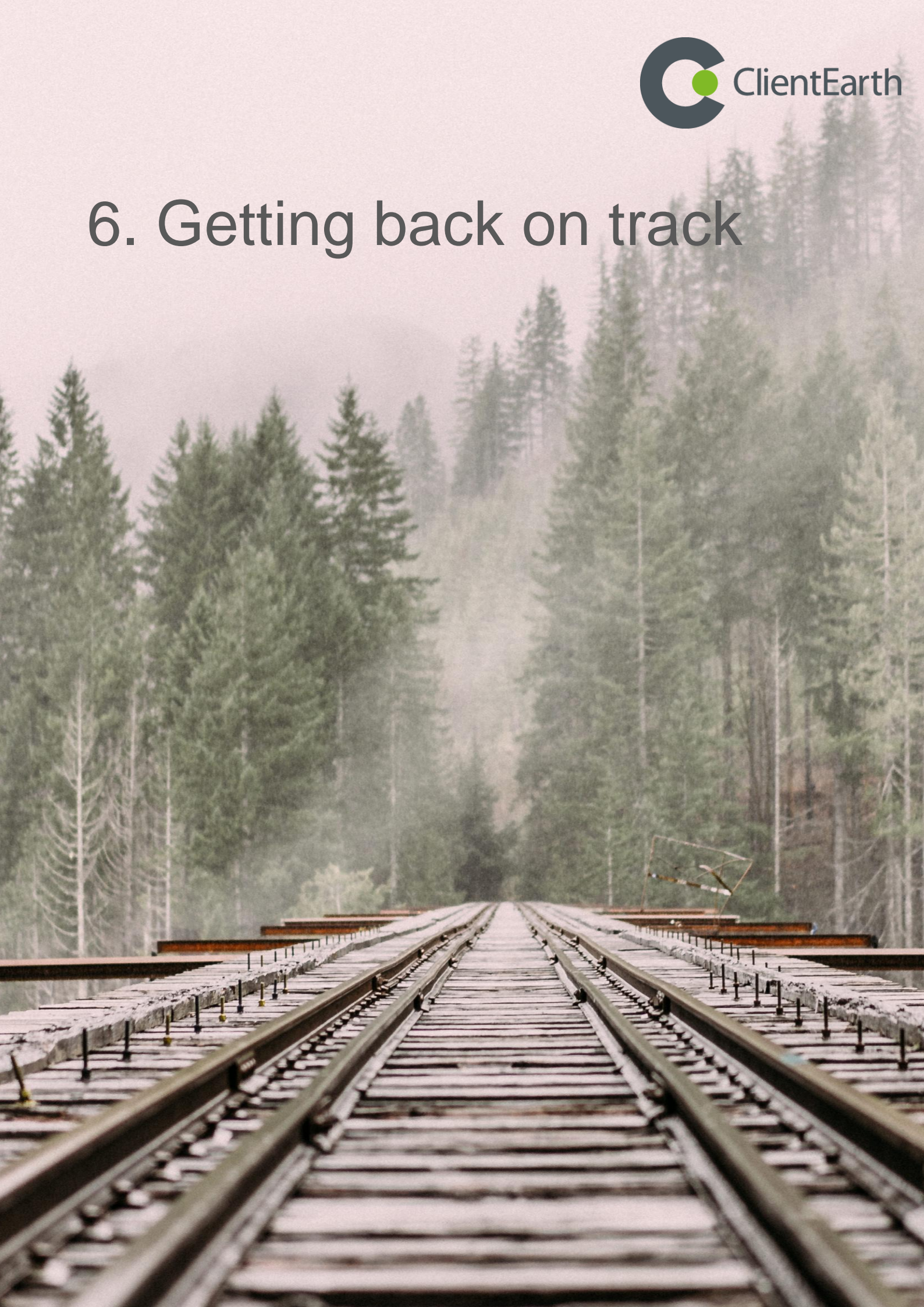
The CCC's remit is broad and covers some hugely important areas.¹²³ But the CCC has its limits, and is not empowered to compel government to change course.

First, while the CCC makes clear recommendations on policies, it cannot be prescriptive as to the policy mix that government should adopt.¹²⁴ That decision is for government alone.

Secondly, when the CCC measures government progress it does so against its own policy models and recommendations - those that it develops to demonstrate how carbon budgets *can* be met. Meanwhile, the policies formulated by government derive from a different framework: the Carbon Plan.¹²⁵ (As we have seen, the policies pursued by government have in fact developed along lines different from those in the Carbon Plan.) But this means there is in any case a disconnect between the indicators that the CCC uses to measure progress and the government's own policy milestones. This means that the CCC's indicators will not in general relate directly to the likelihood of meeting future carbon budgets¹²⁶ nor, therefore, allow for 'hard-edged' scrutiny of government action.

In other words, the CCC shows how targets can be met, but it cannot force government to act.¹²⁷ It is political actors and civil society who must ensure the government meets its obligations - through public accountability and through the law courts where the Act itself is breached. If failures persist without being addressed, it should be no surprise that elements of neglect are allowed to spread and deepen over time.

6. Getting back on track



6. Getting back on track - New carbon budget, New Carbon Plan

The fifth carbon budget was set on 21 July 2016, requiring annual emissions for the period 2028-2032 to be an average of 57% below 1990 levels.¹²⁸

The Act now requires the government to publish a successor to the Carbon Plan to cover the full period of the fourth and fifth carbon budgets - i.e. to extend to 2032¹²⁹ - and the new government has reaffirmed that it will do so.¹³⁰ The successor to the Carbon Plan is increasingly referred to as the "new emissions reduction plan"¹³¹ and that name (Emissions Reduction Plan) is used in what follows.

Expressions of commitment - from this government and its predecessor - are to be welcomed, although of course they are not on their own sufficient. Indeed, numerous statements of good intent have been made in the past with respect to closing the fourth carbon budget policy gap - and not acted upon.¹³²

The May Government may already be testing the water on delaying the release of the Emissions Reduction Plan. In November 2015, DECC had reaffirmed that the government "will publish a new emissions reduction plan at the end of 2016 which will set out the proposals [for meeting the fourth and fifth carbon budgets] in full."¹³³ This timeline was consistent with past practice and the legal requirement to release the new plan "as soon as is reasonably practicable" after the new budget is set.¹³⁴

However in September 2016 it was reported that the "UK may delay release of [its] plan to reach carbon goals until 2017".¹³⁵ Nick Hurd, the Climate and Industry Minister, had said in a speech that "It's more important to get this right than to rush something out that doesn't hit the target."¹³⁶

Explaining his comments in Parliament, the Minister stressed the "need to get this right", saying: "if it is done well, it will send signals to market for investment and for the mobilisation of private capital and the private sector that is fundamental for success."¹³⁷ This would represent a welcome departure from the 2011 Carbon Plan insofar as that plan "appear[ed] to be intended to meet a legal requirement of the Climate Change Act rather than designed to play a meaningful role in managing the carbon budgets."¹³⁸

In fact, since the Act mandates "the development of a *coherent* climate policy agenda", the new Emissions Reduction Plan must set out a policy pathway that is credible, sustainable and genuinely deliverable in the coming years.¹³⁹ The Plan needs to It must also set out a single intended decarbonisation path to help the management of carbon budgets: to guide future action and allow for internal and external accountability. To this end, the Emissions Reduction Plan must provide a degree of specificity that the Carbon Plan's "illustrative scenarios" failed to provide.

The Act also requires that the Emissions Reduction Plan cannot be published merely "When we are ready".¹⁴⁰ Experience has shown that the timelines in the Act are every bit as crucial as its

substantive duties. In sum, the Emissions Reduction Plan must be legal and timely *as well as* being "right".

The policy gap to meeting the fifth carbon budget is particularly significant: current policies provide only 50% of the emissions reductions needed.¹⁴¹ But if the development of a new plan was effortless, there would be no need for a law mandating it.

In meeting the challenge of developing the Emissions Reduction Plan, government should work openly and with the engagement and support of as wide a range of stakeholders as possible.¹⁴² In this respect, Nick Hurd's stated approach is the right one:

"We need to engage with the private sector and non-governmental organisations. This has to be a shared challenge. We have to make sure that the process is properly connected with the extremely important substantive and long-term work and thinking being done about the industrial strategy, ..."143

Outreach to the private sector and civil society has apparently already begun.¹⁴⁴ As part of this process, and in accordance with past practice, the government should consider releasing a draft of the Plan before it is published. The Emissions Reduction Plan itself should be published before the end of 2016, in line with the government's intentions.¹⁴⁵

Recommendations: The Emissions Reduction Plan

As this report has aimed to show, there is much besides an adequate plan that is needed to ensure progress towards meeting carbon budgets is properly managed and sustained. (Our broader recommendations are summarised in the following section). However the new Carbon Plan / Emissions Reduction Plan will provide *the central framework* for managing this transition. As such, it is imperative that it is truly fit-for-purpose from the outset.

The Emissions Reduction Plan must:

1. set out a single, intended policy path which is coherent, sustainable and projected to **close the fourth and fifth carbon budget policy gaps**;
2. **describe in sufficient detail and clarity "proposals and policies"**¹⁴⁶ that **will** (not just *can*) deliver the necessary emissions reductions, showing how the expected emissions savings of each contributes to meeting future carbon budgets;
3. **be a 'living' document**, updated annually and in a form which allows for direct comparison from year to year;

4. re-establish a system of clear and realistic **policy milestones** to guide the efforts of individual government departments and against which progress can be judged;
5. **integrate with complementary elements of governance** (recommendations on which are summarised in the following section) as they evolve, and describe clearly how they will function together.

Recommendations: A wider reset

The coming months offer a crucial opportunity to reset not just current policy plans and "to build a shared vision of the direction of travel"¹⁴⁷, but to reset the wider operation of the Act. This means restoring, or otherwise reinvigorating, the Act's governance mechanisms.

Alongside the release of the Emissions Reduction Plan must come (renewed) commitment to the following elements of governance:

1 Active and transparent carbon budget management according to key policy decisions

- The impact of all major policy decisions on projected emissions *as they relate to meeting carbon budgets* evaluated and incorporated into decision-making. (Where a decision puts projections off track, corresponding emissions reductions should be found elsewhere).
- These updated emissions projections published frequently in a clear, user-friendly and timely manner - perhaps best achieved by the creation and maintenance of a '**carbon budget transparency platform**'.¹⁴⁸

2 Climate policy integrated across government

- A new NET Board (or equivalent), acting transparently, monitoring performance of climate policies, holding key actors accountable and ensuring progress is sustained.
- Carbon budget management pro-actively championed across government by the new Department for Business Energy and Industrial Strategy.

3 Policy milestones regularly updated and progress accounted for

- Policy milestones (once set out in full in the Emissions Reduction Plan) updated to remain current and capture all material actions required of different departments.
- Comprehensive progress reports published quarterly.

These recommendations are intended to establish a system of governance that ensures compliance with the Act but that is resilient and flexible enough to allow for future course correction where necessary. Even the best-laid plans will be revised and refined over time.

It may be noted that many of the recommendations made in this report follow - either explicitly or implicitly - the stated aims of governments since the Act's adoption in 2008. If implemented, the result should be a Climate Change Act working as Parliament intended.

The Act allows the government the freedom to choose what policies it will pursue as long as it meet its statutory emissions targets. This is compliance culture in positive action: where governments operate in a flexible but consistent way over time within a legal framework of targets, budgets and decision-making rules and processes.

This report makes no specific recommendations on how government chooses to meet the fourth and fifth carbon budgets, beyond acknowledging the CCC's important Progress Report from June this year, which "sets out the areas where policy should be developed and strengthened" in the Emissions Reduction Plan.¹⁴⁹ Particular priorities highlighted by the CCC include the development of CCS, heat in buildings, transport policy beyond 2020, and mature low-carbon generation, alongside progress in agriculture and industry.¹⁵⁰ Government will also, of course, be mindful of the recommendations made by industry, technical experts and civil society actors.

The government's response to the Committee's report, expected later in October, should give important signals on how it is approaching the important challenges ahead.

Conclusion

The Climate Change Act from 2016



Conclusion: The Climate Change Act from 2016

The UK is rightly proud of the Climate Change Act. The Act sets statutory emissions reductions targets that give stakeholders, investors and the wider business community clear signals about the direction of travel. It establishes a framework of regular reporting and reappraisal that helps keep climate change politically salient. It provides independent expert guidance through the Committee on Climate Change. And it charts a path for emissions reductions which reduces disruption and costs over the long-term. It adds credibility to the UK's positive climate diplomacy and it acts as a model and catalyst for the creation of similar climate laws around the world.

The Act can, and must, succeed. But it will not implement itself. Government must invest in the Act and what it requires.

In the years immediately after 2008, appropriate governance mechanisms were put in place within government. By 2013, many of these had already been neglected but government expressed its commitment to reinvigorate them. This report has highlighted how, in the years since, the Act has continued to be hollowed out, such that its longer-term goals have begun to be threatened. Failing to invest now in the Act is a false economy.

2016 must come to be seen as the year that the Climate Change Act was revived; when the UK got back on track. Failing to take full advantage of this opportunity could risk the long-term success of the Act and all the benefits that go with it.

Setting the fifth carbon budget at the level recommended by the CCC was an important positive step, reaffirming government's commitment to the Act.

Likewise, the formation of the DBEIS could in time prove to be a positive step. But, of course, the onus to reinvigorate the Climate Change Act does not lie exclusively with DBEIS. Though large, it is but one of a number of government departments with a key role to play in achieving emissions reductions.¹⁵¹ Notably, the commitment of HM Treasury will be crucial.¹⁵² For reasons described in this report, it is an economic as much as an environmental priority to invest in the Climate Change Act and ensure that it succeeds.

The Act has been neglected for too long. Now is the time to get back on track.

Annex – Problematic Projections



Annex - Problematic Projections

The following issues make it extremely difficult, if not impossible, to use UEE Projections in their current form to actively scrutinise policy-level progress towards meeting carbon budgets.

First, the Projections are not sufficiently responsive to changing circumstances. A policy's Impact Assessment is produced to assess the impact of a new proposal, and is not typically updated as circumstances change. The Government's UEE Projections are released annually but are otherwise static. They are not updated on the same timescales as policies are refined or abandoned.

Secondly, even though a certain complexity is inevitable, the way the Projections are presented makes them less accessible than necessary. The emissions savings that will result from individual policies are found in an Excel spreadsheet annexed to the Projections whose figures are caveated or supplemented by numerous highly technical explanatory notes.

Thirdly, not all key policy decisions are properly captured by the Projections or Impact Assessments. Take, for example, the decision to increase Vehicle Excise Duty on less polluting cars, announced in the 2015 Budget: even though concerns have been expressed that the decision will be environmentally harmful, the government's 'environmental impact assessment' consisted of the statement that "by strengthening the incentive to purchase zero-emission cars and ULEVs over conventionally fuelled cars this measure is expected to contribute to the UKs carbon emissions targets." (<https://www.gov.uk/government/publications/vehicle-excise-duty/vehicle-excise-duty>).

A related problem is that, in the Projections, certain policies are not disaggregated from broader categories. For example the Renewables Obligation sits within a category called "Decarbonisation policies in the electricity supply industries" which includes Feed-in-Tariffs and Contracts for Difference, and which in total accounts for GHG emissions savings of 498 MtCO₂e (2014 UEE Projections, Annex D, "All, by sector").

Beyond this, some policies are simply not identified at all. The 2015 UEE Projections state (at p.14): "The savings from some policies cannot currently be explicitly identified, particularly in the agriculture and waste management sectors. Nonetheless, these policy savings *do* contribute to the projections of emissions and energy demand discussed elsewhere in this report."

Fourthly, although the relevant annex to the UEE Projections contains data in appropriate units (i.e. MtCO₂e), relating these to carbon budgets is not straightforward. Most emissions savings (by policy) are judged against a pre-April 2009 baseline, while others are listed as *contributing* to that baseline ("Baseline policies"). But these policy savings need to be clearly related to the level of carbon budgets if meaningful assessments of progress are to be possible. Another complication is how the overlaps between different policies are treated - with the Projections taking an approach different from Impact Assessments (see, e.g., 2014 UEE Projections, p.27).

Fifthly, the models that project future emissions are complex (unavoidably so), responding not only to evolving policy plans but also to changing circumstances and updated methodologies (eg. fossil fuel prices, economic growth expectations, GHG inventory updates). By way of example, the CCC found, in its 2015 Progress Report to Parliament, that "Since our last report, DECC have significantly revised down their projection of emissions expected *in the absence of any policy to reduce them* (i.e. the 'baseline projection')" (emphasis added). This can make comparing UEE Projections, like-for-life and from one year to the next, difficult. However it should not be impossible *provided* the changes are clear and transparently accounted for. Yet this is not always done. In the example cited, the CCC Report continued: "We will be working closely with DECC to fully understand these changes", suggesting a lack of clarity.

Another example concerns certain methodological changes which informed the 2014 UEE Projections (see pp.10-11), which remain undisclosed. (As of October 2016, the Projections website (<https://www.gov.uk/government/publications/updated-energy-and-emissions-projections-2014>) continues to read: "We hope to publish [the methodology update] later in 2015." Similar concerns arise from the failure to reproduce in the 2015 UEE Projections the summary of the impact of modelling changes that earlier vintages had featured (for example: Table 2.5 (2014); Table 3.4 (2013)).

More generally, it may be noted that the 2015 Projections report is around half the length of its predecessor and, when first released, did not include many other data tables that had been included in earlier years (though most were subsequently released in a separate spreadsheet). It is hoped that this does not signal any lowering of standards.

Finally, one particular source of potential confusion derives from the way that emissions in the traded sector of the economy are currently calculated: they are assumed to equal the UK's ETS allocation, rather than equating to actual emissions (see, e.g., CCC 2016 Progress Report, pp.26-29). This can be said to obscure the impact of decisions likely to increase traded sector emissions. For example, on the environmental impact of its decision to phase out the exemption from the Climate Change Levy given to renewable energy sources, the government simply states: "The measure will have no direct impact on the achievement of UK Carbon Budget targets, as emissions from electricity generation are capped through the EU Emissions Trading System." (<https://www.gov.uk/government/publications/climate-change-levy-removal-of-exemption-for-electricity-from-renewable-sources/climate-change-levy-removal-of-exemption-for-electricity-from-renewable-sources>). This may strictly be true as things stand, but the impact on emissions should in any case be disclosed clearly.

In sum, it is arguable whether the UEE Projections make available to the public all the information they need to understand the UK's progress towards a low-carbon economy. But it is surely incontestable that the "normal person" will be frustrated if he or she wishes to understand the impact of specific government decisions on meeting future carbon budgets. This report proposes the establishment of a 'carbon budget transparency platform' to meet this need.

Jonathan Church
Lawyer
0203 030 5962
jchurch@clientearth.org
www.clientearth.org

ClientEarth is a non-profit environmental law organisation based in London, Brussels and Warsaw. We are activist lawyers working at the interface of law, science and policy. Using the power of the law, we develop legal strategies and tools to address major environmental issues.

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Brussels

60 Rue du Trône
5ème étage
1050 Bruxelles
Belgique

London

274 Richmond Road
London
E8 3QW
UK

Warsaw

ul. Żurawia 45
00-680 Warszawa
Polska

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Notes

¹ The Guardian, 14 December 2015, "Paris climate change agreement: the world's greatest diplomatic success", <http://www.theguardian.com/environment/2015/dec/13/paris-climate-deal-cop-diplomacy-developing-united-nations>

² French President Francois Hollande, reported in the Daily Telegraph, 12 December 2015, "Paris climate change agreement 'a major leap for mankind'", <http://www.telegraph.co.uk/news/earth/paris-climate-change-conference/12047909/Paris-climate-change-agreement-a-major-leap-for-mankind.html>

³ ClientEarth Chief Executive James Thornton has called for COP21 promises to be made into domestic law, 26 January 2016, <http://www.clientearth.org/cop21-promises-must-be-made-law/>

⁴ The Guardian, 14 March 2016, "Zero carbon emissions target to be enshrined in UK law", <http://www.theguardian.com/environment/2016/mar/14/zero-carbon-emissions-target-enshrined-uk-law>
Separately, the CCC is currently considering the implications for the Climate Change Act of the increased ambition of the Paris Agreement and is expected to publish its analysis on 13 October 2016.

⁵ The Guardian, 20 September 2016, "Theresa May: UK to ratify Paris climate change deal this year", https://www.theguardian.com/world/2016/sep/20/theresa-may-uk-ratify-paris-climate-change-agreement-this-year?utm_term=0_876aab4fd7-b4087410ff-303473053&utm_content=buffer10983&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer

⁶ Oral evidence before House of Commons Energy and Climate Change Committee, 21 July 2015, "DECC priorities 2015", questions 20, 21, <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/energy-and-climate-change-committee/decc-priorities-2015/oral/18799.pdf>

⁷ For example: Mexico's General Law on Climate Change (2012); Denmark's Climate Change Act (2014); Finland's Climate Act (2015); Norwegian climate change law proposed for 2017.

⁸ The Act was passed with near-unanimous cross-party support. In their 2015 General Election manifestos all major political parties except UKIP committed to continued support for the Act.

⁹ Oral evidence before House of Commons Liaison Committee, 12 January 2016, "Evidence from the Prime Minister", question 77, <http://www.parliament.uk/documents/commons-committees/liaison/2016-01-12-PM.pdf>

Positive statements about the Act were also made at the 2014 UN Climate Summit in New York (where the creation of "the world's first Climate Change Act" reflected the UK's leadership on climate change) (<https://www.gov.uk/government/speeches/un-climate-summit-2014-david-camerons-remarks>) and similarly at COP21 in Paris (<https://www.gov.uk/government/speeches/pm-speech-to-the-cop21-summit-in-paris>).

¹⁰ "At the heart of the government's commitment [to combating climate change] is the Climate Change Act 2008" - Jesse Norman MP, Under-Secretary of State for BEIS, Hansard, 18 July 2016, [https://hansard.parliament.uk/commons/2016-07-18/debates/5e3634c3-d05f-4912-8a00-35872877d5fe/DraftClimateChangeAct2008\(CreditLimit\)Order2016](https://hansard.parliament.uk/commons/2016-07-18/debates/5e3634c3-d05f-4912-8a00-35872877d5fe/DraftClimateChangeAct2008(CreditLimit)Order2016)

"We are committed to the UK Climate Change Act 2008." / "As we develop our emissions reduction plan, which is one of the Department's top priorities ..." / "The emissions reduction plan matters enormously." - Nick Hurd MP, Minister for Climate Change and Industry, Hansard, 8 September 2016, <https://hansard.parliament.uk/Commons/2016-09-07/debates/16090723000001/ParisAgreementOnClimateChange>

¹¹ "Machinery of Government", <http://qna.files.parliament.uk/ws-attachments/539038%5Coriginal%5CDBEIS%20Explanatory%20Note.pdf>

¹² Jesse Norman MP, Hansard 7 September 2016, "Paris Agreement on climate change", <https://hansard.parliament.uk/Commons/2016-09-07/debates/16090723000001/ParisAgreementOnClimateChange>

¹³ CCA, section 13 ("proposals and policies").

¹⁴ CCA, section 14

¹⁵ CCA, section 12

¹⁶ CCA, section 16

¹⁷ CCA, sections 36, 37.

¹⁸ CCA, Part 4

¹⁹ Most well known is Nicholas Stern, October 2006, "Stern Review on the Economics of Climate Change". See, more recently: Simon Dietz and Nicholas Stern, June 2014, "Endogenous growth, convexity of damages and climate risk: how Nordhaus' framework supports deep cuts in carbon emissions".

²⁰ For example, "The UK Climate Change Risk Assessment, which was published in 2012, concluded that the economic cost of "coastal and river flooding in England and Wales could rise from an annual average of about £1.2 billion today to between £1.6 and £6.8 billion by the 2050s." - Centre for Climate Change Economics and Policy, 13 February 2014.

Severe impacts suffered by other countries will inevitably impact the UK. The 2014 report by PwC, "Two degrees of separation: ambition and reality - Low Carbon Economy Index 2014" states (at p.4): "[T]he international impacts of climate change to the UK could be an order of magnitude larger than domestic threats and opportunities. The UK for example, holds around £10 trillion of assets abroad, with the flow of investment by the UK into other countries exceeding £1 trillion in 2011 alone. Physical or economic damages in the countries that the UK has invested in will therefore flow back to the UK."

Even if judged from the perspective of unilateral reduction of greenhouse gas emissions, it is possible to argue that the UK's efforts make economic sense. Quoting Engel and Saleska, "Subglobal Regulation of the Global Commons", 2005, (p208): "countries acting on their own, in the absence of international agreement have an economic incentive to reduce a sizable fraction of the world's total greenhouse gas emissions". At least at the time this study was published, the authors then saw the UK as one of "the large countries" to which this logic applied (p.210). In fact, of course, the UK is in any case very far from alone in the efforts it is pursuing to combat climate change.

On job creation and higher wages, see Cambridge Econometrics, "The Economics of Climate Change Policy in the UK", September 2014: "The evidence in this report suggests that meeting the reduction in GHG emissions set out in the first four carbon budgets will lead to a net 1.1% increase in GDP by 2030, the creation of an additional 190,000 jobs and higher real disposable incomes ... relative to a counterfactual scenario where no action is taken to mitigate the effects of climate change."

A 2015 preliminary study suggests that the co-benefits of meeting carbon budgets 1 to 4 appear to "significantly outweigh" the negative consequences of doing so: Smith A. et al, "Health and environmental co-benefits and conflicts of actions to meet UK carbon targets", Climate Policy, <http://www.tandfonline.com/doi/abs/10.1080/14693062.2014.980212>

²¹ BusinessGreen, 22 April 2016, "Lord Bourne: Paris Agreement proves that the UK is stronger in the EU", <http://www.businessgreen.com/bg/opinion/2455704/lord-bourne-paris-agreement-proves-that-the-uk-is-stronger-in-the-eu>

²² Mark Carney, 22 September 2016, Arthur Burns Memorial Lecture, "Resolving the climate paradox", <http://www.bankofengland.co.uk/publications/Documents/speeches/2016/speech923.pdf>

²³ BusinessGreen, 19 May 2016, "UK green economy worth £46.2bn, official stats reveal" <http://www.businessgreen.com/bg/news/2458701/uk-green-economy-worth-gbp462bn-in-2014-official-stats-reveal> The figure given does not include associated gains such as, eg., less burden on health spending due to cleaner air.

²⁴ Department for Business, Innovation and Skills, March 2015, "The size and performance of the UK low carbon economy". This figure corresponds to the "direct low carbon economy", measured by GVA generated in 2013.

See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/416240/bis-15-206-size-and-performance-of-uk-low-carbon-economy.pdf (p.17)

²⁵ Grantham Research Institute on Climate Change and the Environment; Centre for Climate Change Economics and Policy; Bassi and Duffy, "UK climate change policy: how does it affect competitiveness?", May 2016, Executive Summary, p.3. <http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2016/05/Bassi-and-Duffy-policy-brief-May-2016.pdf>

²⁶ See footnotes 19, 20, 22.

In general terms, the challenge, as described by Mark Carney - both in his September 2015 and September 2016 speeches ("Breaking the Tragedy of the Horizon"; "Resolving the climate paradox") - is to take the necessary action now without destabilising markets through too rapid or abrupt a transition. In specific terms, DECC's modelling results on 'least-cost pathways' to meeting the 2050 target "support the view that the UK should follow a pathway of early action." - DECC, "Impact Assessment of Fourth Carbon Budget Level", 16 May 2011, p.48.

The cost-effective path described in the CCC's 2015 report concerning the fifth carbon budget involves "fairly close to a linear reduction" to 2050, but with a slightly higher rate of reductions in earlier years (Figure 1.10). See p.25, Sectoral scenarios for the Fifth Carbon Budget, November 2015.

The same report (at p.29) states: "We have estimated the costs of delayed action in the 2020s for the non-traded sector. ... Overall, delayed action in the 2020s would impose a cost of around £95 billion in present value terms, under central assumptions about fossil fuel and carbon prices, over the period to 2050".

²⁷ The levels of carbon budgets (to date) adhere to this trajectory.

²⁸ CCC, "Fourth Carbon Budget Review – part 2, The cost-effective path to the 2050 target", December 2013, p.5.

Similarly, the 2014 study by Cambridge Econometrics quoted above ("The Economics of Climate Change Policy in the UK") found that "Overall, the modelling evidence suggests that meeting the fourth carbon budget will lead to a higher GDP (1.1% by 2030) supporting more jobs across the economy (190,000) and higher real disposable incomes (£565 per household per year)."

²⁹ Mazzucato, "The Entrepreneurial State", Anthem, 2013, p.125 (the quoted passage refers to the UK).

³⁰ "One reason why persistent and pervasive policies are required is the inertia in energy and industrial systems once built." From: Grantham Research Institute on Climate Change and the Environment; Global Green Growth Institute; Bowen, Duffy and Fankhauser, "'Green growth' and the new Industrial Revolution", January 2016, p.5, <http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2016/01/Bowen-et-al-2016.pdf>

³¹ Dimitri Zenghelis, co-head of policy, Grantham Research Institute (LSE), quoted on Solar Power Portal, 12 August, 2016, "Government needs to 'plug the gap' in energy policy, says former Treasury head", http://www.solarpowerportal.co.uk/news/government_needs_to_plug_the_gap_in_energy_policy_says_for_mer_treasury_head

Very relevant here is the important role that will likely be played by the National Infrastructure Commission in the years ahead. The Commission must be constituted to ensure it takes due account of the government's climate change commitments.

³² Matthew Lockwood, "The political sustainability of climate policy: The case of the UK Climate Change Act", Global Environmental Change, 2013 (23) 1339–1348, p.1344.

³³ These criticisms are drawn out, for example, in the report by the House of Commons Energy and Climate Change Committee, "Investor confidence in the UK energy sector", February 2016. The report focuses on developments in the "traded sector" (i.e. the power and industrial sectors), however its conclusions apply more widely to the management of emissions reductions across all sectors. (It may be noted that the accounting mechanism which the Act currently uses does not count actual emissions from the "traded sector". The government is keeping under review the ability of the current accounting system to drive emissions reductions in the traded sector.)

See also, eg,

Carbon Brief, 9 September 2016, "UK set to miss renewable energy targets, warn MPs", <https://www.carbonbrief.org/uk-to-miss-renewable-energy-targets-mps>

The Independent, 14 July 2016, "David Cameron promised the greenest government ever - and failed. Theresa May is following his lead", <http://www.independent.co.uk/voices/david-cameron-theresa-may-climate-change-greenest-government-ever-failed-a7137391.html>

³⁴ BBC News, 9 November 2015, "Government energy policies 'will increase CO2 emissions'", <http://www.bbc.co.uk/news/science-environment-34767194> (Strikingly, given the government's express prioritising of consumer bills, more of these policy changes were identified as being likely to increase bills than were seen as likely to decrease them.)

³⁵ On fracking: Daily Telegraph, 16 December 2015, "MPs clear the way for fracking to start under National Parks", <http://www.telegraph.co.uk/news/earth/energy/fracking/12054726/MPs-clear-the-way-for-fracking-to-start-under-National-Parks.html>

³⁶ As the CCC estimates "if CCS were to be unavailable, it might be necessary to find additional emissions reductions of around 35 MtCO₂e in 2050 from the rest of the economy." ("The Fifth Carbon Budget - The next step towards a low-carbon economy", November 2015, p.57.) Note that 35MtCO₂e corresponds to around one fifth of total permissible emissions for 2050.

In July 2016, the CCC wrote to the DECC Secretary of State to underscore the importance of adopting "A strategic approach to Carbon Capture and Storage", not least on grounds of cost. The CCC stated: "we have estimated that the costs of meeting the UK's 2050 target ... would approximately double without CCS."

See also the comments of Matthew Bell, CCC Chief Executive, in his interview with Carbon Brief, 2 February 2016, <http://www.carbonbrief.org/the-carbon-brief-interview-matthew-bell>.

³⁷ The House of Commons Energy and Climate Change Committee found that "the manner in which the CCS competition was cancelled, weeks before the final bids were to be submitted and without any prior indication given to the relevant parties, was both disappointing and damaging to the relationship between government and industry." From the Committee's inquiry on the "Future of carbon capture and storage in the UK", February 2016, (para 35).

³⁸ House of Commons ECC Committee, 16 December 2015, "Oral Evidence: Outcomes of Paris COP21", questions 19, 20. (Quoted comment by Angus MacNeil MP). <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/energy-and-climate-change-committee/outcomes-of-paris-cop-21/oral/26932.pdf>

³⁹ BBC News, 25 November 2015, "UK government carbon capture £1bn grant dropped", <http://www.bbc.co.uk/news/uk-scotland-scotland-business-34357804>

⁴⁰ Committee report: "Future of carbon capture and storage in the UK", February 2016. <https://www.parliament.uk/business/committees/committees-a-z/commons-select/energy-and-climate-change-committee/inquiries/parliament-2015/ccs-15-16/>

⁴¹ This is a legal requirement of the Act, as discussed in Section 4.

⁴² As it was put by Alan Whitehead MP in a meeting of the Energy and Climate Change Committee.

⁴³ The Guardian, 30 June 2015, "Government must explain removal of support for onshore wind, advisers say", <http://www.theguardian.com/environment/2015/jun/30/government-must-explain-removal-of-support-for-onshore-wind-advisers-say>

The BBC's Environment Analyst, Roger Harrabin, has similarly noted this failure of accountability: "The government says it is still committed to its climate targets but hasn't offered any explanation as to how it will fill the gap created by the end to new onshore wind." (BBC News, 30 June 2015, "Climate change plans require urgent action, government warned", <http://www.bbc.co.uk/news/science-environment-33315125>)

⁴⁴ (Emphasis added). HM Treasury, HM Government, April 2009, "Building a low-carbon economy: implementing the Climate Change Act 2008", paragraph 4.51.

⁴⁵ September 2013, "Progress on Carbon Budgets, Fifth Report of Session 2013-14", question 186, Mark Spencer MP. Transcript of oral evidence available at: <http://www.publications.parliament.uk/pa/cm201314/cmselect/cmenvaud/uc60-iv/uc6001.htm>

⁴⁶ Emissions projections - one potential way to address such questions - are discussed in more detail in the Annex.

⁴⁷ Infrastructure Act 2015, section 49.

⁴⁸ CCC, March 2016, "Onshore Petroleum: The compatibility of UK onshore petroleum with the UK's carbon budgets", p.8 (Executive Summary), <https://www.theccc.org.uk/wp-content/uploads/2016/07/CCC-Compatibility-of-onshore-petroleum-with-meeting-UK-carbon-budgets.pdf>

⁴⁹ Department of Energy and Climate Change, July 2016, "Onshore Petroleum: The compatibility of UK onshore petroleum with the UK's carbon budgets - Government Response to the Committee on Climate Change report", p.14, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/535208/CCC_Response_new_template_FINAL.pdf

⁵⁰ Quoting Lord Deben, Chair of the Committee on Climate Change, in his letter to the Secretary of State, 22 September 2015, "Clarifying the direction for low-carbon policy", <https://d2kx2p8nxa8ft.cloudfront.net/wp-content/uploads/2015/09/220915-CCC-letter-to-Rt-Hon-Amber-Rudd-MP.pdf>.

As to the accusations of disjointed climate policy, see for example the letter to the Prime Minister from UK charities, 31 July 2015, describing their "major concern" at recent developments: <http://www.scribd.com/doc/273124041/UK-green-groups-letter-to-David-Cameron>

As an example from industry, a board member of the Drax power company said: "We've ... got concerns about the government's future support for the low carbon agenda and that's left us in a position where we are no longer confident we can persuade our shareholders that this [CCS] is an attractive investment" (Financial Times, 25 September 2015, "Energy policy under fire after Drax pulls out of carbon capture scheme").

⁵¹ 18 November 2015, "Amber Rudd's speech on a new direction for UK energy policy" - "Today I can announce that – if, and only if, the government's conditions on cost reduction are met – we will make funding available for three auctions in this Parliament. ... On current plans we expect to see 10GW of offshore wind installed by 2020". <https://www.gov.uk/government/speeches/amber-rudds-speech-on-a-new-direction-for-uk-energy-policy>

⁵² Matthew Pennycook MP, House of Commons ECC Committee, 16 December 2015, "Oral Evidence: Outcomes of Paris COP21", question 24. ("In your "reset" speech, apart from the welcome announcement that we would phase out unabated coal by 2025, there was very, very little detail. An uncertainty and a lack of detail in key areas like heat and transport is worrying".)

⁵³ This is implicit from the reference in the "policy reset" speech to when the policy gap to the fourth carbon budget might in due course be closed. ("And we'll be setting out our plans for meeting the fourth and fifth Carbon Budgets next year.")

⁵⁴ "In fact, one criticism that could be levelled is that of *too much* [policy-making] activity." - LSE Centre for Economic Performance; Martin, Colmer and Dechezlepretre, "Energy and the Environment: a cold climate for climate change policies?", April 2015, p.2

⁵⁵ Oral evidence before House of Commons Liaison Committee, 12 January 2016, "Evidence from the Prime Minister", question 67, <http://www.parliament.uk/documents/commons-committees/liaison/2016-01-12-PM.pdf>

⁵⁶ [http://www.ey.com/Publication/vwLUAssets/RECAI-45-September-15-LR/\\$FILE/RECAI_45_Sept_15_LR.pdf](http://www.ey.com/Publication/vwLUAssets/RECAI-45-September-15-LR/$FILE/RECAI_45_Sept_15_LR.pdf)

⁵⁷ [http://www.ey.com/Publication/vwLUAssets/EY-RECAI-47-May-2016-index-at-a-glance/\\$FILE/EY-RECAI-47-May-2016-index-at-a-glance.pdf](http://www.ey.com/Publication/vwLUAssets/EY-RECAI-47-May-2016-index-at-a-glance/$FILE/EY-RECAI-47-May-2016-index-at-a-glance.pdf)

⁵⁸ "No surprise then that many are describing the government's proposals as something of an antithesis of sensible policy for achieving better public value for money." - EY, September 2015, Renewable Energy Country Attractiveness Index, p.36

The point has also been made by Lord Oxburgh: "The [constant changes to energy policy] that the government is announcing in the name of affordability will have the perverse effect of increasing the cost of clean energy." Quoted by Energy and Climate Intelligence Unit, 22 July 2015, <http://eciu.net/press-releases/2015/comment-on-changes-to-renewable-energy-support>

⁵⁹ Letter from Lord Deben, Chair of the Committee on Climate Change, to the Secretary of State, 22 September 2015, "Clarifying the direction for low-carbon policy", <https://d2kx2p8nxa8ft.cloudfront.net/wp-content/uploads/2015/09/220915-CCC-letter-to-Rt-Hon-Amber-Rudd-MP.pdf>.

On affordability, see also The Guardian, 30 June 2016, "Government must explain removal of support for onshore wind, advisers say", <http://www.theguardian.com/environment/2015/jun/30/government-must-explain-removal-of-support-for-onshore-wind-advisers-say>

⁶⁰ Although the report looked at the energy sector specifically, its conclusions are applicable to the economy more broadly.

⁶¹ House of Commons Energy and Climate Change Committee, March 2016, "Investor confidence in the UK energy sector", p.5

⁶² (Emphasis added). Page 12, quoting Temporis, a Fund Manager for the Environment Agency Pension Fund. The National Infrastructure Commission will be important in this space.

⁶³ Oral evidence to the House of Commons Liaison Committee, 12 January 2016, Q77

⁶⁴ Notwithstanding the role of warm winters in reducing recent emissions, there is real progress. Provisional 2015 emissions figures show a 38% drop in greenhouse gas emissions since 1990. (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/511681/20160331_2015_Provisional_Emissions_Stats_one_page_summary.pdf)

See also: https://www.carbonbrief.org/six-charts-show-uk-progress-towards-low-carbon-energy?utm_content=buffer29d3c&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer

⁶⁵ Gregory Barker MP, House of Commons, Oral Evidence Taken before the Environmental Audit Committee, 10 July 2013, question 187.

⁶⁶ "emissions only nudged below the [first] carbon budget target as a result of the contraction in output following the onset of the economic crisis in 2007-08. If the economy had continued on the same output trend that it had prior to the recession (2000-07), emissions would still have fallen, but they would have exceeded the [carbon budget]." - LSE Centre for Economic Performance; Martin, Colmer and Dechezlepretre, "Energy and the Environment: a cold climate for climate change policies?", April 2015, p.3 (Figure 1).

⁶⁷ CCC, June 2016, "Meeting Carbon Budgets - 2016 Progress Report to Parliament", p.27

⁶⁸ 2009: "A major shift in the pace of UK carbon emissions reduction must be achieved".

2010: "A step change in the pace of emissions reduction is needed".

2011: "A step change in the pace of emissions reduction is still required".

2012: "... the step change is needed urgently if we are to remain on track ..."

2013: "Without a significant increase in the pace of emissions reduction, starting very soon, the costs and risks of moving to a low carbon economy in the 2020s and beyond will be increased".

2014: "The underlying rate of emissions reduction remains low relative to what is required to achieve the cost-effective path that would meet the fourth carbon budget." (p.56)

2015: "... concerns remain about underlying progress ... Significant action is required in the new Parliament in order to meet the fourth carbon budget and to stay on track to the 2050 target." (p.9)

2009-2013 quotes taken from: House of Commons Environmental Audit Committee, September 2013, "Progress on Carbon Budgets; Fifth Report of Session 2013-14", p.24 (Figure 3), www.gci.org.uk/EAC/60.pdf

⁶⁹ Page 12

⁷⁰ Table 1 (pp.16-17).

⁷¹ As compared with the fourth carbon budget = 1,950 MtCO₂e:

Projected net carbon account (October 2011) = 2,131 MtCO₂e.

Projected net carbon account (November 2015) = 2,137 MtCO₂e.

From, respectively: Updated Energy and Emissions Projections, October 2012, Table 1 (showing 2011 and 2012 projections); Updated Energy and Emissions Projections, November 2015, Table 2.1

It should be acknowledged that differences in projected emissions from one year to another cannot be attributed solely to government action or external changes in circumstance. As the CCC has explained (in 2015): "Since the release of our fourth carbon budget advice in 2010, the projections changed considerably as a result of updates for the latest evidence and methodological improvements". These changes are described in detail in at pp.51, 52 (Box 3.1) in CCC, November 2015, "The Fifth Carbon Budget; The next step towards a low-carbon economy". See also, in this report: p.28 and the Annex.

⁷² House of Commons Environmental Audit Committee, September 2013, "Progress on Carbon Budgets; Fifth Report of Session 2013-14", p.34 (para 68), www.gci.org.uk/EAC/60.pdf

⁷³ CCA, section 14

⁷⁴ As the National Audit Office has described, the Carbon Plan constitutes a key strand of governance and reporting arrangements under the Act. (National Audit Office, "Carbon Budget Management", July 2013, p.8, para 1.1, pp.10-12.)

⁷⁵ This is clear from sections 12-14 of the Act. In particular, section 14(2)(b): "The report must, in particular, set out ... the time-scales over which [the section 13] proposals and policies *are expected* to take effect." Setting out illustrative pathways is the domain of the CCC more than the government. (See, for example, comments by Matthew Bell, CCC Chief Executive, to the Energy and Climate Change Committee, 15 September 2015, question 31.)

⁷⁶ According to section 14(2) and (3), the illustrative scenarios pertaining to the fourth carbon budget were required to provide at least as much detail as proposals and policies produced under section 13. There will naturally be greater uncertainty around more distant budgets than earlier budgets, however they should not be approached in fundamentally different ways. The Carbon Plan treated the fourth carbon budget differently to the earlier three budgets (illustrative scenarios rather than intended pathways, and see, eg., Table B26, p.194). This is not anticipated under the Act and, indeed represents a backward step

from the Carbon Plan's predecessor (the "Low Carbon Transition Plan", July 2009), which treated all carbon budgets the same.

⁷⁷ HM Government, December 2011, "The Carbon Plan: Delivering our Low Carbon Future", p.148, (Table B4).

⁷⁸ As the Environmental Audit Committee recommended in September 2013, "Changes to policies, and the impact on emissions abatement expected [should] be spelt out in the updated Carbon Plan." ("Progress on Carbon Budgets; Fifth Report of Session 2013-14", p.34 (para 68), www.gci.org.uk/EAC/60.pdf).

More generally, see the Conclusions and Recommendations of its earlier 2011 report into carbon budgets, in particular, "The Carbon Plan as an aid to managing emissions reductions".

The relevant conclusions (paras 11-13) are at <http://www.publications.parliament.uk/pa/cm201012/cmselect/cmenvaud/1080/108010.htm>

⁷⁹ "A 'live' Carbon Plan will be published in October 2011 (to take into account the fourth carbon budget covering the period 2023-2027) and will be refreshed annually thereafter." -

HM Government, "[draft] Carbon Plan", early 2011, pp.11-12, <http://webarchive.nationalarchives.gov.uk/20110614202245/http://decc.gov.uk/assets/decc/What%20we%20do/A%20low%20carbon%20UK/1358-the-carbon-plan.pdf>

⁸⁰ "The Carbon Plan be updated on an annual basis, after the government reflects on the Committee on Climate Change's annual progress report." - Environmental Audit Committee, September 2013, "Progress on Carbon Budgets; Fifth Report of Session 2013-14", p.34 (para 68).

⁸¹ "the government set out a number of scenarios for bridging the assumed shortfall and the government will come forward with updated proposals in due course." - Environmental Audit Committee, "Progress on Carbon Budgets: Government response to the Committee's Fifth Report of Session 2013-14", <http://www.publications.parliament.uk/pa/cm201314/cmselect/cmenvaud/928/92804.htm>

"a revised Carbon Plan ... was due 'very soon'." - Environmental Audit Committee, September 2013, "Progress on Carbon Budgets; Fifth Report of Session 2013-14", p.31 (para 62), www.gci.org.uk/EAC/60.pdf

⁸² HM Government, December 2011, "The Carbon Plan: Delivering our Low Carbon Future", pp.192-203 (Annex B, Tables B25 - B28).

⁸³ "The government has not stopped using the Carbon Plan to track progress as such. ..." - Ben Golding MP, House of Commons, Oral Evidence Taken before the Environmental Audit Committee, 10 July 2013, question 188. www.gci.org.uk/EAC/60.pdf

⁸⁴ National Audit Office, July 2013, "Carbon Budget Management" p.10, (para 1.7).

The action summary is at Annex C of the Carbon Plan. By way of example, one milestone reads: "Lay secondary legislation to enable the Green Deal before Parliament"; Start date: Jan-2012; End date: Mar-2012; Department responsible: DECC; Is action in Departmental Business Plan (Nov 2010)? Yes.

⁸⁵ For example, 58% of the milestones "were for actions which had already started when the Carbon Plan was published in December 2011 and some had already been completed" and "half of the milestone deliveries were for actions within the first 18 months of the five year plan" - NAO report, previous footnote, pp.10-11, (paras 1.9, 1.10).

Another problem is that the milestones did not provide for any "accountability at department level for the total emissions from the individual sectors contributing to carbon emissions." (NAO report, para 1.8.). Departmental carbon budgets were abandoned because the departments "did not feel able to influence the sector emissions they were held accountable for". (See HM Government, Written evidence submitted in response to the Environmental Audit Committee's 2013 carbon budget report, <http://www.publications.parliament.uk/pa/cm201314/cmselect/cmenvaud/60/60we02.htm>)

⁸⁶ "Additional milestones would be included in a revised Carbon Plan, which was due 'very soon'." - Environmental Audit Committee, September 2013, "Progress on Carbon Budgets; Fifth Report of Session 2013-14", p.31 (para 62), www.gci.org.uk/EAC/60.pdf

⁸⁷ The Carbon Plan, pp.118-119.

⁸⁸ The last report (as of 7 September 2016) was from Q3 2012 (which showed only 4 of 7 required actions for that period as having been completed). See HM Government, "Carbon Plan: quarterly implementation updates", <https://www.gov.uk/government/collections/carbon-plan-quarterly-implementation-updates>

⁸⁹ Environmental Audit Committee, December 2013, "Progress on Carbon Budgets: Government's response to the Committee's Fifth Report of Session 2013-14", p.6.

This followed the NAO reporting, in 2012, that the government “plans to resume publication of a revised form of report in the coming months”. (para 1.14).

In July 2013, Ben Golding had said “we are just in the process of updating and aligning the Carbon Plan milestones so that we are consistently reporting against the same things.” <http://www.publications.parliament.uk/pa/cm201314/cmselect/cmenvaud/uc60-iv/uc6001.htm> (qn. 188).

⁹⁰ See NAO report, Appendix One.

⁹¹ HM Government, Written evidence submitted in response to the Environmental Audit Committee's 2013 carbon budget report, (summary and para 12), <http://www.publications.parliament.uk/pa/cm201314/cmselect/cmenvaud/60/60we02.htm>

(Unlike its predecessor, the Carbon Plan did not divide up emissions targets by department).

⁹² National Audit Office, July 2013, “Carbon Budget Management”. It is evident from the report that, when the NAO investigated the NET Board's role, it had limited access to information.

Such concerns were reiterated by the House of Commons Environmental Audit Committee (“Progress on Carbon Budgets”) later in 2013: “The National Emissions Target Board—the main oversight body—has met infrequently and there is limited evidence that it is holding departments to account for their progress.” (p.38, para 7). The report also recommended that “The National Emissions Target Board convene regularly. It should actively monitor performance of policies in reducing emissions, and take explicit account of the CCC's progress reports. The Board must take control of identifying the new policies and incentives needed in the next two years to get the UK on track ...”. (p.34, para 68).

More recently, when Amber Rudd, then Secretary of State for Energy and Climate Change, was pressed on the mechanism for achieving cross-departmental renewables targets, she replied in somewhat guarded terms: “I think I can say there is a formal grouping that meets regularly and sets specific targets. Of course it is well supported by officials but it is attended by Secretaries of State, which I hope highlights the seriousness of how we take it.” (Energy and Climate Change Committee, 16 December 2015, qn 46).

⁹³ National Audit Office, July 2013, “Carbon Budget Management”, para 1.23.

The NAO also found that the Board had “met irregularly and not as frequently as it intended”; and there was a lack of evidence that its meetings included senior departmental officials (paras 1.17, 1.26, 1.27).

⁹⁴ Freedom of Information Act request 2016/13296 - NET Board meetings took place on: 9 January 2014; 24 March 2014; 24 April 2014; 15 July 2014; 22 September 2014; 22 January 2015; 24 February 2015; 30 April 2015; 23 July 2015; 3 September 2015.

⁹⁵ BusinessGreen, 5 February 2016, “Amber Rudd declines to reveal details of secretive ‘clean growth’ committee”, <http://www.businessgreen.com/bg/analysis/2445289/amber-rudd-declines-to-reveal-details-of-secretive-clean-growth-committee>

⁹⁶ Financial Times, 4 November 2015, “David Cameron sets up committee to tackle air quality”, <https://next.ft.com/content/b63015d6-8309-11e5-8095-ed1a37d1e096#axzz3z7fqGyAQ>

⁹⁷ BusinessGreen, 5 February 2016, “Amber Rudd declines to reveal details of secretive ‘clean growth’ committee”, <http://www.businessgreen.com/bg/analysis/2445289/amber-rudd-declines-to-reveal-details-of-secretive-clean-growth-committee>.

See also: DeSmogUK, 8 February 2016, “What do we actually know about Amber Rudd's new Emissions Reduction Plan being developed?”, <http://www.desmog.uk/2016/02/08/what-do-we-actually-know-about-uk-s-new-emissions-reduction-plan-being-developed>

In January 2016, Oliver Letwin said that the government does “not comment on specific membership or the frequency and timing of [its] meetings” in order to “protect the integrity of the policy making process.”

Answer to written question from Matthew Pennycook MP, 22 January 2016, <http://www.parliament.uk/business/publications/written-questions-answers-statements/written-questions-answers/?page=1&max=20&questiontype=AllQuestions&house=commons%2clords&use-dates=True&answered-from=2015-06-05&answered-to=2016-06-10&keywords=%22clean+growth%22>

More recently, when pressed, Mr Letwin said that meetings occurred “every few weeks” (Adam Vaughan on Twitter, 3 February 2016 (https://twitter.com/adamvaughan_uk/status/694890382308597764)).

⁹⁸ HM Government, Written evidence submitted in response to the Environmental Audit Committee's 2013 carbon budget report, para 13, <http://www.publications.parliament.uk/pa/cm201314/cmselect/cmenvaud/60/60we02.htm>

⁹⁹ As to the failure to satisfy legislative requirements, see in particular Section 4 of this report.

¹⁰⁰ HM Government, July 2009, “The UK Low Carbon Transition Plan”, p.36 .

¹⁰¹ The Secretary of State's duty to always have in place adequate s.13 proposals and policies implies a duty to remain cognisant of the risk of falling into a breach of the Act. (According to the Ministerial Code (Cabinet Office, October 2015), Ministers have an "overarching duty" "to comply with the law"). The Secretary of State must track expected emissions as they relate to carbon budgets - as circumstances change and, in particular, as policy decisions (certainly significant policy decisions) are considered and made.

¹⁰² BBC Today Programme, 31 July 2015, 7.20am

¹⁰³ BBC News, 10 November 2015, "Energy Secretary Amber Rudd 'misled' MPs on renewables", <http://www.bbc.co.uk/news/science-environment-34774145>

¹⁰⁴ National Audit Office, July 2013, "Carbon Budget Management", p.9, para 1.6.

For reasons described in this report, ("The CCC: not a policeman"), the CCC's annual report – and the government's response to it – is important, but it does not allow for the kind of hard-edged scrutiny of progress towards meeting carbon budgets that projections can provide.

¹⁰⁵ See Section 4 of this report

¹⁰⁶ Each UEE report "includes projections of the demand for each type of fuel in different sectors of the economy. The publication discusses the projected demand for electricity and indicates what mix of generation will meet it." - Updated energy and emissions projections: 2015, <https://www.gov.uk/government/publications/updated-energy-and-emissions-projections-2015>

¹⁰⁷ On 12 May 2016, Barry Gardiner MP asked the Secretary of State whether she considered "that she is now in breach of the Act" given her government's failure to produce a Carbon Plan closing the policy gap to the fourth carbon budget. <https://hansard.digiminster.com/Commons/2016-05-12/debates/16051228000002/OralAnswersToQuestions>

¹⁰⁸ With the limited exception, in respect of the carbon budget furthest in the future, of a 'grace period' until (pursuant to section 14) a new Carbon Plan is published "as soon as is reasonably practicable"

¹⁰⁹ The Carbon Plan, p.148, Table B4

These are from DECC's UEE Projections for 2011 and published pursuant to the section 12 requirement to set out "indicative annual ranges" for emissions.

¹¹⁰ CCC, "The Fifth Carbon Budget - The next step towards a low-carbon economy", November 2015, p.53: "DECC's projections assume that current Government policies to reduce emissions deliver in full. In our 2014 and 2015 Progress Reports we noted that a number of these policies are at risk of failing to deliver due to design and delivery problems, or because they are currently unfunded".

¹¹¹ Examples include:

In 2013: "Based on current planned policies there is an expected shortfall over the fourth carbon budget" - <http://www.publications.parliament.uk/pa/cm201314/cmselect/cmenvaud/928/92804.htm>.

21 July 2015: "I think we are conscious that, with the fourth carbon budget, there is a bit of shortfall as those are the years in the mid-2020s." / "We are not there yet on the fourth carbon budget." -

Oral evidence before Energy and Climate Change Committee, 21 July 2015, "DECC priorities 2015", Qns 18, 22 (Amber Rudd, Stephen Lovegrove),

<http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/energy-and-climate-change-committee/decc-priorities-2015/oral/18799.pdf>

¹¹² DECC, November 2015, UEE Projections, p.5.

¹¹³ The Carbon Plan, p.146, para B2.10. This comparison is illustrative although, as acknowledged, direct comparisons may be difficult - see pp.51, 52 (Box 3.1) in CCC, November 2015, "The Fifth Carbon Budget; The next step towards a low-carbon economy"

¹¹⁴ Sections 11 (with s.27), 17 respectively.

¹¹⁵

The use of carbon units allows for strictly limited adjustments to be made to the net UK carbon account in response to unexpected variations; i.e. during the budgetary period itself. The limit on how many units can be used is set (and must be approved by both Houses of Parliament) only 18 months before the period of the carbon budget in question begins. Accordingly (and in accordance with section 15 of the Act), the government has stated that it "aims to meet the first four carbon budgets through domestic action. However, ... purchasing international credits remains an option" – The Carbon Plan, p.149 (para B2.16). On rolling-over excess progress: section 13 is a duty to plan to meet carbon budgets as they are - not as they might be if they were subsequently varied in accordance with the Act.

¹¹⁶ The CCC's Chief Executive, Matthew Bell, has underscored the need to avoid in future "getting so close [to future targets] that then it is very difficult or very expensive to act quickly [enough]". - Comments to the Energy and Climate Change Committee, 15 September 2015, question 34.

¹¹⁷ Oral evidence before Energy and Climate Change Committee, 21 July 2015, "DECC priorities 2015", qn 5.

¹¹⁸ ClientEarth, November 2009, "The UK Climate Change Act 2008 - Lessons for national climate laws", p.6, <http://www.clientearth.org/climate-energy/climate-energy-publications/uk-climate-act-337>

¹¹⁹ New governance is not easily defined, however one notable conception (Maria Lee, "EU Environmental Law, Governance and Decision-making", Hart Publishing, 2014 (2nd edn), p.81) stresses the following elements, each of which is clearly evident in the Act's Governance Framework: (1) Flexibility rather than hierarchical commands; the use of softer rather than harder legal measures; (2) Inclusion of a range of public and private actors in decision-making; deliberation in the public interest and a willingness to change position; (3) A strong emphasis on the generation of information and knowledge.

¹²⁰ Experience at the EU level has shown how 'new governance' legal frameworks can act as a kind of bedrock, affirming certain principles upon which practices of governance are based and subsequently refined. ("Law provides a framework for the scrutiny of existing practices, and for their continuous improvement." - Joanne Scott and Jane Holder, "Law and New Environmental Governance in the European Union" in "Law and New Governance in the EU and the US", Hart Publishing, 2006, p.234. This feature can "emerge even where it is not explicitly mandated." (p.212).)

¹²¹ Joanne Scott and Jane Holder, "Law and New Environmental Governance in the European Union" in "Law and New Governance in the EU and the US", Hart Publishing, 2006, p.239 (quoting Martin Loughlin from "The Idea of Public law", OUP, 2003.)

Recall the government's earlier intention that the Carbon Plan be a 'live' document (p. 23, footnote 79).

¹²² "Government takes seriously the statutory *and non-statutory* reporting duties which are the primary accountability mechanism for carbon budgets." - Environmental Audit Committee, "Progress on Carbon Budgets: Government response to the Committee's Fifth Report of Session 2013-14", <http://www.publications.parliament.uk/pa/cm201314/cmselect/cmenvaud/928/92804.htm>.

The CCC has elaborated its approach beyond the bare duties set out in the Act (for example in refining the form of the reports it produced under section 36 of the Act). It also understands part of its role as ensuring that government continues to do likewise. For example, it has stated: "Where data is not available or [is not high quality, representative or timely], we will work with government to try to address this." (CCC, October 2009, "Meeting Carbon Budgets – the need for a step change; Progress report to Parliament", p.92).

¹²³ The CCC is mandated by the Act to recommend the appropriate level for carbon budgets, to advise how those budgets can be met, and to oversee the progress being made towards meeting them. In its own words, it 'advises government', 'monitors progress', 'analyses science, economics and policy', and engages widely and transparently. (CCC, "About us" <https://www.theccc.org.uk/about/>) It also makes various specific recommendations; on, for example, the treatment of aviation emissions or the use of international credits.

¹²⁴ Examples of the CCC's recommendations abound, but see for a general example Table 6 (pp.40-42) in CCC, June 2015, "Meeting Carbon Budgets - Progress in reducing the UK's emissions".

¹²⁵ Environmental Audit Committee, September 2013, "Progress on Carbon Budgets; Fifth Report of Session 2013-14", p.31, para 63. Footnote 218 notes that the CCC's indicator framework includes "quantitative and qualitative headline and supporting indicators, and may not flow from, or be reflective of, policies or ambitions set out in the Carbon Plan."

¹²⁶ As the CCC described the traffic light indicators which it used in 2014 to measure progress: "it is important to note that our traffic lights compare outturn to our indicators, and are intended to be an evaluation of progress to date, rather than the likelihood of meeting future carbon budgets." - CCC, July 2014, "Meeting Carbon Budgets - 2014 Progress Report to Parliament", p.67.

¹²⁷ "In using indicators, the Committee wishes to make clear that our framework provides an indicative roadmap for emissions reduction rather than a concrete plan which cannot be deviated from." - CCC, October 2009, "Meeting Carbon Budgets – the need for a step change; Progress report to Parliament", p.92.

¹²⁸ The Carbon Budget Order 2016 No.785.

And see: CCC, <https://www.theccc.org.uk/2016/06/30/ccc-welcomes-government-backing-for-fifth-carbon-budget-and-continued-ambition-to-meet-2050-target/>

¹²⁹ Section 14

¹³⁰ Jesse Norman MP (Hansard, 18 July 2016): "It [the Emissions Reduction Plan] will provide policy direction and pathways for the transition over both the fourth and fifth carbon budgets." Baroness Neville-Rolfe (Hansard, 19 July 2016): "our new emissions reduction plan will map the transition over the period of the fourth and fifth carbon budgets- from 2022 to 2032."

¹³¹ E.g. "Government response to the CCC's Annual Progress Report 2015 - Summary", October 2015, p. 6. It has also been referred to as the "low-carbon infrastructure plan" (Jesse Norman MP, Parliamentary Under-Secretary of State for BEIS, Hansard, 18 July 2016).

¹³² A number have been highlighted in this report. Specifically with regard to closing the policy gap, the government said in 2013 that it was "working hard to develop policy options and bridge the projected shortfall". (<http://www.publications.parliament.uk/pa/cm201314/cmselect/cmenvaud/60/60we02.htm>) The Carbon Plan itself stated that it "set out the proposals and policies for meeting the first four carbon budgets" (p.3) yet it failed to do so.

¹³³ DECC, November 2015, UEE Projections 2015, p.5.

In October 2015, the government had likewise stated: "Our emissions reduction plan towards the end of 2016 will set out our proposals in full." - "Government response to the CCC's Annual Progress Report 2015 - Summary", p.6

¹³⁴ CCA, section 14.

¹³⁵ Bloomberg, 6 September 2016, <http://www.bloomberg.com/news/articles/2016-09-06/u-k-may-delay-release-of-plan-to-reach-carbon-goals-until-2017>

¹³⁶ Bloomberg, 6 September 2016, <http://www.bloomberg.com/news/articles/2016-09-06/u-k-may-delay-release-of-plan-to-reach-carbon-goals-until-2017>

¹³⁷ Nick Hurd MP, Hansard 7 September 2016, "Paris Agreement on climate change", <https://hansard.parliament.uk/Commons/2016-09-07/debates/16090723000001/ParisAgreementOnClimateChange>

¹³⁸ Environmental Audit Committee, September 2013, "Progress on Carbon Budgets; Fifth Report of Session 2013-14", p.38 (para 7), www.gci.org.uk/EAC/60.pdf

¹³⁹ (emphasis added). The Act establishes a "framework within which is mandated the development of a coherent climate policy agenda." "Legislating Against Climate Change: A UK Perspective on a Sisyphean Challenge", Modern Law Review, 2009 72(3) 412-462, p.418.

¹⁴⁰ Nick Hurd MP, Hansard 7 September 2016, "Paris Agreement on climate change". This comment was ambiguous. It may have referred to when the Emissions Reduction Plan would be published or alternatively when an announcement would be made about that publication date. On either interpretation, this is unhelpful.

¹⁴¹ CCC, June 2016, "Meeting Carbon Budgets - 2016 Progress Report to Parliament", p.37.

¹⁴² Similar recommendations were made by the House of Commons ECC Committee in its recent report, "Investor confidence in the UK energy sector" (at p.4). Another notable recommendation made there was "to build a cross-party consensus around the Plan."

¹⁴³ Hansard 7 September 2016, "Paris Agreement on climate change", <https://hansard.parliament.uk/Commons/2016-09-07/debates/16090723000001/ParisAgreementOnClimateChange>

¹⁴⁴ Jesse Norman, Minister for Industry and Energy, said in July 2016 that "The government have already begun to talk positively with businesses, consumers and civil society on the development of our policies and proposals, and will continue to do so in the coming months." - Hansard, 18 July 2016, <https://hansard.parliament.uk/commons/2016-07-18/debates/1de5b49c-3090-4818-a0ed-6a8aa1469c35/DraftCarbonBudgetOrder2016>

¹⁴⁵ See footnote 133 and, more recently: "We would like to do it in 2016." - Nick Hurd MP, Hansard 7 September 2016, "Paris Agreement on climate change", <https://hansard.parliament.uk/Commons/2016-09-07/debates/16090723000001/ParisAgreementOnClimateChange>

¹⁴⁶ Within the meaning of sections 13, 14.

¹⁴⁷ House of Commons Energy and Climate Change Committee report, June 2016, "Investor confidence in the UK energy sector", p.4.

¹⁴⁸ See pages 25-26.

¹⁴⁹ CCC, June 2016, "Meeting Carbon Budgets - 2016 Progress Report to Parliament", p.21.

For an overview of the CCC's recommendations, see for example Table 1 (pp.16-17), Table 1.3 (p.35).

¹⁵⁰ CCC, June 2016, "Meeting Carbon Budgets - 2016 Progress Report to Parliament", pp.13-14.

The CCC has, on a number of occasions, stressed the importance of CCS development. See eg.: Letter from Lord Deben, CCC Chair to the Secretary of State, 6 July 2016, "A strategic approach to Carbon Capture and Storage", refers to an estimate that "the costs of meeting the UK's 2050 target ... would approximately double without CCS." The letter describes how the least-cost pathway implies "deployment of CCS at scale from the mid-2020s and increasing thereafter. This will require UK action to start now."

¹⁵¹ In particular, the Department for Communities and Local Government, the Department for Environment, Food and Rural Affairs, and the Department for Transport.

¹⁵² The Treasury is not only a powerful department within government. It has also - at times at least - sought to exercise a negative influence on climate ambition:

The Guardian, 22 July 2014, "George Osborne defeated in attempt to weaken UK carbon budget", <http://www.theguardian.com/environment/2014/jul/22/george-osborne-defeated-in-attempt-to-weaken-uk-carbon-budget>

The NAO's 2013 report ("Carbon Budget Management") suggests (at para 1.16) that the NET Board may increasingly have been sidelined by the Economic Affairs Committee; a cabinet committee chaired by the Chancellor.