



National Audit Office

**BRIEFING FOR THE  
ENVIRONMENTAL AUDIT  
COMMITTEE  
SEPTEMBER 2010**

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# Departmental Carbon Budgets

**Briefing for the Environmental Audit Committee  
September 2010**

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## Departmental Carbon Budgets

Our vision is to help the nation spend wisely.

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The National Audit Office scrutinises public spending on behalf of Parliament. The Comptroller and Auditor General, Amyas Morse, is an Officer of the House of Commons. He is the head of the National Audit Office which employs some 900 staff. He and the National Audit Office are totally independent of Government. He certifies the accounts of all Government departments and a wide range of other public sector bodies; and he has statutory authority to report to Parliament on the economy, efficiency and effectiveness with which departments and other bodies have used their resources. Our work leads to savings and other efficiency gains worth many millions of pounds: £890 million in 2009-10.

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## Summary

**1** The UK has a commitment, under the Climate Change Act 2008, to meeting a series of targets to cut carbon emissions by at least 34 per cent by 2020<sup>1</sup> and at least 80 per cent by 2050 compared to the 1990 baseline. The Climate Change Act required the Government to publish a set of interim five-year carbon budgets to monitor progress towards these long term targets. The Environmental Audit Committee published a report on the UK's carbon budgets in January 2010. In the report, the Committee concluded that the management of the carbon budget was as vital as the management of the fiscal budget. The Committee suggested it required the same level of political attention and civil service commitment, and the same degree of parliamentary scrutiny. The Committee recommended that their successors should lead the way in rigorously monitoring the robustness of the carbon budgets and the progress the UK made in meeting them.<sup>2</sup> In its response to the Committee's Report in March 2010, the previous Government agreed that careful management of the carbon budgets was vital.<sup>3</sup>

**2** This briefing has been prepared by the National Audit Office to provide the Environmental Audit Committee with an overview of the pilot departmental carbon budget system as outlined by the previous Government in March 2010. The pilot system of departmental carbon budgets was introduced as the proposed performance management system for government collectively to manage delivery of the UK's carbon budgets. The system is currently at an early stage of implementation, and the new Government is reviewing the approach. The review is being led by the Department of Energy and Climate Change, in consultation with other Departments. The new Government intends to agree a revised approach to managing the delivery of the UK's carbon budgets by the end of this year.

**3** Part 1 of this briefing sets out the pilot system of departmental carbon budgets developed by the previous government. Part 2 sets out the review of the system, and includes findings from previous NAO work on performance management systems, which are relevant to the further development of the system for managing and monitoring delivery of the UK's carbon budgets.

<sup>1</sup> Percentage as amended by The Climate Change Act 2008 (2020 Target, Credit Limit and Definitions) Order 2009 No. 1258

<sup>2</sup> Environmental Audit Committee, *Carbon budgets*, Third Report of Session 2009-10, HC 228, January 2010, Recommendation 27

<sup>3</sup> Environmental Audit Committee, *Carbon budgets: Government Response to the Committee's Third Report*, Second Special Report of Session 2009-10, HC 479, March 2010

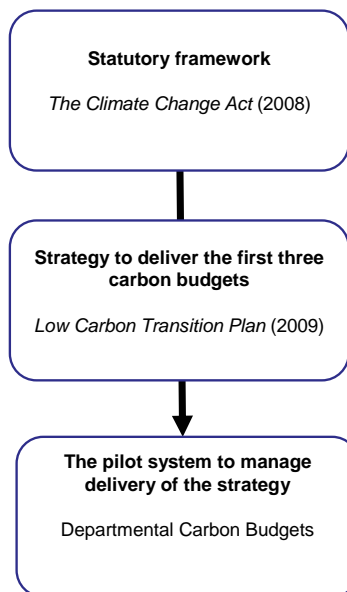
# Part One

## The intended purpose of the pilot system of departmental carbon budgets

1.1 Part 1 of this briefing sets out the departmental carbon budgets system designed to support delivery of the statutory targets in the Climate Change Act. The system was designed to drive delivery against the previous Government’s strategy for carbon reductions, as set out in the Low Carbon Transition Plan, to achieve the statutory targets in the Climate Change Act (**Figure 1**).

**Figure 1**

The relationship between the Climate Change Act 2008, the Low Carbon Transition Plan and the pilot system of departmental carbon budgets



Source: National Audit Office

## The Statutory Framework – The Climate Change Act 2008

1.2 The Climate Change Act (2008) created a framework to address climate change which includes:

- a requirement to reduce emissions, formally the ‘net UK carbon account’<sup>4</sup> by at least 34 per cent over the period 2018 to 2022<sup>5</sup> and by at least 80 per cent by 2050 below the 1990 baseline;
- a requirement to publish an initial series of three five-year carbon budgets, starting in 2008, to deliver the reductions required to meet the 2020 target and to put the UK on an appropriate path to meet the 2050 target;
- the setting up of the Committee on Climate Change, an independent body to advise the Government on setting carbon budgets and to report annually to Parliament on the progress made in reducing greenhouse gas emissions; and
- a requirement to establish a national adaptation programme to address the most pressing climate change risks to the UK and to review it every 5 years.

1.3 The first three carbon budgets were approved by Parliament and became law in May 2009<sup>6</sup>. The budgets require a 22 per cent reduction in greenhouse gas emissions in 2008-2012, a 28 per cent reduction in 2013-2017 and a 34 per cent reduction in 2018-2022. The Climate Change Act (2008) specifies that the Secretary of State must set in legislation details of the fourth carbon budget (2023-2027) by 30 June 2011 and it is the duty of the Committee on Climate Change to advise the Government by the end of 2010 on setting the level of this budget.

## The strategy to deliver the first three carbon budgets: The Low Carbon Transition Plan

1.4 The previous Government set out the proposals and policies for meeting the first three carbon budgets (from 2008 to 2022) in the Low Carbon Transition Plan<sup>7</sup>, published in July 2009. It showed the intended impact of the policies across eight sectors of the economy (**Figure 2**). The strategy was based on an analysis of the key policies in each area and where savings would be most cost effective.

<sup>4</sup> The net UK carbon account is the total of carbon emissions and the carbon dioxide equivalent of emissions of other targeted greenhouse gas emissions.

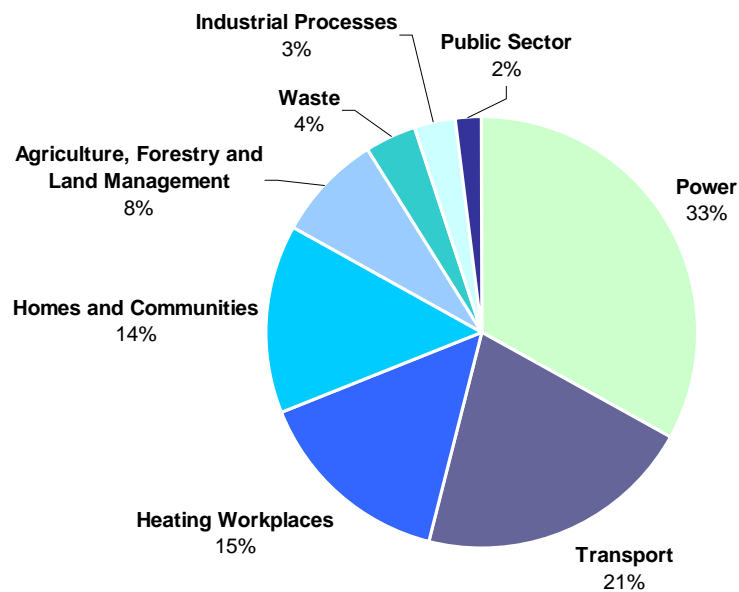
<sup>5</sup> Percentage as amended by The Climate Change Act 2008 (2020 Target, Credit Limit and Definitions) Order 2009 No. 1258

<sup>6</sup> The Carbon Budgets Order 2009 Available at: [http://www.opsi.gov.uk/si/si2009/uksi\\_20091259\\_en\\_1](http://www.opsi.gov.uk/si/si2009/uksi_20091259_en_1)

<sup>7</sup> The Department of Energy and Climate Change, *The UK's Low Carbon Transition Plan: National Strategy for Climate & Energy*, July 2009.

**Figure 2**

Expected contributions of the eight economic sectors to the first carbon budget (2008-2012)



Source: Climate Change: Taking Action (2010)

### The pilot system to manage delivery of the strategy: departmental carbon budgets

**1.5** The Low Carbon Transition Plan introduced the concept of departmental carbon budgets as the proposed performance management system for government as a whole to manage delivery of the UK's carbon budgets. Through this system all major government departments would have their own carbon budget.

**1.6** The plans for piloting this performance management system were set out in more detail in March 2010 in the report, *Climate Change: Taking Action*<sup>8</sup>. The intention of the pilot system of departmental carbon budgets was to:

- assign responsibility for the necessary emissions reductions across government departments;

<sup>8</sup> Department of Energy and Climate Change, *Climate Change: Taking Action*, March 2010

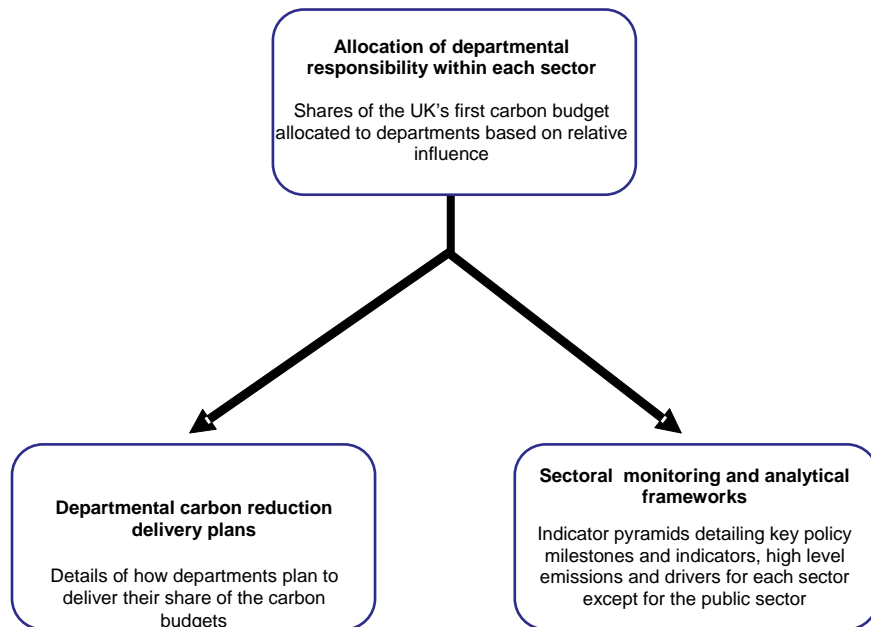
- encourage increased collaboration between departments, especially where there is shared responsibility for emissions in a specific sector; and
- provide a mechanism through which to monitor and report progress against the statutory carbon budgets.

The Department of Energy and Climate Change has overall responsibility for the system of departmental carbon budgets. There are three key elements to the departmental carbon budget system: allocation of shares of the sectoral carbon budgets to departments; departmental carbon reduction plans; and the carbon management indicators for monitoring and analysing progress in carbon reduction in each sector (**Figure 3**).

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**Figure 3**

The pilot departmental carbon budget system for managing delivery of the strategy



Source: National Audit Office

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## Allocating departmental responsibility for the carbon budgets

**1.7** The Low Carbon Transition Plan allocated each major government department its own carbon budget representing its share of responsibility in meeting the UK's overall carbon budget. *Climate Change: Taking Action* explained that each departmental carbon budget is made up of two elements:

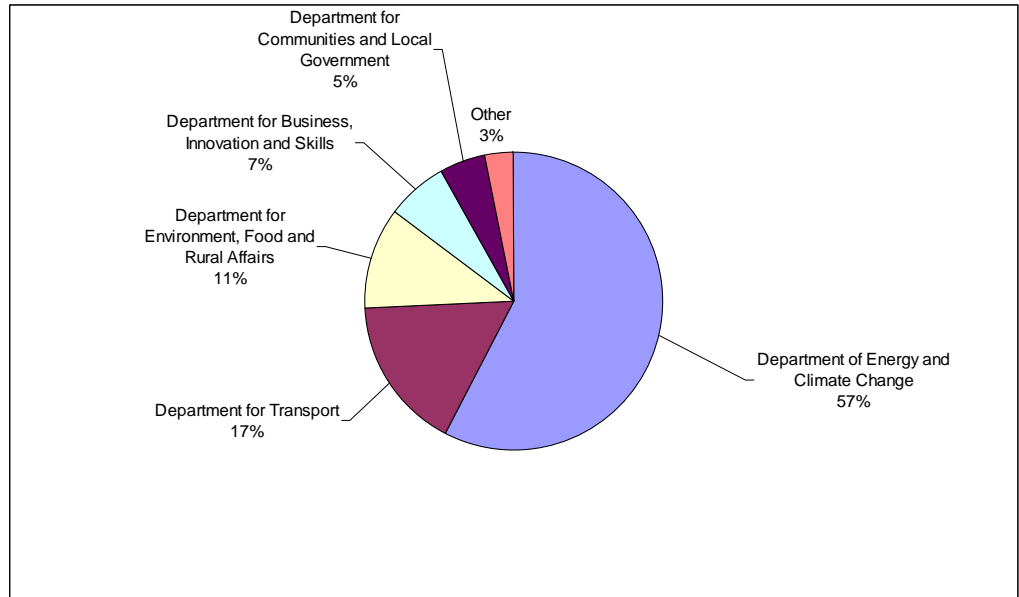
- an allocation which reflects emissions from the departments' own estate and operations, with the amounts assigned based on the previous government's Sustainable Operations on the Government Estate (SOGE) framework; and
- a further allocation to each delivery department which reflects the degree of influence they have in reducing emissions in the various sectors of the economy taking account of:
  - the projected emission reductions from **their carbon reduction policies**. This element was given the greatest weight.
  - **other relevant policies (indirect)** – this element included the effect of a department's policy area on the economic sectors. For example, activities or policies in the tourism sector (sponsored by the Department of Culture, Media and Sport) may generate activity in the transport sector; and
  - the broad **"influence or sponsorship"** role which departments have over particular sectors. This element was given the lowest weighting.

**1.8** *Climate Change: Taking Action* emphasised that the methodology for determining a department's relative degree of influence over a sector's emissions inevitably resulted in a broad approximation, rather than an exact measurement, of a department's relative degree of influence over greenhouse gas emissions. The budgets were not designed to demonstrate the precise contribution that a Department would make within each economic sector. The intention was to encourage departments to recognise the range of economic sectors their policies influence and encourage collaborative work within the eight sectors to reduce emissions.

**1.9** This approach has resulted in the Department of Energy and Climate Change (DECC) retaining responsibility for 57 per cent of the carbon budget reductions required for the first carbon budget, with most of the remainder being the responsibility of the Departments for Transport; Environment, Food and Rural Affairs; Business Innovation and Skills; and Communities and Local Government (**Figure 4**). DECC's share includes 74 per cent of the public sector element of the first carbon budget, including the estate and operational emissions of the wider public sector. DECC is in the process of finalising the transfer of own estate and operational emissions from schools, further education colleges, Higher Education Institutions, and the NHS to the relevant departments.

**Figure 4**

Percentage allocation of the first carbon budget (2008-2012) across Government departments



Source: National Audit Office, adapted from Low Carbon Transition Plan (2009)

**1.10** The system for assigning the departmental carbon budgets has resulted in nine departments with budgets covering solely emissions from their own estate and operations<sup>9</sup>. The new Government announced in May 2010 that carbon emissions from central government would be cut by 10 per cent in the next 12 months. If this target is met this will result in earlier delivery of planned reductions than in the carbon budgets. There is no immediate plan to re-set the public sector allocations for the first budget period, but allocations will be revisited for the second budget period.

<sup>9</sup> Cabinet Office, Department for International Development, Department for Work and Pensions, Foreign and Commonwealth Office, HM Revenue and Customs, HM Treasury, Home Office, Law Officers' Departments, Ministry of Justice. The budgets of departments with sectoral shares also cover emissions from their own estate.

**1.11** The other nine departments have a share of both public sector emissions and emissions from specific economic sectors in their departmental carbon budgets. For each sector of the economy one department has been assigned the role of leading and managing the delivery for that sector's emission reductions (**Figure 5**). In all but one case, the lead department is the one with the largest share of the emissions reduction in the sector<sup>10</sup>. The four lead departments are the Department of Energy and Climate Change, the Department for Environment, Food and Rural Affairs, the Department for Transport and the Department for Communities and Local Government. *Climate Change: Taking Action* notes that lead departments are intended to work in collaboration with other departments to ensure cost-effective emissions reductions are achieved within a sector and to identify new opportunities for emissions reductions. Such collaboration is intended to help in identifying new policies that may increase emissions and implementing measures to mitigate these effects on the overall carbon budget.

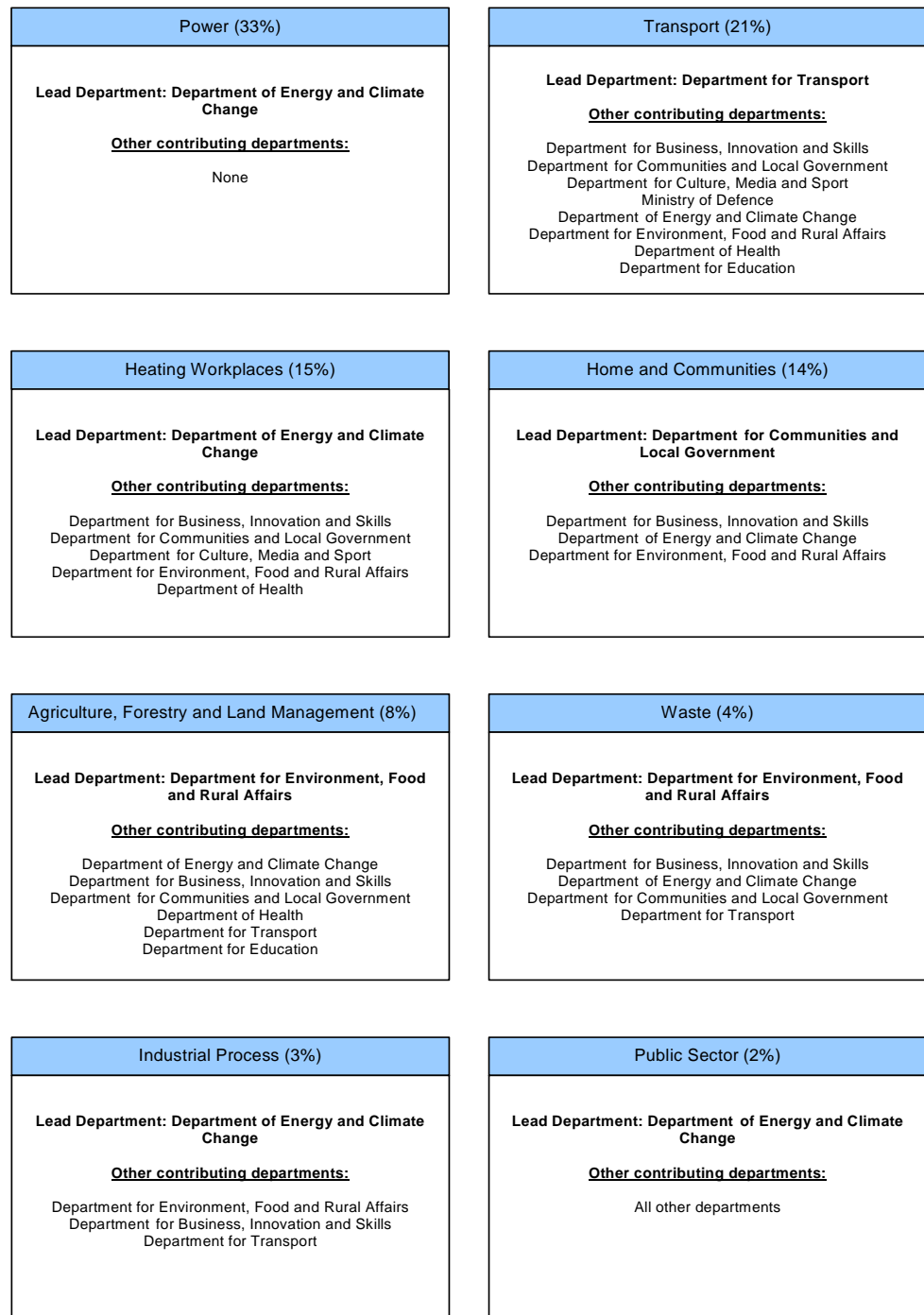
**1.12** There are five departments with no lead role but responsibility for a share in one or more sectors: the Department for Business, Innovation and Skills; the Department for Education; the Department for Culture, Media and Sport; the Department of Health; and the Ministry of Defence. Of these, the Department for Business, Innovation and Skills has the most significant share with 7 per cent of the total carbon budget and a share in six different sectors.

**1.13** HM Treasury is included in the category of departments that have a budget covering only their own estate and emissions, and has no direct responsibility for a share in any of the economic sectors. Nevertheless, *Climate Change: Taking Action* notes that Treasury has a key role in terms of its influence on tax policy, international deals on emission reductions and the integration of climate change into fiscal and economic policy.

<sup>10</sup> The exception is the Homes and Communities sector, where although the Department of Energy and Climate Change has the greatest percentage share (63 per cent), the Department for Communities and Local Government (27 per cent) has the lead responsibility.

**Figure 5**

Lead and contributing departments for each economic sector in the first carbon budget (2008-2012)



Source: National Audit Office, based on Climate Change: Taking Action (2010)

## Departmental carbon reduction plans

**1.14** In March 2010, 18 government departments published Departmental Carbon Reduction Delivery Plans to underpin the delivery of their carbon budgets. The plans set out in detail the actions that Departments planned to take on their own, and in collaboration with others, to reduce emissions in the sectors that they can influence as well as from their own estate and use of transport. The plans also included the indicators and milestones against which Departments intended to track progress in meeting UK carbon budgets and ensure that action was taken to deliver those policies designed to reduce emissions. **Figure 6** sets out the key elements within these plans for departments allocated sectoral shares.

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### Figure 6

#### Contents of departmental carbon reduction plans for departments allocated sectoral shares

For departments with a share in one or more sectors of the economy their departmental carbon reduction plans typically set out:

- how the department would deliver in practice the policies outlined in the Low Carbon Transition Plan to reduce sector emissions;
- how the department would deliver emission reductions from its own estate;
- details of who would deliver policies and key delivery partners;
- specific milestones set to keep delivery on track; and
- the planned indicators for measuring progress.

The plans of lead departments also included:

- sector-level pyramids of carbon budget indicators;
- contributions from other government departments within sectors; and
- key governance structures in each sector for managing and co-ordinating carbon reduction. These included structures both within the department and across Government.

**1.15** Although the pilot contained no formal accountability mechanism, at the end of the first budget Departments were intended to be assessed on their delivery of emission reductions against those set out in Departmental Carbon Reduction Plans. Performance in relation to Departments' carbon emissions from their own estate would also be collated and reported using the existing mechanisms under the government's Sustainable Operations on the Government Estate (SOGE) initiative. The intended reporting approach for the new Government's 10 per cent in 12 months target is not yet clear.

### Sectoral monitoring framework

**1.16** *Climate Change: Taking Action* set out a series of carbon budget management indicators and milestones for tracking progress and providing a basis on which to report progress externally for the economic sectors, through the Committee on Climate Change's Annual Report and the Government's response. The carbon budget management indicators are presented as pyramids which are made up of four tiers representing the links between emissions and policy (**Figure 7**). The first two tiers measure the overall UK emissions broken down by economic sector and sub-sector (for example transport, and, at sub-sector level, bus emissions); whilst the third and fourth tiers monitor the drivers of emissions (that is factors affecting supply or demand); and the delivery of policies that affect emissions. For example, reducing new car CO<sub>2</sub> levels should improve technological efficiency and drive down overall car CO<sub>2</sub> emissions. Contextual indicators have also been included in the framework to allow monitoring of external factors that are not policy related but which can impact on emissions within a sector, such as the weather or economic activity.

**Figure 7**

Principles of the proposed carbon budgets management indicator pyramid

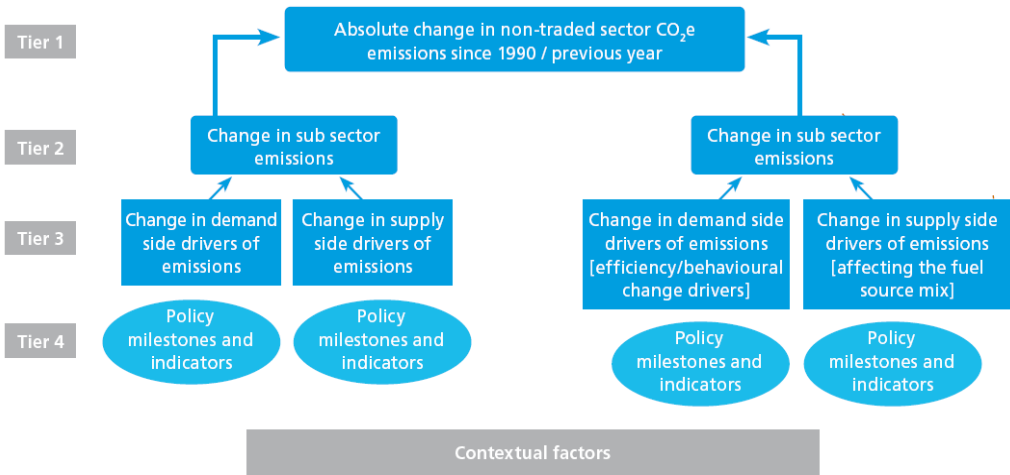


Figure Source: Climate Change: Taking Action (2010)

**1.17** The indicator pyramids published with the departmental carbon reduction plans were intended to be a key analytical and communication tool tracking the delivery of policies that affect overall emissions. The six sector indicator pyramids form the overall monitoring framework for capturing progress across the different sectors of the economy. The Departmental Carbon Reduction Plans set out cumulatively across the sectors around 200 provisional indicators. Many of these indicators have been based on the indicator framework established by the Committee on Climate Change in its 1<sup>st</sup> Annual Progress report<sup>11</sup>. The indicators covering the delivery of individual policies are provided from a wide range of data sources and in some cases the desired indicators are still under development. The greenhouse gas emissions data are available from information in the Greenhouse Gas Inventory System. This System provides an independent annual estimate of the UK’s Greenhouse Gas emissions for reporting to the United Nations Framework Convention on Climate Change (UNFCCC)<sup>12</sup>.

<sup>11</sup> Committee on Climate Change, *Meeting Carbon Budgets – the need for a step change*, Progress report to Parliament, October 2009

<sup>12</sup> The NAO report *UK greenhouse gas emissions: measurement and reporting* (March 2008) provides additional information on the measurement of emissions.  
[http://www.nao.org.uk/publications/0708/uk\\_greenhouse\\_gas\\_emissions.aspx](http://www.nao.org.uk/publications/0708/uk_greenhouse_gas_emissions.aspx)

**1.18** *Climate Change: Taking Action* noted that an essential part of the monitoring framework is understanding the interaction between progress in delivering the policies and changes in total sector emissions. The plan acknowledged that the tier 4 indicators focus on those things Government can influence and that as such these indicators can give only a partial understanding as to the performance of the overall sector emissions.

**1.19** The indicators tend to identify the desired direction of travel for progress, rather than a quantified trajectory. The Committee on Climate Change's 2nd Annual Report, published in June 2010, commented that the lack of trajectories for emissions reduction measures set out in Departmental Carbon Reduction Delivery Plans is problematic as it means there is no basis in the plans for assessing whether sufficient progress is being made towards 2020 goals. The Committee recommended that trajectories for specific measures were defined to allow Departments' progress against them to be monitored.

**1.20** The Department of Energy and Climate Change is developing the mechanism for collating and aggregating the indicator data. The intention is that category 1 and 2<sup>13</sup> departments should create a departmental scorecard. Lead departments are responsible for collating the data across their sector. The Department of Energy and Climate Change will be responsible for a central scorecard drawing on departments' indicator information. This will be used for high level monitoring and internal reporting. The central scorecard will also be used to inform the Government's response to the Committee on Climate Change' Annual Report in October each year.

<sup>13</sup> Category 1 departments have a budget that covers their own estate and operations and are a lead department for one or more sectors with shares in other sectors. Category 2 departments have a budget that covers their own estate and operations and have shares in one or more sectors.

## Part Two

### Developing and reviewing the system of departmental carbon budgets

**2.1** The system of departmental carbon budgets was set up as a pilot to operate during the first carbon budget period, to be reviewed and revised in advance of the second budget period, starting in 2013. Part Two of this briefing sets out the current governance arrangements for the departmental carbon budget system; the timing for the government's review of the system; and lessons for this review drawn from previous NAO work on the effective design of performance measurement systems.

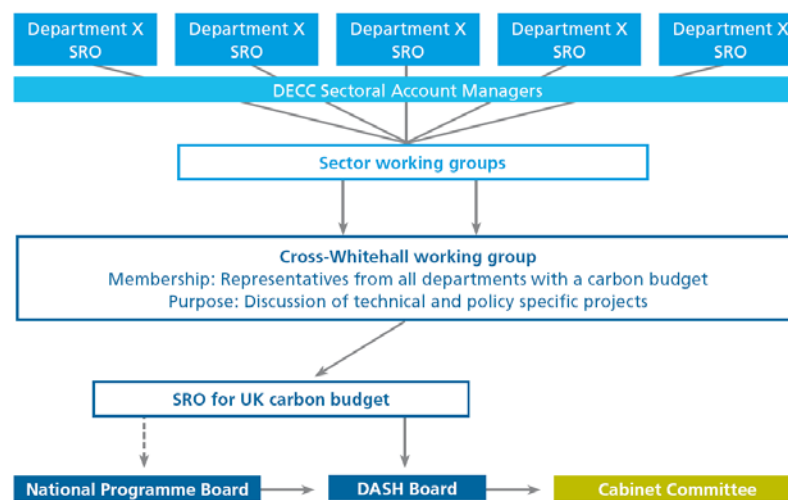
#### **Governance**

**2.2** *Climate Change: Taking Action* proposed that a cross-Whitehall working group would oversee the operation of the carbon budget system (**Figure 8**). Delivery of the carbon budgets would be driven across three levels. Within each department, an appointed Senior Responsible Officer (SRO) would be responsible for: ensuring the right mechanisms are in place to deliver the policies and measures required to meet the department's carbon budget; and for building capacity and knowledge across the department to support delivery. At the sector level, working groups would consider the management of emissions for each sector, with each group being governed by the lead Department for each sector. Finally, cross-Whitehall management of departmental carbon budgets would be brought together through the Delivery and Strategy High-Level (DASH) Board and the National Programme Board. The DASH board focus would be on cross-cutting high-level strategic risks with the National Programme Board focus on specific delivery risks.

**2.3** The new Government has revised the cross-Whitehall structure, removing the National Programme Board and replacing the DASH Board with a smaller group with responsibility for ensuring delivery of the UK Carbon Budgets. This will be known as the National Emissions Targets (NET) Board. This smaller, strategic, high level Board is intended to provide senior oversight and maintain momentum between the new SRO and Ministerial bilateral departmental meetings. The NET Board will develop policy on Carbon Budgets including for example on issues such as the fourth budget and tackling aviation and shipping. The NET Board will be closely connected to the policy process, for example, by providing a link to Cabinet Committees that consider national climate change.

**Figure 8**

Governance structure initially proposed for managing and monitoring carbon budgets



Note:

1. The governance structure depicted above has been revised by the new government, with the removal of the National Programme Board and the replacement of the DASH board with the National Emissions Targets Board. The governance structure may be subject to further change following the current review of the carbon budgets system.

Source: Climate Change: Taking Action (2010)

## Timing of the review of the management of the carbon budgets system

**2.4** The Department of Energy and Climate Change expects to complete its review of the departmental carbon budgets system by the end of 2010 and needs to set the budget for the fourth carbon budget period by 30 June 2011. During this period:

- The Government will respond to the Committee on Climate Change's 2<sup>nd</sup> Annual Progress Report in October 2010; and
- The Committee on Climate Change will advise on the Budget for the fourth period by the end of 2010.

## Lessons from NAO work on the effective design of performance measurement systems

**2.5** The pilot system of departmental carbon budgets was set up as the performance management system to manage delivery of the UK's carbon budgets. The NAO considers lessons learnt from its previous work on performance measurement, principally on the previous government's approach to performance measurement through the now discontinued Public Service Agreement (PSA) framework, are relevant to further work to develop and review the departmental carbon budget system.

**2.6** The National Audit Office, together with the Treasury, the Cabinet Office, the Audit Commission, and the Office for National Statistics, have said that the key principles for a performance measurement framework are that it should be focussed, appropriate, balanced, robust, integrated and cost effective (**Figure 9**).

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### Figure 9

The National Audit Office, Treasury, Cabinet Office, Audit Commission and Office for National Statistics have stated that a performance framework should be:

**Focused** on the organisation's aims and objectives;

**Appropriate** to, and useful for, the stakeholders who are likely to use it;

**Balanced**, giving a picture of what the organisation is doing, covering all significant areas of work;

**Robust** in order to withstand organisational changes or individuals leaving;

**Integrated** into the organisation, being part of the business planning and management processes; and

**Cost Effective**, balancing the benefits of the information against the costs.

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Source: Choosing the right FABRIC, National Audit Office et al, 2003

**2.7** The NAO considers a well designed and implemented performance management system will, among other things:

- allow decision-makers to take informed decisions about how best to deliver objectives cost-effectively;
- facilitate challenge and allow performance to be optimised; and
- support accountability through reporting on government performance in delivering key outcomes.

**2.8** The NAO's work on the PSA framework examined the main achievements and areas for improvement in the light of the fiscal challenges the public sector faces. These challenges will place a premium on Departments' abilities to define top priority objectives and allocate resources to the most cost-effective responses. The NAO identified the following four issues as being particularly important when establishing or designing any new performance measurement systems :

- Setting clear objectives that capture the outcomes that matter most to the Government and which are appropriately supported by relevant indicators and success criteria;
- Distinguishing how far outcomes are attributable to the Government intervention rather than other factors which the Government did not influence. This can be achieved through identifying explicitly the 'business model' which links the inputs (resources used) through outputs (goods and services delivered) to outcomes (the impact on society) and using it as a basis for measurement and reporting. Such a 'clear line of sight' between inputs and outcomes should help interpret performance, and promote lesson learning and the refinement of the business model over time;
- Providing information which highlights the performance improvement cost and how to improve cost-effectiveness. This may require integration with public bodies' other management systems, such as budgeting, resource planning and allocation, programme evaluation and performance review processes – so that lower-level management systems feed into and support top-level objectives; and
- Reliable, easy-to-interpret progress reporting, drawn from robust information in accordance with supporting departmental information strategies that establish data quality standards, and arrangements to provide assurance that data standards are met.

