The coordination of climate finance in the United Kingdom

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Key messages

- Political and policy certainty and consistency is vital to providing an attractive investment environment. A lack of consistency, even if only rhetoric, undermines investor confidence which takes time to rebuild. Investors are generally operating on a longer time scale than politicians, so changing politics has a big impact. Cross-party consensus is vital, as is cross-government alignment.
- Institutions are important but they are not a guarantee of successful engagement or effective climate-related investment. They need consistent political support and funding, as well as embedding positive behaviour across organisations.
- The UK Climate Change Act has been absolutely vital to transparency and accountability for climate change and carbon reduction targets. Creating carbon budgets, and an independent institution in the form of the Committee on Climate Change to monitor progress, has brought openness and the tools to hold successive governments accountable.
- Stakeholder engagement should occur throughout the process of climate policy and investment – from inception to implementation. It should be transparent and inclusive, with genuine consideration given to the input received.
- UK climate policy and investment is driven and heavily influenced by the actions of the UK government. It needs to be more inclusive of other levels, particularly local government which should be playing a much more prominent role in implementation of climate policy and investment, and empowering and engaging citizens, as well as helping to shape policy.

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The views presented in this paper do not necessarily represent the views of ODI, Future Climate or CPR. In particular, no responsibility for the opinions here expressed should be attributed to the Government of the Federal Republic of Germany or GIZ.

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Abbreviations

ASC	Adaptation Sub Committee (of the Committee on Climate Change)
BERR	Department for Business, Enterprise and Regulatory Reform
BIS	Department for Business, Innovation and Skills
CCA	Climate Change Act 2008
CCC	Committee on Climate Change
CO_2	Carbon Dioxide
DCLG	Department for Communities and Local Government
DECC	Department for Energy and Climate Change
Defra	Department for Environment, Food and Rural Affairs
DfID	Department for International Development
DfT	Department for Transport
DH	Department of Health
EU	European Union
EC	European Commission
FCO	Foreign and Commonwealth Office
FOI	Freedom of Information
GGEI	Global Green Economy Index
GHG	Greenhouse Gas
GIB	Green Investment Bank
HMT	Her Majesty's Treasury
LGA	Local Government Association
MOU	Memorandum of Understanding
MP	Member of Parliament (UK)
NIS	National Indicator Set
UK	United Kingdom
UNFCCC	United Nations Framework Convention on Climate Change

1 Introduction

This case study maps recent domestic responses to climate change policy and investment in the United Kingdom[1]. Based on the institutions, actors and channels for climate policy and investment in the UK, this case study aims to understand the processes around institutional governance in order to inform climate finance developments in other countries.

2 Mapping the institutions and experience to date

Climate change in context

Carbon dioxide accounts for the majority of UK's GHG emissions, and the Energy Sector is the predominant source. The reduction in GHG emissions since 1990 has been mainly driven by restructuring in the energy supply industry (concerted move away from coal and oil generation towards use of gas), energy efficiency, pollution control measures in the industrial processes sector and other policies that reduced emissions of non-CO2 GHGs, most notably the increase in landfill methane capture and oxidation.[2]

The table below contains the Greenhouse Gas Emissions by sector for the UK and the reductions achieved against a 1990 baseline.

[1] The United Kingdom comprises the countries of England, Scotland, Wales and Northern Ireland (and Overseas Territories). The UK Government develops policy and legislation for England, and where powers are reserved, for the other administrations of the UK. For its international commitments, such as the UNFCCC and Kyoto Protocol, and EU obligations, the UK Government is ultimately responsible for meeting them. However, many elements of climate change mitigation and adaptation have been devolved – with each of the administrations at different points in the devolution process. The liberalised energy market operates across Great Britain (England, Scotland and Wales) so much of the policy and regulation covering the energy market and/or implemented through it do not apply in Northern Ireland. For the purposes of this case study, the focus will be on policy, legislation and investment from the UK Government.

[2] UK Department of Energy and Climate Change, 2013. ***The UK's Sixth National Communication and First Biennial Report under the UNFCCC,*** London: DECC. p12

The UK has international targets for reducing greenhouse gas (GHG) emissions. The Kyoto Protocol requires that UK GHG emissions are reduced by 12.5% below base year levels over the 2008-12 period. In 2011, UK's GHG emissions were 29% below 1990 base year levels and therefore significantly ahead of their Kyoto targets.[3]

Table 1: UK UNFCCC Annex 1 GHG Emissions 2011 (CAIT)[4]

Emissions by Sector	Total (MtCO2e)	Per Capita (tCO2e)	Absolute Change from 1990
Energy	465.95	7.43	-23.71%
Industrial Processes	26.47	0.42	-51.34%
Solvent and other product use	n/a	n/a	n/a
Agriculture	46.67	0.74	-19.74%
Land use change and forestry	-3.31	-0.05	-182.28%
Waste	17.36	0.28	-63.43%

Energy Emissions by Sub-Sector	Total (MtCO2e)	Per Capita (tCO2e)	Absolute Change from 1990
Energy Industries	180.15	2.87	-24.24%
Manufacturing Industries and Construction	68.71	1.09	-34.86%
Transport	116.23	1.85	-0.02%0-=
Other Sectors	86.56	1.38	-21.70%
Energy - Other	2.78	0.04	-47.95%
Fugitive Emissions from Fuels	11.52	0.18	-67.39%

Using the UNFCCC sectoral classification for GHG emission, Energy, Energy Industries and Transport are the dominant sectors in the UK, with Energy accounting for 84.2% of total emissions.[5] An examination of emissions by end user is a more useful classification and is generally how policy and investment is framed in the UK.

The top three (3) sectors of GHG emissions by end user are business, transport and residential which accounted for 79.6% in 2011 (see Table 2 below).

[3] UK Department of Energy and Climate Change, 2013. **The UK's Sixth National Communication and First Biennial Report under the UNFCCC,** London: DECC. p20

[4] World Resources Institute, 2013. ***WRI Climate Data Explorer - CAIT 2.0.*** http://cait2.wri.org/profile/United%20Kingdom [Accessed 10 February 2014]

[5] World Resources Institute, 2013. ***WRI Climate Data Explorer - CAIT 2.0.*** http://cait2.wri.org/profile/United%20Kingdom [Accessed 10 February 2014]

Table 2: Top 3 sectors – GHG by end use[6]

End Use	End Use Details	Emissions in 2011 (MtCO2e)	Proportion of total emissions (less sinks)
Business	The business sector covers emissions from stationary combustion in all industrial and commercial sectors (including the combustion of fuel to provide the heat required for certain industrial processes or for heating), industrial off-road machinery, refrigeration and air conditioning, and the use of fluorinated gases for other applications. Emissions have fallen since 1990 in the business sector. In 2011, emissions from this sector were estimated to be 29% below 1990 levels	175.0	31.6%
Transport	This sector includes emissions from domestic aviation, road transport, diesel railways, domestic shipping (coastal, inland waterways), fishing and aircraft support vehicles. Transport accounted for around 24% of UK GHG emissions in 2011, representing a reduction of 3% since 1990. Road transport is the most significant source of emissions in this sector and in particular the changes seen in passenger cars heavily influence the transport category	134.8	24.4%
Residential	Emissions in the residential sector arise from fuel combustion for heating, cooking, garden machinery, fluorinated gases released from aerosols and metered dose inhalers (such as those used for asthma sufferers), and carbon emissions released from the breakdown of consumer products (such as detergents). In 2011, residential sector emissions (including those derived from electricity use in the sector) were estimated as 130.5 MtCO2e, compared to 1990 emissions of 169.7 MtCO2e, a reduction of approximately 24%.	130.5	23.6%
Total Emissions (less sinks)		553.1	100%

The UK has a strong evidence and reporting framework in place for climate change risks and adaptation, through the Climate Change Act 2008 (see below). The first Climate Change Risk Assessment Evidence Report identified the UK's vulnerability to: severe weather; inland and coastal flooding; prolonged cold periods; drought and water shortages; hotter than average temperatures; and, severe air pollution.[7] According to the World Resources Institute, the low vulnerability score and high readiness score of the United Kingdom conclude that adaptation challenges still exist, but the United Kingdom is well positioned to adapt. The United Kingdom is the 8th least vulnerable country (although it was previously the least vulnerable) and the 17th most ready country.[8]

[6] UK Department of Energy and Climate Change, 2013. ***The UK's Sixth National Communication and First Biennial Report under the UNFCCC,*** London: DECC. p63

[7] Department for Environment, Food and Rural Affairs, 2012 ***The UK Climate Change Risk Assessment 2012 Evidence Report*** http://randd.defra.gov.uk/Default.aspx?Module=More&Location=None&ProjectID=15747 [Accessed 10 February 2014]

[8] University of Notre Dame, 2012. ***ND-GAIN: Notre Dame Global Adaptation Index - UK Country Profile*** http://index.gain.org/country/united-kingdom [Accessed 10 February 2014]

Policies and legislation adopted to address climate change

Climate change policy and legislation in the UK has not developed in a linear manner, and much of it is focused on specific end-use sectors, aimed at reducing carbon dioxide emissions. There is a plethora of policy and legislation intended to reduce the use of energy and increase renewable energy generation in all sectors (see Annex II for more detail).

Arguably the biggest legislative contribution has been the Climate Change Act 2008. It is a framework piece of legislation which established:

- 2050 carbon emissions reduction target, committing the government to reducing CO_2 emissions by at least 80% in 2050 from 1990 levels.
- Carbon Budgets which require the government set legally binding budgets for greenhouse gas emissions over given five year periods. The Committee on Climate Change (CCC) provides advice to government on the level at which the carbon budgets should be set, although the government does not have to accept the advice.
- The CCC which advises government on emissions targets, carbon budgets and reports to Parliament on progress made in reducing greenhouse gas emissions. The CCC includes the Adaptation Sub-Committee (ASC) which performs a similar function on adaptation and associated risks.
- A National Adaptation Plan which requires the government to assess the UK's risks from climate change, prepare a strategy to address them, and encourage critical organisations to do the same.[9]

The CCA was the culmination of a civil society campaign known as *The Big Ask* which started in 2005. A broad coalition of environmental and civil society groups got behind the campaign to develop a climate change law, which eventually achieved cross-party support.[10]

European Directives have also had a significant influence on UK climate change policy and legislation, particularly on renewable energy generation, energy efficiency and car emissions standards, as well as the EU Emissions Trading Scheme. There is an EU target for renewable energy generation which is seen by many as a key driver for investment in renewables in the UK, particularly at a time when public investment and support is being called into question by some MPs.

The UK's membership of the EU is currently the subject of intense political debate, with many members of the Conservative Party (the majority partner of the current Coalition government) opposing the influence of EU policy on UK domestic policy. Since coming to power, the government has taken an approach of not 'goldplating' EU Directive transposition in the UK, implementing only the minimum requirements. The government has also taken a negotiating position on EU policy, which seeks to ensure that it does not go beyond what the UK is already doing or has committed to do.

The EU also has a range of funding streams which support low carbon policy and activity, some of which supports projects in the UK. These funding streams often support action by local government, non-government organisations, regional organisations/coalitions and other agencies. Further detail on European policies in contained in Annex I.

[9] http://www.theccc.org.uk/tackling-climate-change/the-legal-landscape/global-action-on-climate-change/
[10] http://www.foe.co.uk/news/big_ask_history_15798

Unfortunately, however, climate-related policy still largely exists as a separate policy area rather than one which is embedded across government and the economy. Whilst carbon budgets are a positive addition to the regulatory landscape, they are not yet linked to financial budgets or broader economic/industrial policy.

Decisions across government are not always consistent with a transition to a low carbon economy, with, for example, the Secretary of State for Communities and Local Government, rejecting several planning applications for onshore wind farms, and the current commission looking into airport expansion in London and the South East, which is expected to recommend airport expansion. The government has also recently lowered the household energy efficiency targets of its key policy, the Energy Companies Obligation, as well as reducing support for smaller scale renewable energy generation through the Feed-in Tariff.

The climate and carbon reduction policy and funding is still subject to the vagaries of politics in the UK. Following the passing of the CCA, there was a sense that climate policy had finally transcended party politics and was entering a new era of consensus for tackling the problem. More recently, however, both the CCA and other climate policy and investment has been called into question by some MPs, including the former Environment Secretary. There is also some tension between the two political parties of the coalition government which often plays out in climate change policy, in particular, negotiation of the 2030 EU targets and the adoption of the 4th carbon budget.

The lack of consistency and regular changes to policy in this area are creating a climate of uncertainty, which is not attractive to potential investors. As the Global Green Economy Index recently noted: "while the United Kingdom performs adequately in most areas of the GGEI, it doesn't excel on any one topic, possibly due to inconsistent political rhetoric and policy related to green economy there".[11]

[11] Dual Citizen LLC (2014) ***The Global Green Economy Index 2014: Measuring National Performance in the Green Economy*** 4th edition http://dualcitizeninc.com/GGEI-Report2014.pdf p03

3 Analysing institutional arrangements for climate change and finance

Overview

National level

The UK has developed a formalised set of institutions for addressing climate change, although the mechanisms for stakeholder engagement are rarely formalised beyond public consultation on policy towards the end of the process. In some instances, government departments set up advisory groups or panels consisting of stakeholders and/or experts, to provide input into the development and/or delivery of certain policies. The influence of these advisory panels varies depending on the policy in question and how contentious it is.

A wealth of institutions are involved in the UK's response to climate change, and efforts to direct finance to this end (see Annex II for a detailed listing). Legislation on climate change, through the CCA, provides a macro framework for action. Key institutions involved in efforts to finance low carbon and climate compatible development include the Department of Energy and Climate Change (DECC) which leads on mitigation policy and energy supply, the Department for Environment, Food and Rural Affairs (Defra) which is responsible for the UK's adaptation policy and investment. Through its oversight of regulation of energy related investment and infrastructure, DECC influences investment choices, at both centralised and decentralised levels.

In addition, the UK has created two new institutions to support its climate change response: first, the national Climate Change Committee provides oversight of the impact of efforts to respond to climate change, including monitoring progress towards meeting carbon budgets. Second, the UK has launched a Green Investment Bank sponsored by the Department for Business, Innovation and Skills which supports investment in low carbon and environmentally sustainable businesses, infrastructure and enterprises. Finally, the economics and finance department, Her Majesty's Treasury (HMT) also plays a vital role in the allocation of public funds for low carbon and climate resilient economic development within the UK.

HMT allocates funds to several Government Departments and institutions with responsibility for climate change mitigation and adaptation. Along with those departments and institutions mentioned above, funding is also allocated to the Department for Transport, Department for Communities and Local Government and the Department of Health for climate-related activities, although it is still peripheral to their primary operations.

The Departments then commit funds directly to specific elements of climate change or they delegate responsibility to other organisations, known as non-departmental

public bodies (NDPBs). The key institutions – Department of Energy and Climate Change, HM Treasury, Green Investment Bank and the Committee on Climate Change – are explored in greater depth below. Further details on all of the institutions involved in climate change efforts in the UK are contained in the following Annex III.

Local government

Local government[12] has limited formal role on climate change, although it is widely recognised that they are well-placed to lead efforts on both mitigation and adaptation locally. On mitigation, they have responsibilities under the Home Energy Conservation Act, although these are largely on reporting, but not necessarily delivering, changes to the energy efficiency of houses within their boundaries. They do have some responsibilities for flood risk management via their planning powers.

Local government also took over responsibility for public health in April 2014, so now have public health risk management, planning and strategic roles which ideally should take account of climate-related health impacts. However, it is not yet clear that these impacts are being reflected in plans.

Between April 2008 and March 2011, local authorities' performance was monitored against a set of national indicators which included carbon emissions reduction and adaptation planning. These indicators provided a focus for action locally, and helped give political support to investment. However, the Secretary of State for Local Government announced the scrapping of the National Indicator Set in October 2010.[13]

Local government has been subject to budget cuts and council tax freezes since the 2010 election, and have had to substantially reduce staff numbers. As a result, teams who were previously developing and implementing climate-related programmes have been cut or now no longer exist. A survey of local authorities by Green Alliance found that 37% of councils were de-prioritising action on climate change (or that it never was a priority), 28% are narrowing their ambitions and not working on wider environmental issues and only 35% were remaining firm on their commitment.[14]

DECC's relationship with local government has also been inconsistent, although it has a Memorandum of Understanding (MOU) with local government via the Local Government Association. In 2010, the MOU was agreed but very little action took place. The MOU has since been renegotiated in 2013, and is far less ambitious in scope or action.

Local government is seen by many as an important delivery agent for emissions reduction activity and community empowerment and engagement, but this is not often translating into the necessary support from DECC, DCLG or HMT.

Private sector

The private sector is seen as a key delivery and investment partner for government. It is also influential in the development of policy and regulation. Given the

[12] Local government is a devolved power in the UK, so this section refers to local government arrangements set by UK government which apply to England only. Powers, duties and responsibilities vary in Scotland, Wales and Northern Ireland.

[13] http://archive.audit-commission.gov.uk/auditcommission/performance-information/performance-data-collections-and-guidance/nis/pages/default.aspx.html

[14] Green Alliance, 2011 ***Is Localism Delivering for Climate Change: emerging responses from local authorities, local enterprise partnerships and neighbourhood plans*** http://www.green-alliance.org.uk/resources/Is%20localism%20delivering%20for%20climate%20change.pdf p2

constraints of public finances, government has increasingly been looking to the private sector to provide funding for low carbon initiatives, including renewable energy and household energy efficiency. The creation of the Green Investment Bank has also been seen as an important vehicle for leveraging private sector investment.

Civil society

Civil society plays an important role in low carbon policy and investment. It has been instrumental in advocating for initiatives and improvements, including the CCA and the creation of the Green Investment Bank. DECC often consults with civil society groups, who are regularly part of workshops and consultation panels for the development of the details of policy and regulation. For example, several working groups operated between 2011 and 2013 to support DECC in creating the Green Deal energy efficiency financing policy.

Civil society also plays an important role in holding government to account and challenging its decisions. They also help to raise the public profile of issues and developments, such as hydraulic fracturing (or fracking as it is more commonly known), which are seen to be running contrary to carbon reduction targets.

Department of Energy and Climate Change

The Department of Energy and Climate Change (DECC) was created in October 2008, as part of a Cabinet re-shuffle by the then Labour Prime Minister, Gordon Brown. The new department brought together energy policy - previously led by the Department for Business, Enterprise and Regulatory Reform (BERR) – with climate change mitigation policy – led by the Department for Environment, Food and Rural Affairs. It was the first time that energy supply and demand management had been under the auspices of the same department.

The Department has a vital and leading role to play in the Government's programme to turn the UK into a low carbon economy. DECC leads on Public Service Agreement[15] 27 - 'To lead the global effort to avoid dangerous climate change' - and is organised to deliver against seven Departmental Strategic Objectives (DSOs). These are to:

1. Secure global commitments which prevent dangerous climate change;
2. Reduce greenhouse gas emissions in the UK;
3. Ensure secure energy supplies;
4. Promote fairness through climate and energy policies at home and abroad;
5. Ensure that the UK benefits from the business and employment opportunities of a low carbon future;
6. Manage energy liabilities effectively and safely; and
7. Develop the Department's capability, delivery systems and relationships so that it serves the public effectively.[16]

DECC is a ministerial department represented at Cabinet level by the Secretary of State for Energy and Climate Change. The Secretary of State is supported by a Minister of State and two Parliamentary Under-Secretaries of State, each with specific portfolio responsibilities. These positions are all filled by elected members of the government.

[15] Public Service Agreements set out departmental aims and objectives, targets and plans for meeting targets across government.
[16] http://www.civilservice.gov.uk/wp-content/uploads/2011/09/DECC-phase2-Dec2009.pdf

The Department is run by a senior civil servant, or Permanent Secretary who is appointed by the Secretary of State, and approved by the Prime Minister. The Permanent Secretary is supported by four Directors General, each of whom have specific directorates[17], and the Chief Scientific Advisor.

DECC also has a Non-Executive Board which provides oversight and challenge. It is comprised of non-government stakeholders, generally drawn from the private/commercial sector. Non-Executive Board members are appointed by the Secretary of State.

They exercise their role through influence and advice, supporting as well as challenging the Department's executive. They advise on performance, operational issues, and on the effective management of the department. They also provide support, guidance and challenge on the progress and implementation of the business plan, and are involved in recruiting, appraising and ensuring appropriate succession planning of senior executives. They form committees responsible for audit, risk and remuneration. To share best practice and to ensure departments learn from the successes and failures of comparable organisations, they meet regularly with other non-executives across government and the Government Lead Non-Executive Board member[18]. DECC also has responsibility for eight agencies and public bodies.

DECC's Departmental Expenditure Limit for 2013/14 is £1.384bn resource and £2.185bn capital, with the majority of capital funding allocated to nuclear decommissioning.[19] This budget makes DECC one of the smaller government departments by expenditure. Like most government departments, it has also suffered budget cuts since 2010.

DECC priorities

The Department has been set five priorities by the Coalition Government:

1. Promote UK Growth by: Maximising the benefits of essential investment in energy infrastructure to jobs, the supply chain, and business opportunities in the UK and abroad. Facilitate the sustainable energy investment that drives greater efficiency and maintains a diverse energy mix, thereby protecting UK consumers and businesses from long-term international fuel price volatility and minimising energy costs;
2. Save energy with the Green Deal[20] and other policies and support vulnerable consumers (reduce energy use by households, businesses and the public sector, and help to protect the fuel poor);
3. Deliver secure energy on the way to a low carbon energy future (reform the energy market to ensure that the UK has a diverse, safe, secure, and affordable energy system and incentivise low carbon investment and deployment);
4. Drive ambitious action on climate change at home and abroad (work for international action to tackle climate change, and work with other government departments to ensure that we meet UK carbon budgets efficiently and effectively);

[17] Directorates are: International, Science and Resilience Group; Consumers and Households Group; Markets and Infrastructure Group; and Finance and Corporate Services Group.
https://www.gov.uk/government/organisations/department-of-energy-climate-change

[18] https://www.gov.uk/government/news/decc-appoints-non-executive-director

[19] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/274908/Mid-year_Report_2013_230114.pdf p12

[20] Green Deal is the Coalition government's headline policy for a market-based approach to home energy efficiency. It includes a pay-as-you-save financing mechanism, along with a stronger consumer protection framework.

5. Manage our energy legacy responsibly and cost-effectively.[21]

The priorities are supposed to align with DECC's policy development and funding activity, although they are fundamentally driven by the Government's policy priorities outlined in their election manifestos and the Coalition Agreement (the agreement made on taking office between the two political parties that form the UK government).

DECC is still a relatively new Department and has not fully coalesced the two, often competing areas, of energy supply and demand side management. This tension is largely a result of the relative power, funding and influence of the two parts which were brought together to form DECC. The supply side, from BERR, was more influential on government policy than the energy efficiency side within DEFRA.

As a result, certain areas of policy have been less well developed or understood – particularly those on the demand side, and those addressing consumer/public issues, for example, household energy use, small-scale renewable energy. The approach needed is very different from that taken for large scale supply side projects, but this is something with which policy-makers have struggled.

Political considerations

It is impossible to ignore the impact of politics on energy and climate change policy. It has become an increasingly politicised area, with many government back-bench MPs ideologically opposed to action on climate change, such as investment in renewable energy. The Prime Minister and Chancellor have also intervened in energy and climate change policy in recent times, as a result of this political pressure.

There is also an ideological approach to energy and climate change policy to move away from subsidies to the creation of a market. In some, more developed, areas this is a transition that could be successful, however, in other areas, such as household energy efficiency where there is very little latent demand, a considerably longer transition period is needed.

Another challenge presented by the politicisation of the policy and investment environment, is that it takes a very short term approach to implementation – not leaving room for properly trialling new approaches or allowing for a transition and the development of supply chains.

Politicisation has also created an environment of uncertainty which increases the risks for private sector investment. This is evidenced by the current Electricity Market Reform process, which is creating uncertainty and large private investors are now withdrawing their support for offshore wind projects, amongst other developments.

Cross-departmental collaboration

DECC is the lead department for energy and climate change, however, it does not appear that they always have the necessary influence across government to achieve policy outcomes. They are a relatively small department with one of the smaller budgets. They work with some other departments frequently – Department for Transport, Department for Communities and Local Government, and Department for Environment, Food and Rural Affairs – particularly on oversight and co-ordination of carbon budgets but their influence on cross-cutting policy is limited.

[21] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/274908/Mid-year_Report_2013_230114.pdf pp7-10

For example, DECC is currently working on minimum energy performance standards for privately rented homes, responsibility for which predominantly rests with the Department for Communities and Local Government who are not inclined to increase the regulatory or financial burden on private landlords. This has resulted in a lengthy negotiation process, likely to end in a compromised solution which is less ambitious than originally envisaged.

DECC also works with other departments from time to time, including the Department for Work and Pensions and Department of Health, on issues such as fuel poverty, however, their involvement is generally peripheral. Cross-government co-ordination is generally at the Cabinet level (i.e. political) where the departments are represented by Secretaries of State. DECC, like all other departments, regularly interacts with HMT on matters of funding and policy. Many stakeholders believe that HMT dominates the relationship through their control of financial resources, although they do not technically control policy.

One major area of cross-departmental collaboration, however, has been on international climate finance through the UK's international climate fund which brings DECC, DFID, and Defra together with inputs from Treasury and the FCO to deliver funding to developing countries to help them address climate change.

Stakeholder engagement

DECC does undertake a considerable amount of both formal and informal stakeholder engagement. The formal engagement is generally through a public consultation process, which generally takes place towards the end of policy development, and opportunities to influence the outcome are limited. Many stakeholders see this as a box-ticking exercise, and it is not uncommon for DECC to overrule the dominant views which arise in the consultation process in order to proceed with a policy direction already agreed within government.

As part of policy development process, DECC's analysts prepare Impact Assessments. The Impact Assessments are usually published alongside the public consultation document and contain a detailed analysis of the policy options and their cost-effectiveness. The Impact Assessment process is often opaque and does not generally have much stakeholder input. It does not always have as much influence over policy decisions.

Stakeholder engagement during the policy development process varies greatly. DECC will often host workshops and roundtables, as well as set up specific working groups to support policy development. These are not generally open to everyone, although they tend to have representation of a cross-section of organisations, such as industry, academia/researchers, and environment and consumer NGOs. However, it is often the same groups/individuals who are invited to these forums which raises the criticisms of exclusivity and lack of transparency, and calls into question how representative the working groups are.

Stakeholder engagement also occurs at ministerial level with individuals or groups meeting with DECC Ministers in order to influence policy. Details of these meetings are not often made public, although environment NGOs will often submit Freedom of Information (FOI) requests in order to find out who Ministers have been meeting with on certain policy issues. DECC also seconds experts, more often from the energy industry or large private sector firms, into the Department to assist with the policy development process. The legitimacy and transparency of this has been questioned by many stakeholders, particularly NGOs. DECC has recently

published a list of secondments in response to a FOI request from Greenpeace's EnergyDesk.[22]

HM Treasury

Her Majesty's Treasury (HMT) is the economics and finance ministry of the UK, maintaining control over public spending, setting the direction of the UK's economic policy and working to achieve strong and sustainable economic growth.[23] Most countries, particularly in Europe, have separate ministries for these two key functions. The amalgamation of economics and finance functions gives HMT considerable power and influence over government policy and investment decisions, making it arguably the most powerful government ministry.

Organisation and priorities

HMT is led by the Chancellor of the Exchequer, the second most influential position in the government behind the Prime Minister. At HMT, the Chancellor is supported by the Chief Secretary to the Treasury and four Secretaries to the Treasury. All of these positions are members of the government – elected, except for the representative in the House of Lords.

Administratively, HMT is led by the Permanent Secretary to the Treasury, a civil servant, and is supported by two Second Permanent Secretaries and four Directors General with responsibility for areas including: International and EU; Financial Services; and Tax and Welfare.[24] HMT also has a Board which advises and supports the department's ministers, and operationally turns policy into reality. The board:

- Monitors and improves the Treasury's performance making sure opportunities and risks are recognised in both the short and long term
- Ensures Treasury staff and resources are correctly allocated
- Protects and enhances the Treasury's reputation as a world-class finance ministry

The HMT board is made up of the permanent secretary, the second permanent secretaries, the directors general, and the directors of finance, strategy and corporate services, as well as non-executive members.[25]

HMT is responsible for:

- Public spending including departmental spending, public sector pay and pension, annually managed expenditure and welfare policy, and capital investment
- Financial services policy: including banking and financial services regulation, financial stability, and ensuring competitiveness in the City
- Strategic oversight of the UK tax system: including direct, indirect, business, property, personal tax, and corporation tax
- The delivery of infrastructure projects across the public sector and facilitating private sector investment into UK infrastructure
- Ensuring the economy is growing sustainably

[22] http://www.greenpeace.org.uk/newsdesk/energy/investigations/fois-reveals-british-gas-role-energy-policy
[23] https://www.gov.uk/government/organisations/hm-treasury/about
[24] https://www.gov.uk/government/organisations/hm-treasury
[25] https://www.gov.uk/government/organisations/hm-treasury/about/our-governance

Its stated priorities are:

- Achieving strong and sustainable growth
- Reducing the deficit and rebalancing the economy
- Spending taxpayers' money responsibly
- Creating a simpler, fairer tax system
- Creating stronger and safer banks
- Making corporate taxes more competitive
- Making it easier for people to access and use financial services
- Improving regulation of the financial sector to protect customers and the economy[26]

Relationship with government departments

HMT sets departmental budgets through the Spending Review process. Spending Reviews are published, on average, every three years and align departmental spending limits with political priorities which have been set out in the election manifesto of the government, or in the case of the current Coalition government, as set out in the Coalition Agreement.

Theoretically, it is up to each department how they then commit their budget, however, HMT often places conditions upon spending. HMT approval is also required for any substantial financial commitment and/or any initiatives which might be considered novel or contentious, or which might impact upon other government areas. Spending priorities are also constrained by politics, and regularly change both within the financial year and within the spending review period.

Each year, usually in February/March, the Chancellor announces a Budget for the year which includes other priorities which were not contained within the spending review or which have arisen in the meantime. An Autumn Statement is also made by the Chancellor in November/December each year and is similar to the Budget, although usually smaller.

HMT interacts with all other departments, including DECC, frequently. Within HMT, there are teams allocated to different areas of tax and spending. Approximately 20 people work, either fully or partially, on energy and climate change.

HMT seeks to ensure that decisions made by departments represent value-for-money, are affordable and the most efficient way of delivering, given the current funding constraints. These constraints often create tension between HMT and DECC (and other departments). Some experts have called for the break-up of HMT to ensure a more balanced approach, incorporating longer-term considerations into policy and investment decisions.[27]

The departments tend to undertake stakeholder engagement on policy and investment areas, rather than HMT – so DECC is deemed to have the lead on engagement in this area. HMT does, however, meet with stakeholders, including industry and NGOs at both ministerial and civil servant level, and is doing it more now than they have in the past. This is generally conducted outside any formal advisory or consultation process, so does lack transparency – both on which

[26] https://www.gov.uk/government/organisations/hm-treasury/about
[27] http://www.green-alliance.org.uk/Reforming_the_Treasury_release.php

organisations are being engaged with, and which policy and investment decisions are being discussed.

Green Investment Bank

Origins

The Green Investment Bank (GIB) is the first of its kind in the world, a public bank investing specifically in sustainable projects. It was officially launched in late 2012 and has a budget of £3.8 billion which it invests in order to stimulate private investment in priority areas. HMT will not permit the GIB to borrow until the government's wider debt reduction targets have been met.

The concept of a UK Green Investment Bank was first proposed around the time of the global financial crisis and subsequent economic crisis in 2008-09, when the then government was considering a stimulus package. A group of organisations, including think-tanks E3G and Climate Change Capital, were exploring how to green the stimulus package and found that there were not really any obvious mechanisms for getting public money into the economy, so they explored how the UK government could play a greater role. In looking across Europe, most countries had public banks which were taking on this role, something the UK did not have.

Following research and consultation with a range of organisations, particularly in the private sector, E3G and Climate Change Capital published a paper advocating the creation of a green infrastructure bank in 2009. The paper, entitled *Financing the UK's Low Carbon Transformation*, proposed the establishment to "catalyse private sector investment through the effective and efficient use of public finance to implement low carbon infrastructure investment through a variety of public/private finance approaches".[28]

Many other organisations were then involved in campaigning for the creation of the Green Investment Bank, led by Friends of the Earth and Transform UK. The proposal for a GIB was their main recommendation in the lead up to the Budget at the end of March 2009. Friends of the Earth coordinated a letter to the Guardian just before the Budget from over 20 companies from the green business sector supporting the proposition.[29]

Unfortunately, there was no appetite for the proposal within HMT or the government at the time. However, the idea seeded a wider political campaign in the lead up to the general election in May 2010. The Conservative Opposition was looking for iconic ideas for their election manifesto, and were interested in exploring the concept further. In Autumn 2009, the then Shadow Chancellor announced the formation of an independent and non-partisan advisory group, the Green Investment Bank Commission, to identify how Britain could better support and accelerate the private sector investment required to deliver the UK's transition to a low carbon economy.[30]

Just prior to the general election, the then Chancellor handed down Budget 2010, in which he committed £1 billion to a Green Investment Bank. The GIB Commission reported in June 2010, after the general election and subsequent change of government.

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[28] http://www.e3g.org/library/green-investment-bnak-the-history

[29] http://www.e3g.org/library/green-investment-bnak-the-history

[30] http://www.e3g.org/images/uploads/Unlocking_investment_to_deliver_Britains_low_carbon_future_-_Green_Investment_Bank_Commission_Report_June_2010.pdf p vi

In the period before State Aid approval, a precursor investment team, UK Green Investments, was established, operating within the Department for Business, Innovation and Skills, to develop the investment strategy and be responsive to deal opportunities. During this period, a number of mandates were competitively tendered and awarded to external fund managers, focusing on smaller deals within the waste and energy efficiency sectors. Greensphere Capital and Foresight Group were mandated to co-invest equity in small scale waste infrastructure projects, and Sustainable Development Capital and Equitix to co-invest in non-domestic energy efficiency projects. Following GIB becoming operational in October 2012 when it was granted State Aid approval by the European Commission, the pipeline of investment opportunities was transferred to GIB.[31]

Organisation and mission

The GIB has a Board comprising the Chair, Chief Executive, a Senior Independent Director, six Non-Executive Directors and a Shareholder Representative Director.[32] The organisation is managed by the Chief Executive who is supported by an Executive Team and three Executive Committees – Risk and Compliance, Investment and Portfolio Management.[33] The GIB currently employs c100 staff recruited predominantly from the private sector. The objectives of the company are to facilitate, engaging in and encouraging investment, lending and related activates which the board considers, likely to support business, enterprise, industry or infrastructure that will contribute to GHG emission reduction, advancement of efficiency of natural resource use, protection of the environment, biodiversity and sustainability. Responsibilities are therefore relatively wide ranging, under the guidance of the Board.[34]

GIB is sponsored by the Department for Business, Innovation and Skills. It was suggested that there is tension in the relationship with HMT, as it is an area of central government spending over which they do not have control and ideologically, public investment crowds out the private sector.

The GIB's mission is: "to accelerate the UK's transition to a green economy and to create an enduring Institution, operating independently of Government." It therefore, has a "double bottom line", which places its green objective and financial returns on equal footing, although the bank does not see these objectives as conflicting. In their own words: "We are unashamedly and unambiguously a 'for profit' bank, because only by making profit will we build a sustainable bank, capable of making an enduring impact on the challenge of accelerating investment in the transition to a greener economy".[35] During its establishment, GIB obtained EU State Aid approval for its areas for investment, which are:

- Offshore wind
- Waste recycling and energy from waste
- Energy efficiency, including support for the government's Green Deal (household energy efficiency finance programme/policy)
- Biofuels for transport
- Biomass power
- Carbon Capture and Storage
- Marine energy

[31] http://www.greeninvestmentbank.com/who-we-are/our-history.html
[32] http://www.greeninvestmentbank.com/who-we-are/the-board.html
[33] http://www.greeninvestmentbank.com/who-we-are/governance/board-and-executive-committees.html
[34] http://www.parliament.uk/briefing-papers/SN05977/green-investment-bank pp4-5
[35] http://www.greeninvestmentbank.com/who-we-are/default.html

- Renewable heat

GIB's mandate from government is to deploy at least 80% of their capital in the first three areas, with the balance to be deployed in the remaining sectors.[36]

According to the GIB, its purpose is to help government to achieve its sustainability targets in a cost effective way. They will not undertake activities which are in conflict with government policy objectives.[37] GIB claims to seek those opportunities where their capital, knowledge and reputation make the difference that enables a project to be successfully financed. They partner with other lenders and investors, and seek always to attract private sector capital into their priority sectors.[38]

Fulfilment of their mission and mandate requires that they are not a:

- "lender of last resort";
- provider of grants or regional assistance;
- taker of high risk for low reward;
- provider of venture capital or development equity.[39]

Contention over GIB mandate and resourcing

This latter commitment was the subject of debate during GIBs establishment, between DECC and BIS. DECC was of the view that GIB should be supporting new and emerging technologies in order to provide proof-of-concept and reduce the risk for private sector investment in the future. However, BIS won the argument.[40] Most stakeholders are of the view that the Bank's role should be a mix of the two approaches in order to maintain a long-term, sustainable pipeline of investment opportunities, as well as helping new technologies to become market-ready.

Many stakeholders also believe that the Bank's priority areas should be expanded given two thirds of the green economy is currently outside its remit.[41] It was also suggested that the GIB needs to blend finance with grants in order to build the pipeline of projects, which is not currently strong. Grants would help some proposals, such as city-wide energy efficiency programmes, to draw up business plans which would support the development of the project for financing.

Another criticism from stakeholders is that the bank is underfunded, particularly when compared with Germany's KfW bank which shares similar objectives with GIB. KfW has assets approximately twice that of the World Bank and borrows substantially on the capital markets, with about a third of its investments going into energy and climate change projects. In 2009 to 2011, KfW invested £20.4bn in home energy efficiency, leveraging in total investment of £49.3bn.[42] Whilst it is still early days for GIB, it has so far invested in 36 green infrastructure projects, committing over £1.6bn and mobilising a total £5.2bn.[43]

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[36] http://www.greeninvestmentbank.com/what-we-do/
[37] http://www.greeninvestmentbank.com/what-we-do/
[38] http://www.greeninvestmentbank.com/what-we-do/
[39] http://www.greeninvestmentbank.com/what-we-do/
[40] http://www.parliament.uk/briefing-papers/SN05977/green-investment-bank
[41] Aldersgate Group (2014) ***Two Years of the Green Investment Bank*** http://www.aldersgategroup.org.uk/reports p7
[42] http://www.civilserviceworld.com/interview-shaun-kingsbury-green-investment-bank/
[43] http://www.greeninvestmentbank.com/

As yet, the government will not permit the GIB to borrow on the market and fully operate as bank. Government has been roundly criticised for this. HMT has placed conditions that net public sector debt needs to reach a certain level before the GIB can borrow, given its borrowings will appear as the public sector debt, which it expects from 2015 onwards.

Committee on Climate Change

The Committee on Climate Change is an independent, statutory body established under the Climate Change Act 2008. Its purpose is to advise the UK government and Devolved Administrations (Scottish Government, Welsh Government and Northern Ireland Executive) on emissions targets and report to Parliament on progress made in reducing greenhouse gas emissions and preparing for climate change. It is jointly sponsored by DECC, Defra and the Devolved Administrations.[44]

The CCC plays an important role in ensuring transparency and accountability of government action on climate change, it critiques government policy initiatives, and monitors and evaluates the effectiveness of policy and investment in reducing greenhouse gas emissions.

Governance and Structure

The CCC comprises a Chairman, the Chief Executive and seven independent members, who are each appointed for a term of five (5) years. The Chairman is appointed by a panel of sponsor organisations, and is confirmed by a hearing of the Energy and Climate Change Select Committee of the House of Commons (UK Parliament). Board members are appointed by the Secretary of State for Energy and Climate Change in consultation with the Devolved Administrations.

The Adaptation Sub-Committee (ASC) which is part of the CCC, is also established under the Act to support the CCC in advising and reporting on progress in adaptation. It comprises a Chairman, who also sits on the main Committee, and five independent members – all of whom are appointed by the Secretary of State for Environment, Food and Rural Affairs. It is jointly sponsored by Defra, the Northern Ireland Executive, the Scottish Government and the Welsh Government.

The Chief Executive, appointed by the CCC Chair with the agreement of the Secretary of State of Energy and Climate Change, Defra and Devolved Ministers, leads the Secretariat of around 30 staff who provide analytical and corporate support to the Committee.[45] The majority of staff are economists.

The CCC's Statutory Duties, Governance, Accountability and Relationship with Government are set out in the CCC Framework Document (April 2010).[46]

The CCC's budget comes from DECC, Defra and the Devolved Administrations, and is therefore under the same spending pressures as government departments. Cuts to DECC's and Defra's budgets have been passed through to the CCC's budget in the past. Negotiation of the budget with DECC/Defra does present some challenges for CCC's independence and it has been suggested that it should be allocated a separate budget.

[44] http://www.theccc.org.uk/about/
[45] http://www.theccc.org.uk/about/structure-and-governance/
[46] http://www.theccc.org.uk/wp-content/uploads/2013/03/CCCFramework-Document.pdf

The CCC is a data and analysis driven organisation. Its role is enshrined in legislation (CCA) and further detailed in the Corporate Framework Document.

The Committee:

- Advises on the appropriate level of the UK's carbon budgets and steps required to meet them; The budgets define the maximum level of CO2 and other greenhouse gases which the UK can emit in each 5 year budget period, beginning with 2008-12;
- Monitors progress towards meeting carbon budgets and recommending actions to keep budgets on track;
- Advises on the preparation of the UK Climate Change Risk Assessments and progress towards implementation of the UK Government's National Adaptation Programme;
- Advises on other requests for advice from national authorities in regard to carbon budgets, progress in reducing emissions and adaptation;
- Conducts independent analysis into climate change science, economics and policy; and
- Engages with a wide range of organisations and individuals to share evidence and analysis.[47]

When carbon budgets were first recommended, they were agreed and adopted with very little debate. However, the politicisation of climate change policy and investment has seen a battle emerge over the adoption of the fourth carbon budget in particular. CCC have recently had to review the budget to ensure it was still appropriate. The process is suffering from an increased lack of consensus in Parliament, and has really justified the role of the CCC and its independence.

Responsibility for meeting the carbon budgets rests with the government, and DECC in particular. Ideally, they should join-up across government functions and have a clear link to the HMT spending review and budget process. However, that budgetary link does not exist and responsibility for meeting the carbon budgets remains with DECC, although they do attempt to ensure some co-ordination across government departments for monitoring purposes.

This could become particularly problematic during the third and fourth carbon budget periods. Government is relatively easily on track to meet the second carbon budget (having already met the first budget 2008-12) with its current policies. However, when the actions necessary to meet the budget become more challenging and/or expensive, the policy response is likely to meet significant opposition, especially if joining up across government has not been properly embedded, particularly in HMT.

The CCC itself primarily interacts with DECC, Defra, DfT, HMT and the Devolved Administrations. They often share the same economic and technical models, and their analysis. CCC's relationship with DECC is generally positive and co-operative, although tension sometimes arises when the CCC publicly criticises policy decisions taken by DECC. CCC also interacts with HMT, although the relationship is generally more difficult. They often disagree on analysis and conclusions, and are fundamentally coming from different places.

The CCC does not have formal consultation processes, although they regularly engage stakeholders from the beginning and throughout their analyses. They do

[47] http://www.theccc.org.uk/wp-content/uploads/2013/06/1458_CCC_Annual-Report-2013_FINAL.pdf p6

often undertake targeted stakeholder engagement based on the specific work being conducted. As their resources are limited, they often seek data and analysis from other organisations to assess, compare and/or incorporate into their own work.

4 Synthetic analysis of the implications of these arrangements

Emergence of arrangements

In the UK, both the policy and institutional arrangements have emerged in a less-than-coordinated way. Whilst the institutions are predominantly centralised, the emergence of policy has not always followed a logical, top-down, strategic approach. However, the key policies and institutions have been created by the government of the day, although often after intense campaigning from civil society organisations, particularly environmental NGOs and think tanks.

The institutions examined in-depth in Section III all play instrumental roles in climate investment in the UK. HMT and DECC are both departments of government, represented in Cabinet. Other departments will roles in climate related investment, such as Defra and DfT, are also represented at this high political level. The CCC and GIB were both created in Acts of Parliament, with cross-party support which is seen to have been critical to their success since their establishment. Their creation and functions being enshrined in legislation has been vital to their impact.

Having so many government departments (and their agencies) with responsibility for different elements of low carbon investment and resilience poses a considerable co-ordination challenge. The CCC's role, whilst overarching, is not to co-ordinate the activities of government but rather it independently recommends the level at which targets should be set and monitors progress towards achieving targets. DECC plays a role in over-seeing mitigation activities but does not co-ordinate. HMT controls the flow of funding to each of the departments, and whilst it claims not to have a role in policy it uses its funding role to influence priorities within departments.

There is also often conflict between departments and their priorities. For example, the UK has its share of the EU renewable energy target, along with its own carbon budgets, for which DECC is responsible yet the Secretary of State for Communities and Local Government has planning powers and has intervened in 50 onshore wind

projects since June 2013. Of the 19 projects in which decisions have been made, all but two have been refused.[48]

Primarily, however, it is the government of the day – the elected members – who most influence what is prioritised and where the funding is directed. The institutions are important, but their roles can be undermined by MPs who are not supportive of their agenda. This is playing out at present with some back-bench MPs pressuring government over their investment in certain renewable and low carbon energy technologies.

Modalities of working

UK climate policy is centralised, coming from the UK government (sometimes initiated by the EU) and implemented by government departments and their agencies. However, the policy itself has not generally developed strategically – sector specific policy has often preceded overarching strategy. In many cases, the strategies are often a culmination of sectoral policies.

DECC is the departmental lead on climate mitigation strategy and Defra on adaptation. However, both of these departments are relatively small and lack the necessary stature and influence across other government departments with larger budgets.

Institutionally, there are a raft of organisations involved in climate investment, including many across government. Whilst it is positive that so many government departments have climate related responsibilities, they are often peripheral to their primary functions, and there is a lack of co-ordination across government in their policy and delivery. Co-ordination between individual departments is often informal and project-specific.

Stakeholder engagement continues to be a challenge. Whilst the UK government does publicly consult on their policies before finalising them, it is generally towards the end of the process and there is no obligation on the government to change their policy as a result of public/stakeholder views. Less formal consultation sometimes occurs during policy development, with the use of stakeholder advisory groups to garner opinion for representatives of those groups affected. Having stakeholders engaged earlier in the process is very construction, however, this approach can attract criticisms of lacking transparency and exclusivity, that is, only certain groups/individuals are invited and it is often the same ones each time.

The way forward

Politics

Politics matters. It has a huge impact on policy and investment in the UK, as well as the capacity of the relevant departments to fulfil their mission. Setting up independent organisations with effective governance arrangements can help to insulate against this politicisation but it does not protect the institution or the policy and investment climate completely.

The increasing politicisation of climate change, and renewable energy in particular, has had a significant impact on the policy and investment environment. Policy uncertainty increases the risks for investment, and in some cases, the GIB is having to step in to shore up projects.

[48] http://www.renewableuk.com/en/news/press-releases.cfm/renewableuk-condemns-pickles-50th-intervention-in-a-wind-farm-application

Politicisation also results in the drive for immediate results. This does not allow for effective transitions, for example, from a subsidy-based approach to a market-driven approach, which can often take several terms of government to implement properly. There is also an ideological resistance on the part of the current government to increasing regulation and the tension between different departments which is a barrier to effective policy and investment.

The politicisation of energy and climate change has also seen policy interventions from both the Prime Minister and Chancellor, effectively over-ruling the Secretary of State for Energy and Climate Change. This also creates an environment where decisions are rarely final and open to influence at the right level. Yet again, creating uncertainty.

Leadership

Leadership is important. There has been a need for more consistent policy across government, and several members of the government have publicly disagreed on policy and/or investment priorities - or even, indeed, on the seriousness of the threat from climate change. This contributes to uncertainty and also distracts from the many other areas of low carbon policy that need attention. It also undermines the ability of DECC to undertake their strategic co-ordination role across government with any confidence.

Embedding climate change across government

There is a need to strengthen the embedding of climate change action across government and linking to the decision-making processes in the UK. It is difficult to assess whether creating a department dedicated to energy and climate change has been a barrier to this, but the fact that it is a relatively new and small department has not supported its efforts to influence decisions across government. In the absence of policy consistency and/or leadership, it is has been difficult to embed low carbon into investment decisions across government.

Governance and independence

Institutional governance and independence is vital for certain roles. The set-up of both the CCC and GIB have largely done this, with the exceptions of budgetary processes. Whilst neither organisation is completely immune from government influence, they do have a strong structure to support their actions, even if/when they are critical of government. Diversity will also be important if these institutions are going to robust. Ensuring a diverse skill set amongst board members provides for strong and effective challenge of analysis, conclusions and decisions, which supports the strong, positive reputation of the organisation. This is key for organisations such as CCC, which are publishing extensive analyses in order to hold the government to account.

Stakeholder engagement

Stakeholder engagement and consultation is an important part of policy/investment development and implementation. In the UK, government usually undertakes a formal public consultation as the final step in the policy development process. Most stakeholders view this as a formality rather than an opportunity to influence the outcomes. By this stage in the process, most decisions have been made.

However, often during the development phase, DECC talks to a range of stakeholders representing industry, civil society (environment and consumer groups), academia and other government departments. This process has the benefit of allowing stakeholders to input during development, however, it is a selective group of organisations involved. Through Parliamentary and legislative processes there have been wider opportunities for stakeholders to input and weigh in on

priorities. But in general it seems that UK institutions approaches to consultation have placed equal weight on informal engagement as on formal consultation. While this may be expedient, it may raise challenges in terms of transparency and accountability.

Delivery and the role of local authorities

Delivery and implementation of climate measures have often been challenging. One reason for this is the political demand for quick action. There is a need for more time for the proper trialling and piloting of initiatives to find out how best to deliver them or if policy actually works on-the-ground. Another factor is that the expectation of delivery sometimes falls upon local authorities who are not often adequately resourced to undertake this role. Local authorities should be an important delivery route, but DECC wants to maintain tight control over delivery, often stifling innovation in the process.

Local authorities need to be supported in order to deliver effectively. They have political processes of their own which often present a barrier, as action on climate change is not seen as a political priority in many areas. They also have not had the resources to maintain the expertise needed to deliver, and stop/start funding for specific projects does not help the situation. Local authorities are also increasingly expected to partner with the private sector to facilitate delivery. This is often a fraught process, largely as a result of the organisational differences, and could be improved with a supporting framework and resources for local authorities.

ANNEX I: European Policies

EU Emissions Trading Scheme
The EU ETS works on the 'cap and trade' principle. A 'cap', or limit, is set on the total amount of certain greenhouse gases that can be emitted by the factories, power plants and other installations in the system. The cap is reduced over time so that total emissions fall.[49]

Horizon 2020
Horizon 2020 is the financial instrument implementing the Innovation Union, a Europe 2020 flagship initiative aimed at securing Europe's global competitiveness. Horizon 2020 is the biggest EU Research and Innovation programme ever with nearly €80 billion of funding available over 7 years (2014 to 2020) – in addition to the private investment that this money will attract.[50]

EU Directives
Renewable Energy Directive
Energy Efficiency Directive
Energy Performance of Buildings Directive
Eco-Design for Energy Using Products Directive
Eco-Labelling Directive
Energy Labelling Directive
Large Combustion Plant Directive
Biofuels Directive
Tyre Labelling Directive
Waste Framework Directive
Air Quality Directive
Water Framework Directive
Emission performance standards for new passenger vehicles

European Investment Bank
The EIB is the European Union's bank. It is the only bank owned by and representing the interests of the European Union Member States, working closely with other EU institutions to implement EU policy. It supports projects that make a significant contribution to growth and employment in Europe, focussing on four priority areas: innovation and skills; access to finance for smaller businesses; climate action; and strategic infrastructure.[51]

European Bank for Reconstruction and Development
EBRD provide project financing for banks, industries and businesses, both new ventures and investments in existing companies. They also work with publicly owned companies. Their projects are tailored to the needs of the client and to the specific situation of the country, region and sector. Direct investments generally range from €5 million to €230 million. EBRD provide loan and equity finance, guarantees, leasing facilities and trade finance, typically funding up to 35 per cent of the total project cost.[52]

Directorates General
DG TREN (transport)
DG ENER (energy)
DG REGIO (cities/regions)
DG CLIMA (climate action)
DG ENV (water)[53]

[49] http://ec.europa.eu/clima/policies/ets/index_en.htm
[50] http://ec.europa.eu/programmes/horizon2020/en/what-horizon-2020
[51] http://www.eib.europa.eu/about/index.htm
[52] http://www.ebrd.com/pages/about/what.shtml
[53] http://ec.europa.eu/about/ds_en.htm

ANNEX II: UK Climate Change Policies & Legislation

Policy/Legislation	Description	Department	Year
Cross-Sectoral			
Climate Change Act	2050 Target. The act commits the UK to reducing emissions by at least 80% in 2050 from 1990 levels. This target was based on advice from the CCC report: Building a Low-carbon Economy. The 80% target includes GHG emissions from the devolved administrations, which currently accounts for around 20% of the UK's total emissions. Carbon Budgets. The Act requires the Government to set legally binding 'carbon budgets'. A carbon budget is a cap on the amount of greenhouse gases emitted in the UK over a five-year period. The Committee provides advice on the appropriate level of each carbon budget which are designed to reflect cost effective path to achieving the long terms objectives. The first four carbon budgets have been put into legislation and run up to 2027. The Committee on Climate Change was set up to advise the Government on emissions targets, and report to Parliament on progress made in reducing greenhouse gas emissions. It includes the Adaptation Sub-Committee (ASC) which scrutinises and advises on the Government's programme for adapting to climate change. A National Adaptation Plan requires the Government to assess the UK's risks from climate change, prepare a strategy to address them, and encourage critical organisations to do the same.[54]	DECC	2008
The Carbon Plan: Delivering our low carbon future	Decarbonisation Strategy setting out how the UK proposes to achieve its climate change goals and carbon budgets.[55]	DECC	2011
Energy Act	Extensive legislation covering a range of energy-related issues, including: Decarbonisation – provides powers to set a decarbonisation target for the UK electricity sector for 2013, in 2016 when the fifth carbon budget has been set Increasing size of systems eligible for the feed-in tariff to ensure larger community installations would be eligible for support	DECC	2013

[54] http://www.theccc.org.uk/tackling-climate-change/the-legal-landscape/global-action-on-climate-change/
[55] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/47613/3702-the-carbon-plan-delivering-our-low-carbon-future.pdf

	Contracts for Difference – long-term contracts between a CFD counter-party and eligible generators, funded by contributions from licensed electricity suppliers to provide stable and predictable incentives for companies to invest in low-carbon electricity generation Capacity Market – to ensure the security of electricity supply, including provisions to allow Electricity Demand Reduction to be delivered Investment contracts – long-term contracts broadly similar to CFDs to enable early investment in advance of the CFD regime coming into force Conflicts of Interest and Contingency Arrangements – to ensure the institution which will deliver these schemes is fit for purpose Liquidity and Power Purchase Agreements – to ensure a competitive wholesale market and help independent renewable electricity generators access the market to sell their power Renewables Transitional – transition arrangements for investments under the Renewables Obligation scheme Emissions Performance Standard – to limit carbon dioxide emissions from new fossil fuel power stations[56]		
Energy Efficiency Strategy	Identifies energy efficiency opportunities across household, business and industry sectors Identifies the barriers that exist to energy efficiency in these sectors Brings together policies addressing energy efficiency Identifies areas for further research and policy gaps, particularly in the business and industry sectors[57]	DECC – EEDO	Published 2012 Updated 2013
Heat Strategy – *The Future of Heating: Meeting the Challenge*	The follow-up to *The Future of Heating: a strategic framework for low carbon heat in the UK* published in 2012 Addresses four key parts of the heat challenge - industrial heat; networked heat; heat in buildings; and grids and infrastructure Identifies barriers to heat decarbonisation and initiatives to overcome them	DECC / BIS	2013

[56] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/266867/Energy_Bill_Summary_Policy_Brief_RA.pdf
[57] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/65602/6927-energy-efficiency-strategy--the-energy-efficiency.pdf

Household Energy Efficiency			
Green Deal	Green Deal is a pay-as-you-save finance mechanism which allows homeowners and tenants to pay for energy saving improvements to their homes over the lifetime of the measures, using the money saved on heating bills to cover the repayments.	DECC	2013
Energy Company Obligation	The Energy Company Obligation is an obligation on energy suppliers with more than 250,000 residential customers to reduce CO2 emissions by installing energy efficiency measures in homes – running from January 2013 to March 2015. The costs of the scheme, currently estimated at £1.4bn per year, are passed through to all residential energy customers' bills. The government recently announced changes to the scheme which will soon by subject to a public consultation and require regulatory amendments.	DECC	2013
Building Regulations – Part L – Conservation of Fuel & Power	Building regulations contain the rules for building work in new and altered buildings to make them safe and accessible and limit waste and environmental damage. Part L came into effect in 2005, and its requirements have been successively tightened since. It requires many replacement measures such as heating systems and windows to be more efficient (required standard) and for new build homes, the creation of a zero carbon requirement.[58]	DCLG	2005
Smart Meters	All homes are required to have smart meters installed in GB by 2020 in order to provide householders with better, real-time information on their electricity and/or gas consumption. Deployment is being led by the energy utilities, with central coordination and communication.[59]	DECC	2013
Home Energy Conservation Act	Requires local authorities in England to report on the energy efficiency of housing in their area and report on plans to improve them.	DECC	1995
Landlords Energy Saving Allowance	The Landlord's Energy Saving Allowance (LESA) was introduced to encourage landlords to improve the energy efficiency of let residential properties. It is an allowance for the cost of acquiring and installing certain energy-saving items.[60]	HMT/HMRC	2004
Reduced Rate VAT – Sustainable Energy Materials	A reduced rate of VAT (value added tax) is charged on a range of energy saving and small-scale renewable energy measures which are professionally installed in residential properties.[61]	HMT/HMRC	2006

[58] https://www.gov.uk/government/policies/providing-effective-building-regulations-so-that-new-and-altered-buildings-are-safe-accessible-and-efficient
[59] https://www.gov.uk/government/publications/2013-home-energy-conservation-act-heca-reports
[60] http://www.hmrc.gov.uk/manuals/pimmanual/PIM2072.htm
[61] http://www.hmrc.gov.uk/vat/sectors/consumers/energy-saving.htm

Business Energy Efficiency			
CRC Energy Efficiency Scheme	The CRC Energy Efficiency Scheme (or CRC Scheme) is designed to improve energy efficiency and cut emissions in large public and private sector organisations. The CRC affects large public and private sector organisations across the UK, together responsible for around 10% of the UK's greenhouse gas emissions. Participants include supermarkets, water companies, banks, local authorities and all central government departments.[62]	DECC (administered by Env Agency)	2010
Climate Change Levy	Levy designed to encourage large businesses, industry and public authorities to become more energy efficiency through application of a levy on consumption of fuels. It covers those large energy users that are not subject to the EU Emissions Trading Scheme.[63] Initially some funding raised from the CC Levy was directed to the government-backed Carbon Trust to help organisations reduce their energy use.	DECC/HMRC	2001
Climate Change Agreements	Climate Change Agreements (CCAs) give energy-intensive industries a discount on the Climate Change Levy (a tax on energy use in industry, commerce and the public sector) as long as they meet government-agreed energy efficiency improvement targets.[64]	DECC	2001
Salix	Salix Finance is a government-funded scheme (revolving loan fund) that provides interest-free loans to public sector organisations and SME businesses for energy efficiency improvements.[65]	DECC	
Enhanced Capital Allowances	Enhanced Capital Allowances (ECAs) let businesses that invest in certain energy-saving equipment write off the total cost of the equipment against their taxable profit as a 100% first-year capital allowance.[66]	HMT/HMRC	

[62] https://www.gov.uk/government/policies/reducing-demand-for-energy-from-industry-businesses-and-the-public-sector--2/supporting-pages/crc-energy-efficiency-scheme
[63] http://customs.hmrc.gov.uk/channelsPortalWebApp/channelsPortalWebApp.portal?_nfpb=true&_pageLabel=pageExcise_ShowContent&id=HMCE_CL_000290&propertyType=document
[64] https://www.gov.uk/government/policies/reducing-demand-for-energy-from-industry-businesses-and-the-public-sector--2
[65] https://www.gov.uk/government/policies/reducing-demand-for-energy-from-industry-businesses-and-the-public-sector--2
[66] https://www.gov.uk/government/policies/reducing-demand-for-energy-from-industry-businesses-and-the-public-sector--2

Low Carbon and Renewable Energy			
Renewables Obligation	The RO provides incentives for the deployment of large-scale renewable electricity in the UK, requiring licensed UK electricity suppliers to source a specified proportion of the electricity they provide to customers from eligible renewable sources. This proportion (known as the 'obligation') is set each year and has increased annually.[67]	DECC	2002
Feed-in Tariff	FiTs provide an incentive to install small-scale renewable electricity systems, such as solar PV and wind turbines, on homes and in communities. FiTs are a tariff paid per unit of electricity generated and an additional rate is available for electricity exported. The FiT is paid via the home energy bill so is effectively funded by the energy suppliers, recouped through their customers.[68]	DECC	2010
Renewable Heat Incentive	The first phase of the RHI for non-domestic premises was launched in 2011, followed shortly after by Renewable Heat Premium Payment – a capital grant for residential low carbon heat installations. The RHI for domestic properties starts in mid-2014. The RHI incentivising the use of low carbon and renewable heating in buildings and is the primary scheme of the government's Heat Strategy. Similar to FiTs it provides a payment per unit of heat generated, however, unlike FiTs, it is funded by the government rather than energy suppliers.[69]	DECC	2011
CCS	The government is working with industry to create a new cost-competitive CCS industry in the 2020s. Support for the development of CCS includes a £1 billion commercialisation competition to support practical experience in the design, construction and operation of commercial-scale CCS, and a £125 million, 4-year co-ordinated research, development and innovation programme. The government is also reforming the electricity market so that CCS will be able to compete with other low carbon energy sources.[70]	DECC / BIS	2013

[67] https://www.gov.uk/government/policies/increasing-the-use-of-low-carbon-technologies/supporting-pages/the-renewables-obligation-ro
[68] http://www.energysavingtrust.org.uk/Generating-energy/Getting-money-back/Feed-In-Tariffs-scheme-FITs
[69] https://www.gov.uk/government/policies/increasing-the-use-of-low-carbon-technologies/supporting-pages/renewable-heat-incentive-rhi
[70] https://www.gov.uk/government/policies/increasing-the-use-of-low-carbon-technologies/supporting-pages/carbon-capture-and-storage-ccs

Transport			
Ultra Low Emission Vehicles (ULEVs)	Government has been working to increase the market penetration of ULEVs, particularly in the car and van sector. It started with the strategy for recharging network infrastructure (*Making the Connection*). The Government committed £400m over three years to invest in electric vehicle charging infrastructure, making the tax system more favourable to ULEVs, grants for purchasing electric cars and vans and the provision of advice to fleet managers to increase uptake.[71]	OLEV – DfT, DECC and BIS	2011
Vehicle Excise Duty	Vehicles registered after March 2001 have their VED, an annual tax on vehicles, charged on the basis of the vehicle's CO2 emissions and fuel type. This is a fiscal measure designed to encourage a shift towards more fuel and CO2 efficient vehicles.	DfT	2001
Adaptation			
Climate Change Risk Assessment	It sets out the main priorities for adaptation in the UK under 5 key themes identified in the CCRA 2012 Evidence Report - Agriculture and Forestry; Business, industries and Services; Health and Wellbeing; Natural Environment and Buildings and Infrastructure - and describes the policy context, and action already in place to tackle some of the risks in each area. The CCRA is a requirement of the Climate Change Act 2008 and will be published every five years.[72]	Defra	2012
National Adaptation Programme	The NAP was developed in response to the CCRA and sets out what different sectors are doing to become 'climate ready'. It also contains an Economic annex on the costs and benefits of climate change adaptation. It broadly covers: raising awareness of the need for climate change adaptation; increasing resilience to current climate extremes; taking timely action for long-lead time measures; and, addressing major evidence gaps.[73]	Defra	2013
Heatwave Plan for England	The Heatwave Plan is a central part of the Department of Health's support to the NHS and local authorities, providing guidance on how to prepare for and respond to a heatwave which can affect everybody's health, but particularly the most vulnerable people in society. The purpose of this Heatwave Plan is to reduce summer deaths and illness by raising public	DH	2012

[71] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/239317/ultra-low-emission-vehicle-strategy.pdf
[72] https://www.gov.uk/government/publications/uk-climate-change-risk-assessment-government-report
[73] https://www.gov.uk/government/policies/adapting-to-climate-change/supporting-pages/national-adaptation-programme

	awareness and triggering actions in the NHS, social care and other community organisations to support vulnerable people. [74]		
Cold Weather Plan for England	It is a public health plan which aims to prevent the major avoidable effects on health during periods of severe cold in England. It recommends actions for key actors including: the NHS, local authorities, social care, and other public agencies; professionals working with people at risk; and, individuals and local communities.[75]	DH	2012
Research			
Research Councils	There are 7 publicly funded Research Councils, several of which include climate change and its many elements within their scope. The Research Councils give grants to academics and recognised research institutions.[76]	BIS	
Departments	All government departments with responsibility for climate change undertake research and data collection/analysis in order to build an evidence base for policy and delivery. The outputs are often published and made widely available. Government also funds several specific organisations to undertake research, including the Met Office's Hadley Centre.	All	ongoing

[74] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/216523/dh_134741.pdf
[75] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/216937/9211-TSO-NHS-Cold-Weather-Plan_Accessible-main-doc.pdf
[76] https://www.gov.uk/government/policies/investing-in-research-development-and-innovation/supporting-pages/science-and-research-funding

ANNEX III: UK Climate Change Institutions

Mapping		**Implications**
What role do the following actors play?		
Ministries / agencies that control investments in key sectors play (and how) e.g. finance / planning, energy, water, environment, agriculture	At what level are they represented? What is the form of their engagement? What resulting actions are they taking?	
HM Treasury	Chancellor of the Exchequer – second most senior role in Government behind the Prime Minister	Public funding for climate change is allocated by HM Treasury (HMT) to several Government Departments and institutions with responsibility for climate change mitigation and adaptation. HMT is influential in the policy agenda for climate change although it does not directly set policy in this area. It does, however, exert significant influence over the funding available for climate change mitigation and adaptation policies and activities – having to agree both the level of funding and the type of activity for which it will provide funding. HMT is often seen as an obstacle by the relevant departments, particularly as fiscal measures are increasingly seen as a tool for climate-related behaviour change. When the Coalition Government came to power in 2010, it was against a backdrop of recession and the global financial crisis. The Government committed to significantly reducing public expenditure and the deficit. Funding for education and health was largely protected, so other government departments had to make significant reductions, including those with responsibility for climate related policy and programmes. Given these constraints, there is a constant public and political battle for funding for climate related activities, as they compete with other areas of public sector spending. The budget is set annually, announced in March each year which outlines the departmental expenditure limits and funding for new initiatives. In December each year, the Chancellor provides

		an Autumn Statement which updates the financial position and forecasts, as well as announcing funding for new initiatives which are seen as a political priority.
Department of Energy & Climate Change	Cabinet level post and three ministerial posts	DECC was created in 2008, bringing together for the first time areas of climate change mitigation, and energy supply and demand-side management. These responsibilities were previously sitting in several other departments covering environment, business and industry. Combining responsibility for energy supply and demand into one portfolio was well received, as it was seen as an opportunity to take a holistic and strategic approach to energy in the UK. It was also seen as making climate change a political priority by having a dedicated department with strategic responsibility. However, responsibility for adaptation and investment in low carbon technology R&D remains in the existing environment and industry departments. DECC, along with HMT, is seen as the key driver of climate policy and investment in the UK. It has a challenging role in trying to find the balance between economic growth through a viable energy sector, and environmental protection and emissions reduction. DECC works with eight (8) agencies and public bodies for which it has responsibility. They cover areas such as coal mining, nuclear waste and decommissioning and fuel poverty. It also has responsibility for Ofgem (the Office of Gas and Electricity Markets) and the Committee on Climate Change. Ofgem regulates the different elements of the liberalised energy market in Great Britain, and often administers government initiatives and funding schemes such as the Renewables Obligation, Feed-in Tariff, Energy Companies Obligation and the Renewable Heat Incentive which are delivered directly by the energy utilities. DECC has also set up internal units with a specific focus on priority areas, including the Energy Efficiency Deployment Office, Office of Renewable Energy Deployment, Heat Networks Delivery Unit and the Office of Unconventional Oil and Gas. DECC's approach to investment in climate change has generally been to establish 'market-based mechanisms' which seek to use public funding to leverage private sector investment or reduce the risk to private sector investors. These vary in form from capital grants programmes, guaranteed returns on investment (eg Feed-in Tariffs), and financial incentives. DECC policy has also resulted in several regulatory obligations placed on energy suppliers, which then directly fund these requirements. However, any obligation on energy suppliers is then passed through to their customers' bills. This approach has come under increasing public and political pressure as energy bills continue to rise substantially (although not predominantly as a result of these initiatives).

		DECC's total resource budget in 2013/14 is £1.4 billion, although not all of this is for climate related activities.
Committee on Climate Change	Independent Chair and Board; reports to Parliament	The Committee on Climate Change is the government's independent climate change advisory body. It advises government on the level at which the five-yearly carbon budgets should be set and reports to parliament on progress towards the targets. The Committee also has an Adaptation Sub-Committee. CCC has an influential role in climate change policy and investment, despite it technically not having a role in either. It is well regarded for its evidence-based analysis of climate change and carbon emissions reduction in the UK economy. It has challenged government policy decisions on many occasions on the basis of its evidence and research. It plays an important role in bringing greater transparency and accountability to government's actions on climate change.
Department for Environment, Food & Rural Affairs	Cabinet level post	Defra leads on environment, water, agriculture, forestry, waste and climate change adaptation policy and programmes. Its stated priorities are to "grow the rural economy, improve the environment and safeguard animal and plant health". Large parts of Defra were subsumed by the creation of DECC in 2008 and the department lost much of its political influence as a result. It has suffered from public spending cuts, with significant job losses in one of its key agencies – the Environment Agency – which has responsibility for, amongst other areas, flood management and defences. Defra has responsibility for implementing a range of European Directives including those addressing agriculture, water and waste. It also leads on the development of the National Adaptation Programme.
Department for Transport	Cabinet level post	DfT leads on all matters relating to transport, including implementation of a range of EU Directives covering vehicle emissions standards, and car and tyre efficiency labelling. DfT also leads on investment in transport infrastructure and ensures that potential climate impacts are considered in future planning. DfT has recently developed a strategy for ultra low emissions vehicles and is in the implementation phase, providing capital grants for vehicles and charging infrastructure, and leverage private funding as a result. DfT, like most departments, has a balancing act to perform between investment in more sustainable transport (ULEVs, public transport) and the public and political demand for continued investment in road infrastructure. The environmental unit within DfT is relatively small in comparison with the rest

		of the organisation. Climate change and environment is a relatively new area of focus of DfT.
Department for Business, Innovation & Skills	Cabinet level post	BIS is the department for economic growth. The department invests in skills and education to promote trade, boost innovation and help people to start and grow a business. BIS also protects consumers and reduces the impact of regulation.[77] It is the department responsible for the Met Office, Green Investment Bank, the Technology Strategy Board and the seven Research Councils (see below).
Technology Strategy Board	Executive non-departmental public body of BIS	TSB is the UK's Innovation Agency. It works with business, research and policymakers to invest in R&D in priority areas including: the built environment, energy, transport and resource efficiency.[78]
Department for Communities & Local Government	Cabinet level post	DCLG leads on housing, buildings, planning and local government. It is responsible for a range of EU Directives including energy performance of buildings. It administers the national planning regime and Building Regulations, as well as maintaining a comprehensive data set on the energy efficiency of homes. Previously it had primary responsibility for improving home energy efficiency but in recent times the power has shifted (although not completely) to DECC. The current Secretary of State is not seen as supportive of initiatives to reduce CO2 emissions. He recently over-ruled his department when it tried to include new requirements for energy efficiency in home extensions in the Building Regulations. DCLG also set the regulatory and performance framework for local government, which under the previous government included a specific measure on CO2 reduction in their own operations and across their communities. However, the performance regime was streamlined with the change of government and local government budgets were reduced significantly, so action on climate change is variable.

[77] https://www.gov.uk/government/organisations/department-for-business-innovation-skills
[78] https://www.innovateuk.org/our-priorities

Parastatals e.g. utilities, etc.	
Energy Technologies Institute (ETI)	The ETI is a public-private partnership between global industries – BP, Caterpillar, EDF, E.ON, Rolls-Royce and Shell – and the UK Government. Public sector representation is through the Department for Business Innovation and Skills (BIS), the Technology Strategy Board (TSB), the Engineering and Physical Sciences Research Council (EPSRC) and DECC. The ETI brings together projects that accelerate the development of affordable, clean, secure technologies needed to help the UK meet its' legally binding 2050 targets. It is not a grant-giving body, but makes targeted investments in projects in offshore wind, marine, distributed energy, buildings, energy storage and distribution, carbon capture and storage, transport and bioenergy. Those projects bridge the gap between laboratory scale research and development and commercial deployment of large-scale engineering projects.[79]
Energy retailers	The UK has one of the most liberalised energy markets in Europe, since it was privatised. The energy market is vertically disaggregated, with supply, distribution and generation being separate businesses (although often owned by the same parent company). The market is regulated, and overseen by Ofgem. Energy retailers (or suppliers) have regulatory obligations regarding climate change and emissions reduction through policies such as the Renewables Obligation and Energy Company Obligation. Although they are completely privatised, they do exert a fair degree of political influence, particularly they are key to implementation of the government's decarbonisation agenda, and also consumer energy bills are highly sensitive issue in the media.
Energy generators	Energy generators are often owned by the same companies as retailers. They are less visible publicly and politically, although they do have a role in decarbonisation but this is generally via the EU Emissions Trading Scheme. One actor, EDF, has been influential as the government has committed to new nuclear power stations without public subsidy, and EDF has been the most likely partner. The government has seen nuclear as an important part of a move to low carbon energy sources and maintaining energy security.
Distribution Network Operators	DNOs are a regulated monopoly, operating and investing in the infrastructure for electricity distribution and transmission. DNOs income is via a standing charge on energy bills, which is then invested in infrastructure. The electricity distribution price control also funds the Low Carbon

[79] http://www.eti.co.uk/about

			Networks Fund. The LCN Fund allows up to £500m to support projects sponsored by the Distribution Network Operators (DNOs) to try out new technology, operating and commercial arrangements. The aim of the projects is to help all DNOs understand how they can provide security of supply at value for money as Britain moves to a low carbon economy.[80]
Local government and subnational entities	**If yes, which ones? If no, why not?**	**What are the challenges and modalities for delivering finance to local actors?**	
Local Government	Local government action and investment in climate change varies greatly across the country. It does not have an official role other than to ensure wellbeing in its area. Investment in climate change by local government is almost entirely determined by what each are identifies as a priority, which is often a very political process. Although not exclusively, it is often the larger authorities and cities which are more active in this space.	The biggest challenges to delivering local finance are: 1. Politics – elected councillors determine local priorities. 2. Resource constraints – budgets have been cut and there are a huge number of competing priorities, many of which are more visible and immediate to the local community than climate change. 3. Institutional differences – private sector partners struggle to understand how local government operates (and vice versa)	The CCC recognised the importance of local authorities taking action on climate change and the contribution they can make in achieving the carbon budgets. The guidance was requested by the Climate Change Minister, as there was discussion at the time regarding the feasibility of local carbon budgets.[81] One of the more common types of local government investment is in partnership with the energy suppliers, in order to deliver local energy efficiency measures through the Energy Company Obligation. Initially, this targets the council's own housing stock (social housing) and then moves out to include private housing. Birmingham City Council set up its own Green Commission which set out their vision to become a leading green and developed their Carbon Roadmap, focussing on powering and heating buildings, transport, energy efficiency and low carbon energy generation.[82] Other authorities, or consortia, have secured EU structural funds for regeneration activity, incorporating low carbon housing retrofit.

[80] https://www.ofgem.gov.uk/electricity/distribution-networks/network-innovation/low-carbon-networks-fund
[81] http://www.theccc.org.uk/publication/how-local-authorities-can-reduce-emissions-and-manage-climate-risks/
[82] http://www.birmingham.gov.uk/greencommission

National financial institutions – including development banks and (potentially) central banks	What role is climate playing in their investment strategies (short and long term)? If they are not involved in climate policy responses, why not? Do they have a mandate from Government to engage?	If yes, what role do they play in these arrangements? At what level are they represented?	How actively engaged are they? How are they resourced in terms of number of people? What is the extent of climate related activity within their portfolio?	
Bank of England	N/A	-	N/A	
Green Investment Bank	Climate change, GHG emissions reduction targets and renewable energy developments are the primary focus of the GIB alongside returning a profit in order to be a sustainable bank. They were created by Government in the Enterprise and Regulatory Reform Act 2013. The GIB has an independent Board of non-Executive Directors and a staff of approx. 100.[83]	The GIB is the first bank of its kind, with £3.8 bn of Government funding to invest in its priority areas of offshore wind, energy efficiency and waste reduction.	Their sole focus is on environmental investment, with a focus on those linked to climate change mitigation. It has three priority areas with 80% of funds allocated to them. 20% can be invested in non-priority areas of: biofuels for transport; biomass power; carbon capture & storage; marine energy and renewable heat.	GIB mission is: "to accelerate the UK's transition to a green economy and to create an enduring Institution, operating independently of Government." GIB's purpose is to help Government to achieve its sustainability targets in a cost effective way, and it will therefore never undertake activities which are in conflict with Government policy objectives. GIB seeks those opportunities where its capital, knowledge and reputation make the difference that enables a project to be successfully financed. It partners with other lenders and investors, and seeks always to attract private sector capital into our priority sectors. [84] Many organisations, NGOs and business, have been lobbying for the GIB to have borrowing powers. However, the government has delayed this until 2015/16.

[83] http://www.theyworkforyou.com/wrans/?id=2013-04-17d.151446.h
[84] http://www.greeninvestmentbank.com/what-we-do/

Civil society/ NGOs	If involved, which ones, and what was the selection process If not, why have they been left out / what are the implications	If involved, how have they engaged? Are there formal processes for engagement?	What kinds of inputs have they made? How are they perceived by other stakeholders?
Organisations are involved in a variety of ways but are not generally institutionalised into climate change finance.		National NGOs, particularly environmental ones, seek to influence policy and investment in climate change. They were instrumental in the Climate Change Act and Green Investment Bank, and a raft of other decisions. There are formal consultation processes, but often they are towards the end of the policy process when the key decisions have largely been made.	
		Some NGOs are more involved in the delivery of climate programmes, and compete for funding through bid processes or tenders for the provision of services.	
		Community-based NGOs are also involved through the investment in community energy schemes, which has recently be recognised as a key delivery mechanism in the Government's Community	

		Energy Strategy.		
Research Institutions		Research institutions, particularly universities, receive funding through the Research Councils, as well as philanthropic grants	Excellent research contributing to understanding and action on climate change. However, it does not always enter into policy and investment debates/decisions.	UK Energy Research Centre works with academics to translate their research into policy-friendly documents to ensure a wider audience and greater influence.
Think tanks		Think tanks in the UK are often politically-aligned, although some focus on particular issues. They undertake policy research on climate change and investment which is often funded by philanthropic grants or sponsored by the private sector.	Think tanks are often influential in policy debates. Their research often moves issues onto the political agenda.	The think tank funding model in the UK generally means that their climate change work is project-specific rather than a long term strategic programme.
Private actors (big business vs. SMEs?)	If involved: which ones? What was the selection process? If not, why have they been left out / what are the implications	If involved, how have they engaged Are there formal processes for engagement?	What kinds of inputs have they made What kinds of activities or roles are they taking on as a result? How are they perceived by other stakeholders?	
Big business				Large business takes on several roles, namely: 1. Regulated – undertake activities required of them by regulation including EU ETS, Climate Change Levy/Agreement, or the CRC Energy Efficiency Scheme depending on their size. 2. Political influence – often the role of industry associations, although

				large businesses also participate, they seek to influence policy and investment decisions. 3. Investment in greening their own business, including resource and energy efficiency and use of low carbon energy sources There are also large businesses which are part of the supply chain for lowcarbon and renewable energy, energy efficiency, and other technology.
SMEs				SMEs roles vary depending on their size. They are a very disparate group and many are not engaged in climate change. A lot of members of the supply chain for the likes of home energy efficiency and low carbon energy are SMEs.
Private financial institutions	What role are private financial institutions playing in investing in responses to climate change within the country so far? Have they been involved in the national climate change response efforts at all to date? Are they involved in these institutional arrangements? If not, why not?	If involved, then what roles are these actors playing? What is the availability of market data and information? Who and how is this provided?		
			Institutional investors – large scale renewable energy projects International Investors Group of Climate Change would like to see greater clarity from government on climate change policy.[85]	

[85] http://www.iigcc.org/

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