

The contribution that reporting of greenhouse gas emissions makes to the UK meeting its climate change objectives

A review of the current evidence

November 2010

The contribution that reporting of greenhouse gas emissions makes to the UK meeting its climate change objectives: A review of the current evidence

Report presented to Parliament pursuant to section 84 of the Climate Change Act 2008.

Department for Environment, Food and Rural Affairs
Nobel House
17 Smith Square
London SW1P 3JR
Telephone 020 7238 6000
Website: www.defra.gov.uk

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Any enquiries regarding this document should be sent to us at:

Environmental Reporting
Defra
Area 5C
Ergon House
Horseferry Road
London
SW1P 2AL
Tel: 020 7979 8587
E-mail: ghgreporting@defra.gsi.gov.uk

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Foreword



Our climate is changing and this presents a global challenge where the UK has the opportunity to show leadership.

The UK has published guidance on how organisations should measure and report their greenhouse gas emissions in a transparent and comparable way. And we have now completed a review of the contribution that reporting of greenhouse gases by companies makes to the UK meeting its climate change objectives.

As we recover from the recession, it is crucial that we take the necessary steps to avoid the mistakes of the past. That means that the focus must be on sustainable green growth and on issues that matter to long term success. We need to rebuild confidence and corporate reporting of greenhouse gas emissions has an important part to play in ensuring there is greater corporate transparency around risks.

This report is an important piece of evidence that will help us bring forward proposals on how we can meet the challenges of climate change and accelerate the transition to a low carbon economy. It outlines how reporting of greenhouse gas emissions has played a part in helping companies to manage their emissions and helped improve transparency for investors. Disclosing good quality and relevant information helps investors to make informed decisions about where and how to invest taking account of how well the company is managing its environmental impacts. It should also enable shareholders to take an active interest in how the companies they own are run on their behalf and where necessary to challenge the directors on their performance.

This report presents specially commissioned analysis assessing the contribution that reporting makes to the UK meeting its climate change objectives. It also includes highlights from recent studies from a range of different sources that are also relevant to consideration of this issue.

I would like to acknowledge the help and co-operation we have received from the Climate Disclosure Standards Board, the Environment Agency, the European Commission, the Institute of Environmental Management and Assessment, and the Organisation for Economic Co-operation and Development in compiling this report.

This comprehensive report will inform the decision on whether the Government should introduce regulations to require corporate reporting of emissions. We will take account of the results from the recent consultation by the Department for Business, Innovation and Skills on how to improve the standards of narrative reporting.

The Government will announce in early 2011 how it intends to proceed in promoting more widespread and consistent reporting of greenhouse gas emissions.



Lord Henley

1. Executive Summary

1. The following section summarises the key findings of the evidence reviewed in this report which aimed to examine the contribution that corporate reporting of GHG emissions makes to the UK meeting its climate change objectives.
2. The evidence highlights that for businesses in the UK, as well as internationally, measuring and reporting of GHG emissions is considered an important part of the GHG management cycle and a tool for embedding sustainability into a company.
3. Current research shows that businesses are considering their environmental impacts at the highest level; 62% of FTSE all-share companies reported quantified figures on climate change or energy use in their 2009 annual reports and 22% are disclosing absolute figures on their total GHG emissions, showing improved performance since 2004. The focus of reports tend to be qualitative, but there is increasing pressure from a number of drivers (see paragraph 10) to report more quantitative and focussed information. The Organisation for Economic Co-operation and Development's (OECD) report concludes that more could be done to help companies integrate climate change into their corporate strategies. In particular, OECD, the Environment Agency, ERM and the investor literature review all highlighted the need for consistency in reporting frameworks.
4. All of the research highlights the importance of reporting as part of the overall approach for companies to better manage their environmental outcomes;
 - PricewaterhouseCoopers (PwC) described how the companies that participated in their study found reporting helped enable reductions of GHG emissions and development of climate change strategies;
 - Institute of Environmental Management and Assessment (IEMA) view it as 'enabling' GHG management; and
 - ERM's report identifies reporting as a 'tool' in the GHG management cycle.
5. All of these studies identify reporting as part of a wider process; reporting in isolation is not enough to drive emissions reductions and needs to lead to associated behaviour change. ERM identify that reporting has an important link to target setting which leads to emissions reductions; OECD's research identifies that there is a gap between company awareness and action and that regulatory certainty would help to bridge this.
6. Measuring emissions is an important first step, allowing an understanding of where emissions are and then identifying where/what to tackle. Reporting then follows as an important communication tool both internally and externally. PwC, ERM and IEMA highlight that emissions reports are used to demonstrate the current situation of the business, to enable targets to be set and to track progress and are therefore central to the commitment of the company to action. The investor literature review identifies that emissions reports also communicate information to investors who use this information for research, analysis and the basis for direct engagement with companies on climate change.

1. Executive Summary

7. There is significant and growing interest from investors in GHG emissions data and investor pressure is one of the major drivers for reporting. Investors do consider climate change to be important to investment decisions. However, the use of environmental information is not yet widespread amongst the majority of investment decisions. Investors are particularly seeking robust quantitative information on their assets and identify the incomplete spread of company reporting, incomparable company reports and the short termism amongst investor behaviours as key barriers to making further use of this data for investment analysis. There is a strong steer in the investor literature and amongst investment groups that investors would like improved reporting from companies in order to better understand climate change risks and opportunities.
8. The Climate Disclosure Standards Board (CDSB) research supported the conclusions of the literature review, in that it found interest in climate change disclosures but relatively low levels of use in guiding portfolio allocation. In addition it found that many respondents were dissatisfied with available sources of company environmental information (including carbon emissions data). However, the study did find a robust demand for corporate environmental reporting. It highlighted the 'perceived poor suitability of unpriced carbon data for investment purposes' as one of the most significant reasons for investors' level of indifference.
9. In identifying the costs and benefits of reporting, it is difficult to isolate the impact that reporting has from other related activities, particularly from the measuring of emissions. It is even more difficult to quantify the costs and benefits associated with reporting. PwC's research shows that based on quantifiable costs and benefits, 60% of responding businesses found there is net cost of reporting, whereas on overall impressions of reporting including less tangible benefits, 53% of companies interviewed believe there is a net benefit. However, the companies interviewed as part of the PwC research did not consider the cost financially material to the business.
10. There are additional benefits, which companies identify as associated with reporting, but find it difficult to quantify. These include market forces (such as reputation, brand value and being seen as a market leader) and investor benefits (such as improving investor relations and being able to respond to shareholder requests). These benefits are also identified by businesses in PwC's research as being key drivers to reporting initially, so it is important that these are also captured as the benefits.
11. Overall emissions reductions and behavioural change are achieved though the combined influence of drivers (including measuring and reporting of emissions), awareness and action.
12. This report sets out in the annexes the key conclusions of the research studies specifically commissioned for this review.

2. Introduction

13. This report reviews the current evidence base on reporting of greenhouse gas (GHG) emissions by UK companies, taking evidence from specially commissioned research and from other recent relevant studies, or forthcoming publications.
14. This report meets a requirement placed on the Government by the Climate Change Act 2008 (section 84) to review the contribution that company reporting of emissions makes to the UK meeting its climate change objectives.
15. Implicit in the wording of section 84 of the Act is that reporting of GHG emissions at a company level does contribute to the UK's climate change objectives. This report aims to understand the extent of the impacts of company reporting, in particular:
 - i. from a company viewpoint, does reporting lead to improved emissions management by the reporting organisation and, if so, what is the impact of this?; and
 - ii. the use of GHG reports, do users of the reported data, notably investors, incorporate GHG emissions reports into their decision making and, if so, what is the impact?
16. A company that is reporting on the emissions associated with its activities must, as a prior step, be measuring them. In this case, reporting is taken as a proxy for identifying that a company is taking some steps to understanding and tackling its emissions. One of the aims of this report is to understand how far this is true and to what extent this contributes to the UK moving to a low-carbon economy.
17. In the context of this report, 'corporate reporting' refers to companies disclosing, on an annual basis, their GHG emissions footprint. This review of the evidence focuses on publicly disclosed emissions reporting.

3. Background

18. Climate change is one of the biggest challenges the world faces. Given that the UK only accounts for 2% of global emissions, we must address climate change by acting in partnership with other countries. The UK is committed to securing global action to reduce emissions which is consistent with limiting global temperature increases to below 2°C. Making this happen requires ambitious action from all major emitting countries. In order to reach a global legally-binding agreement we need to demonstrate that we are taking action to tackle our own emissions and lead by example.
19. The legal framework for action on climate change in the UK is provided by the Climate Change Act 2008 which makes the UK the first country in the world to introduce a legally binding long-term framework to cut greenhouse gas (GHG) emissions.
20. The Act sets targets for a reduction in UK GHG emissions of at least 80% by 2050, and at least 34% by 2020¹. It also sets a system of five-yearly carbon budgets that ensure that the UK remains on track in reducing emissions, and gives the Committee on Climate Change a statutory function to provide advice to the Government on these and other aspects of the Act. Meeting the first three carbon budgets, which were set in 2009 and run from 2008-2022, requires action across the economy and in all sectors.
21. The UK needs to move to a low carbon economy while ensuring that the UK benefits from the business and employment opportunities this brings. The Government is taking action to support the transition.
22. The Climate Change Act also sets out commitments which will help to demonstrate UK leadership internationally, signalling that we are committed to taking our share of responsibility for reducing global emissions in the context of developing negotiations on a post-2012 global agreement on climate change.
23. Sections 83 to 85 of the Act relate to corporate reporting:
 - Section 83 required the Government to publish guidance for organisations on how to measure and report their greenhouse gas emissions. Guidance was published last year following extensive stakeholder consultation. The Guidance will be updated as necessary.
 - Section 84 requires the Government to review the contribution of reporting to the UK's climate change objectives and to submit the review to Parliament.
 - Section 85 of the Act requires regulations to be made, no later than 6 April 2012, under section 416(4) of the Companies Act 2006, that require the directors' report of a company to contain information about GHG emissions (as specified in the regulations); or the Government must lay a report before Parliament explaining why no such regulations have been made.

¹ Both of these targets are against a 1990 baseline

3.1. Current reporting schemes and policy measures

24. There are currently several requirements on organisations in the UK which require them to collect data and report on their emissions as part of the objective of improving energy efficiency. Figure 1 gives a summary of the three main requirements:

Figure 1: Summary of existing UK emissions reporting requirements

Requirement	Description
EU Emissions Trading System (EU ETS)	A cap and trade scheme placing a limit on CO ₂ emissions from electricity and heavy industry (and aviation from 2012). Fuels combustion and certain process emissions are captured by the scheme. Organisations are required to monitor and report CO ₂ at an installation level to their EU ETS regulator. Companies report to the EU centrally.
CRC Energy Efficiency Scheme (CRC)	A mandatory energy efficiency scheme requiring large public and private sector organisations to purchase allowances to cover emissions from their energy use. Covers some direct emissions but mainly emissions associated with purchased electricity. Organisations are required to collect data on their energy use and report this to the Environment Agency. The information is made public.
Climate Change Levy Agreements (CCAs)	A series of voluntary agreements enabling energy intensive industry to obtain a reduction in the Climate Change Levy (CCL) if they meet challenging energy efficiency or emission reduction targets. Covers some direct and some purchased electricity emissions. Agreement holders are required to report against their targets every two years to assess performance. Sector level performance is made public.

25. The EU ETS and the CRC are two of the main levers by which the UK will meet its climate change targets and are designed to deliver a significant proportion of the emissions reductions needed. Although these various schemes require that the organisations covered measure and report on certain parts of their emissions footprints, reporting is not the main aim of any of these schemes but rather a means to the achievement of emissions reductions.

3. Background

26. In addition to this, UK company law places some requirements on businesses to report environmental information. The Companies Act 2006 (section 417) requires that all companies, other than small, include a business review in their directors' report. The purpose of the business review is to inform members of the company and help them assess how the directors have performed their duty to promote the success of the company. The business review should include a fair review of the company's business and its principal risks and uncertainties. For a quoted company the business review must include, amongst other things, information about environmental matters (including the impact of the company's business on the environment) to the extent necessary for an understanding of the development, performance or position of the company's business. The latest information available (the Environment Agency review²) shows that 62% of FTSE all-share companies provided quantitative data on climate change or energy use in their 2009-2010 annual reports, however 22% are disclosing quantified figures on climate change or energy use in accordance with latest Government guidance.
27. In 2009, as required by section 83 of the Climate Change Act, Defra published 'Guidance on how to measure and report your GHG emissions' which provides recommendations to businesses on how they should calculate and communicate their corporate emissions footprint. This Guidance is intended for use by all organisations and is based on an international standard for reporting, the Greenhouse Gas (GHG) Protocol corporate standard. Businesses should use this Guidance for reporting either under the Companies Act or in separate corporate social responsibility (CSR) or sustainability reports.
28. As well as the mandatory requirements for reporting, many companies report voluntarily under initiatives such as the Carbon Disclosure Project (CDP). CDP acts on behalf of a number of institutional investors and sends a request for information to FTSE listed companies on an annual basis. The data request asks for information on the companies' emissions, climate strategy and action plans and the information provided is used to compile an annual climate leaders index which ranks companies in terms of their performance. In 2010, 69% of the FTSE 350 responded to the data request. In 2010, the data request was sent out to the FTSE all share for the first time and CDP had responses from 51%. CDP has been a successful voluntary reporting initiative, harnessing the influence of investors to encourage reporting. However, CDP's 2010 report showed that just over half of respondents (54%) reported on their GHG emissions in their annual corporate report and half of respondents (50%) made their disclosures public³. This is supported by the Environment Agency's latest research, and shows that CDP reporting does not necessarily translate to full disclosure in annual reports.

2 EA (2010) Environmental Disclosures. The third major review of environmental reporting in the statutory annual reports and annual accounts of the FTSE all-share companies.

3 CDP (2010) FTSE 350 Report
<https://www.cdproject.net/CDPResults/CDP-2010-FTSE350.pdf>

4. Research findings

29. In order to prepare this report, Defra commissioned two specific pieces of research and contributed to a third:
- i. research into the contribution of reporting to GHG emissions reductions and associated costs and benefits (see section 4.1)
 - ii. literature review of the investor use of climate change disclosures (see section 4.2); and
 - iii. international investor engagement research (see section 4.3).
30. The main findings from these pieces of research are discussed in this chapter.

4.1. Corporate reporting and emissions reductions: Review of the contribution of reporting to GHG emissions reductions

31. Defra, through an open tender process, commissioned PricewaterhouseCoopers (PwC) in partnership with the Carbon Disclosure Project (CDP) to complete a research project entitled 'review of the contribution of reporting to GHG emissions reductions and associated costs and benefits'. The research focused on the company perspective and had three research aims:
- To assess the impact of corporate GHG reporting in helping UK companies to achieve emission reductions;
 - To assess the impact of corporate GHG reporting on the development of broader corporate climate change strategies; and
 - To seek information on the associated costs and benefits of corporate GHG reporting.
32. The project used a combination of a literature review, survey of businesses, business focus groups and in-depth telephone interviews in order to gather information from businesses on the impact of reporting on emissions reductions. The executive summary and summary of findings can be found in section 6⁴.

4.1.1. Does reporting directly drive emissions reductions?

33. The research undertaken by PwC and CDP shows that the relationship between reporting and emissions reductions is indirect; the relationship is complex with many other activities and influences coming into play.
34. The business survey and the focus groups both supported the findings of the literature review which showed that there are several drivers that lead a company to start measuring and reporting: to meet investor needs, to provide accountability and transparency and for

4 The full report is available at: <http://www.defra.gov.uk/environment/business/reporting/index.htm>

4. Research findings

compliance with regulations. None of these directly focus on the potential for emissions reductions. The literature review, supported by the focus groups, found that reductions in emissions are far more likely to be influenced by senior management commitment, specific targets, the potential for efficiency savings, brand building/market leadership and ethical reasons. There is an emphasis in these responses on money-saving or revenue generating opportunities driving emissions reductions. (It should be noted that most respondents to the business survey were large businesses). Similar results were found from research undertaken by the Institute of Chartered Accountants of England and Wales (ICAEW)⁵, cited in this report. In particular, the interviews highlighted the more important role of measuring emissions in leading to reductions which supports the theory that 'what gets measured, gets managed'.

35. Experiences from CDP show that some companies are able to identify the link between reporting and emissions reductions and the PwC/CDP literature review highlights several examples, such as Alcoa, Cisco, EMC and Walmart. However, the report's overall conclusion is that reporting emissions did not automatically result in companies reducing emissions but that it is a key enabling factor.
36. The research concludes that reporting in isolation is not enough, but that it must be followed by behavioural changes in order to achieve reductions. Based on the evidence in the report, reporting might be seen as an integral part of wider activities leading to reductions as it plays a major role in the communication of climate change related information. This is discussed further in section 5.1 and 5.4.

4.1.2. Does reporting have an indirect link to emissions reductions?

37. There is little evidence to show that emissions reporting is a direct driver of emissions reductions, however companies are reporting on a voluntary basis and therefore must see benefit in doing so. Very few reporting companies surveyed are not reporting externally, suggesting that there are additional benefits to external reporting over and above the benefits associated with measuring emissions. The key benefits that companies realise from reporting as identified in the PwC research are:
 - providing transparency to the Board;
 - brand building and public reputation; and
 - being able to set targets for reductions.
38. The survey of businesses showed that 60% of responding companies found a net cost to businesses of reporting but the in-depth interviews on this subject showed that 53% companies perceive a net benefit to reporting when including the wider range of benefits which they associate with reporting, such as transparency to stakeholders, brand building and target setting. The response rate to the survey was low and so statistical significance cannot be drawn from these findings.

5 ICAEW (2009), ICAEW Business Opinion: Managing Greenhouse Gas Emissions http://www.icaew.com/index.cfm/route/169267/icaew_ga/Members/Business/Business_Confidence_Monitor/Q4_Business_Opinion_report__managing_greenhouse_gas_emissions/pdf

39. The report states that measuring of emissions has a greater direct impact on emissions reductions than reporting does, and that it is not clear if reporting has additional benefits over and above measuring of emissions. The findings of the survey and the telephone interviews show that companies find it difficult to separate the impacts of reporting from the impacts of measuring emissions. However, it might be better understood that neither one of these activities has as much impact in isolation: if a company wants to report on its emissions, it must first measure them, conversely, if a company measures its emissions, the results do not mean very much unless they are reported⁶, although not necessarily externally. Ultimately reporting the information communicates it to those who can use the information, such as the board or investors, where it can be used for example, to set emissions targets, identify where emissions reductions activities should be targeted or be added to other strategic information on the carbon liabilities of the company.
40. This is supported by evidence from CDP's experience which identifies that the decision for a company to start reporting on their emissions is a catalyst for emissions management and a trigger for emissions reductions by:
- raising awareness through the involvement of the board in the decision to report;
 - capability and awareness raising through implementation of new systems;
 - learning from results to identify opportunities;
 - boosting strategic importance of emissions and emissions management; and/or
 - taking up mitigation activities.

Evidence in the literature review from the Confederation of British Industry (CBI), Environment Agency and ICAEW all support this view that preparing emissions reports helps to focus a company's understanding of climate change risks and opportunities.

41. This catalyst idea highlights the many different activities there are which lead to a reduction in emissions and the difficulty in attributing emissions reductions themselves to a single action in the sequence. This supports the model suggested above whereby companies start with either measuring or reporting and use this as a basis to take actions to reduce. Reductions in emissions are not then guaranteed as a result, but they are more likely. Nevertheless, reporting is a part of this series of events and can be said to have an indirect link to emissions reductions.
42. One area which PwC/CDP's research explores in more detail is the link between reporting on emissions and setting targets for emissions reductions. This is an important link because if a company sets a target, and particularly if it discloses this target externally, then this shows a commitment to realising these emissions reductions. CDP have found that as well as the number of companies who report to their survey increasing, the number of companies setting an emissions reductions target has also increased, but at a faster rate. In 2008, 39% of responding companies were setting a target; in 2009 there was a 1% increase in the response rate but 59% of companies set a target. The literature reviewed in PwC's research 'suggests that reporting provides the focus for reduction activities and the quantification once achieved'.

⁶ If emissions data is to be disclosed externally, it is likely that this information will be signed off by the board and therefore be brought to their attention.

4. Research findings

4.1.3. How does reporting relate to the development of a climate change strategy?

43. The research finds that it is not possible, based on the evidence, to show a direct causal link between reporting and emissions reductions. However, there is stronger evidence linking emissions reporting and the development of a corporate climate change strategy.
44. The research shows conflicting evidence of the role of emissions reporting in driving a climate change strategy:
 - On the one hand, some of the literature identified⁷ as well as experience from CDP suggests that reporting develops the tools to address climate change related risks which in turn stimulates the development of a climate change strategy;
 - On the other hand, the business survey finds that the identification of risks and opportunities, developing market leadership and anticipating policy and regulation risks are the most important drivers for developing a climate change strategy.
45. However, the survey also finds that there is a very strong link between companies with a climate change strategy and those who report on their emissions. The survey and CDP's experience found that for those companies who do not report, it is often because it is not in their business strategy to do so. Although it is unclear whether reporting on emissions influences the development of a climate change strategy, there is much stronger evidence that where such a strategy exists reporting is an important part of it and that measuring and reporting on the current situation is often the starting point. In such cases, reporting is not an outcome in its own right, but a crucial part of developing a strategy for many companies, particularly where there is pressure from investors to do so.

4.1.4. Other indirect links to emissions reductions

46. Although the focus of PwC/CDP's research is on the company perspective on emissions reporting, it is difficult to view this entirely in isolation from the external impacts of reporting, particularly when stakeholder requests can form an integral part of the reason for initiating reporting. PwC/CDP's research highlights the importance of investor pressure as a driver for emissions reductions through initiatives such as CDP and direct engagement by investors. The relationship between company emissions disclosures and investor use of this data is explored further in section 4.2.
47. The experience from CDP's supply chain programme, highlights another potential link between reporting and emissions reductions. The experience from CDP here shows that some companies start to look to their supply chains to further manage their emissions through the development of sustainable procurement scorecards for suppliers or through sharing best practice in the supply chain. This is rewarding suppliers' reporting and reductions of emissions and providing an incentive to reduce emissions further. In this instance reporting is the stimulus for the behavioural changes needed to reduce emissions, however this only occurs in a minority of cases and is not mainstream behaviour.

7 Such as Slater (2007) also picked up by CBI, OECD and IEMA view measuring and reporting as the building blocks for GHG mitigation actions.

It shows the potential for reporting in one company to have indirect impacts through the supply chain, thus raising awareness and changing behaviours.

4.1.5. Summary

48. The evidence in the PwC/CDP report is mixed in terms of showing a clear link between reporting and emissions reductions. The research shows that it is difficult to separate the relative role and importance of reporting from other activities that companies undertake in order to tackle the risks and opportunities of climate change such as measuring emissions, setting emissions reductions targets and developing a climate change strategy. However, it is clear from the number of companies already reporting voluntarily as well as evidence from the survey, interviews and focus groups, that companies see importance in reporting as one piece of this jigsaw that overall allows them to tackle GHG emissions.
49. There is no single driver for reporting and similarly there is no single driver for emissions reductions identified in the research. The report suggests the role of GHG reporting as an 'enabler' rather than a direct driver of emissions reductions. This is supported by evidence which highlights the role of emissions reports as a communication tool, both internally to the organisation's board encouraging further engagement from them on climate change strategies, and externally for use in brand building or demonstrating market leadership and increasing the value of the business. Three of the drivers of reporting highlighted as most important by the research reflect the role of reporting as a communication tool, confirming these are the perceived benefits of reporting (pressure from investors, market leadership and brand building).
50. One finding from all the different research techniques is that senior management commitment is a key driver of companies undertaking initiatives to reduce emissions. It is very likely that in order to get this commitment, information on the current state of emissions must be reported to them. A request to report externally could trigger this whole process, or it could have occurred because of another stimulus. The evidence suggests that a request to report is one example of the link between reporting and emissions reductions, however experiences will differ across companies and a combination of drivers is likely to be more realistic. Nonetheless, the evidence in this report shows that reporting is a part of this process and it is likely that 'policies that encourage companies to better measure emissions will enable GHG emissions reductions'⁸.
51. Reporting is one way in which companies can articulate their emissions and their progress in managing their emissions and climate risks. However, the PwC/CDP research suggests that it is not a single action to be taken in isolation, or at a single point in the chain of activities, but a tool which enables communication at various points and is an ongoing part of a company's approach to tackling climate change.

4. Research findings

4.2. Investor use of GHG emissions data: How are investors using GHG emissions reports?

52. Defra has conducted an in-house literature review to gain a better understanding of the demand for and use of GHG emissions disclosures by investors and whether investor use of GHG emissions leads to emissions reductions through influencing investment decisions.
53. Investors, whilst not the only interested group, are one of the main users of corporate disclosures. Annually reported accounts and statements are one source of information which can be factored into investment analysis. The hypothesis is that increased availability of good quality, comparable climate change related information would lead to increased instances of such information being factored into investment decisions alongside traditional economic analyses. Initiatives such as the Carbon Disclosure Project (CDP)⁹, the UN Environment Programme Finance Initiative (UNEP FI)¹⁰, Global Reporting Initiative (GRI)¹¹ and the GHG Protocol¹² as well as investor groups such as the Institutional Investors Group on Climate Change (IIGCC)¹³, UN Principles for Responsible Investment (UNPRI)¹⁴ and UK Sustainable Investment and Finance (UKSIF)¹⁵ all identify the importance of and potential for investors to use climate change disclosures in investment analysis.
54. This literature review specifically aims to answer the following questions:
- i. Are investors using the information from company GHG emissions reports to inform their investment decisions?
 - ii. If they are:
 - a. what are the perceived benefits of this?
 - b. how are they using this information?
 - iii. If they are not:
 - a. why not?
 - b. what are the barriers to using this information?
55. The literature search was conducted by using keywords to search academic journals to find articles relevant to investor use of GHG emissions data. Other known pieces of work were also reviewed, from investor groups and lobby groups with an interest in climate change policy and emissions disclosure. This review is not an exhaustive search of the literature but aims to understand the key findings from the literature on this topic so far¹⁶. Investor use of GHG emissions data is rarely considered in isolation in the literature but much more commonly as one part of investor use of wider climate change information. Therefore this review considers climate change disclosures in its wider context, recognising

9 The Carbon Disclosure Project (CDP) www.cdproject.net

10 UNEP FI <http://www.unepfi.org/>

11 GRI <http://www.globalreporting.org/Home>

12 World Resources Institute and World Business Council for Sustainable Development joint initiative: the Greenhouse Gas Protocol <http://www.ghgprotocol.org/>

13 IIGCC(2008) and IIGCC (2010)

14 UNPRI (2008)

15 UK SIF (2010)

16 A full list of references can be found at section 7

that GHG emissions are one important strand of this. Although this review is interested in impacts in the UK specifically, institutional investors manage assets on an international basis and tend to embody international norms¹⁷ and therefore international examples are highly relevant to the UK situation.

4.2.1. Are investors using corporate climate change disclosures?

56. In the literature reviewed, the availability of evidence to answer this question is limited to a handful of recent investor surveys; in particular the CDP Investor Research Project¹⁸ survey of institutional investors, the Ceres investor survey¹⁹ of fund managers, Fair Pensions pension fund manager survey²⁰ and UNEP FI's investor survey²¹ of investment managers and asset owners. All of these surveys are likely to have a non-representative response rate as those who are more engaged on the topic are more likely to respond. However, in trying to understand what those who are engaged are doing, these are helpful sources. Although there are many initiatives which argue for improved climate change disclosure²², their focus is often on the benefits of this or why it is necessary, rather than investors' current behaviours and this is discussed further in section 4.2.2.
57. Economic theory considers climate change to be a form of market failure. It has been argued that improved disclosure will lead to more efficient markets as information is made available for decision making, within the context of existing and expected future policies to address the market failure²³. Investors are exposed to the risks and opportunities from climate change across the economy and therefore should have an interest in disclosures from companies on how climate change affects them. Pfeifer & Sullivan²⁴ provide a useful history of investor interest in climate change. Investor interest in the environment has increased over the last thirty years originating amongst the first specialist Socially Responsible Investment (SRI) funds in the early 1980s²⁵, which used screening tools to avoid 'dirty' coal and oil firms, whilst the majority of investors did not consider environmental impacts at all. Although the Kyoto Protocol in 1997 was a landmark in political and public debates and showed recognition of the need to act to reduce human impact on climate change, investors still had very low levels of interest in climate change until the twenty first century. At this time there was a growth of collaboration initiatives and in particular the CDP was launched in 2000 as a collaboration of investors asking for climate related disclosures. In 2000 the UK Government amended the Pension Act to require pension funds to disclose in a statement of Investment Principles, the extent to which social, environmental, and ethical (SEE) considerations were taken into account and this led to guidance being issued by the Institutional Shareholder Committee to investors on how to monitor the performance of and establish engagements with companies²⁶.

17 Kim and Lyon (2008)

18 CDP (2009a)

19 Ceres (2010)

20 Fair Pensions (2009)

21 UNEP FI (2009)

22 For example, Global Framework for Climate Risk Disclosure (2006), IIGCC (2008 & 2010) UK SIF (2010), UN PRI (2009)

23 Erion (2009)

24 Pfeifer & Sullivan (2008)

25 Brook (2009)

26 <http://institutionalshareholderscommittee.org.uk/sitebuildercontent/sitebuilderfiles/ISCCode161109.pdf>

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At the same time, particularly in the UK and Europe, wider climate change policies were coming into force, notably the EU Emission Trading System (EU ETS) in 2005 which, by setting a carbon price gave a legitimate financial implication of climate change for investment decisions for the first time.

58. A Fair Pensions survey of fund managers found that 89% of respondents considered climate change 'important' or 'very important' to investment decisions²⁷. CDP's investor survey²⁸ supports this as it found that from 87 respondents, 77% of investors factor climate change information in to investment decisions and asset allocations. Despite the natural bias of CDP's investor signatories, CDP signatories represent over \$64 trillion of assets under management worldwide. The CDP dataset is one of the most widely used on climate disclosures and therefore investor interest in this dataset shows the appetite for climate change information more generally. Sullivan & Kozak²⁹ state that there has been increased interest in climate change, particularly in increased research into this field and an increase in the number of fund managers who are explicitly looking for climate change in their investment analyses; the latter was also found in the Ceres investor survey³⁰.
59. However, despite what is generally considered a high response rate to the CDP, it is important to bear in mind that this is not a panacea for investors. For a business, responding to this survey is not the same as disclosing this information publicly. Additionally, from an investor viewpoint, not all investors have access to the CDP dataset. In 2010, 31% of FTSE 350 companies failed to respond to the survey and only just over half (54%) reported on their GHG emissions in their annual corporate report. Further, half of respondents (50%) made their disclosures public³¹. In comparison, CDP's 2010 global survey shows that 73% of respondents reported emissions in their annual corporate reporting and 65% made their disclosures public³² showing that UK businesses are not matching the rest of the world in providing transparent and comprehensive GHG reporting to investors and stakeholders.
60. Ceres survey of the 500 largest global asset managers found that relatively few are including climate risks and opportunities in investment analysis, specifically in their asset allocation, portfolio valuation or corporate governance due diligence and nearly half do not consider climate risks 'at all'³³. Those that did include climate risks in these activities position themselves as industry leaders. Trucost and Mercer's analysis of the carbon risks of UK equity funds included interviews with fund managers which also found that the inclusion of climate change factors in investment decisions is not current practice amongst some of the UK's biggest funds representing over £206 billion in 2008³⁴.

27 Fair Pensions (2009)

28 CDP (2009a)

29 Sullivan & Kozak (2009)

30 Ceres (2010)

31 CDP (2010), FTSE 350 Report, <https://www.cdproject.net/CDPResults/CDP-2010-FTSE350.pdf>

32 CDP (2010), Global 500 Report, <https://www.cdproject.net/CDPResults/CDP-2010-G500.pdf>

33 Ceres (2010)

34 Study looked at 118 portfolios in Mercer's Investment Consulting business with holdings valued at over £206 billion as of 31st December 2008. Trucost & Mercer for WWF-UK (2009)

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61. Despite this, the majority of Ceres's respondents are making the link between climate change and investment risks and a high response rate³⁵ to this survey indicates the level of interest in the topic. Similarly the Fair Pensions survey also found that despite the high level of respondents recognising climate change risk, only 29% made use of climate data in analysis for all companies where available³⁶. Their survey showed a higher rate of activity for sectors where climate risk was considered higher and 66% responded that climate change data had impacted investment decisions in a minority of sectors in the past two years³⁷.
62. UNEP's 'Fiduciary II' refers to legal advice that investment consultants should take Environmental, Social and Governance (ESG) considerations into account and if they don't then there is a risk of being sued for negligence. Despite this, a survey of six investment consultants, who represent 30% of the world's pension fund assets under management in 2008, found that two considered ESG 'requisite to investment management', one considered only the governance aspect regularly, two consider these issues rarely and one not at all, although these results correlated strongly to the level of ESG experience of the respondents.
63. Whilst investor interest in climate change information is increasing and the majority of investors identify climate change as a potential risk to their investments, it is clear that the use of climate change data is not yet widespread amongst mainstream investment decisions. Activity seems to be confined to sectors identified as high risk or to investments where trustees have specifically asked for this information. The UNEP FI's report also highlights the complex nature of influence and incentives in investment decisions and this is discussed further in paragraph 89. A further complication in assessing how far investors are integrating GHG reporting within investment decisions, is the different models which investors have developed for doing so. Some investors have specialist teams looking at climate change issues whereas others expect mainstream analysis to take account of these factors.
64. However, it is clear from several of the findings above that investor appetite for climate change data is growing. Calvert Group are used as a case study of best practice in the CDP investor survey who say that 'CDP responses directly influence which companies we invest in'³⁸. This exposes the weighting that some, albeit a minority, of investors are placing on information such as the CDP dataset. The evidence from the Ceres report suggests that investors know that climate change will present a risk but they are not sure how to act on this currently.

35 Response rate was 17% which is considered very high for an online survey of this type. Normally a 10% response rate is considered high, depending on the survey and population. 84 asset managers responded collectively managing \$8.6trillion assets, Ceres (2010)

36 Fair Pensions (2009)

37 Fair Pensions (2009)

38 CDP (2009a) p18

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4.2.2. What are the benefits to investors of using climate change disclosures?

65. Given the difference between investors that are and those who are not including climate change considerations, it is interesting to get a better understanding of what is driving investors to identify climate change as a risk. Investors are primarily concerned with the financial returns of their investments³⁹ and as such want to understand the exposure of their investments to various risks and the ability of their investments to deal with these risks as well as opportunities⁴⁰. Climate change poses a real threat to the returns of an investment, for example the introduction of the EU ETS is likely to cost RWE AG approximately €1.2 billion annually from 2008-2012⁴¹, and it is exposure to these types of risks which investors want to analyse. Several of the articles reviewed identified the types of climate risks that investors are trying to understand, in particular⁴²:
- regulatory: unclear future direction of climate change policy, in particular uncertainty over a carbon price;
 - reputational and competitiveness: changing consumer or market behaviours and positioning of companies in these markets;
 - physical: business continuity and risks to physical assets as a result of extreme or changing weather patterns; and
 - litigation: potential for climate or environmental litigation.
66. The literature also shows that investors are interested in climate change risks to a differing extent depending on how material it is considered to an understanding of the company. Materiality is dependent on different factors such as sector, company, geography, oil and gas prices, consumers, regulations (current and pending) etc, and the materiality of all issues will vary across sectors and companies⁴³. By using climate information in investment analyses, investors are trying to analyse the company's capacity to mitigate carbon risks and seize related opportunities alongside financial models. Climate change is a global risk to businesses and investors cannot avoid this risk altogether by looking to invest in different locations⁴⁴. By assessing this exposure of their portfolios to climate risks, investors are seeking to minimise the impact of climate change on their financial returns and an investor has a fiduciary duty to maximise the returns of investments for their beneficiaries⁴⁵. Analysis conducted by Mercer⁴⁶ found a positive correlation between active ESG approaches by investors to financial performance. This was particularly strong where investors engaged with the companies and exercised their influence, such as using shareholder voting rights.

39 IIGCC(2008), Latham (2009), Thomas (2009)

40 Global Framework for Climate Risk Disclosure (2006)

41 Thomas (2009)

42 Erion (2009), Latham (2009), CDP (2009a), Ceres (2010), Pfeifer & Sullivan (2008), IIGCC (2008)

43 CDP (2009a), UNEP FI (2009), Koch (2009)

44 Stanny and Ely (2008)

45 UNEP FI (2009), Pfeifer & Sullivan (2008)

46 Cited: Fair Pensions (2010)

4.2.3. How are climate change disclosures used?

67. It is not clear what overall proportion of mainstream investors are using climate disclosures, but for those that are the literature documents various types of stakeholder activism and highlights that investors tend to use multiple approaches as best practice in assessing climate risks⁴⁷.

Research

68. Analysing and comparing information from various sources, including annual reports, corporate social responsibility reports, CDP datasets, information direct from companies and specialist data providers, is often a starting point for investors who are actively considering climate risks. Data can be used as a standalone resource or to reinforce and support other activities. The information taken from this analysis is then used as a basis for discussions during direct engagement⁴⁸. The CDP investor survey found that CDP data was used for corporate engagement (36%), to back up other sources (33%), for sectoral analysis (28%), for sell-side reports (6%) and in lending decisions (1%)⁴⁹.
69. By combining several sources of information, investors develop an overall assessment of climate risk exposure or sustainability, for example SAM integrate their relative sustainability scores into their models for economic profit models to manage this risk more effectively and create an overall fair value system⁵⁰. Another common practice is to develop sector ratings and benchmark companies against their peers⁵¹ which can be used to inform engagement strategies. For example 56% of respondents to the Fair Pensions survey stated that they request climate change data from all or the majority of their investments, but there was a clear split between those who do this for all investments and those who are selective⁵².

Direct engagement

70. Direct engagement with the company is considered a key tool by investors to understanding the company's approach to managing climate risk, particularly if this represents a threat to the asset's value. Initiatives such as the IIGCC encourage investors to engage directly to actively assess risks and opportunities and engagement is also highlighted by the UNPRI as the second of their principles for responsible investment⁵³. Using information such as sectoral benchmarking as a starting point, investors can build on this during engagement to drive behavioural change⁵⁴. Engagement may not be used

47 UNEP FI (2009)

48 CDP (2009a)

49 CDP (2009)

50 UNPRI (2009)

51 Ceres (2010)

52 Fair Pensions (2009)

53 Principle 2: 'We will be active owners and incorporate ESG issues into our ownership policies and practices'. Best practice guidance for this includes 'engaging in a dialogue with companies with a view to changing company behaviour when appropriate', UN PRI (2009) p24

54 Fair Pensions (2009)

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by all active investors however as some investors will be selective over the companies or sectors which they engage with, often driven by exposure to risk or sectoral analysis⁵⁵.

71. Engagement activities can include direct dialogue, proactive questioning, direct requests for change, asking questions at AGMs, voting at company meetings, collaboration with other investors and initiatives and dialogue with policy makers, regulators and industry organisations. In this context, engagement generally has the purpose of fact finding and understanding of the company's long term approach to climate change or ESG issues⁵⁶. The UN PRI 2008 Progress Report found that UK investors had the highest level of engagement with companies amongst their signatories with 445 engagements by asset owners and 2468 engagements by investment managers. Most other countries were between 20 and the low hundreds in both cases⁵⁷. The survey also found that the most common ESG topics covered during engagement were: governance, environment, climate change and labour issues⁵⁸. This is supported by the finding that over half of investor responses to CDP's questionnaire stated that they discuss CDP and GHG emissions in engagement meetings⁵⁹. Some investors use engagement as an opportunity to ask companies directly to take action on climate change or achieve emissions reductions⁶⁰.

Investment analysis and decisions

72. The results of initial research combined with information from engagement can be used to inform valuation approaches and investment analysis models, such as sectoral analysis and 'best in class' analysis, sell-side reports, valuation models, adjusting stock and portfolio weightings and investment screening criteria⁶¹. UN PRI's report found that 46% of investment managers surveyed reported that they integrate ESG information into 'information gathering and analysis (i.e. research)' and 43% use this in 'conversion of that research into portfolios'⁶². The sophistication of the type of analysis that investors can perform is improving as quality of disclosures and available information increases, which builds on the idea that there is investor appetite for climate risk information as identified in section 4.2.1. A continuation of this is the investors' ability to use the reported data to calculate and report their own portfolio emissions and understand their overall exposure to climate risk. Although this practice is not currently widespread, two examples of snapshot assessments of emissions are the Environment Agency Active Pension Fund⁶³ and the London Pension Fund Authority⁶⁴.
73. Thomas⁶⁵ argues that corporate carbon footprint data in particular is useful for investment analysis as it provides a tangible tool for measuring potential costs of carbon emissions. He goes on to discuss 'carbon optimising' portfolios, which over-weight carbon efficient

55 Fair Pensions (2009), see also section 4.2.3: Research

56 Fair Pensions (2009)

57 UN PRI (2008)

58 Responses for asset owners and investment managers respectively: governance 68.5%, 68.4%, environment 68.5%, 67.1%, climate change 62.1%, 55.9%, labour issues 58.9%, 56.6%, UNPRI (2009)

59 CDP (2009a)

60 UNEP FI (2009), CDP (2009a), EIRIS (2010), Sullivan & Kozak (2009)

61 CDP (2009a), UNEP FI (2009), Pfeifer & Sullivan (2008)

62 UN PRI (2009) p23

63 http://www.environment-agency.gov.uk/static/documents/Utility/Responsible_Investment_Review.pdf

64 <http://www.lpfa.org.uk/investment/responsibleinvest.aspx>

65 Thomas (2009)

companies against sector benchmarks and under-weight carbon inefficient ones, and 'carbon overlay', whereby portfolios are rebalanced on the basis of carbon performance such as footprint emissions reductions. Such emissions data is also used already for modelling expected emissions surpluses and deficits under EU ETS and the associated expected costs⁶⁶ indicating the potential for its use to be applied more widely.

74. Trucost & Mercer's⁶⁷ analysis of UK equity funds is one example of analysis of portfolios using climate change disclosures. This analysis looked at 118 UK-based institutional equity portfolios, for which GHG emissions data was available for 85% of the value of the holdings (2,380 companies). This analysis showed that these holdings emit over 10 billion tonnes of GHG emissions, of which 134 million tonnes can be attributed to the market capitalisation 'owned' by the investors (approx 22% of UK GHG emissions). Using a short term cost of carbon (three-month average market price) of £12 per tonne, carbon exposure is £1.6 billion which equates to 0.7% of revenue of holdings. Using the social cost of carbon (£57) from the Government's Stern review, this is much higher at over £7.65 billion (3.2% of combined revenues). The analysis also gives examples of how investors can use this information to guide sector allocation and identify more/less carbon intense businesses within a sector, to reduce carbon exposure whilst maintaining sector allocations. This analysis however, is not common amongst mainstream investors.

Climate related shareholder resolutions

75. Shareholder resolutions filed by investors can have an impact on changing behaviours of businesses. For example, Calvert Group are cited as an example in CDP's report where, in 2008, they filed eight shareholder resolutions with non-responding companies to CDP receiving five commitments back that the company would respond in the following year⁶⁸. In the UK it would be extremely rare that a climate-related shareholder resolution would be passed, however such resolutions still have an impact by drawing attention to the issue at the highest level. Shareholder resolutions were filed by a coalition of investors led by the Co-Operative Asset Management and FairPensions in 2010 at both BP and Shell's AGMs on the grounds of greater transparency for decision making and risk assessment surrounding tar sands extraction and processing. Although the resolutions were not passed, the companies did disclose further information to investors and stimulated a wider debate on the sustainability of tar sands extraction⁶⁹. Erion⁷⁰ notes that whilst shareholder resolutions have been and continue to be a successful way of encouraging disclosure in companies, they will never achieve the full disclosure that regulation would.

Other sources of climate disclosure data

76. As well as research and engagement with companies, various other channels are being developed which can provide fund managers with climate related information on companies. These initiatives use the data collected and reported by companies. Recently,

66 Sullivan & Kozak (2009)

67 Trucost & Mercer for WWF-UK (2009)

68 CDP (2009a)

69 WWF-UK & The Co-Operative Group (2010)

70 Erion (2009)

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for example, the CDP dataset has been included in several products targeted at investors including:

1. Working with research houses to use data in ESG research and analytical reports, for example with ClearCost, Trucost and Bloomberg⁷¹. The latter of which make the data available via Bloomberg terminals and making non-public data available to view for CDP investor signatories;
 2. Standard & Poors (S&P)/International Finance Corporation (IFC) Carbon Efficient Index⁷² which is a product that measures the performance of investable emerging market companies with relatively low carbon emissions, while closely tracking the returns of the S&P/IFCI LargeMidCap, therefore aiming to offer reduced environmental exposure with underlying index performance. The IFC requested CDP to extend their disclosure requests to emerging markets to compile the footprint information for this product;
 3. Equity funds using CDP data as input for the climate element of analysis, for example Schroder Climate Change Fund⁷³;
 4. FTSE CDP Carbon Strategy Index⁷⁴ which is a 'carbon-risk-tilted' version of the FTSE all-share Index. The index follows the all-share but varies the weights of the companies on the basis of their exposure to carbon risk relative to their sector peers.
77. The fact that CDP are able to sell this data for these purposes shows that there is investor demand for access to this type of information and financial products. Over time it is expected that the use of and demand for such products would increase if investor use of this data in investment analysis increased.
78. It is clear that there are variations across investors as to which of these methods is used and when, with some being more active than others and multiple activities thought to provide the best results. However it is less clear what proportion of investors are undertaking which activities. CDP's investor report cites one example where climate change investment criteria are treated as equal to financial data, noting this as an 'extreme' example⁷⁵ with only 3% of respondents to their survey identifying climate change as the most important factor.
79. The UN PRI's report gives some useful indications that activities amongst investment managers are more common than amongst asset owners. This may be due to the influence of investment managers on day to day investment decision making and assessments of individual companies. Ceres's investor survey also finds that different items of environmental information are used at different points in the process; for example 2/3 respondents consider environmental regulations and 1/3 consider physical

71 <https://www.cdproject.net/en-US/WhatWeDo/Pages/alliances.aspx>

72 [http://www.ifc.org/ifcext/sustainability.nsf/AttachmentsByTitle/p_CarbonEfficientIndex-Factsheet/\\$FILE/Factsheet_SP_IFCI_Carbon_Efficient_Index.pdf](http://www.ifc.org/ifcext/sustainability.nsf/AttachmentsByTitle/p_CarbonEfficientIndex-Factsheet/$FILE/Factsheet_SP_IFCI_Carbon_Efficient_Index.pdf)

73 <http://www.schroders.com/StaticFiles/Schroders/Funds/SIL%20-%20Unit%20Trusts/Global%20Climate%20Change/English/SIL-Global-Climate-Change-Fund-A-Acc-FMR-UKEN.pdf>

74 http://www.ftse.com/Indices/FTSE_CDP_Carbon_Strategy_Index_Series/index.jsp

75 CDP (2009a), p13

risks, whilst fewer use these as metrics for valuing investments⁷⁶. On GHG emissions in particular, it is unclear when and where investors are using this information as climate disclosure is treated more generally in the literature. Stanny and Ely⁷⁷ note that GHG emissions information is just one of four strands in the CDP report emphasising that it is just one element of information that investors need. Other elements include information on likelihood of regulated emissions, required reductions, timeframe over which this would be required and the costs of reducing/offsetting emissions, ability to profit from opportunities, and to assess these alongside traditional financial factors⁷⁸.

4.2.4. What are the barriers to increased use of climate change disclosures?

80. Whereas 77% of CDP's investor survey respondents do factor climate change into their investment decision making, the report states that it is unclear about the activities of the other 23%; whether they do not want to use the information, are not the ones in the organisations who will make investment decisions or whether there are other barriers to them doing so. Whilst this is referring to CDP investors only, other sources find similar results whereby not all investors find climate change to be material to their investment decisions⁷⁹.
81. The strongest influencing factors on investor actions on climate change are cited as a lack of certainty of a strong future carbon price and lack of demand for incorporation of climate change risks/opportunities into investment analysis and decision making from clients⁸⁰. However, the focus of this review is on the on barriers for investors who are trying to express materiality quantifiably using climate disclosures. Several barriers are cited in the literature that fall into the following broad categories.

Scope of disclosures

82. Despite the rise in the number of companies disclosing climate information and raising awareness amongst investors, disclosures are 'not providing the information required to allow investors to properly assess the financial implications of climate change'⁸¹. In particular, the focus of disclosures tends to be on historical information and environmental performance and does not consistently include expected GHG emissions, potential physical impacts, cost implications and future prospects for the company⁸². As well as this, generic disclosures of climate change information do not put the responses in the overall context of the business. Sullivan⁸³ uses the example of the utilities sector, where climate change risks must be put into the context of operational aspects such as the generating capacity (current and planned) and country by country basis for planned changes. Further,

76 Ceres (2010)

77 Stanny and Ely (2008)

78 Sullivan & Kozak (2009)

79 See sections 4.2.1 and 4.2.2

80 Fair Pensions (2009) found that 83% of pension fund managers surveyed cited low carbon price as a barrier to incorporating climate change into investment analysis and decision making with 53% citing this as the most important barrier. 56% cited lack of client demand as a barrier. Poor quality data disclosures ranked fourth.

81 Sullivan (2006), p1, see also UN PRI (2009) which states that lack of information for investors is a key barrier to implementation of the Principles

82 Pfeifer & Sullivan (2008), Sullivan (2006), CDP (2009a)

83 Global Framework for Climate Risk disclosure (2006), Sullivan (2006), Fair Pensions (2010)

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he argues that the multitude of reporting initiatives is lowering the overall standard of disclosures as they cater to a wider audience of stakeholders, not just investors, therefore losing sight of the information that investors want. Despite the multitude of reporting standards, there is a great deal of consistency amongst what the initiatives ask for, and the information inevitably covers the categories outlined in paragraph 79.

83. Recently there have been moves to tackle these issues. For example, the Climate Disclosure Standards Board's forthcoming framework for disclosures of climate change information in mainstream reports includes a requirement for disclosure of forward looking information⁸⁴. The reporting framework aims to drive consistency and standardise what companies report and make their disclosures useful for decision making. Further, the launch of the International Integrated Reporting Committee (IIRC) (see paragraph 86) aims to integrate and standardise sustainability disclosures into mainstream reporting.

Quality of disclosures

84. Investors are looking for value in the information they use⁸⁵ and consequently being able to determine the robustness of disclosures is key to their utility. Issues on the quality of disclosures that are cited in the literature⁸⁶ are: comparability and consistency of disclosures for example around reporting methodologies and organisational boundaries, lacking third party audit, level of detail is too much/ too little, lack of clarity around uncertainties in reported data, and identifying the treatment of subsidiaries and geographical subsets. Lack of a standardised reporting framework was the third of three barriers identified by UK equity fund managers in Trucost & Mercer's analysis and was highlighted amongst other much higher level issues, such as lack of expectation that Governments will achieve emissions reductions or establish a global carbon price and short-term pressures for investment returns (see paragraph 88)⁸⁷.
85. Even though CDP data is widely regarded as the most complete and comprehensive dataset on climate disclosure, many question quality of data as an issue which is inevitable with any voluntary disclosure scheme not requiring third party verification. The top quality issue stated in the survey is the fact that it is voluntary⁸⁸. CDP's 2009 FTSE 350 report states that 55% respondents provided scope 1 or 2 emissions⁸⁹. CDP's investor report states that 'more consistent CDP responses from companies and broader company coverage would be much more useful to investors than having different sources for the same information'⁹⁰. Although this is in relation to CDP data, this would apply to any source of climate disclosures, such as in annual reports or separate CSR reports and it is clear that a single, consistent and robust source would be preferred. To support this, work is currently underway by the International Auditing and Assurance Standards Board on an international standard on assurance engagements (ISAE) on GHG statements⁹¹ which will

84 CDSB (2010, forthcoming). For more information see: <http://www.cdsb-global.org/reporting-framework/>

85 CDP (2009a)

86 CDP (2009a), UN PRI (2009), Sullivan & Kozak (2009), Sullivan (2006), Fair Pensions (2010), Trucost & Mercer for WWF-UK (2009)

87 Trucost & Mercer for WWF-UK (2009)

88 CDP (2009a)

89 CDP (2009b)

90 CDP (2009a) p13

91 <http://www.ifac.org/IAASB/Meeting-BGPapers.php?MID=0209&ViewCat=1372>

help to provide an effective verification standard against which reports can be verified, therefore allowing users to be more confident in the use of this information.

86. In terms of the location of disclosures, there is variation in investor's views. The UN PRI progress report shows that signatories differ in their opinions: integrated financial reports including ESG featured highest (67%), followed by standalone reports (62%)⁹² reflecting that many signatories are doing both. But, compared to previous years, the 2010 survey shows a swing in preference towards integrated reporting. This is supported by international developments such as the Global Reporting Initiative (GRI) and Accounting for Sustainability (A4S) initiative: the IIRC, launched in 2010, which aims to develop a framework that 'brings together financial, environmental, social and governance information in a clear, concise, consistent and comparable format'⁹³.

Investor behaviours and incentives

87. Many investment funds operate through fund management companies and the contracts for managing funds are often on a short timescale, for example a three to five year basis. Incentive structures for fund managers are constructed on corresponding timescales and consequently even funds which would lend themselves to long term investment strategies, such as pension funds, rarely do⁹⁴. Performance evaluations of fund managers very rarely carry out ESG ratings alongside financial performance criteria⁹⁵. The short termism of mainstream investors is not conducive to factoring in climate change impacts, particularly in quantifying the materiality of climate change to a business, as the material impact of climate change will occur over a longer timescale than that for which there is any degree of certainty.
88. Trucost and Mercer's⁹⁶ research shows that investors identify short termism as one of the three key barriers to including climate change in investment decisions, alongside lack of expectation of Government action and lack of a standardised reporting format. However the report goes on to argue that this is actually a misconception by investors as Europe and the USA in particular have introduced climate change regulations which are impacting on earnings and valuations for some companies, in particular through cap-and-trade schemes.
89. UNEP's 'Fiduciary II' report focuses on investment consultant⁹⁷ activities for pension funds. Whether asset managers use their potential influence on climate change issues generally relates to whether the consultants assess their performance in this area or if ESG may influence the risk and return of the client's mandate. Ultimately clients drive the inclusion of ESG criteria in their mandates. Some SRI pension funds are including this in their

92 UN PRI (2010) http://www.unpri.org/files/2010_Report-on-Progress.pdf

93 IIRC, <http://www.integratedreporting.org/>

94 Fair Pensions (2010), UNEP FI (2009), Ceres (2010), Sullivan & Kozak (2009), CDP (2009a), Trucost & Mercer for WWF-UK (2009)

95 UNEP FI (2009)

96 Trucost & Mercer for WWF-UK (2009)

97 Pension fund trustees (clients) consult investment consultants for advice on asset manager selection and consultants therefore have influence over asset managers as they set out the questions and terms for competition amongst asset managers. An investment consultant's role is partly for legal reasons, as pension fund trustees have a fiduciary obligation to represent pension fund beneficiaries, and partly practical reasons as not all trustees have the skills to do this. UNEP FI (2009)

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investment strategies⁹⁸ but the practice is not widespread. EIRIS actively calls on investors to engage with long term targets to address this issue⁹⁹.

90. There are other aspects of investor behaviour which also do not encourage the increased use of climate change disclosure. Sullivan¹⁰⁰ argues that a key factor is that companies do not see evidence of climate change data being taken into account for investment decisions and therefore do not have the incentive to improve disclosures to meet investors needs. He goes on to argue that delegating responsibility for data collection to other initiatives such as the CDP, reduces the need for direct engagement with companies and actually shows lack of interest on the part of the investor. However this does not align with evidence in section 4.2.3 which shows that investors use this as a starting point for direct engagement. It could be said that this delegation of responsibility is a symptom of a different issue; that investors have not tended to speak as a single unified body about precisely what type of detail would enable them to make better use of disclosures. A notable exception to this is the petition that was sent to the US Securities and Exchange Commission in September 2009 which showed that they do want this information¹⁰¹. Sullivan also argues that investors need to challenge the outputs from companies to get improved data and in doing so they would highlight the growing importance of climate change in investment decisions.
91. Both CDP's investor survey and the Ceres investor survey¹⁰² highlight the need for action from investment companies to train their staff in how to use climate change data, which would improve their confidence in challenging companies to disclose meaningful and useful information. This is not something that is often undertaken at the moment with many references to the need for outsourcing to find these skills. However, the growing capacity within the investor supply chain to offer a variety of services and expertise on climate change reflect the demand (or anticipated demand) that investment consultants are getting from their clients. Simultaneously, a number of investment banks have built teams to provide research and brokerage services to fund managers on climate change and carbon reporting, shown by their appearance in the Thomson Reuters Extel Survey, as scored by buy-side and sell-side firms¹⁰³.

4.2.5. Conclusions

92. The literature clearly shows that there is interest amongst investors in incorporating climate change risks into their investment decisions. There is less conclusive evidence that investors are currently doing this in a comprehensive way, but the interest signalled by active investor groups, responses to investor surveys and the success of CDP show that the appetite exists and is growing. Investor groups such as the IIGCC are calling for improved

98 Hickox (2009), Pfeifer & Sullivan (2008), for examples see Environment Agency http://www.environment-agency.gov.uk/static/documents/Utility/investmentstratrev_1726287.pdf and London Pension Funds Authority <http://www.lpfa.org.uk/investment/responsibleinvest.aspx>

99 EIRIS (2010)

100 Sullivan (2006) see also Sullivan & Kozak (2009)

101 <http://www.incr.com/document.doc?id=187>

102 CDP (2009a), Ceres (2010)

103 Thomson Reuters Extel / UK SIF (2010) Sustainability and SRI survey. This is a survey of buy-side and sell-side firms across Europe who were asked to score firms and identify attributes and concerns on a number of SRI issues http://www.extelsurveys.com/Panel_Pages/PanelPagesBriefings.aspx?FileName=SRI_Report_2010

climate change disclosures to use as the basis for quantifying the materiality of climate risks to include in the investment decision process: 'as investors... we need more information about how companies are preparing for and acting on climate risks and opportunities'¹⁰⁴.

93. Climate change is generally accepted amongst investors as presenting a variety of risks to investments such as physical, regulatory, reputational and litigation risks but the challenge currently is in quantifying this in a meaningful way amidst many uncertainties. Disclosure is not the only factor which would drive increased action by investors over climate change; if it was then it is likely that investors would be driving improved disclosures already. In particular a strong carbon price would impact on the financial returns of investments and therefore would be the strongest single driver of investment behaviour change. Coupled with this, there is currently a lack of client demand for the inclusion of ESG issues in investment strategies. However, in order for investors to accommodate either of these into investment analysis, companies would need to disclose robust information on their carbon intensities in order to model how this would affect investment portfolios.
94. The literature review has shown that investors are starting to incorporate climate disclosures including GHG emissions into investment analysis in a number of different ways. It is expected that they will continue in 'refining their approach to the use of both CDP and the climate change data'¹⁰⁵. In particular at the moment there is increased direct engagement, collaboration to improve disclosure and on-going public discussions about the need for reducing GHG emissions.
95. There are a number of issues around the current quality of disclosed data which need to be resolved in order to enable investors to get increased value from disclosures. Principal amongst these is the inconsistency, poor quality and robustness of disclosures without a single agreed reporting standard and verification approach. The literature reveals a demand from investors for mandating reporting, particularly to improve the quality and coverage of disclosures to a level which voluntary reporting alone is unlikely to achieve. There is a clear perception that further action without mandating disclosures would not lead to a step change in investor behaviour¹⁰⁶. Although disclosures are not an end in themselves, improved disclosures would facilitate increased incorporation of climate change risks into investment decisions and unleash the 'huge potential influence over corporate emissions policies'¹⁰⁷ of investors.

4.3. CDSB: Investors, Climate Risk and Company Disclosures

96. Defra, along with the Carbon Disclosure Project and Aarhus University, funded a Climate Disclosure Standards Board (CDSB) academic study on "Investors, Climate Risk and Company Disclosures" by Matthew Haigh and Matthew Shapiro. The research report is due to be published in January 2011 but Defra have been provided with a preliminary report in order that the preliminary conclusions can be taken account of in this report to Parliament.

104 IIGCC (2010) p6

105 CDP (2009a) p17

106 IIGCC(2010), Erion (2009), UNEP FI (2009), Thomas (2009), Fair Pensions (2009 & 2010) 86% of pension fund managers support mandatory reporting requirements

107 Fair Pensions (2010)

4. Research findings

97. The CDSB research aimed to gain insight into four questions:
- factors that motivate institutional investors to use company issued carbon emissions reports and climate-risk related data in portfolio management processes;
 - information sources that investors use when recognising climate change – related portfolio risks;
 - information processing difficulties faced by investors with respect to company carbon and climate reporting; and
 - investor attitudes to regulation and public policy requiring environmental data to be used to guide portfolio allocation levels (for example, the UK's CRC energy efficiency scheme).
98. The study measured how institutional investors in Europe, North America, Japan and Australia have taken account of regulations that require recognition of environmental matters, especially climate change. The research for the interim report was conducted April to October 2010. Two methods were used: one, where a sample of investors completed a questionnaire which looked at the influence of company-supplied carbon emissions data on investor allocation decisions; and second, interviews were conducted with selected investment professionals located in several developed countries including the UK. (Governors, trustees, portfolio managers, investment consultants, analysts and researchers, and private equity investors were all involved). The interviews then sought how investors have identified and managed climate risk and any associated regulation.
99. The findings indicate strong level of investor interest in collecting company data on carbon emissions and company environmental management programmes. However, there was no evidence that any of the interviewees actually used environmental data to guide portfolio allocation.
100. There is moderately strong evidence that institutional investors are aware of and adhere to their fiduciary responsibilities with respect to climate change risk assessment. However, use of company reports in making climate change risk assessments is extremely limited. There is no statistically significant correlation between the investors' use of company carbon emission reports and investors' satisfaction with those reports in terms of their use in portfolio analysis. Company issued "carbon reports" are used by some respondents as an informal indicator of the quality of corporate governance. No investors surveyed used company carbon reports to guide asset allocation policy.
101. Nearly 60% of respondents were dissatisfied with the information sources available on company environmental data (including carbon emissions data). There were similar results with regard to satisfaction on completeness and reliability of company environmental data. Despite these findings of dissatisfaction, investors surveyed in this study claim to use company carbon reports, regardless of the appropriateness, complexity or quality of the reports, indicating a robust demand from investors for corporate environmental reporting.

4. Research findings

102. There were some regional differences found in the study, with respondents who focus on the European region for investment purposes using company carbon reports with greater frequency. Respondents with a global investing focus also claim to use such reports very often or always.
103. The study looked at the differences between conventional (index driven) investors and “green” styled investors. The results of the study show that index investors (perhaps the most common investment style of institutional investors such as pension funds and insurance companies) place significantly more importance on company specific “carbon” information than green investors. The analysis suggests that the scale of investment around climate change is dependent on investment styles and less dependent on company issued reports on environmental matters such as carbon.
104. The finding that information disclosed by companies on carbon emissions and related data is of little use to investors suggests that the current relevance of company specific disclosures can be questioned. The study highlights that one of the most significant reasons for investors muted level of interest in climate-related risk and carbon emissions data is the *“perceived poor suitability of unpriced carbon data for investment purposes”*.
105. The study notes that the implications of the findings in the report are *“potentially serious in terms of preserving the value of private pension arrangements. The observed reluctance of investors to systemise the way they make climate related risk assessments is belied by widespread warnings of the salience of climate change-related risks and policymakers exhortations for involvement of privately managed capital in carbon emission mitigation efforts. The findings suggest, however, that structural factors such as climate legislation, carbon trading markets, and macroeconomic policy are material influences on investors’ decisions.”*
106. The study goes on to note that the *“policy positions of investors with respect to climate change and environmental protection are presently stifled by perceptions of policy vacillation, slowly developing information standards and, perhaps, combination of both”*.
107. The study finishes with looking at some potential policy solutions to the issues raised in the report, including macro incentives and policy measures, portfolio asset pricing initiatives, and mechanisms that might facilitate investors’ use of company-issued environmental data.

5. Other relevant recent research

108. In addition to the work carried out or commissioned by Defra specifically for this report, there have been pieces of other research which have looked more widely at the role of emissions reporting. This chapter outlines the key relevant findings from other recent research.

5.1. IEMA special report: GHG Management and Reporting¹⁰⁸

109. The Institute for Environmental Management and Assessment (IEMA) is the UK's largest membership association for environmental and sustainability professionals representing over 15,000 members. In 2010 they conducted an online survey of their membership base into the state of GHG management and reporting within the profession. They received a high response rate of 1,674 members representing 16% of their eligible membership base with respondents ranging across sectors and sizes of companies. IEMA also held eight regional workshops, attended by 201 practitioners, to validate the findings of the survey. The results of this research present a useful snapshot of reporting practices and viewpoints from the practitioner perspective and are therefore valuable additional evidence for this report.

110. Nearly three quarters of respondents to the survey work directly on GHG management and reporting for an organisation and 64% work on related strategy documents which gives a good idea of the positioning of the responding practitioners. Despite the high response rate it is still likely that this is a biased sample towards those who are engaged in the area or those who would like to be. The majority of reporting practitioners (57%) report externally and 50% of these report GHG emissions in a company annual report, with the majority of practitioners reporting in more than one location. Over half of the SME respondents were not reporting but the data shows that reporting in all sectors and across all sizes of businesses continues to grow.

111. A key premise of IEMA's research is that GHG reporting is an integral part of effective emissions management. Although it is not a driver of action itself, reporting is an important tool which enables companies to take action. The research aims to understand current trends in emissions reporting and management and does not seek to establish a causal relationship between reporting and emissions reductions.

5.1.1. Drivers encouraging organisations to act on emissions

112. IEMA's research identifies several key drivers which put pressure on a company and lead it to measure, report and therefore manage its emissions. Supporting PwC's research findings, the survey and workshop results show that this is a complex picture with many varied drivers acting on businesses at one time. The four most important drivers highlighted are:

108 IEMA (2010), Special Report – GHG Management and Reporting, <http://www.iema.net/ghgreport>

5. Other relevant recent research

- Cutting costs / improving efficiency (47.5%);
- Organisational values (45.3%);
- Legislation (45.2%); and
- To promote the brand or improve reputation (41.5%)

But the workshops identified that it is likely that there is a 'critical mass' effect whereby several drivers build up to a tipping point which encourages the company to take action.

113. In particular legislation is highlighted as a strong driver for action for those respondents who are reporting and a potentially important driver for those respondents who are not currently reporting. The importance placed on the potential for cost savings and efficiency improvements as a driver for managing emissions shows that practitioners have expectations that GHG reporting and management will lead to emissions reductions and therefore cost savings.
114. Various different barriers to companies taking action are also identified such as lack of investment, limitations of internal systems¹⁰⁹, lack of senior management buy-in, scepticism, a gap in skills or the perceived scale of the task. However, the most commonly identified barrier to reporting is competing priorities with other business objectives, making GHG management a low priority. This was cited by 84% of active practitioners and 73% of other practitioners and confirmed by the workshop findings as the most important barrier. The barrier of competing priorities suggests that these organisations do not see the potential benefits of GHG management, or that the perceived benefits are not great enough to warrant action.

5.1.2. The role and value of reporting

115. Although no attempt is made to understand the causal link between reporting and emissions reductions, IEMA's research does focus in some depth on the role and value of reporting as separate to emissions management and reductions activities.
116. The survey results and workshops confirm the importance placed by practitioners on reporting of emissions as a tool which has a range of benefits to the organisation in enabling them to:
- communicate the internal management process, inform decision making and prioritise action;
 - improve visibility of GHG management internally and externally
 - keep senior staff informed of progress;
 - benchmark performance (internally and externally as well as over time); and
 - improve the effectiveness of processes.

¹⁰⁹ Such as the need to provide a return on investment over a shorter period and therefore business cases not getting approved.

5. Other relevant recent research

117. The survey results show that 54% of practitioners believe that reporting makes a valuable contribution to keeping emissions reductions on the agenda, with only 2.5% believing that it makes no contribution at all. 92% of respondents believe that reporting helps build commitment to action from the board with 24.7% believing reporting is essential to doing this. These findings underline the importance that practitioners place on reporting as part of their GHG management strategy.
118. By analysing combined survey response questions, the IEMA research is able to establish that there is a link between a company's ambition in emissions management and the emissions reductions that they have achieved in the past two years. Further to this, the evidence from the survey shows that companies who report externally as well as internally are more likely to be more ambitious in their GHG management strategies and more likely to achieve greater emissions savings than companies who report internally or not at all. This is an important piece of evidence which highlights the correlation between reporting and emissions reductions, and the greater impact of external reporting in particular, although a causal link cannot be established. Overall, reporting practitioners were able to indicate emissions reductions between 2008 and 2010 that were four times as great as emissions reductions for the two years prior to that (although it is likely that the recession will have had an impact on this finding), with larger organisations being better able to deliver greater reductions.
119. Supporting one of PricewaterhouseCoopers (PwC)/Carbon Disclosure Project (CDP)'s findings that reporting can help indirectly drive behavioural change in the supply chain, the IEMA survey also showed that 39% of respondents are in organisations who face supply chain pressure to report on their emissions, with 28% respondents actually placing similar requests on their suppliers.

5.1.3. Summary

120. Overall this report provides some evidence which shows the important role of emissions reporting as part of successful management strategy in contributing to both short term reductions and long term strategies. The research findings are focussed on the practitioner viewpoint and highlight the value that they place on reporting as an integral part of effective GHG management and decision making. Reporting is seen as an enabler in the form of a 'management tool'¹¹⁰ whose 'unique value lies in its critical role to support the essential wider programme, for example helping to build board support, enabling target setting and providing the visibility to ensure that... [there is] continuous improvement over time'¹¹¹.
121. The evidence in this research also shows that companies who report on their emissions are achieving emissions reductions, and there is evidence to suggest that this is at a greater rate than their peers who are not reporting publicly. IEMA argues that 'good quality GHG accounting is also fundamental to management and reporting, in effect a pre-requisite to both'¹¹² and believes that measuring and reporting are together intrinsic links in what it describes as the 'GHG management hierarchy', which outlines the key principles that should be addressed in developing a strategy to tackle emissions. This model, supported

110 IEMA (2010) p18

111 IEMA (2010), p32

112 IEMA (2010) p14

5. Other relevant recent research

by IEMA's members, embeds the role of reporting on emissions at the heart of steps taken to reduce them.

5.2. Environment Agency: Environmental Disclosures

122. The latest review by the Environment Agency (EA) of environmental reporting in the annual report and accounts of FTSE all-share companies has recently been published¹¹³. This is the third review by the EA of environmental reporting; the two previous ones having been published in 2004 and 2007. It outlines the major trends in environmental reporting (not just GHG reporting), as well as the disclosure frameworks.
123. The review looks at environmental reporting in the context of the Companies Act 2006 whereby large companies are required to include information on environmental issues, to the extent necessary for an understanding of the business, in their business review as part of their annual report and accounts¹¹⁴.
124. The aim of the latest EA report is to examine progress made by FTSE all-share companies on environmental reporting since the last review in 2006, and compare findings against the 2004 baseline. Previous studies had found that environmental information provided by most companies was not comprehensive and lacked quantitative data but reporting has improved since legal requirements came into force under the EU Accounts Modernisation Directive. Nonetheless the Accounting Standards Board has found that almost one-third of reports reviewed did not disclose non-financial key performance indicators, despite requirements to do so where "necessary" and "appropriate".
125. The report looks at the extent that companies are following voluntary guidance. It notes that qualitative reporting is useful for an understanding of corporate policies and strategies but that investors and other stakeholders are increasingly demanding more focused, relevant information in reports. In particular, quantitative information makes it easier to connect environmental and financial performance. Moreover quantitative data can help identify opportunities to improve, reduce costs, support regulatory compliance and also aid with benchmarking performance and setting targets.
126. The EA report notes that reporting amongst FTSE all-share companies has improved since 2006, with many environmental topics being discussed by more companies with more quantified disclosures. But they also note that many companies are lagging behind their peers by not providing information in line with reporting frameworks. As the report also notes there is a need, by investors, for comparable environmental data that can be integrated into financial analysis so that investment decisions can take account of relevant risks and opportunities.
127. Its key findings show that 62% of companies now refer to quantified figures on climate change or energy use within their business review (up from 29% in 2006), and climate change (alongside biodiversity and land use) was one of the most discussed environmental topics. However, only 22% report quantified figures in accordance with Government

113 EA (2010) Environmental Disclosures. The third major review of environmental reporting in the statutory annual reports and annual accounts of the FTSE all-share companies.

114 See the "Reporting in Practice" chapter of the EA report for details of number of company reports reviewed, etc.

5. Other relevant recent research

guidance (up from 12% in 2004). 2009 Annual Reports would have been written before publication of the Government's *Guidance on how to measure and report your greenhouse gas emissions* on 1 October 2009, however earlier guidance on reporting GHG emissions would have been in place.

128. Many of the FTSE all-share companies' reports refer to legislation that affects or might affect their financial performance so, for example, 99 companies (22%) refer to the impact of the CRC Energy Efficiency Scheme, whilst 11 (2%) refer to the EU Emission Trading System.
129. In reporting on impacts, 62% of companies referred to climate change or energy use in 2009-10 with quantified figures, up from 24% in 2004 which probably reflects growing awareness of the risks and opportunities across the different sectors. For example, in health care only 8% of companies reported on climate change impacts in 2006 but this has increased to 40% in 2009.

5.3. OECD: Transition to a low-carbon economy: public goals and corporate practices

130. The Organisation for Economic Co-operation and Development (OECD) has published a report¹¹⁵ which aims to explore how the implementation of public policy can effectively "harness private sector investment to mitigate climate change". The report includes a new survey of companies which shows that an increasing number of them were accounting for GHG emissions, achieving emission reductions, as well as establishing plans to deal with climate change including looking beyond the company's immediate boundaries. The OECD report concludes that much more could be done to help companies integrate climate change into their corporate strategies.
131. In examining the drivers that impact on business, the report notes that climate change presents a number of risks and opportunities which are causing businesses to respond. The risks include increased regulation, especially of carbon intensive businesses with penalties when they fail to comply; and risks from climate change including physical risks from extreme weather, etc. But these risks also present opportunities from those that act early as they respond to new consumer needs and new market opportunities. Positive responses to market opportunities also meet growing societal expectations that companies will act to mitigate their impact on climate change. Nonetheless, as the OECD report shows, there is still a gap between company awareness and action. One issue that is pertinent here is the rapid but unequal development of regulatory frameworks in different countries. Accordingly when asked about the most necessary factor to promote a low carbon economy the majority of respondents to the OECD survey converged around one issue – "regulatory certainty".
132. One of the areas the OECD report focuses on is accounting for GHG emissions, and concludes that the absence of internationally agreed standards on methodologies is leading to variations which reduces the ability to compare performance. It proposes that use of a recognised standard such as the GHG Protocol, drawn up jointly by the World

115 OECD (2010) Transition to a low-carbon economy: public goals and corporate practices. <http://www.oecd.org/dataoecd/40/52/45513642.pdf>

5. Other relevant recent research

Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD), could be used to build a common approach. And that aligning carbon and financial reporting would help simplify matters for companies. The OECD report also proposes that national guidance (such as the UK's which is based on the GHG Protocol) helps ensure greater consistency and comparability.

5.3.1. Accounting for Corporate Emissions

133. OECD looked at the global upward trend in reporting by companies and reports on the factors cited by companies that responded to their survey: companies are driven by multiple motivations in reporting although complying with regulation is an important or very important driver for 8 out of 10 companies. In addition, pressure for reporting is seen to be increasing due to demands from investors and insurers. One example mentioned is that, as a result of limited disclosure of climate change risks by companies, a petition was sent by the Investor Network on Climate Risk to the US Securities and Exchange Commission (SEC) in September 2007 asking the SEC to require publicly held companies to assess and disclose their material financial risks from climate change. In January 2010 the SEC issued interpretative guidance on how to apply existing SEC disclosure regulations to climate change related matters. The OECD report also cites various examples of the increased trend in OECD countries but also notes that disclosure of such information is increasing in non-OECD countries too.
134. In reviewing the scope of what is reported, it is seen that most corporate reporting is of scope 1 (direct emissions, as defined by the GHG Protocol) and scope 2 (indirect energy emissions, mainly purchased electricity). Few companies go beyond this to report on their scope 3 emissions (other indirect emissions). OECD concludes that this is both a reflection of the requirement of existing mandatory schemes and also of the difficulties in collecting data from a company's supply chain. Companies are also disclosing other relevant information such as targets and levels of verification.
135. The report reviews the multiplicity of accounting tools and reporting frameworks which often mean that a company can be reporting under several frameworks and that this is a significant challenge especially for companies operating in a number of countries. 75% of companies that responded to the OECD survey mentioned harmonisation of reporting requirements as an issue, and harmonisation of methodologies for estimating emissions would facilitate them in collecting and disclosing their GHG emissions data. Nevertheless, there is increasing harmonisation in the methodologies used, especially in European OECD countries. An important element in the increasing harmonisation is the success of the GHG Protocol although it is noted that as the GHG Protocol is not prescriptive enough to generate harmonised company information guidance, such as that published by the UK in 2009 has an important role. Verification is another area that the report considers and notes that forms of verification vary widely and that the establishment of global standards for "verification of corporate emissions is still at an early stage of development".

5. Other relevant recent research

5.3.2 Achieving emission reductions

136. The OECD report notes that achieving emission reductions requires a positive attitude on the part of companies and that a key step in achieving reductions is the setting of targets and then implementing reduction plans and the embedding of climate change considerations into corporate governance of the companies, not just at board level but also through employee engagement. Apart from reducing emissions because it makes economic sense (reducing energy costs, finding new business opportunities) and for compliance with regulatory requirements (for some businesses) companies state that they are also responding to societal expectations and that to reduce emissions is in line with their corporate values.
137. Most companies favour short-term targets which OECD suggest could be related to them waiting for clarification of the global regulatory framework, post-Kyoto before setting longer term targets.
138. At present there is limited information on the impact of corporate actions to reduce emissions, although increasing numbers are setting targets. The report does conclude that targets need to be set at company level as they are sector and location specific but that clarification of government expectations in terms of level of reductions needed and guidance on how to set targets is needed. (Note the guidance that the UK Government issued in 2009 includes information on how companies should go about setting targets).
139. On emission reductions, the OECD report concludes (on the basis of their survey) that companies are clearly taking measures to reduce emissions through reducing energy consumption and improving energy efficiency. Such changes to business practice make good business sense, but important investments in longer term projects are seen to happen with only the far-sighted companies with the vast majority of companies requiring either stronger market signals or Government incentives.
140. The report's authors conclude that engagement along the value chain is increasing as companies start engaging with suppliers and also with consumers in order to reduce their overall emissions. However, the report acknowledges that companies face challenges in trying to reduce their indirect emissions, such as obtaining data, ensuring reliability of information, and encouraging action by suppliers to reduce emissions. The OECD report concludes that in this area, governments could clarify expectations and put in place policy measures such as carbon pricing, emission reduction requirements, education campaigns and financial incentives to support behaviour change.

5.4. ERM: Company GHG emissions reporting - a study on methods and initiatives¹¹⁶

141. ERM conducted a six month study of international voluntary and mandatory reporting methods and initiatives¹¹⁷ on behalf of the European Commission, Directorate General Environment.

¹¹⁶ http://ec.europa.eu/environment/pubs/pdf/ERM_GHG_Reporting_final.pdf

¹¹⁷ As defined in the report; a 'method' is a means of calculating a GHG emissions footprint in tCO₂e (including guidance on choosing reporting boundaries and emission factors); whereas an 'initiative' defines the reporting format (covering aspects such as public disclosure, target setting, emission reduction measures assurance/verification and league tables) and may refer back to a specific 'method'.

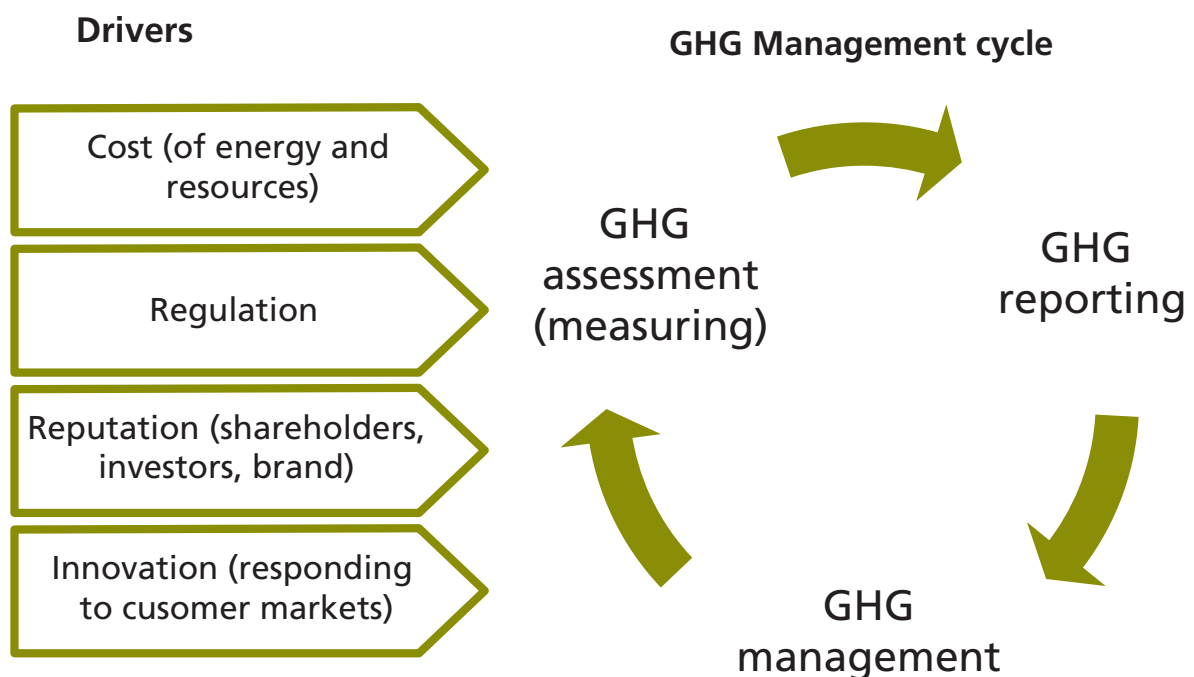
5. Other relevant recent research

142. The research provides a comprehensive review of the leading international emissions reporting schemes, focusing the analysis of these from the perspective of potential European-wide policy development. The research uses a range of techniques to identify, compare and analyse the schemes and analyses the risks, costs and benefits of the major schemes. Although the research does not specifically focus on the role of reporting in leading to emissions management, there is some useful analysis on the issue which is highlighted in this section.
143. Overall, ERM identify that there is a multiplicity of reporting methods and initiatives internationally (over 80), but that around half refer back to the GHG Protocol as their basis but, for example, provide further or specific guidance for sectors. The report identifies 30 major schemes and 9 leading schemes which are analysed in further detail. The Defra/ DECC Guidance is included as one of these 9, due to it being widely recognised and setting minimum requirements for reporting, alongside CDP and the GHG Protocol. Two mandatory schemes are also considered, namely EU ETS and the CRC, for their compliance nature and the intended emissions reductions associated with them. It should be noted that both of these policies are intended to be primarily cap and trade schemes with an element of emissions reporting, not specifically reporting schemes.

5.4.1. Role of emissions reporting in GHG management

144. The research starts with the basic premise that emissions reporting is an integral part of GHG emissions management. A 'GHG management cycle' model is used to illustrate the premise which was developed from previous research by ERM as shown in Figure 2.

Figure 2: ERM Management cycle model



5. Other relevant recent research

145. The four drivers identified incentivise a company to start the GHG management cycle, often fusing measuring and reporting as an important first step. The drivers work in combination with one another, supporting the idea of a critical mass identified by IEMA's research, whereby the absence of one of the drivers weakens the overall incentive to report. Under this model GHG management includes business case development, policy and target setting, capital programmes and the capacity to deliver reductions, and measuring and reporting can be seen as a first step to realising the benefits of this stage. The GHG management stage relates to the strategies and processes by which awareness can be raised and emissions reductions achieved through a combination of factors.
146. This model underpins ERM's analysis of the role and relative importance of reporting in the various schemes analysed. The evidence found from the interviews of businesses and literature review supports the identification of these drivers. In the interviews, companies repeatedly identified that measuring and reporting led to an understanding of emissions from activities, identifying opportunities for reductions (in particular the 'big wins'), setting baselines and monitoring trends. The role of reporting is found to be more varied in the opinions of the businesses which were interviewed; some of whom believe it can be linked directly to emissions reductions whereas others do not. However, most agree that reporting is an important part of the overall cycle. A questionnaire of method/initiative owners supports the theory set out in the GHG management cycle model that reporting is a first step to GHG management and for several this is the premise of their scheme¹¹⁸.
147. The various sources of evidence agree that measuring and reporting is linked to the ability to realise emissions reductions, but that measuring and reporting is not enough to realise emissions reductions on its own. This supports the findings of PwC/CDP's research that identifies the role of reporting as a contributory part of this process.
148. A deeper analysis is conducted of the risks and benefits from each of the schemes and the benefits of reporting identified can be grouped around these categories:
- Improving reputation: external market reputations, investor and stakeholder relations;
 - Identifying opportunities: using emissions to exploit market opportunities, helping the company to be forward looking, enhance market value;
 - Identifying cost savings: focusing on efficiency; and
 - Ethical reasons: reducing the environmental impact of the company, raising employee awareness and engagement (this could be linked to cost savings as well).
149. Improving the company's reputation externally was the most frequently cited benefit from the business interviews followed by investor related benefits. Benefits of improved relationships with investors was the second most frequently reported benefit and supports the identification of investor pressure as a particular driver for emissions reporting as found in PwC's research.

¹¹⁸ Note that EU ETS and CRC did not respond to this questionnaire and that these policies have very different objectives to the reporting initiatives as they are targeted emissions reductions policies. See para 156.

5. Other relevant recent research

150. The benefits identified do not necessarily lead directly to emissions reductions on their own but are largely in relation to getting an understanding of the company's emissions situation and raising awareness of GHGs as an issue in the company, thus supporting the role of reporting as an important part of the GHG management cycle.
151. Conversely, the risks identified from a company's failure to report are largely the opposite of the benefits described above such as risks to: reputation, market value, brand value, shareholder reputation, investor relationships.
152. ERM identify that the balance of costs and benefits to any one company will depend on several variables such as the size of the business, the business sector and the size of their emissions. The research does not separate out the impact that the reporting element of these schemes has in influencing the different costs and benefits.

5.4.2. GHG abatement potential

153. In their analysis of the nine leading schemes ERM develop a set of six criteria by which the schemes are examined. The criteria are based on the rate of uptake, reliability and robustness, compatibility and comparability, ease of use, incentives for use and finally GHG abatement potential. From the perspective of this report, this final criterion is of the most interest in understanding the impact that reporting can have. In this final criterion, the emphasis is placed on reporting having three main levers for incentivising emissions reductions amongst participants:
 - Processes for setting emission reduction targets
 - Identifying baselines, projections and benchmarking
 - Linking to the implementation of GHG reduction measures.
154. These measures are identified as important in offering GHG abatement potential because setting emissions targets means that the company must identify their baseline and monitor trends as part of their reporting cycles with the aim of achieving the target. There are also reputational risks associated with publicly committing to a target and then failing to achieve it, so it represents a commitment by that company to action.
155. Overall, performance of the top nine leading schemes was found to be poor against this criterion. However, two levers which were identified as good practice from amongst the schemes were:
 - leadership indices or benchmarking which rewards good and improved performance either financially (e.g. CRC, EU ETS) or in terms of reputation (e.g. US Environmental Protection Agency (EPA) Climate Leaders Index, CDP Leadership Index, CRC); and
 - the setting of emissions reductions targets as part of the scheme (e.g. the US EPA Climate Leaders Index).

5. Other relevant recent research

156. EU ETS and CRC are primarily cap and trade schemes which both have a measuring and reporting element to them. The incentive in these schemes to reduce emissions comes from the price signal resulting from the finite and decreasing cap placed on emissions. Under EU ETS extra credits have a price on them and therefore this impacts the company financially, encouraging them to reduce emissions. The CRC has a financial element as participants have to buy allowances for their carbon emissions. The reductions achieved by these schemes therefore cannot be said to be attributed directly to the reporting of emissions and ERM identify that the large scale emissions reductions achieved by companies can be associated with financial incentives. However, the CRC does give guidance to participants on target setting to improve their league table position and therefore provides companies with tools to support behavioural change amongst the reporting procedures.
157. The US EPA Climate Leaders Index is a US Government and industry partnership whereby companies complete a corporate emissions inventory, set agreed reduction targets and report annually, receiving EPA recognition for accomplishments as environmental leaders. The initiative requires that participants sign up to agreed emissions reductions targets to remain in the scheme. The initiative also offers guidance on setting targets and on reporting performance tracking. This scheme, like CDP's Leadership Index, offers companies reputational gain from being at the top of the index and reputational losses from poor performance which drives continual improvement through the reporting process. CDP also request more than just GHG emissions, but information covering climate change strategy and reduction measures, so there is a further incentive to be able to report on all of these areas (and a risk to not doing so).
158. ERM identified target setting as a gap for development of future policies which would strengthen their ability to drive emissions reductions through reporting initiatives.
159. A series of questionnaires with method or initiative owners showed that the intention of all schemes is to encourage measurement of emissions in order to manage them and decrease over time. However, none of the schemes (including the Defra/DECC Guidance) is able to quantify the emissions reductions that their scheme will achieve which can be directly related to GHG emissions reporting. This suggests that this has not been the focus of these initiatives so far or that there is general difficulty in isolating the role of reporting amongst other drivers of action.

5.4.3. Summary

160. ERM's research is based on the premise that reporting is an essential pre-requisite in the emissions management cycle and that the overall GHG management cycle will work to deliver emissions reductions. The report does not attempt to unpick this relationship to identify the specific role of reporting but does find evidence to support this overall model through the research, in particular in interviews with companies, the literature review and questionnaires with method / initiative owners. Reporting is identified as important in 'enabling companies to connect to the drivers for emissions reduction (i.e. costs, regulation, reputation, innovation)'. The research shows that reporting plays a part in this cycle, but is 'not enough' on its own¹¹⁹.

119 ERM (2010) Company GHG emissions reporting - a study on methods and initiatives, p12 http://ec.europa.eu/environment/pubs/pdf/ERM_GHG_Reporting_final.pdf

5. Other relevant recent research

161. However there are specific ways which are identified whereby reporting leads more clearly to emissions reductions and the research concludes that the focus of reporting should be on encouraging the 'next step', for example to use the reported data to set emissions targets or provide incentives to improve performance through benchmarking. A closer analysis of nine leading GHG reporting schemes identifies that the extent to which schemes currently capitalise on this is limited and that this is an area for policy development to strengthen the impacts of emissions reporting.

6. Annex A: PwC/CDP summary of findings

This annex includes the executive summary and summary of findings from the PwC/CDP research 'Review of the contribution of reporting to GHG emissions reductions and associated costs and benefits' (2010). The full report is available here: <http://www.defra.gov.uk/environment/business/reporting/index.htm>.

Executive Summary

The UK's Climate Change Act 2008 sets the framework for how the UK will manage and respond to the threat of climate change. The Climate Change Act requires Government to carry out a review by December 2010 to evaluate the contribution that reporting on GHG emissions is making to the achievement of Government's climate change objectives. The output of this research is part of the evidence base that will help inform the Secretary of State's decision on whether to make regulations requiring reporting of GHG emissions.

Specifically, this study is set out to achieve three objectives:

1. To assess the impact of corporate GHG reporting in helping UK companies to achieve emission reductions;
2. To assess the impact of corporate GHG reporting on the development of broader corporate climate change strategies; and
3. To seek information on the associated costs and benefits of corporate GHG reporting.

A number of different approaches have been used to collect evidence for this research – including a review of existing literature, a business survey covering responses from 155 companies, three focus group sessions with business and sector representatives, direct telephone interviews with 32 companies, and an account of experience from the Carbon Disclosure Project (CDP), a voluntary investor-led GHG reporting initiative.

This research found that external reporting of GHG emissions does not in itself drive companies to reduce their GHG emissions as this is influenced by many factors including senior management commitment, targets, efficiency savings, a belief that it is an ethical imperative and brand building. The act of reporting in isolation does not reduce emissions. It needs to be followed by behavioural and operational changes within the business.

Companies that participated in this study found that external reporting of GHG emissions helped enable reductions of GHG emissions and development of climate change strategies by driving the company to measure emissions. Many companies attributed the act of measuring rather than the external reporting of GHG emissions to the identification of emission reductions. It has not been possible to confirm if companies that report externally benefit from greater reduction in emissions than those that do not. Therefore policies that encourage companies to better measure emissions will enable GHG emission reductions. External reporting is one such measure, as are policies that place a material cost of GHG emissions such as trading schemes and carbon taxes.

6. Annex A: PwC/CDP summary of findings

Some CDP participants also described a process of internal change that was triggered by the CDP information request, leading to a new focus on climate change and emission reductions. This is supported by other studies where publications by the CBI, the Environment Agency and the ICAEW argue that the process of preparing an external GHG emissions report helps a company to address climate change related risks and develop a climate change strategy.

Given the role of reporting in enabling emissions reduction, it is therefore important to understand the drivers that have encouraged many companies to report. One of the key drivers identified by existing literature and companies surveyed was meeting the information needs of key stakeholders, particularly investors. Reporting on GHG emissions provides investors with quantifiable data to factor into investment decisions where they then assess climate change risks and performance. In turn this drives companies to report improving performance and demonstrable emission reductions.

The third objective for this study is collecting evidence on the costs and benefits of GHG emissions reporting. The majority of companies which participated in this study do not actively measure the costs and benefits associated with reporting GHG emissions, although companies surveyed were more able to quantify the costs of reporting than the benefits. Most of the benefits companies gained from reporting their GHG emissions are either intangible or complex to quantify, for example improved transparency to investors and other stakeholders, target setting and brand building. Therefore there is limited evidence available on the true financial implications for companies from reporting GHG emissions. The research carried out obtained more insight into the financial implications than previous research but the evidence mostly reflects the experience of large companies, as these are the companies more likely to report their emissions and participate in research into this area at present.

The costs quoted for the external reporting GHG emissions by survey participants (who were mainly large companies) ranged from less than £25,000 up to £400,000. Costs quoted for the measurement of GHG emissions were slightly higher. Within this range the majority of companies surveyed experience costs of reporting of less than £75,000 and only a small number of companies seeing costs in excess of £150,000. Survey respondents also stated that these costs were holding level or increasing over time as the reporting of GHG emissions matured within the company.

Reporting can be a net cost or net benefit to different companies and the aggregate impact of reporting for UK companies at present is still unclear. Analysis performed on a sample of companies in the survey showed 60% of respondents experienced a net cost of reporting, based on quantifiable costs and benefits provided by these companies. As intangible benefits have proven hard to quantify, this research held discussions directly with 32 companies, which found that 53% of those companies asked believed that reporting led to a net benefit to their business. These direct interviews with companies also suggested that the costs associated with reporting GHG emissions is not considered to be financially material to the business.

The focus of the net cost-benefit analysis in this study has been on the net impact on the reporting companies. However, there are also potentially wider benefits to other stakeholders that are hard to quantify, for example in raising public awareness, to support fundamental research or due diligence for investors, to enable the learning of best practices in environmental management techniques and sharing this with other stakeholders / suppliers. The potential to generate wider benefits forms a key part of the debate on the need for mandatory reporting.

6. Annex A: PwC/CDP summary of findings

Key Conclusions

- Companies that focus on climate change through measuring, managing and reporting GHG emissions experience benefits in terms of cost savings, brand building and stakeholder communications.
- A wide range of factors can drive companies to set emission reduction strategies, targets and deliver these reductions. Reporting is not viewed by companies who participated in this study as one of the top drivers but an activity that enables emissions reduction / target setting.
- Very few companies that participated in this research who measure GHG emissions chose not to report their performance externally. It has not been possible to confirm if companies that report externally benefit from greater reduction in emissions than those that do not.
- The costs of reporting GHG emissions vary widely from company to company. The reporting companies interviewed in our research viewed the costs of reporting as not financially material to the business.
- According to the companies surveyed the costs of reporting GHG emissions hold level or increase over time as the reporting of GHG emissions matures within the company.
- It has not been possible to obtain reliable estimates of the value of the net cost or benefit derived from GHG emissions reporting, but there seems to be a fair split of companies who view the investment in reporting as a net benefit to the business and those who perceive it as a net cost.
- There are also potentially wider benefits to other stakeholders, for example in raising public awareness, to support fundamental research or due diligence for investors, to enable the learning of best practices in environmental management techniques and sharing it across other stakeholders / suppliers.
- Policies that encourage companies to better measure emissions will enable GHG emission reductions. External reporting is one such measure, as are policies that place a material cost of GHG emissions such as trading schemes and carbon taxes.

Summary of Findings

Overview

A number of different approaches have been used to collect evidence for this research. This section pulls together the findings from the different evidence bases – literature review, business survey, focus groups and telephone interviews. However, as a topic that is evolving for businesses, participation from business suffers from potential self-selection bias. In particular, the findings of this research in general and the business survey (covering responses from 155 companies) in particular are skewed towards larger companies, or companies that are already engaged in the topic. While the different research approaches aimed to balance this by seeking sector representation (e.g. participation of sector associations in focus groups) or by doing in-depth interviews with selected participants that have been under-represented, some of the findings cannot be generalised across all companies without further work.

Drivers for reporting GHG emissions

To understand the impacts of GHG emissions reporting it is first important to understand the drivers for reporting as this provides an insight into the expected benefits.

The literature review identified the key drivers for reporting sustainability and GHG emissions data as transparency and accountability to stakeholders, regulatory compliance and as a basis to meet stakeholder demands for information. Investor interest, in particular, was highlighted as a driver of increasing importance.

Reporting climate change related information to CDP as part of its annual questionnaire on behalf of investors is now prevalent. CDP sees the competitive interests of companies and their desire to meet and exceed peer performance behind the high response rates. Data reported to CDP is increasingly used as a source for green investment products such as funds and indices, and as an indicator for purchasing decisions, albeit this is still far from being a mainstream practice. Other key drivers identified by CDP were the opportunity to discover strategic information about the business and satisfying requests from customers.

The online business survey in this research asked companies to rank the relative importance of these drivers.

- Nearly half of the respondents identified pressure from investors as very important in driving their reporting, compared with only a fifth of companies identifying consumer pressure as very important.
- Other key drivers that ranked highly in the survey responses were demonstrating market leadership, brand building, anticipation of future regulation and pressure from other external stakeholders.

The business survey results on the relative importance of drivers for reporting were tested at a series of focus groups. While the focus group participants agreed that the investment community is increasingly interested in the environmental performance of companies, this interest may not be shared by all investors. Also, some members within the focus groups had expected consumers to be ranked as a more influential stakeholder group, though this view could be attributed

6. Annex A: PwC/CDP summary of findings

to a high proportion of consumer facing companies attending certain focus groups. More generally, the participants in the focus groups agreed that companies face a multitude of drivers that influence the decision to report and that these differ from sector to sector and between companies.

The literature argues that larger firms are more visible targets for the public, face potentially higher political risks and costs of non-disclosure, have more active investors and other financial stakeholders and are therefore more likely to report (or have better quality reporting). This view is partly supported by the type of company that responded to the business survey, which suffered from self-selection bias where significantly more large companies than SMEs chose to respond. In particular, a higher proportion of SME respondents to our business survey that calculate GHG emissions choose not to report externally.

The audience for the reported data, and how they use this data, may also drive the level and forms of reporting.

- For example, a 2009 CDP survey of 87 of its signatory investors from around the world found that 77% of respondents factored climate change information into their investment decisions and asset allocations, citing “carbon risk” and “potential regulation” as motivation for using CDP data.
- Direct engagement with companies, for example to challenge poor or non-existent reporting, emerged as the leading area in which investors are currently using CDP data.
- Several companies participating in the CDP Supply Chain programme incorporate Sustainable Procurement Scorecards into their procurement process, rewarding suppliers for reporting their emissions and information on climate change strategies. Existing and prospective suppliers will be under strong pressure to report their emissions.

Several participants in the focus groups and telephone interviews also argued that they are unlikely to report (or report robustly) on GHG emissions until it affects the procurement decisions of their customers.

Another important stakeholder group is governments, which are increasingly seeking emissions data in order to help meet policy goals. Governments can directly mandate corporate GHG emissions reporting or require measurement, reporting and verification (MRV) as a key part of carbon regulations (for example the EU Emissions Trading System (EU-ETS) or the CRC Energy Efficiency scheme (CRC)). The regulatory authorities behind mandatory GHG emissions reporting schemes around the world, such as those in the US and Canada, have stated the ability to compare and assimilate data to inform future climate change policy as a key driver for enforcing corporate reporting. The literature review presents a summary of existing environmental disclosure requirements and schemes that require GHG emissions disclosure around the world.

While there is a lack of agreement across the evidence base on the relative importance of different stakeholder pressure, there is a general consensus on the reasons why companies do not report:

- The business survey highlighted that some companies do not report because they do not view reporting a part of their strategy or business objectives, or that they lack the resources to do so.

6. Annex A: PwC/CDP summary of findings

- Although the sample of non-reporters in the survey is too small to make statistical conclusions, this finding is reinforced in the views from the focus groups and in-depth telephone interviews.
- Resource constraints were thought to be an acute issue among SMEs, particularly by the sector associations that represented primarily SME members.

Companies that have not invested in understanding the risks and opportunities posed by climate change will not have incorporated a response into their strategy or business objectives and do not see the business benefits that reporting can bring.

The literature found that though many stakeholders show a keen interest in GHG emissions data, many do not use the information or do not trust the information currently reported. The challenge of reporting robust GHG emissions data is highlighted in a 2009 survey by the ICAEW, which found that only 42% of companies (and 31% of SMEs) believe they have sufficient information on how to measure GHG emissions. Additionally, some participants from the telephone interviews confirmed that the current quality of reported GHG information, while fit for current purposes, is not as robust as those for financial reporting.

CDP acknowledged that many of its investor signatories are only using this data to a limited extent in their investment decisions and many are still struggling to integrate climate data into their mainstream investment models. As a result, for some companies the investor demand is not enough to stimulate a voluntary response. Around one third of UK companies do not respond to the CDP information requests, and in the majority of these cases CDP staff are unable to engage their interest despite repeated attempts. Many companies do not give a reason for their failure to respond. Of those that do, the reasons provided include: lack of interest; insufficient resource; unavailability of data or data not felt to be of sufficient quality; or the data is deemed to be commercially sensitive.

Are carbon reductions attributable to emissions reporting?

A key objective of the research is to explore the link between carbon reductions¹²⁰ and GHG emissions reporting. This is a complex area as the reporting of GHG emissions is unlikely to drive emissions reduction in isolation. Research that has looked into the causal relationship between reporting and performance improvement in the sustainability and climate change area is limited. There is some anecdotal evidence suggesting how external reporting enables carbon reduction, however there was no hard evidence supporting a causal relationship between GHG emissions reporting and reductions.

The research aimed to look at this relationship through two sets of questions:

- What are the key outcomes from reporting? How important are these outcomes?
- What are the drivers for carbon reductions? Is reporting considered a driver, and if so, how important is reporting relative to other drivers?

120 Carbon reductions refers to absolute reductions in emission levels

6. Annex A: PwC/CDP summary of findings

The first set of questions was explored in the business survey. The key findings were:

- The top climate change outcome resulting from GHG reporting was emissions reduction, with the highest number of 'very important' responses. Emissions target setting also ranked highly.
- The other top outcomes identified were around transparency – to stakeholders, investors and the board.
- Cost savings from energy, carbon and resource efficiency all ranked towards the bottom, indicating that though these are potentially very important outcomes for businesses, reporting is not seen as a key contributor to cost savings.

On the second set of questions, the evidence from our business survey suggests that key contributors in driving carbon reduction are efficiency savings, brand building and board pressure. A recent survey by the ICAEW identified senior management commitment, cost savings and personal / staff interest as the top three drivers for emission reduction programmes. Also, several participants from both the focus groups and telephone interviews stated that energy and carbon prices are strong drivers for action on climate change. In particular, some of the participants raised the need for more certainty on future energy and carbon prices so that these can be factored into investment appraisal processes, and that an appropriate price for carbon will enable actions to reduce emissions to be implemented by business.

To understand the role of reporting better, the activity of measuring emissions needs to be decoupled from the action of reporting emissions. The participants of the focus groups, for example, agreed that effective management of its carbon performance needs firstly the ability to measure its performance and that reporting in isolation does not reduce emissions, although it drives the action of measuring. The telephone interviews with companies, which also explored the relative contribution of measurement and external reporting to emission reductions, reinforced this finding. From these it also became clearer that the act of measuring emissions, especially for the first time, rather than the act of reporting, helped companies identify opportunities for emission reductions and set meaningful and achievable reduction targets. The focus group argued that reporting can be effective if it is used in combination with other measures to improve environmental efficiencies such as target setting, again consistent with the survey results that highlighted the importance of emissions target setting as an outcome of reporting.

The importance of a climate change strategy and the role of reporting

A second research question for this study is exploring the role of reporting in driving the broader development of climate change strategies. Climate change strategies are deemed to be an important element for driving emission reductions in companies. The business survey conducted for this research highlighted the importance to companies of having a corporate climate change strategy.

- 72% of company respondents have a climate change strategy.
- The drivers for the development of a climate change strategy that stood out were the identification of risks and opportunities from climate change; anticipation of future regulation; and to demonstrate market leadership.

6. Annex A: PwC/CDP summary of findings

- A significant number of other drivers for climate change strategies were highlighted, including moral/ethical reasons, cost savings and value creation.
- Again, reporting is not considered an important driver for the development of a climate change strategy and elicited the second highest number of 'not at all' or 'not very important' responses.
- However, reporting enables activities e.g. measurement and emissions target setting that form parts of a climate change strategy. For example, correlation analysis shows that there is also a strong link between those who measure emissions and those with a climate change strategy.
- For the survey respondents, 94% of their corporate climate change strategies included action plans to reduce emissions.

As a result of the self-selecting nature of participants to the survey, some of the above findings may not be representative of the UK business population. With this caveat, the findings from the survey suggest there is no strong link between reporting and the development of a climate change strategy. However, an indirect link may be present as with the case of emissions reduction as GHG emissions reporting was found to be an integral part of climate change strategies and most companies recognise the importance of reporting emissions to achieve change. Recent publications by the CBI, the Environment Agency and the ICAEW argue that the process of preparing an external report helps a company to address climate change related risks and develop a climate change strategy. Company case studies from CDP also show that the process of collating information for reporting to CDP has provided companies with the tools to develop reduction targets, which are part of a climate change strategy. Participants from our focus groups also agreed that GHG emissions reporting can be a useful tool to raise awareness among employees, educate the business and to present environmental performance to senior management or the board.

The costs and benefits of GHG emissions reporting

Little research has been conducted into the quantification of the costs and benefits of reporting GHG emissions. Quantification of the benefits is seen as particularly challenging as many are qualitative or long-term in nature. The representation in the business survey and telephone interviews, for reasons mentioned above, is skewed towards larger companies. It is also clear, particularly from the interviews, that most companies do not actively measure the costs and benefits associated with reporting their GHG emissions. The majority of the benefits discussed in the interviews were intangible or would require significant assumptions that undermine the value and effort of quantifying the benefits.

Quantifiable costs

The direct costs of reporting identified by the literature fall into three main areas: employee time, development and running of systems, and consultancy costs (including assurance of the data). The Defra/DECC 'Guidance on how to measure and report your greenhouse gas emissions', the CRC, and the US Mandatory Reporting of GHG Rule have also recently published analysis of the expected implementation costs of the schemes.

6. Annex A: PwC/CDP summary of findings

To provide greater insight to this important area the business survey asked detailed questions about the costs of measuring and the costs of reporting and looked at the difference between set-up costs and on-going costs.

As GHG emissions measurement and reporting is an evolving area and companies are often increasing the scope of reporting each year, the survey results showed no significant difference between the set-up and on-going costs for either measurement or reporting. Key findings from the survey – which represents large companies more than SMEs – are:

- Over 50% of companies surveyed have annual measurement costs of less than £50,000 and a further quarter have costs between £50,000 and £100,000. The highest total cost of measurement stated was £450,000.
- Specific costs associated with external GHG emissions reporting were generally slightly lower than measurement costs. Around 40% of companies quoted costs of less than £25,000 for reporting, with a further 25% stating costs between £25,000 and £50,000. Just fewer than 20% stated costs from £50,000 to £100,000 and the maximum cost stated was £400,000.

Due to the distribution of responses the spread of costs rather than an average cost has been provided.

Through the telephone interviews, we found that the (top) range of costs identified by the business survey is broadly consistent with those of the interview participants. For example, the companies interviewed highlighted the most significant costs as the development and running of systems (£50,000 - £400,000), external consultants (£10,000 - £100,000) and report publication (£50,000 - £70,000). While combining these values to produce a combined cost will not provide a true reflection of the total costs for a company (as few companies provided data and no company provided estimates for all categories) the top end of the costs quoted are broadly aligned with those from the survey. Interestingly, most companies interviewed who were reporting viewed the costs of reporting as not financially material to the business. Those who were not reporting, however, cited resource constraints as a reason not to report.

57% of survey respondents stated that costs have increased over time, and a further 43% claimed that they have remained broadly similar. The business survey highlighted costs of reporting as greater than the estimates of both the Defra and DECC estimates as well as those by the US EPA. Caution should be taken in making these comparisons as the scope of activities included in the schemes is likely to vary.

The survey results also suggest considerable variation of costs across companies. The literature and the telephone interviews offered a number of reasons for this:

- time spent on measurement and data collection (which could depend on number of facilities / operations; with greater experience the time spent could fall);
- employee type engaged in the measurement and reporting of GHG emissions (e.g. engineering professionals, corporate managers, operation managers);
- Scope and boundaries of reporting (all GHG or CO₂ only, scope of reporting);

6. Annex A: PwC/CDP summary of findings

- company size (larger, higher profile companies may have different pay scales compared to smaller, less established companies);
- complexity of corporate structure (number of sites / group structure);
- the level of verification and assurance (there is currently no formal requirement for gaining external assurance although some voluntary schemes such as CDP value verification and assurance);
- the level of engagement by senior management; and
- the level of integration into day-to-day operations.

In particular, the interviews with companies also suggested that the approach to measurement and reporting could range from simple data collation to the use of real-time integrated software systems.

Quantifiable benefits

The business survey also asked companies to provide an indication of the benefits like monetary savings attributable to external reporting of GHG emissions in areas such as energy, carbon and resource use.

- Less than half the respondents completed the question, indicating that this is analysis many companies do not carry out on a regular basis or are not willing to share.
- The majority of companies who did respond stated benefits of less than £1,000 for carbon and resource efficiency savings. Also, 40% stated energy savings of less than £1,000, with 25% stating energy savings in excess of £200,000.

The inability to quantify benefits was also observed in the telephone interviews. Interviewees agree that the benefits gained were primarily driven by the act of measurement of energy use and/or GHG emissions, which helped identify opportunities for emission reductions and the setting of KPIs and targets.

A few companies did volunteer value for cost savings, ranging from £200,000 to £60 million over five years, however the role of reporting in achieving these savings was not clear.

Though the quantification of benefits proved challenging, when business survey respondents were asked to rank the impact of reporting on certain factors emission reductions came second (with the highest number of 'very important').

Net cost-benefit analysis

55 companies in the survey provided both quantitative costs and benefits data enabling an analysis of net cost-benefit. While the responses were insufficient to provide statistically significant results to draw strong conclusions, the results indicate that slightly more companies who responded recognised reporting to generate a net cost. 62% of these companies viewed GHG emissions reporting as a net cost with four companies showing a net cost of greater than £250,000 per annum. A further 25% showed a net benefit of no greater than £150,000 per annum and three companies showed a net benefit of greater than £500,000. As the cost-benefit

6. Annex A: PwC/CDP summary of findings

analysis is derived from data provided by survey respondents on quantifiable costs and benefits, the results would not have captured intangible or unquantifiable costs and benefits. This is particularly relevant for the quantification of benefits as they are likely to be intangible – e.g. improvement or protection of reputation and accountability.

Therefore, this study also asked companies explicitly in the telephone interviews whether the reporting of GHG emissions generates a net cost or benefit to the company. The lack of conscious analysis of the cost-benefit of reporting by companies meant that the responses were based more on the interviewees' views rather than detailed analytics and analysis. While the results are still inconclusive, they suggest that the results of the net cost-benefit analysis from the survey may not have captured some of the potential intangible benefits. It is worth emphasising that the results from both the survey and telephone interviews do not provide a clear indication of whether reporting is likely to generate a net benefit or net cost for a company. Again, this is likely to be because of the potential variation in costs across companies discussed earlier and the different drivers which led to a company to report its emissions.

Net benefits / costs of GHG reporting

Evidence	Net benefit	Net cost	Neither	Don't know / insufficient data
Telephone survey	53%	22%	3%	22%
Business survey	26%	37%	n/a	36%

The focus of the net cost-benefit analysis is on the net impact of reporting on the companies. However, there are also potentially wider benefits to other stakeholders, for example in raising public awareness, to support fundamental research or due diligence for investors, to enable the learning of best practices in environmental management techniques and sharing it across other stakeholders / suppliers. The potential to generate wider benefits form a key part of the debate of the need for mandatory reporting.

Mandatory versus voluntary reporting

Much corporate GHG emissions reporting to date has been driven by voluntary initiatives for which there has been much debate on their benefits and drawbacks. This report considers these arguments and weighs up mandatory and voluntary reporting, primarily found through the literature review. As there is yet to be research that could present robust evidence for or against mandatory reporting, much of the evidence is anecdotal and the viewpoints and experience of selected groups of companies or individuals.

The literature finds that voluntary reporting has the advantages of allowing companies to develop an approach to reporting that meets the demands of its stakeholders and to harness innovation in reporting. However, voluntary reporting of GHG emissions to date has resulted in inconsistent and incomparable information and is often accused of being restricted to positive performance or information that helps a company's self interest.

6. Annex A: PwC/CDP summary of findings

Proponents for mandatory reporting therefore argue that mandatory reporting helps deliver more credible, comparable, consistent and transparent information, with all reporting organisations using the same methodology and a fixed disclosure format that avoids selective reporting of good performance. However, the literature argues that mandatory reporting rules have to be appropriate for all organisations, which may revert to the lowest common denominator regarding scope and innovation and result in a 'tick box' mentality.

A key message from our findings is the importance of form, structure and coverage of a reporting scheme, whether voluntary or mandatory. Participants from our focus groups noted a lack of consistency among the different voluntary and mandatory reporting standards, guidelines and methodologies that companies are encouraged (or obligated) to follow. This was a cause for concern for companies covered by one or more mandatory schemes as well as participating in voluntary reporting programmes. In some cases, the lack of consistency makes it either very difficult or impossible to compare data and adds complexity for the reporter. There was unanimous agreement about the need for clearer guidance and standards for GHG reporting, with appreciation for differences in sectors and not one rigid standard across all industries. Feedback to CDP from stakeholders using CDP reports highlights the need for more usable, reliable and comparable data.

Coverage of companies is also an important consideration in a mandatory scheme. An analysis of emissions and company size of our survey respondents suggests that while small companies tend to be low emitters, the relationship between company size and scale of emissions for larger companies may be less clear. Within our sample around 5% of companies are categorised as large companies with low levels of emissions (<5,000 tonnes CO₂e for each of scopes 1 and 2 in the last reporting year). Thus, for example, a rule that mandates all large companies to report GHG emissions will lead to a fraction of large companies reporting on an issue that may not be material to them and is more likely to be a net cost than net benefit to the business.

For companies subject to regulatory reporting schemes, such as the EU-ETS and the CRC, 90% of survey participants stated they would have reported even without a regulatory driver. This could be, as suggested in the focus groups, because companies start to realise the benefits of measuring and reporting GHG emissions only when they have started doing it.

The distinction between voluntary and mandatory reporting is blurring, as some schemes have evolved to become quasi-mandatory schemes. For example, it has been argued in the literature that CDP sits between voluntary and mandatory reporting, as responding to CDP is already becoming institutionalised through investors' pressure on companies. However, though response rates to schemes such as CDP have been high, data gathered by CDP is subject to the same challenges as have been mentioned above for voluntary reporting and has not resulted to date in a complete or fully comparable dataset of information from the companies that are asked to respond.

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8. Annex C: CDSB investor engagement initial findings

This annex includes the extended executive summary from the CDSB interim report on 'Investors, climate risk and company disclosures' by Matthew Haigh and Matthew Shapiro. The full report is due to be published in early 2011.

CDSB INTERIM REPORT: EXTENDED EXECUTIVE SUMMARY

The impetus for this report is sourced from two directions: i) incomplete research on issuance of directives requiring investors to use corporate social and environmental performance indicators, and ii) calls for improved knowledge of the motivations, needs and investment intentions of institutional investors offering investment products built on environmental themes (e.g., Clark and Hebb, 2005). Exploratory examinations are conducted to seek insight into four questions:

- The factors that motivate institutional investors to use company issued carbon emissions and related data in portfolio management processes,
- The information sources investors use when recognising climate change related portfolio risks,
- Information processing difficulties faced by investors, and
- Investors' attitudes toward regulation requiring environmental data to be used to guide portfolio allocation levels.

Ascertaining investors' demand for data on climate risk and industrial carbon emissions would seem useful knowledge to accompany legislative moves to introduce mandatory reporting of climate change risks in the business sector. In line with the type of regulation focused on in this report, much of the research on companies' social and environmental information disclosures has presumed rather than measured the influence of environmental data on large investors' decisions (e.g., Cooper and Sherer, 1984; Friedman and Miles, 2001; Gelb and Strawser, 2001; Guthrie and Parker, 1990, 1989; Tilt, 1994).

Studies which have measured and observed investors' decisions in relation to environmental issues and data have tended to focus on retail and not institutional investors (e.g., Bruyn, 1987; Belkaoui, 1980; Buzby and Falk, 1979; Capon et al., 1996, 1994; Cullis, Lewis and Winnett, 1992; Freedman and Stagliano, 1991; Haigh, 2008; Harte et al., 1991; Lewis et al., 1998; Lewis, 2001; Marks and Mayo, 1991; Milne and Chan, 1999; Shapira and Venezia, 2001)¹.

The present study extends the scientific research on corporate environmental disclosure and provides evidence for policy development by measuring how institutional investors located in North America, Europe, Japan and Australia have taken account of regulations requiring recognition of environmental considerations such as climate risk.

¹ Kulkarni (2001) does not present empirical evidence and, in a departure from much of the investment decision-making literature, treats investors as a non-prioritised group of stakeholders.

8. Annex C: CDSB investor engagement initial findings

Two methods are used. One, a sample of investors was obtained for a questionnaire administered in the Internet. The data obtained were used to determine the influence of company-supplied data on carbon emission levels on investors' asset allocation decisions. The sample covered the principal institutional functions in investment management: governors and trustees, portfolio managers, investment consultants, equity analysts, research providers and educators to the funds management industry, and private equity investors.

Two, a study was conducted using twenty-nine semi-structured interviews with selected investment professionals located in nine economically developed countries, including the UK and the USA. The interviews sought to identify how investors have responded to, identified and managed climate-related risk and associated nascent regulation.

The findings indicate mixed levels of interest from investors in data relating to companies' environmental management programmes including, e.g., carbon emissions levels. Despite all subjects having collected data on companies' carbon emissions levels, there was no evidence that any had actually used such data to guide portfolio allocation levels.

The administration of the experiment showed that the type of investment mandate influences the ways investors allocate funds to carbon-sensitive assets. The latter finding and other data obtained in the study suggest that, failing marked policy intervention, environmental investing in the private sector is destined to be confined to a niche-style investing approach.

The outcomes of the study carry implications both for institutional design and for public policy. Based on the data obtained, it is suggested that the capacity of the managed investments sector to contribute to efforts to mitigate absolute levels of carbon emissions is constrained by absence of incentives for investors to engage in such behaviour. The latter constraint is attributed to several institutional factors:

- Disclosure regulation imposed on investors absent of sanctions for the regulated, and without remedies for parties that might benefit from the regulated disclosures,
- Absence of appropriate tertiary and professional education in the financial services sector,
- Tendency of investors to focus on revenue attracting aspects of environmental management, such as carbon prices,
- Investors' perceptions of weak, unfocused or absent economic incentives, and
- Investors' perceptions that regulators are likely to adjust their regulatory policies regarding the use of environmental data, leading in turn to dissipated levels of interest in environmentally themed investing.

Several sets of policy measures can be recommended. To date regulators and policy makers have depended on a minimal admonitory approach requiring investors to disclose how they take into account environmental performance indicators in portfolio construction. Policy might be adjusted such that investors are required to disclose how they have used corporate environmental performance indicators in value and risk assessments.

8. Annex C: CDSB investor engagement initial findings

Policy-makers can expect environmental value and risk assessments to be factored in investment models, however, if economic incentives for such behaviour were to be introduced. Examples of 'incentives' might include income taxation concessions and a fungible carbon market. A call is made to policy-makers and regulatory agencies for clearer signals on portfolio risks related to climate change.

Of legal and theoretic interest is the way that investors have used companies' management of climate-change related issues to collectively lobby policy makers, to highlight hitherto unidentified investment risks in particular industrial sectors, and to gauge the quality of corporate governance. Such uses of company-specific data are at odds with a conventional investment model dependent only on maximal investment return and market contagion.

The theoretical approach to the study therefore justifies a call for adjustments to the prevailing theory of portfolio management. The investment behaviour observed in relation to climate change-related risk suggests that a social-ecologic portfolio theory has a place in investment thinking. The empirical outcomes also suggest a need for continuing research on investors' use of information relating to industrial greenhouse gas emissions.



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