



National Audit Office

MEASURING UP

HOW GOOD ARE THE GOVERNMENT'S
DATA SYSTEMS FOR MONITORING PERFORMANCE
AGAINST PUBLIC SERVICE AGREEMENTS?

MAY 2010

Comprehensive Spending Review 2007 covering the period 2008-2011

Review of the data systems for Public Service Agreement 27 led by the Department of Energy and Climate Change:

‘To lead the global effort to avoid dangerous climate change’

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Summary

Introduction

1. This report summarises the results of our follow-up examination of the data systems used by the Department of Energy and Climate Change (DECC) in 2009 to monitor and report on progress against their 2008-2011 Public Service Agreements. This indicator set was previously the responsibility of the Department of Food and Rural Affairs (Defra).

The PSA and the Departments

2. Public Service Agreements (PSAs) are at the centre of the Government's performance measurement system. They are usually three year agreements, set during the spending review process and negotiated between Departments and the HM Treasury. They set the objectives for the priority areas of the Government's work.
3. PSA 27 is led by the DECC, with data provided by Defra, external contractors and other third party organisations. Each PSA has a Senior Responsible Officer who is responsible for maintaining a sound system of control across Departmental boundaries that supports the achievement of the PSA. The underlying data systems are an important element in this framework of control. The most recent public statement provided by DECC on progress against this PSA was in the 2009 Autumn Performance Report (APR).

The purpose and scope of this review

4. The Government invited the Comptroller and Auditor General to validate the data systems used by Government to monitor and report its performance. During 2008, the National Audit Office (NAO) carried out an examination of the data systems for all the indicators used to report performance against PSA 27. This involved a detailed review of the processes and controls governing:
 - The match between the indicators selected to measure performance and the PSA. The indicators should address all key elements of performance referred to in the PSA;
 - The match between indicators and their data systems. The data system should produce data that allows DECC to accurately measure the relevant element of performance;
 - For each indicator, (the selection, collection, processing and analysis of data) control procedures should mitigate all known significant risks to data reliability. In addition, system processes and controls should be adequately documented to support consistent application over time; and

- The reporting of results. Outturn data should be presented fairly for all key aspects of performance referred to in the target. Any significant limitations should be disclosed and the implications for interpreting progress explained.
5. All of these indicators within the PSA were previously the responsibility of Defra and were reviewed in full by the NAO in December 2008. For these indicators, this year we have carried out a follow up review to establish progress made in implementing any recommendations and to establish if there have been any changes to the data systems.
 6. Our conclusions are summarised in the form of traffic lights (see figure 1). The ratings are based on the extent to which DECC has:
 - (i) Put in place and operated internal controls over the data systems that are effective and proportionate to the risks involved and;
 - (ii) Explained clearly any limitations in the quality of its data systems to Parliament and the public.
 7. The remaining sections of this report provide an overview of the results of our assessment, followed by a brief description of the findings and conclusions for each individual data system. Our assessment does not provide a conclusion on the accuracy of the outturn figures included in DECC public performance statements. This is because the existence of sound data systems reduces but does not eliminate the possibility of error in reported data.

Figure 1: Key to traffic light ratings

Rating	Meaning
GREEN (Fit for purpose)	The data system is fit for the purpose of measuring and reporting performance against the indicator
GREEN (Disclosure)	The data system is appropriate for the indicator and the Department has explained fully the implications of limitations that cannot be cost-effectively controlled
AMBER (Systems)	Broadly appropriate, but needs strengthening to ensure that remaining risks are adequately controlled
AMBER (Disclosure)	Broadly appropriate, but includes limitations that cannot be cost-effectively controlled; the Department should explain the implications of these.
RED (Systems)	The data system does not permit reliable measurement and reporting of performance against the indicator

RED (Not established)

The Department has not yet put in place a system to measure performance against the indicator

Overview

8. Responsibility for this PSA rests with to the Department of Energy & Climate Change (DECC). The aim of this PSA is to measure the effectiveness of DECC policies to lead the global effort to avoid dangerous global climate change. Progress towards delivering this PSA is monitored using six key indicators. These indicators are shown in figure 2 below.
9. For this PSA we have concluded that the indicators selected to measure progress are consistent with the scope of the PSA and afford a reasonable view of progress. However, as we noted in our prior year review we continue to have some concerns with the coverage of the indicator set and noted some limitations with indicators which are detailed in paragraph 13. In particular, we have concerns whether the indicator set measures global effort and how the indicator set can measure DECC or the wider UK Government's performance in pursuing global policy goals.
10. Figure 2 summarises our assessment of the data systems.

Figure 2: Summary of assessments for indicator data systems

Indicator		Full review Rating	Follow-up review rating
27.1	Global CO ₂ emissions to 2050	Amber (Systems)	Green (Fit for Purpose)
27.2	Proportion of areas with sustainable abstraction of water	Amber (Systems)	Amber (Systems)
27.3	Size of global carbon markets	Amber (Systems)	Amber (Systems)
27.4	Total UK greenhouse gas and CO ₂ emissions (Also DSO 2.1)	Amber (Systems)	Amber (Systems)
27.5	Greenhouse gas and CO ₂ intensity of the UK	Amber	Green

Indicator		Full review Rating	Follow-up review rating
	economy	(Systems)	(Disclosure)
27.6	Proportion of emissions reductions from new policies below the Shadow Price of Carbon (Also DSO 2.4 and 4.3)	Amber (Systems)	Amber (Systems)

Findings

11. We found that of the 6 PSA indicators, 2 were fit for purpose (green) and the remaining 4 were broadly appropriate (amber). The aim of the review was to confirm whether the indicators were suitable and the data systems were in place to support this. It was not a review of the data quality itself.
12. DECC was created in October 2008, and initially DECC relied on the governance frameworks in place at both Defra and BIS. DECC is now in a period of transition and has been working to develop and establish its own governance arrangements. To date DECC has made good progress and has:
 - established a Management Board supported by a number of sub-boards and committees. Detailed terms of reference are in place for each Board/Committee with clearly defined roles and responsibilities;
 - developed a 2 year Business Plan which is supported by 7 individual DSO Delivery Plans. The delivery plans are in the early stages of development. However, it is evident from the review of the draft plans that there are clear linkages with the Business Plan which show how the programme of works contribute to the delivery of the Department's priorities and objectives;
 - developed a performance framework which includes regular reporting of performance against the DSO's and the key milestones in the DSO Delivery Plans. The Management Board receive performance reports on the progress of the DSO's and the PSA through a recently developed balanced scorecard. This is supported by an established system for reporting on the cross Government climate change and energy programme through the Dashboard;
 - developed a risk management framework which includes the introduction of a corporate risk register in October 2009. Risk management arrangements will need to be developed further to ensure they are consistently embedded throughout DECC;

- developed good data quality arrangements to date with clear lines of responsibility for managing the PSA and DSO performance data. Each indicator has a designated Data Policy Officer and Data Quality Officer who takes responsibility for collating and managing the data. A Corporate Governance and Performance Team is in place who co-ordinate the public reporting of the PSA's and DSO's via the Annual Report and Autumn Performance Report, supported by the Office of Climate Change Programme who keep a detailed record of all the DSO and PSA indicators and associated Measurement Annex; and
 - established a Measurement Annex for all DSO and PSA indicators which is centrally managed. This annex is currently in development and is constantly being updated by DECC.
13. The change in responsibility for this PSA from Defra to DECC has resulted in some enhancements to the overall strategic management of the PSA and DSO indicator sets. In particular we recognise that:
- there is evidence of a structured handover between Defra and DECC data quality officers, where appropriate;
 - overall DECC has taken on board recommendations from the prior year review. DECC has taken steps to gain assurances over third party data used within the PSA set. DECC has commissioned an in-year review to confirm the validity of the data used within PSA 27.1. DECC has also internally documented why it is not appropriate for them to gain a service level agreement or equivalent for data used to report PSA 27.3;
 - However, DECC has not acted upon prior year recommendations to ensure written procedure notes have been developed for all of the indicators, explaining how indicators are assimilated and reported. DECC have acknowledged that they will act upon this recommendation in due course as they recognise that production of these will ensure comparability of data over time, particularly where responsibility for the calculation and performance against a specific indicator is passed to a different member of staff; and
 - DECC have included as an appendix to their Annual and Autumn Performance Reports a data quality annex. This provides the reader of these reports with further detail on the sources and quality of specific data sets used.

Assessment of indicator set

14. In undertaking the validation we read the documentation associated with the PSA, including the Delivery Agreement and considered whether the indicators selected to measure progress are consistent with the scope of this PSA. We conclude that the indicators selected afford a reasonable view of progress but we have concern whether some of the indicators can measure DECCs or wider UK Government performance in pursuing policy goals. In particular:
- *Indicator 1: Global CO₂ emissions to 2050* – This indicator is useful in understanding the UK's contribution to global emissions, and in monitoring global emission changes. However, it is questionable how useful this indicator is as a measure of DECC effectiveness and a measure of DECC global effort; and
 - *Indicator 3: Size of global carbon markets* – DECC also has a very limited control over this system, and therefore it is difficult to use as measure of their effectiveness in this area.
15. We concluded that there may be opportunities to develop further indicators that show how the UK is demonstrating best practice and encouraging other countries to follow (eg first climate change bill, first auction of EU Emission Trading Scheme (EUETS) allowances, first carbon budgets). We are aware DECC are now more focussed on this area of policy and their DSOs complement this area of activity.

Appendix 1: Summary of Findings and conclusions for individual data systems

The following sections summarise the results of the NAO's examination of each data system.

No	Indicator	Rating at full review (prior year)	Rating at follow-up review	Reasons for change and additional comments
27.1	Global CO2 emissions to 2050	AMBER (Systems)	GREEN (Fit for purpose)	<ul style="list-style-type: none"> • Since our prior year Defra review DECC has commissioned a review over the quality of the external data provider's data in comparison to other similar providers. This review concentrated on data provided up to 2007 (which was the most recent data available) by the external provider. No significant issues identified affecting the quality and robustness of the data were found within this review. DECC should ensure that a forward looking review covering periods from 2007 onwards are commissioned to ensure the reliability of the data stream for future reporting periods. • DECC has therefore considered the significant risks within the data system which justified the amber rating in the prior year review and externally verified the data source which justifies the uplift in rating.
27.2	Proportion of areas with sustainable abstraction of water	AMBER (Systems)	AMBER (Systems)	Since our prior year review the methodology and compilation for this indicator has been revised. However, the data source remains constant and the new system is directed by European reporting requirements.
27.3	Size of the Global carbon market	AMBER (Systems)	AMBER (Systems)	There are no changes noted; the data system is consistent with the prior year.
27.4	Total UK Greenhouse	AMBER	AMBER	There are no changes noted; the data

No	Indicator	Rating at full review (prior year)	Rating at follow-up review	Reasons for change and additional comments
	gas and CO2 emissions	(Systems)	(Systems)	system is consistent with the prior year.
27.5	Greenhouse gas and CO2 intensity of the UK economy	AMBER (Systems)	GREEN (Disclosure)	<ul style="list-style-type: none"> In the prior year review we found that there were no detailed process notes for the compilation of this indicator, there were no data system risk assessment and no relevant data quality disclosures within the APR. DECC has addressed these weaknesses in part and has strengthened the controls in place over the data system and detailed limitations with the data in the annex to its 2009 APR. Within the 2009 APR a disclosure has been made on the quality of the emissions data and further specific explanation on the compilation of the indicator has been given.
27.6	Proportion of emissions reductions from new policies below the Shadow Price of Carbon	AMBER (Systems)	AMBER (Systems)	<ul style="list-style-type: none"> DECC has not actioned all of the prior year recommendations. However, DECC has disclosed the limitations with the data stream and has acknowledged there is more work required to improve the use and reporting of this indicator.

Appendix 2 – Detailed Findings and conclusions for individual data systems

This section summarise the results of the NAO's examination of those data systems, used to measure performance against the Department's PSAs. We have provided a full narrative for all the data systems so as to provide an understanding of any changes that have occurred within the system in light of the machinery of government changes.

Indicator 27.1: Global CO2 emissions to 2050 (also indicator DSO 1.1)

Current Year's Rating Conclusion: GREEN (Fit for purpose)

16. We have concluded that the data system underlying this indicator is fit for the purpose of measuring and reporting performance against this indicator.

Previous Year's Rating Conclusion: AMBER (Systems)

17. We previously concluded that the data system underlying this indicator was broadly appropriate, but needed strengthening to ensure that the remaining risks were adequately controlled.

Characteristics of the data system

18. The data system for this indicator uses data from the 2009 annual International Energy Agency (IEA) publication 'Energy Technology Perspectives: Scenarios and Strategies to 2050'. This details the level of global CO₂ emissions that have been projected for 2050 given the current policies that have been adopted by governments across the globe. It is also supplemented with additional updated IEA data from their World Energy Outlook report (November 2009).
19. The indicator collates the data from the IEA reports and looks at actual and forecast global CO₂ emissions from fossil fuel combustion as a proxy measure. Fuel combustion is the man-made source of CO₂ and therefore is the one policy area that government can readily address. The indicator measures the most recent IEA projections relative to the projection produced in 2006, which is the baseline dataset.

Findings

20. The follow up work for this indicator has been addressed with DECC personnel. The officers responsible for collection, processing and analysis have changed but the data system has not changed.

21. DECC has addressed the majority of our findings from the prior year review and only 1 minor issue remains as detailed in paragraph 22 below. We have changed the rating for this indicator from amber (systems) to green (fit for purpose) to reflect the strengthened controls in place over the data system:
- Previously the data was not validated by the Department and this was the main reason for the amber rating. This year, the data have been reviewed by an external contractor appointed and monitored by DECC as part of a funded research programme. This programme aimed to review the global emission inventories including the IEA's. As part of this research programme, various inventory data were reviewed and compared in terms of their accuracy, transparency and completeness. The review found that there were no significant data quality risks but the inventory only covered the energy sector. This finding does not impact on the assessment of this indicator as the annex and the 2009 APR clearly state that it is based upon emissions from fossil fuels; and
 - DECC has updated the measurement annex so that it is fully reflective of the indicator as reported.
22. There are still some minor issues that have not been addressed by DECC. These do not undermine the robustness of the data system and can be summarised as:
- DECC does not have guidance in place which sufficiently detail its responsibility in respect of the processing and analysis of the data. This should be an extension to the Measurement Annex and should include narrative on how the data is assimilated by DECC officers and when updates from IEA on new emission projections are expected.
23. The indicator is a useful measure of global performance in reducing carbon emissions. However, it is questionable how much influence DECC policies can have on this indicator.

Indicator 27.2 Proportion of areas with sustainable abstraction of water

Current Year's Rating Conclusion: AMBER (Systems)

24. We have concluded that the data system underlying this indicator is broadly appropriate, but needs strengthening to ensure that the remaining risks are adequately controlled.

Previous Years rating Conclusion: Amber (Systems)

25. We previously concluded that the data system underlying this indicator was broadly appropriate, but needed strengthening to ensure that the remaining risks were adequately controlled.

Characteristics of the data system

26. This indicator measures the sustainable management and abstraction of water across England and Wales. There are many ways in which this can be achieved, notably through measures to reduce water usage and other policy initiatives such as changes to abstraction licensing regulation or time limiting of licences to individual consumers. Abstraction licences are granted to water companies and other businesses, and denote the maximum levels of water that they can extract from water reserves.
27. The Environment Agency (EA) provides Defra with the source information for this indicator on an annual basis. The methodology of compilation for this indicator was revised in September 2009 and was subsequently validated by the Prime Minister's Delivery Unit (PMDU). The indicator now measures the amount of water abstracted against baseline figures of the amount of water potentially available for abstraction. A single measure has been introduced which enables DECC to show the current state of environmental water resources distinct from the likely water available for future new abstractions. The new methodology uses data that are used to demonstrate compliance (or otherwise) with flow standards that are needed to meet the achievement of the ecological objectives of the Water Framework Directive (WFD); the number of measurement points (spatial resolution) is now consistent with WFD reporting.
28. The EA use their national water Resources Geographic Information Systems (GIS) system to collate the information to report to Defra on this indicator. This enables them to clearly show the two headline indicator elements:
- i) Compliance with environmental flow – this shows the current environmental state of water resources and the compliance with the needs of the environment of river flow. It shows where, and the extent to which, the flows are failing to meet the Environmental Flow Indicators (EFI). Therefore, it is easy for readers to see which integrated water bodies have a compliant or non compliant flow. Flows are colour coded; a green flow is seen as compliant (within an allowable amount of abstraction from natural flows). Yellow, orange and red flows demonstrate that there is more abstraction taking place than the EA believe can support a good river environment (the degree of non-compliance being worst when it shows as

red as the flow is more than 50% below the EFI at low flows). Over time the EA would expect a more sustainable abstraction regime to move towards flow regimes that are compliant (i.e. colour coded green).

- ii) Resource availability – this aspect of the indicator looks at water availability for new or increased abstraction as a percentage of time available for future abstraction. This looks at all flows, considers the full licensed regime and takes account of downstream abstractor’s needs. The smaller the percentage of time that water is available, the more restrictive abstraction licence conditions are likely to be. Over time, sustainable abstraction is seen as the reduced utilisation of water where licences are currently only available for a small proportion of the time, and greater utilisation of water where licences are available for a larger proportion of time.

29. There are several benefits that will be realised following changes to the methodology, specifically:

- Under the old methodology the indicator showed the current state of environmental water resources and water available for new abstractions in a combined pictorial format which was confusing and meant that users of the information could not easily interpret the implications of reported data correctly;
- Reporting methodology for the revised indicator is in line with WFD reporting requirements;
- The EA uses a more technical approach to assessing the water resources available, as old data was based upon a 6 year cycle with results updated annually at the end of each cycle. Data can now be updated 6 monthly or at least annually; and
- Spatial resolution has improved as there are more measurement points.

30. The indicator’s progress is measured using a proxy measure, namely, the number of Section 52 notices (EA proposal of change to abstraction rights) that are planned and subsequently issued on an annual basis. This proxy was decided upon because the changes to the above headline indicators were predicted to take effect very slowly and the EA can actively manage the abstraction licensing to manipulate the results of the two headline indicators.

Findings

31. The Measurement Annex for this indicator has been revised in light of the changes in methodology. However, there are still a few areas where this could be improved.
32. The DECC 2009 APR clearly describes the source of the data; it details the rationale for the changes in compilation methodology and also details the fact that the indicator is still in development. The APR also clearly explains that short term progress is measured by the number of notices that the EA issues to abstraction license holders to make compulsory changes to abstraction licenses as the exact targets have not been determined.
33. The data collection procedures and controls in place at the EA have not been reviewed and no steps have been taken by DECC or Defra to ensure that the EA's controls are operating effectively. However, from our discussions with staff at Defra it was clear that they had an understanding of the data collection methods and had a close working relationship with their contacts at the EA. In addition, the EA have provided Defra with a signed data quality assurance statement which states that the EA consider that the data provided is fit for purpose. This statement also details that appropriate quality controls and risk assessments are in place at the EA to ensure the quality of the data and that the EA will make DECC aware of any issues with data quality should they arise. There is no data quality assurance agreement in place between Defra and DECC.
34. This data is also separately reported by Defra within their DSO indicator 2.3.2. The data quality officer at Defra provides the information to DECC in a format appropriate for external reporting. The DECC officer does not have to undertake any processing or analysis over the data presented, but does provide a narrative statement of progress. The DECC data quality officer liaises closely with Defra and the EA and was critically involved in the overall development of the new methodology for the indicator.

Indicator 27.3: Size of global carbon market (also indicator DSO 1.2)

Current Year's Rating Conclusion: AMBER (Systems)

35. We have concluded that the data system underlying this indicator is broadly appropriate, but needs strengthening to ensure that the remaining risks are adequately controlled.

Previous Year's Rating Conclusion: AMBER (Systems)

36. We previously concluded that the data system underlying this indicator was broadly appropriate, but needed strengthening to ensure that the remaining risks were adequately controlled.

Characteristics of the data system

37. This indicator measures the progress towards a viable international carbon trading system, which is a component towards of a global low carbon economy. The target for this indicator is to increase the growth of the carbon market by 7-10% per annum, as strong carbon markets are internationally recognised as a mechanism of incentivising emission reductions.
38. The data system for this indicator uses the data from a World Bank Report, 'State and Trends of the Global Carbon Market', on the volume of CO₂ emissions traded, expressed in terms of tonnes CO₂ equivalent.
39. The data quality principles and values held by the World Bank are consistent with the 'Fundamental principles of Official Statistics' and the 'Principles Governing International Statistical Activities' of the United Nations Statistical Division. The World Bank has also worked closely with the International Monetary Fund to develop the Data Quality Assessment Framework (DQAF) which it complied with when collecting and analysing this data.

Findings

40. The follow up work for this indicator has been addressed with DECC personnel. Officers responsible for collection, processing and analysis have changed. However, the data system has remained the same.
41. DECC has addressed some of our findings from the previous review however other recommendations remain to be actioned and, therefore, the rating for this indicator has stayed at amber (systems). DECC's measurement annex for this indicator has been updated and now correctly reflects the baseline data provider (i.e. the World Bank).
42. The issues that have not yet been addressed by DECC are:
 - DECC has fully explained why the source of the data is appropriate for monitoring the performance of this indicator and have produced a statement detailing why it is not cost effective for them to independently verify the controls in operation over the data systems of the World Bank. However, this is not disclosed within the 2009 APR for users to note; and

- There is insufficient guidance with regard to DECC responsibility for sourcing, processing and analysis of the data which includes consideration of key risks within the indicator's data system. DECC is working towards completing this.

43. The 2009 APR provides satisfactory explanation for the assessment that an improvement has been made against this indicator and provides sufficient narrative explanation and graphs to support the assessment.

Indicator 27.4: Total UK greenhouse gas and CO2 emissions (also indicator DSO 2.1)

Current Years rating Conclusion: Amber (Systems)

44. We have concluded that the data system underlying this indicator is broadly appropriate, but needs strengthening to ensure that the remaining risks are adequately controlled.

Prior Year Conclusion: Amber (Systems)

45. We previously concluded that the data system underlying this indicator was broadly appropriate, but needed strengthening to ensure that the remaining risks were adequately controlled.

Characteristics of the data system

46. This indicator measures the UK Greenhouse Gas and Carbon Dioxide (CO₂) emissions (net of land use change and forestry) with an allowance for UK emissions traded on the European Union Emission Trading System (EU ETS). The data system for this indicator uses the data from the UK Greenhouse Gas Inventory (GHGI) for UK emissions and EU ETS verified emissions for traded volumes.

47. The GHGI is a national system set up in accordance with article 5 of the Kyoto protocol and European Commission Decision 280/2004/EC. The GHGI is collated by an external consultant for DECC. This consultant collects datasets, ensures that the data is of the necessary quality and publishes an annual emissions inventory on behalf of DECC within 15 months of the end of the calendar year in question. The UK Statistics Authority (UK SA) is due to review this data stream in March 2010.

48. EUETS verified emissions data is collated by the Environment Agency (EA), provided to DECC, and is reported by the EA annually each February.

Findings

49. The follow up work for this indicator has been addressed with DECC personnel. The officers responsible for collection, processing and analysis have not changed.
50. The rating for this indicator remains as Amber (systems) primarily due to the fact that DECC has not yet fully addressed the majority of our findings from the previous review and therefore the majority of the recommendations remain outstanding either in whole or in part. The DECC Measurement Annex for this indicator has been amended to reflect the specification of the indicator which was one of our recommendations from last year.
51. The following recommendations have not been addressed:
- Guidance on the compilation of the indicator and the associated quality control and assurance processes are not sufficiently detailed. The documentation available does not explain DECC responsibility for the processing and analysis of the data sets.
 - The controls over the EUETS data stream are not documented and have not been tested by DECC personnel or an external body. This is consistent with our understanding from last year and this has meant that the indicator rating has not changed. The data collection procedures and controls in place at the EA have not been reviewed by a DECC statistician and no steps are taken to ensure that the EA's controls are operating effectively. From our discussions with staff at DECC it was clear that they have an understanding of the data collection methods, although the risks within the system remain.
52. The APR details the scope of the indicator, the limitations in the GHGI data stream and developments that DECC is making in this area through securing supplier agreements. However, there is no narrative explanation on the quality of the EU ETS stream within its APR and the associated risks within this data system.

Indicator 27.5: Greenhouse gas and CO₂ intensity of the UK economy (also DSO 5.1)

Current Years rating Conclusion: Green (Disclosure)

53. We have concluded that the data system underlying this indicator is fit for purpose and the Department have explained fully the implications of limitations that cannot be cost-effectively controlled.

Previous Years rating Conclusion: Amber (Systems)

54. We previously concluded that the data system underlying this indicator was broadly appropriate, but needed strengthening to ensure that the remaining risks were adequately controlled.

Characteristics of the data system

55. This indicator measures the UK Greenhouse Gas and Carbon Dioxide emissions (net of land use change and forestry, but no allowance for emissions trading) per unit of Gross Domestic Product (GDP) presented as an indexed series (1990 = 100).
56. The data system for this indicator uses data streams from the UK Greenhouse Gas Inventory for emissions and GDP based on market prices. These data streams are UK National Statistics (UK SA) quality assured streams, which give users confidence in the quality of the data and the assurance processes in place.
57. The GHGI is a national system set up in accordance with article 5 of the Kyoto protocol and European Commission Decision 280/2004/EC. The GHGI is collated by an external consultant for DECC. This consultant collects datasets, ensures that the data is of the necessary quality and publishes an annual emissions inventory on behalf of DECC within 15 months of the end of the calendar year in question. The UK Statistics Authority (UK SA) is due to review this data stream in March 2010.

Findings

58. The follow up work for this indicator has been addressed with DECC personnel. The officers responsible for collection, processing and analysis have not changed.
59. DECC has addressed the majority of our findings from the previous review and only minor issues remain as detailed in paragraph 60 below. The rating for this indicator has moved from amber (systems) to green (disclosure). In our earlier review there were no detailed compilation process notes, no data system risk assessment and no relevant data quality disclosures within the APR. DECC has addressed these weaknesses in part and has strengthened the controls in place over the data system and detailed limitations with the data in the annex to its 2009 APR.
60. An accurate Measurement Annex is now in place to support the operation of the system and this reflects the data system. However, guidance on the compilation of the indicator and the associated quality control and assurance

processes are not sufficiently detailed. In addition the documentation available does not explain DECC responsibility regarding the processing and analysis of the data sets.

61. Within the DECC 2009 APR there are now cross references made to other publicly available documentation, there is an explanation of the performance of this indicator including graphical presentations and also disclosures of the limitations in the GHGI data stream. Additionally, disclosures have been included which explain the developments that DECC are making through securing supplier agreements for emissions data.

Indicator 27.6: Proportion of emissions reductions from new policies below the Shadow Price of Carbon (also DSO 4.3 and 2.4)

Current Years rating Conclusion: Amber (Systems)

62. We have concluded that the data system is broadly appropriate, but needs strengthening to ensure that remaining risks are adequately controlled.

Prior Years rating Conclusion: Amber (Systems)

63. We previously concluded that the data system underlying this indicator was broadly appropriate, but needed strengthening to ensure that remaining risks were adequately controlled.

Characteristics of the data system

64. This indicator reports on the cost effectiveness of all new Government policies which make a significant contribution to reducing greenhouse gases. The methodology of compilation and measurement of this indicator was revised in July 2009 in line with DECC latest estimates of the costs to meet the UK's carbon budgets, the UK 2050 target and the UK's 2020 targets agreed as part of the EU Climate and Energy Package. The main reason for the change was that there was a lot of uncertainty associated with the old method because it relied on understanding the cost of the global damage caused by climate change which was difficult to estimate. The new method looks at the cost-effectiveness of proposals compared with two main ways of reducing emissions. The costs of reducing emissions by these routes are better known than damage costs (although still associated with some degree of uncertainty). The new approach is designed to enable all new Government policies to be compared with the cost of implementation in the traded sector (via European Union Greenhouse Gas Emission Trading System (EU ETS)) or in the non-traded sector (compared with the cost-curve for abatement measures).

65. The indicator expresses the proportion of CO₂ equivalent tonnes saved by implementing Government policies, the cost of which is calculated by ascertaining whether it falls below the Shadow Price of Carbon (SPC). The new methodology now has higher valuations for the SPC, the non traded price of carbon is £51 per tonne and the traded price is £28 per tonne. Cost for individual Government policies are calculated by individual Departments and verified by DECC in line with its specified mathematical formula.
66. The policy and cost information which is used to measure performance against this indicator is collected from Impact Assessments which have been completed and published on Departmental websites. BIS is responsible for collating all Government policy impact assessments. Impact Assessments are completed by all Government Departments for all Government policies which have a greenhouse gas implication above a DECC defined de-minimis level. Once the Impact Assessments have been completed they are approved by the Chief Economist and Minister responsible for the policy. The analyses underlying the Impact Assessments are also peer reviewed by the Government's Inter-Departmental Analyst Group. This group was formed to ensure consistency and accuracy when climate change mitigation policies are appraised and evaluated.

Findings

67. The follow up work for this indicator has been addressed with DECC personnel. The officers responsible for collection, processing and analysis have changed as well as the overall methodology for compilation of this indicator as detailed above.
68. DECC has not addressed all of our findings from the prior year Defra review and the issues which were raised are detailed below from paragraph 69 onwards and remain outstanding. However, the system is now in operation and is fully developed in terms of measuring the cost-effectiveness of policies with a final impact assessment (which is what is required by the PSA agreement). DECC is looking to increase the usefulness of the indicator even further by extending it to partial impact assessments and it is this optional extra that is still under development. DECC has reported on this indicator, highlighting the limitations within the 2009 APR. The rating for this indicator has remained at Amber systems.
69. In our previous review we noted that sufficiently detailed compilation guidance for the indicator was not in place detailing how the data was compiled, quality assured and reported. This has not been acted upon at the time of our current review. There is a Measurement Annex in place for this indicator and this has

been revised in light of the new methodology. However, some of the specifics measures have not been finalised and sources have not been confirmed.

70. DECC has undertaken and documented a risk assessment for the indicator, however this needs to be formalised and 'suggested procedures' converted into 'actual procedures'. This should help ensure the risk assessment is appropriately documented and acted upon by DECC.
71. We previously suggested that there was also an opportunity for Defra to work with BIS to raise the profile of this indicator and develop the guidance further. This is scheduled to take place in 2010.
72. The DECC 2009 APR clearly details the changes within the data stream. For example: that the methodology of compilation has changed, that the results are different in its July Annual Report; and that they acknowledge that there is, 'more work required to improve the use and reporting of this indicator.'