

**Module: Introduction****Page: Introduction****0.1 Introduction**

Please give a general description and introduction to your organization

**About Centrica**

Our vision is to be the leading integrated energy company in our chosen markets. We source, generate, process, store, trade, save and supply energy and provide a range of related services. We secure and supply gas and electricity for millions of homes and business and offer a range of home energy solutions and low carbon products and services.

We have strong brands and distinctive skills which we use to achieve success in our chosen markets of the UK and North America, and for the benefit of our employees, our customers and our shareholders. In the UK, we source, generate, process and trade gas and electricity through our Centrica Energy business division. We store gas through Centrica Storage and we supply products and services to customers through our retail brand British Gas. In North America, Centrica operates under the name Direct Energy, which now accounts for about a quarter of group turnover.

We believe that climate change is one of the single biggest global challenges. Energy generation and energy use are significant contributors to man-made greenhouse gas (GHG) emissions, a driver of climate change. As an integrated energy company, we play a pivotal role in helping to tackle climate change by changing how energy is generated and how consumers use energy. Our corporate responsibility (CR) vision is to be the most trusted energy company leading the move to a low carbon future.

We developed our 'energy for a low carbon world' programme to drive our ongoing response to climate change, helping us to mitigate the key risks and take advantage of the opportunities. We see opportunities in the way that power generation and use are changing. We are investing in innovative microgeneration technologies, to enable consumers to generate their own low carbon energy, and energy efficiency so they can reduce the amount of energy they need. We are developing employees' skills to help us become the supplier of choice for installing and servicing these new technologies. And we are investing in a range of renewable energy technologies as well as the next generation of nuclear power stations to secure low carbon power.

Our approach reflects the three areas where we believe we can make a difference:

- Enabling customers to cut their carbon footprint
- Investing in lower carbon power
- Leading by example by cutting the carbon emissions of our property, company vehicles and travel

British Gas is in a unique position as Britain's largest energy supplier combined with the largest installation and servicing business through our network of 9,000 engineers. We believe this combination will give us increasing advantages as Government policy and consumer demand trend towards more holistic low carbon energy services – ie services that combine energy supply, advice, energy efficiency products, microgeneration and financing to make it easy for households and businesses to act on climate change.

## Our impact

We emit greenhouse gases (GHGs) from a variety of direct and indirect sources. Our direct GHG emissions, defined in accordance with Scope 1 of the Greenhouse Gas Protocol, include those from sources owned or controlled by us such as power generation, producing and storing gas, consuming gas at our offices and emissions from our fleet of commercial vehicles and company cars. Our indirect GHG emissions under Scope 2 are from the electricity we consume in our offices and at our assets. We also take into account GHG emissions under Scope 3 – those that we do not produce, but are a result of our activities and the products and services we provide, such as the emissions associated with the electricity we purchase to sell to our customers and the products and services we purchase to run our business.

The impact of our indirect emissions is far greater than the impact of our direct emissions, which is why we have an important role to play in helping our customers use energy efficiently and working with our business partners to minimise the impact of our supply chain activities. We also have a role to play in helping future generations and current consumers become more energy literate.

We recognise the need to assess, quantify, measure and communicate our carbon impact in a robust and clear manner.

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## 0.2 Reporting Year

Please state the start and end date of the year for which you are reporting data.

The current reporting year is the latest/most recent 12-month period for which data is reported. Enter the dates of this year first.

We request data for more than one reporting period for some emission accounting questions. Please provide data for the three years prior to the current reporting year if you have not provided this information before, or if this is the first time you have answered a CDP information request. (This does not apply if you have been offered and selected the option of answering the shorter questionnaire). If you are going to provide additional years of data, please give the dates of those reporting periods here. Work backwards from the most recent reporting year.

Please enter dates in following format: day(DD)/month(MM)/year(YYYY) (i.e. 31/01/2001).

Enter Periods that will be disclosed
Fri 01 Jan 2010 - Fri 31 Dec 2010

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## 0.3 Country list configuration

Please select the countries for which you will be supplying data. This selection will be carried forward to assist you in completing your response

Select country
United Kingdom
United States of America
Canada

<b>Select country</b>
Rest of world

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#### 0.4 Currency selection

Please select the currency in which you would like to submit your response. All financial information contained in the response should be in this currency.

GBP(£)

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#### 0.5 Please select if you wish to complete a shorter information request

#### 0.6 Modules

As part of the Investor CDP information request, electric utilities, companies with electric utility activities or assets, companies in the automobile or auto component manufacture sectors and companies in the oil and gas industry should complete supplementary questions in addition to the main questionnaire. If you are in these sectors (according to the Global Industry Classification Standard (GICS)), the corresponding sector modules will be marked as default options to your information request. If you want to query your classification, please email [respond@cdproject.net](mailto:respond@cdproject.net). If you have not been presented with a sector module that you consider would be appropriate for your company to answer, please select the module below. If you wish to view the questions first, please see <https://www.cdproject.net/en-US/Programmes/Pages/More-questionnaires.aspx>.

Electrical

1.1 Where is the highest level of direct responsibility for climate change within your company?

Individual/Sub-set of the Board or other committee appointed by the Board

1.1a Please identify the position of the individual or name of the committee with this responsibility

Chief Executive - The Chief Executive has overall responsibility for climate change. He is a member of the Board, the Centrica Executive Committee and the Corporate Responsibility Committee and is therefore able to ensure that issues around climate change and low carbon are represented consistently at the highest level.

1.2 Do you provide incentives for the management of climate change issues, including the attainment of targets?

Yes

1.2a Please complete the table

Who is entitled to benefit from these incentives?	The type of incentives	Incentivised performance indicator
Corporate executive team	Monetary reward	Leadership behaviour (including EMS implementation; completion of Environment strategy)
Environment/sustainability managers	Monetary reward	Delivery of Group environment plan (includes reductions in group internal carbon footprint)
Chief Executive Officer (CEO)	Monetary reward	Leadership behaviour (including EMS implementation; completion of Environment strategy)
Other: Corporate Affairs teams	Monetary reward	Delivery against environmental targets; Delivery of key climate change programmes in line with CR Committee approved KPIs
Facility managers	Monetary reward	Improve energy efficiency and environmental performance of our estate (including electricity 10% reduction; gas 10% reduction)
Management group	Monetary reward	Delivery of environment plan within departments and visible leadership
Other: All employees eligible for the Annual Incentive Scheme	Monetary reward	Performance against Group environment plan (targets vary by team and department)
Other: Employees involved in green teams	Recognition (non-monetary)	Awards for categories include best performance against targets, most improved team, best initiative

Who is entitled to benefit from these incentives?	The type of incentives	Incentivised performance indicator
Other: Employees within British Gas New Energy	Monetary reward	New business development (focusing on energy efficiency, insulation, microgeneration, other low carbon technologies)
Other: Employees within British Gas Community Energy	Monetary reward	Revenue from new business (using the Community Energy Savings Programme - CESP - as key vehicle for this)
Other: Renewables team	Monetary reward	Lincs wind farm project delivery; Wind farm reliability
Other: Employees nominated by colleagues	Recognition (non-monetary)	Employees can nominate colleagues for living our leadership behaviours – which includes a proactive approach to the environment
Other: Power generation team	Monetary reward	CCGT efficiency; Compliance with EU ETS

2.1 Please select the option that best describes your risk management procedures with regard to climate change risks and opportunities

Integrated into multi-disciplinary company wide risk management processes

2.1a Please provide further details (see guidance)

The Board is responsible for the Group's system of internal control and risk management, and considers this to be fundamental to the achievement of the Group's strategic objectives.

**Governance, risk and control framework**

The work of the Board and its sub-committees are at the heart of the risk management process. The Board and its committees set objectives, performance targets and policies designed to achieve a balanced and transparent assessment of the risks facing the Group's operations and to measure the effectiveness of the key controls in place to manage them. The work of the Board is underpinned by clear delegations of authority, effective policies and procedures covering key areas of Group operation together with a set of business principles and human resource processes which are communicated to Centrica's employees.

In addition, mechanisms are in place to ensure that both strategic and operational risks, including carbon and climate-related risks are identified and assessed and that the controls designed to manage such risks are operating effectively. These mechanisms are reinforced through regular performance management and business reviews.

During 2010 Centrica undertook a number of activities designed to ensure that its governance arrangements remained appropriate to its business risk profile. These included the following:

- a review of the core governance committee structure and enhancements to the risk management reporting processes; and,
- implementation of a comprehensive training programme in respect of controls awareness across the Group.

Our risk processes are designed to make our day-to-day operations more sustainable and successful by ensuring that line managers have a clear understanding of:

- the opportunities and risks faced in delivering their business objectives; and

- the status of the key controls in place to manage these risks.

As with any such system, the processes are designed to manage rather than eliminate the risk of failure to achieve the objectives and can provide only reasonable, and not absolute, assurance against material misstatement or loss.

Each business unit has a 'risk champion' who coordinates regular line management assessment and reporting of that business unit's risk profile. These reports are reviewed and challenged by the Group risk team who provide the Group Risk Management Committee, the Centrica Executive and the Audit Committee with regular updates on cross group trends and material changes in our business risk profile, including those climate change-related risks that might affect us at Group level. The operational assessments are supplemented by regular contact with the Group strategy team to ensure that our assessments also reflect the latest risks attaching to the delivery of our strategic priorities.

### **Group Risk Management Committee**

The Group Risk Management Committee (GRMC) plays a pivotal role in the governance of risks. Each of Centrica's business units has a Business Risk Management Committee whose role is to evaluate, report and advise on material risks, and to consider the adequacy of controls and the actions planned to mitigate those risks. The most material risks are then reported to the GRMC so that it has a clear understanding of Centrica's aggregate risk profile, and that control processes are in place to ensure monitoring and management of significant risks.

### **Executive Committee and Audit Committee**

The Group's material risks are reported to each meeting of the Executive Committee which regularly undertakes in depth reviews of specific risks as appropriate. At each of its 4 meetings in 2010 the Audit Committee received a Group risk report, which provided an assessment of the key risks facing the Company and the adequacy of the associated controls.

Individual risks are assessed with regard to their potential impact in financial terms and also non-financial factors including brand and reputation, legal, regulatory, customers, employees and health and safety and environmental, together with the likelihood of the risk materialising. Our assessment method uses a 1-5 rating for impact and likelihood with the overall rating calculated by multiplying impact x likelihood, i.e. a range of overall risk scores from 1 – 25. Material risks are also subject to review and challenge by expert groups, whilst regular meetings are also held with Internal Audit to ensure that risk reports reflect the latest findings from audit activity.

During 2010 we reviewed our processes to ensure that they remained appropriate to provide the necessary insight and challenge. Key improvements included:

- the introduction of strategic, operational and compliance risk themes to provide a more consistent challenge of risk assessments;
- enhanced coverage of the risks attaching to high impact, low probability events; and
- the introduction of a 3 year HSE audit programme, the results of which are reviewed by the Board, CEC and CRC.

In addition, the Corporate Responsibility Committee (CRC) is authorised by the Board to review the effectiveness of the Group's processes and controls for identifying and managing social and environmental risks and opportunities – including climate change – that could materially affect the Group's business performance and reputation. The CRC sets objectives, performance targets and policies for managing key risks and opportunities, which are monitored by the Board. Potential and material CR risks are discussed, agreed and monitored through a risk and control matrix that is reviewed annually by the CRC. Views on potential risks from external stakeholders are also incorporated at CRC meetings.

To identify opportunities, we hold an annual Board strategy conference, during which the Board examines (amongst other topics) climate change-related opportunities in new markets, new technologies and potential investment opportunities. Promising opportunities are then explored by the relevant business units, with support from the Group Strategy team. Business units conduct due diligence to assess commercial viability, market landscapes and future regulation, before presenting strategies back to the investment sub-committee. Once measures are agreed at this level, the business units develop detailed strategies to maximise opportunities that are available and to model commercial returns. The process is the same for technological innovations such as microCHP boilers as it is for large scale investment in other forms of generation capacity, eg our decision to proceed with constructing the Lincs offshore wind farm project.

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## 2.2 Is climate change integrated into your business strategy?

Yes

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### 2.2a Please describe the process and outcomes (see guidance)

In February 2010, we announced new strategic priorities for the business:

1. Grow British Gas - leading the transition to low carbon homes and businesses
2. Deliver value from our growing upstream business - securing sustainable energy for our customers
3. Build an integrated North American business - with leading positions in deregulated markets
4. Drive superior financial returns

These priorities are underpinned by the commitment to provide 'energy for a low carbon world' and show how we have embedded climate change risks and opportunities into our commercial approach. The approach has been driven by a recognition that to achieve growth in the long term, we need to lead the drive to a low carbon world.

Our strategy has been influenced by a clear momentum towards energy efficiency and a lower carbon economy. The UK government has set out a commitment to cut CO<sub>2</sub> emissions by 80% by 2050. Decarbonising power generation is one part of the story, and particularly important as this will subsequently offer low carbon alternatives in the heating and transportation sectors. The key, though, is to help customers, whether residential or commercial, to reduce their CO<sub>2</sub> emissions through energy efficiency measures. Regulatory developments on climate change are contributing to reductions in consumer demand for energy and greater obligations on energy companies. In addition, our own research has shown that changes in consumer behaviour and the development of new technologies are leading towards significant changes in the way people use and understand energy.

Our first strategic priority reflects a new business model for British Gas which is evolving from an energy supply model to a provider of energy services. The opportunities provided by a low carbon economy include new markets in energy efficiency, microgeneration and smart metering which we are well positioned to serve. We are using our CERT and CESP targets as a platform for growth. This shift also helps to mitigate diminishing underlying consumption of gas and electricity supply as a result of changing consumer behaviour and energy efficiency.

Our distinctive capabilities include 12m customer relationships and a strong recognisable brand. Our national base of 10,000 engineers give us the ability to combine energy scale with services deployment, backed up with a national distribution network, management capabilities and a network of training academies that enable us to upskill our employees quickly as new technologies and products enter the market.

We have adopted a 'go-early' strategy, aimed at revolutionising the energy efficiency of the nation's homes: we are driving ahead with the installation of smart meters and our customers will be able to take advantage of our early phase 'Green Deal' in the first half of 2011, almost 2 years ahead of its official launch. During 2010, we entered into a commercial agreement with Mears, a leading participant in the social housing sector, and have made a number of small acquisitions to help enhance our capability in new technologies, including microgeneration, specialist insulation and home energy management. We also launched a new insulation business to build our capacity to deliver comprehensive services.

Our services business is an area of distinctive competitive advantage. We expect the provision of energy services to play a defining role for the energy company of the future, forming the basis for long-term growth. Our short term strategy is to understand better the markets for energy efficiency and microgeneration, what barriers there are to take-up and how consumer behaviour is evolving. Our 'go early' approach to the Green Deal and smart metering is helping to build our knowledge and experience in these key areas. In addition, our ability to deliver a wide range of services is designed to help us to increase our customer numbers and their loyalty. This together with the value of the low carbon products and services themselves, is partly offsetting the gradual reduction in consumption and delivering financial returns.

Our short term strategy has also been influenced by our focus on our own internal carbon footprint target, which is changing our employees' behaviour. We are bringing about a cultural shift within the business that supports our long term approach.

In power generation many of the UK's coal fired stations will have to be closed in the next 5 years to comply with the LPCD and the existing nuclear fleet is also ageing. Significant levels of new generation capacity will be required to replace this and provide the anticipated increase in demand from heating and transport, whilst also meeting the UK's low carbon ambitions. It is estimated that the UK requires some £200bn of investment in energy infrastructure to meet the challenges of climate change and energy security. This is a huge task and the majority of this investment is expected to be in a range of renewables, including offshore wind, new nuclear, additional gas fired generation and grid reinforcement to support intermittent wind generation.

Investment on this scale will require the policy and regulatory framework to ensure that carbon is correctly priced, that all forms of low carbon generation are rewarded and that energy diversity is encouraged. We welcome the UK Government's intent to address these issues through the proposed reform of the electricity market. Our second strategic priority includes a recognition within the commercial strategy that our low carbon intensive generation fleet is one of our key distinctive capabilities. By combining renewable power, including wind, and low carbon nuclear power with more efficient gas fired power stations and new gas supplies, we are balancing the needs for energy security and carbon reduction. Our 2012 and 2020 carbon intensity targets represent our commitment to this approach.

In 2010 we invested £1.7bn in securing new supplies of gas and developing wind farms, renewable gas, beginning construction on the £750m Lincs offshore wind development and starting to receive offtake from our 20% stake in nuclear generator British Energy. We have prospective wind farm developments, Docking Shoal and Race Bank, under Round 2 of the Crown Estate's licensing rounds and we have also gained exclusive rights to develop offshore wind farms in the Irish Sea Zone with a potential capacity for up to 4.2GW under Round 3. Conventional fuels still have a place in the energy fuel mix though. We focus on CCGT which offer the cleanest power from fossil fuels. Our Langage power station began commercial operations in 2010 and is one of the most efficient in the world.

Centrica's business model is now better balanced and is well placed to thrive, with most of our energy being sourced from our own lower carbon sources. We are helping customers, whether in the UK or North America, to use less energy rather than the traditional paradigm of maximising the energy we sell.

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### 2.3 Do you engage with policy makers to encourage further action on mitigation and/or adaptation?

Yes

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#### 2.3a Please explain (i) the engagement process and (ii) actions you are advocating

In the UK our approach to working with Government is to engage at all levels using a variety of methods. We believe that continuing dialogue is the best means for all sides to understand different perspectives. We do not go through 3rd parties to advocate on our behalf or to secure engagement but we are members of cross-business associations such as UKBCSE, ERA and the Association of Electricity Producers. We are also members of other technology and sector-specific organisations such as the Nuclear Industry Association and RenewableUK but we do not depend on them for our engagement with policymakers.

We meet regularly with MPs from all parties and at varying levels of seniority. We also provide educational visits for civil servants and advisors to understand energy issues. Eg in 2010 we hosted a series of teach-ins for civil servants during the pre-election Purdah that included visits to power stations and to our offshore gas storage business.

In 2010 we responded to consultations on climate change-related issues such as the Environmental Audit Committee Inquiry into the Green Investment Bank, Consultation on Low Carbon Skills and DECC's Electricity Market Reform (EMR). We also post our responses on our website to ensure our views are both transparent and accessible.

We supported the Government's recognition that the electricity market needs to be reformed in order to deliver decarbonisation and security of supply objectives. In particular we supported the Carbon Price Floor which the Government has decided to introduce in Apr 2013. We believe that it has been set sufficiently high to have



an impact. We support the overall Electricity Market Reform (EMR) package, but also believe that it is worth continuing to explore more market-based alternatives in parallel.

One of the principles of our engagement with policymakers is based on a recognition of the need to move to a low carbon economy. To help achieve this, companies need a supportive policy framework from Government. Putting a price on carbon is central to this but further interventions will also be necessary. The purpose of these policies must be clear and the approach must remain market-oriented.

On customer carbon, we are working with the UK Government to identify the best means of rolling out energy efficiency measures and technology such as smart meters on a wide scale. The Green Deal is a flagship policy for the Government and British Gas has decided to 'go early' on the scheme to develop best practice approaches that are shared with the Government and the rest of the industry. Eg we are inviting DECC officials to attend some of our consumer insight focus groups. Our experience is demonstrating the importance of incentivising customer demand and we advocate measures such as council tax rebates to promote the take-up of energy efficiency measures. We are also asking DECC for clarification around the financing arrangements for the Green Deal which are yet to be finalised.

The Govt has plans for a new Energy Company Obligation (ECO) to replace CERT and CESP. We believe ECO should have 2 primary aims: Reduce the heating bills of low income/vulnerable households for whom Green Deal financing doesn't work by installing free or subsidised energy efficiency and heating measures; Provide support for transformational technologies that fail to meet the Golden Rule, eg solid wall insulation.

We engage on smart metering and welcomed DECC's Smart Meter Prospectus published in Mar 2011. This made good progress on clarifying timings for the national smart meter rollout, including a 'test and learn' phase, and in proposing a simplification to the industry switching process. However, Ofgem's Retail Market Review has proposed that every supplier has only one standard tariff, which would limit our ability to implement time-of-use tariffs for smart meter users. Whilst we are supportive of the intention to make customer choice transparent, simple and fair, we don't believe it is in their best interests, and those of the low carbon society, to lose the flexibility that smart can bring to today's standard consumption profile energy tariffs. We are keen to rule out anything that will impede our ability to provide innovative tariffs and propositions for smart meter customers and continue to engage with Ofgem on this issue.

In early 2011, we gave our support to legislation on mandatory carbon reporting, signing a letter alongside 190 other organisations sent to 3 Govt departments, including DECC. We believe that this is a vital step to help enable the UK to decarbonise its economy and meet targets under the Climate Change Act. As the letter states, "Requiring companies to report their carbon emissions in a way that is consistent with international reporting standards would reward those companies taking a lead in the green economy and help businesses to manage and reduce their emissions." This view was supported by MPs who tabled an Early Day Motion on the subject.

In North America we supported the introduction of cap & trade legislation for carbon emissions but this now seems very unlikely to be introduced in the near future. As a result, our focus is more on energy market reform and opening the market to competition. We continue to engage with regulators, legislators and senior officials in the US and Canada through targeted contact programmes.

## Page: 3. Targets and Initiatives

### 3.1 Did you have an emissions reduction target that was active (ongoing or reached completion) in the reporting year?

Absolute and intensity targets

#### 3.1a Please provide details of your absolute target

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions (metric tonnes CO <sub>2</sub> e)	Target year	Comment
ICF1	Other: Scope 1 + Scope 2 + Scope 3: business travel	1.2%	20%	2007	116296	2015	We use the term 'internal carbon footprint' to describe the carbon emissions from our property energy use, company vehicles and business travel. The target is global but it does not cover emissions from power generation or oil and gas production, the reporting and management of which we treat separately. Our internal targets concentrate on those areas where the majority of our employees have the ability to influence results. This is important for engagement purposes and enables us to benchmark our operational performance against the majority of other businesses. Although the percentage of emissions appears immaterial when compared to our total scope 1, 2 and 3 footprint, our approach to managing the impacts in these areas enables us to innovate and trial new technologies, helping us to lead the consumer market and to engage our own employees in understanding environmental issues.
CC1	Scope 3: Use of sold products	100%		2009		2010	We set annual targets for lifetime carbon savings of energy efficiency products provided under the UK Government's Carbon Emissions Reduction Target (CERT). In 2010, our target was to provide energy efficiency products with lifetime carbon savings of 14.6m tonnes. We exceeded this, providing products with lifetime carbon savings of 15.6m tonnes. We have set a target to achieve 16.3m tonnes of lifetime carbon savings in 2011.
ICF2	Scope 1	0.7%	14%	2007	45000	2015	In the UK, we aim to reduce the carbon emissions from our existing fleet by 9% by 2015 (baseline year: 2007). This equates to around 4000 tonnes of CO <sub>2</sub> by 2015, equivalent to taking over 1,400 average private cars off the road. In 2010 we managed to reduce carbon emissions from the existing fleet by 6% compared to 2009 exceeding our year end target of 5%. This included a 6% reduction in our van fleet. This was helped by a 3% decrease in our mileage to a total of 127m miles by our UK fleet of around 10,500 service vehicles and 2,000 company cars.
ICF3	Scope 2	14%	10%	2009	23597	2010	UK Property electricity reduction target of 10% of previous year's consumption.
ICF4	Other: Scope 1 + Scope 2 + Scope 3: business travel	1.1%	25%	2007	79898	2015	We are aiming to reduce our internal carbon footprint (property, fleet, business travel) by 25% in the UK.

### 3.1b Please provide details of your intensity target

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Base year emissions (metric tonnes CO <sub>2</sub> e)	Target year	Comment
CI1	Scope 1	86%	29%	Other: grammes CO <sub>2</sub> e per kilowatt hour (kWh)	2008	9380023	2012	We have set a target to achieve a carbon intensity of 270g CO <sub>2</sub> e/kWh by 2012. This target covers all UK emissions from our own power generation and that from site-specific contracts (ie where we know the source of supplied power and the carbon intensity of the facility providing the electricity but we are not the owners or operators). This supports our commitment to secure energy for our customers and grow our business with our policy of investing in lower carbon power. Our overall generation (using the definition of our own power generation and that from site-specific contracts) has grown since 2008 from 32.9TWh to 40.1TWh but our carbon intensity has reduced from 379g CO <sub>2</sub> e/kWh to 277g CO <sub>2</sub> e/kWh over that same period.
CI2	Scope 1	86%	31%	Other: grammes CO <sub>2</sub> e per kilowatt hour (kWh)	2008	9380023	2020	We have set a target to achieve a carbon intensity of 260g CO <sub>2</sub> e/kWh by 2020. This target covers all UK emissions from our own power generation and that from site-specific contracts (ie where we know the source of supplied power and the carbon intensity of the facility providing the electricity but we are not the owners or operators).

3.1c Please also indicate what change in absolute emissions this intensity target reflects

ID	Direction of change anticipated in absolute Scope 1+2 emissions at target completion?	% change anticipated in absolute Scope 1+2 emissions	Direction of change anticipated in absolute Scope 3 emissions at target completion?	% change anticipated in absolute Scope 3 emissions	Comments
CI1	No change	0%	Decrease	20%	Since 2008, there has been a 4% decrease in emissions in power from our own generation and from site-specific power purchase agreements, although overall power generation has increased from 32.9TWh to 40.1TWh. As a result though, we are purchasing less of our energy on the market from third party providers. In 2010, the increased amount of low carbon electricity available to our UK customers helped avoid the emissions of 2.7m tonnes of CO <sub>2</sub> e had the electricity been generated by other third parties from whom we source power.
CI2	Decrease	21%	Decrease	3%	It is much harder to predict changes in emissions over the longer term. If output were to stay the same and the carbon intensity drops to 260g CO <sub>2</sub> /kWh then there would be a 21% decrease in Scope 1 and 2 emissions compared to 2008. However, output

ID	Direction of change anticipated in absolute Scope 1+2 emissions at target completion?	% change anticipated in absolute Scope 1+2 emissions	Direction of change anticipated in absolute Scope 3 emissions at target completion?	% change anticipated in absolute Scope 3 emissions	Comments
					is expected to increase as we bring our Lincs wind farm on stream and begin work on additional renewables projects under Round 3. Our research suggests that increased take up of energy efficiency, low carbon microgeneration technologies and smart metering will reduce customer demand, decreasing Scope 3 emissions.

### 3.1d Please provide details on your progress against this target made in the reporting year

ID	% complete (time)	% complete (emissions)	Comment
CI1	50%	94%	We have achieved 94% of our carbon intensity target, having reduced carbon intensity from 379g CO <sub>2</sub> e/kWh in 2008 to 277g CO <sub>2</sub> e/kWh in 2010. Our 2012 target is to achieve 270g CO <sub>2</sub> e/kWh. Over the same time period, equivalent carbon dioxide emissions have decreased by 4%.
CI2	17%	86%	We have achieved 86% of our 2020 carbon intensity target.
ICF1	38%	56.5%	We are aiming for a 20% reduction in total on our 2007 baseline. We reduced emissions in from our global internal carbon footprint (property, fleet and travel) to 103,168 T CO <sub>2</sub> in 2010.
ICF2	38%	7.2%	In 2010 we reduced carbon emissions from the existing fleet by 6% compared to 2009 exceeding our year end target of 5%. This included a 6% reduction in our van fleet. This was helped by a 3% decrease in our mileage to a total of 127m miles by our UK fleet of around 10,500 service vehicles and 2,000 company cars.
ICF3	100%	75%	We achieved a 7.5% (21,838 T CO <sub>2</sub> ) against our target of 10%. However, savings of this amount have been particularly positive in a year that saw extreme cold spells at both beginning and end with heating demand rising by over 30% compared to 2009. Despite these challenging conditions, we managed to reduce carbon emissions, helped by our successful 10-week Carbon 10 campaign to encourage employees to reduce the carbon footprint of the business through simple daily behaviours.
ICF4	38%	33%	In 2010 we achieved an 8.4% reduction in our UK internal carbon footprint compared to our baseline of 2007. This equates to 33% completion of our 2015 target.
CC1	100%	100%	We exceeded our target of 14.6m tonnes, achieving 15.6m tonnes of lifetime carbon savings through energy efficiency products provided. As a result we achieved 107% of our target (the system does not allow figures higher than 100% to be entered).

### 3.2 Does the use of your goods and/or services directly enable GHG emissions to be avoided by a third party?

Yes

### 3.2a Please provide details (see guidance)

Under the business model for British Gas, we have commercialised the opportunities around helping customers to reduce CO<sub>2</sub> emissions. Through CERT we provide energy efficiency products to customers, supporting in excess of 100m products in the last 5 years. In 2010 we provided household energy efficiency products with equivalent lifetime carbon savings of 15.6mt, calculated using Ofgem's published guide to the kg CO<sub>2</sub> savings attributable to each measure in their Suppliers' Guidance and also for newer products with agreement with Ofgem based on then energy saving performance of that product. We are building our insulation business, providing insulation for 237,000 homes in 2010.

Centrica is implementing 1/3rd of all CESP programmes after taking on the obligations of 2 other major power generators. In 2010, we launched 26 CESP programmes in 98 low income areas, delivering 0.45mt of equivalent carbon savings (using Ofgem's Suppliers' Guidance). We have gone beyond the minimum required under CESP by installing smart meters and by choosing to work in more rural communities such as Dumfries & Galloway. The remote off-grid location and solid wall stone construction of housing developments make them more challenging to upgrade. We are also working with local authorities to deliver microgeneration to whole communities. Eg in Wales we are delivering a Heads of the Valleys scheme and have now installed our 1,000th microgeneration technology in the area.

Independent analysis by the Cebr of 40m British Gas meter readings found that our customers' gas consumption declined by 22% over a 5 year period 2006-2010, equivalent to savings of 5.47mt of CO<sub>2</sub>. This compares to a 17.0% reduction in gas use for Great Britain as a whole. Customers who adopted measures such as insulation and energy efficient boilers saved an average of £322 each year and saw a 44% fall in their gas use. The report found that gas consumption declines are directly driven by structural energy efficiency measures implemented by households, mainly energy efficient boilers (c.36% of total decline) and insulation (c.36%). The savings have been converted into CO<sub>2</sub> emissions savings using DEFRA's GHG conversion factors, which state that a kWh is equal to 0.18485 kg CO<sub>2</sub>. The findings were based on data from 40% of British Gas customers.

We are bringing to market a range of new technologies, including biomass heating through our 19% stake in Econergy and low carbon fuel cells for domestic boilers through our 10% stake in Ceres Power. These fuel cells, which generate electricity and heat from gas, will be tested in homes in 2011. In 2010, we started selling Baxi's Ecogen boiler, which generates both heat and electricity from gas. Compared to a G-rated boiler, the Ecogen can save around 1.7t of CO<sub>2</sub> emissions, £302 on an average annual energy bill and generate £168 in income from the feed-in tariff. These calculations are based on official PAS-67 and APM results and SAP Apr 2010.

We launched 2 biomethane projects in 2010, joint ventures between British Gas and other companies. This included injecting renewable gas into the grid for the first time in Oct 2010 from Didcot sewage works to produce enough gas for up to 200 homes. We also worked with Adnams to convert brewery waste into renewable gas. Biomethane could account for at least 15% of the domestic gas market by 2020 (National Grid study).

Changing consumer relationships with energy will be underpinned by the rollout of smart meters. British Gas has the largest smart meter deployment in the country with more than 258,000 already installed in homes and business. We aim to have installed 2m by end 2012. We are participating in the UK's biggest smart-grid project – c.14,000 homes and businesses in the North East and Yorkshire will be involved in the £54m project to test the impact on the electricity grid of new low carbon technologies such as smart meters, electric cars and renewable microgeneration.

We offer green energy tariffs based on the principle of additionality and in accordance with Ofgem's best practice guidelines. We retired 7,947 CERs within the framework of CDM in 2010 for British Gas' green energy tariff. We offer green power products to business and residential customers in North America and carbon neutral natural gas in Ontario, Alberta and Ohio. We are committed to offering green alternatives in most markets and use certifications by Ecologo in Canada and Green-e in the US.

In 2010, we reduced our UK power generation carbon intensity by 25% to 277g CO<sub>2</sub>/kWh. The reduction was primarily due to the introduction of nuclear power into our portfolio, which also increased our UK power output by 27% to 31.3TWh. The increased amount of low carbon electricity available to our UK customers helped avoid the emissions of 2.7mt of CO<sub>2</sub>e had the electricity been generated by 3rd parties from whom we source power - calculated using the UK fuel mix disclosure (Apr09-Mar10) made to Ofgem. Together with our power purchase agreements, our UK renewables contributed 2.6TWh to customers in 2010 – 8% of our overall

UK generation. This helped to reduce CO<sub>2</sub> emissions from power generation from 12.7mt (2009) to 11.1mt (2010). Power generation figures are based on output from our own generation and from site-specific offtake contracts.

**3.3 Did you have emissions reduction initiatives that were active within the reporting year (this can include those in the planning and/or implementation phases)**

Yes

**3.3a Please provide details in the table below**

Activity type	Description of activity	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period
Energy efficiency: building fabric	We are participating in the UK Government's Community Energy Saving Programme (CESP), a mandatory obligation on power generators to install energy efficiency measures in areas of severe social deprivation over the three years from 2009-2012. The scheme requires a 'community-by-community' and 'whole house' approach, installing sets of energy saving measures in conjunction with local authorities and residential social landlords. Our own obligations make up around 19% of CESP in the UK but we have also taken on the implementation of CESP obligations for two other major power generators. Combined, this means Centrica is implementing a third of all CESP programmes. In 2010, we launched 26 CESP programmes in 98 low income areas, delivering 0.45m tonnes of equivalent carbon savings. We have gone beyond the minimum required under CESP by installing smart meters, not just energy efficiency measures, and by choosing to work in more rural 'hard to heat, hard to treat' communities such as our CESP scheme in Dumfries and Galloway, Scotland. The remote off-grid location and solid wall stone construction of housing developments in this community make them more challenging to upgrade. However, meeting this challenge presents a valuable opportunity to expand our knowledge and capabilities. The action is helping to reduce our Scope 3 emissions.		100000000	>3 years
Low carbon energy installation	We are building a 270MW offshore wind farm. Total investment in the project is expected to be approximately £750 million, with Centrica's share being £375 million. Offshore construction of the Lincs wind farm commenced in 2010 with first power expected in 2012. This is helping to reduce our Scope 1 emissions by increasing the renewable component of our generation. Our investment in renewables is not a mandatory requirement.	0	375000000	>3 years
Low carbon energy installation	In 2009, we invested £2.3bn in a 20% stake in nuclear power producer British Energy, to increase the amount of low carbon baseload power available to our customers. As part of the deal, we have the option to invest in new nuclear power stations. Our offtake of nuclear energy started in April 2010. This is helping to reduce both our Scope 1 emissions (lower carbon power generation) and Scope 3 emissions (our investment means that we do not have to purchase as much energy on the market, which has a higher carbon intensity than our own generation). Our investment in nuclear is not a mandatory requirement.	0	2300000000	>3 years
Transportation: fleet	We are gradually replacing our commercial vehicles with more efficient models, which is reducing our Scope 1 emissions. This is not done with significant additional investment but as part of our	525965	26000000	<1 year

Activity type	Description of activity	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period
	<p>rolling vehicle replacement programme and is a voluntary initiative. In 2010, we replaced 3,000 vans and we are planning to replace an additional 2,400 in 2011. Our new vans have the latest generation Euro 5 emissions standard power plants and where possible we continue to downsize the engine capacity of our fleet. We achieve more than 40mpg for most of our small vans, even when working in urban areas, demonstrating our commitment to invest in the latest technology that improves fuel efficiency. To replace the vans of our front line management we have sourced 512 Leon Ecomotives, which achieve a fuel consumption rating of 3.8l/100km (61.9mpg), emitting 99g of CO<sub>2</sub> per km. The car employs an auto start/stop function and an energy recovery system to cut emissions and improve fuel economy further. We are the first major operator of these ultra low emission cars, which were specially built for us and the changeover to SEAT Leons has now been completed. We are currently testing an electric van prototype with a view to introducing approximately 1,300 electric vehicles to our UK fleet by 2015. We are hoping to conduct further trials in 2011 but any move to convert our fleet to electric vehicles depends on the availability of reliable, affordable models on the market and the standardisation of electric or electric hybrids by manufacturers. Annual monetary savings are estimated. The investment required is part of the ongoing fleet replacement programme.</p>			
Transportation: fleet	<p>In 2009, we re-engineered our company car policy to encourage our employees to choose cleaner vehicles through raising awareness and using financial incentives. This is a voluntary initiative and is expected to continue indefinitely. The changes have impacted our employees' car selection and on average, they are now choosing cars which emit 22g CO<sub>2</sub>/km less than our current fleet average, helping to reduce our Scope 1 emissions. In addition, since 2007 we have restricted the choice of company cars to those that emit a max of 200g CO<sub>2</sub>/km. Together these initiatives have led to a reduction in the average tail-pipe emissions from our company car fleet to 135g CO<sub>2</sub>/km from 164g CO<sub>2</sub>/km in 2007. This is well ahead of the UK average for new cars of 144.2g CO<sub>2</sub>/km reported in the trade press and of current European Commission targets for car manufacturers. As with the commercial fleet, we have been exploring opportunities for introducing electric vehicles. This has not been as fast a process as we had hoped but we have now agreed with Nissan to take the first UK delivery of two Leaf electric vehicles in 2011. We will use these cars to raise awareness and promote the uptake of electric and hybrid vehicles among employees who will be able to use them to shuttle between our Staines and Windsor offices, where solar canopies will be installed to charge the vehicles. We hope to see the first electric vehicles in use in our company car fleet by 2012. The annual monetary savings are calculated by estimating the savings on fuel through the car policy changes.</p>	127831	300000	<1 year
Behavioral change	<p>Driving: We have trained drivers in efficient driving techniques, used fiscal incentives to encourage employees to choose less polluting vehicles and provided video-conferencing technology to help reduce our Scope 1 emissions. We have continued to roll out GPS to the fleet and now over 80% are equipped with this technology. GPS helps to calculate the most efficient routes, reducing mileage and fuel used. We anticipate this will reduce carbon emissions by a further 5% or 2,200 tonnes CO<sub>2</sub>e per year. We developed a Safe and Fuel Efficient Driving (SAFED) online training module aimed at educating our 13,000 commercial and company car drivers in how to drive in a more environmentally friendly manner. We use a points-based system to profile our commercial</p>	144606	350000	<1 year

Activity type	Description of activity	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period
	vehicle drivers to identify those with low fuel efficiency and provide further training. In 2010, we delivered 1,117 two-hour sessions for these drivers, as well as 200 SAFED e-learning modules, and 168 new induction courses for over 1,000 new drivers. These are all voluntary initiatives. The investment required is a per annum figure and the annual monetary savings are based on estimated savings on fuel.			
Other	To deliver on our energy efficiency and microgeneration programme, we need a team of people with the right skills and expert knowledge. We are creating 'green collar' jobs in insulation, in-home advice, renewable generation and smart metering by the end of 2012. This is not a mandatory requirement but will give our business a competitive advantage. These skilled individuals will be better placed to advise customers, helping to reduce our Scope 3 emissions.		60000000	1-3 years
Energy efficiency: building fabric	We are building our insulation business in the UK and in 2010 we acquired Hillserve Ltd, a leading domestic insulation company serving the North West of England and Wales. Demand for home insulation is forecast to rise significantly in the next five years. Currently, £1 in every £4 spent on domestic energy is wasted because of poor insulation. Spending on home insulation is predicted to rise from around £0.6bn a year in 2010 to £1.4bn in 2015. Better insulation reduces customer energy use and will help to reduce our Scope 3 emissions. It was not a mandatory investment to build an insulation business but it is part of our response to our obligation under the UK Government's Carbon Emissions Reduction Target.		5000000	1-3 years
Energy efficiency: building fabric	In 2010, British Gas announced plans to 'go early' on the UK Government's Green Deal voluntarily by installing £30m of energy efficiency measures in customers' homes from 2011, two years ahead of the Government's scheme. Repayments from customers will be made via savings in their energy bill over two to 10 years (depending on the measures installed), enabling them to benefit immediately from warmer homes and energy savings. This will help to reduce our Scope 3 emissions and provide us with the knowledge and experience to lead the official rollout from 2013.		30000000	>3 years
Energy efficiency: building services	We have introduced 'green' information services (IS) projects to reduce energy consumption and waste, including PC power management and print management. These are saving us over 750 tonnes of CO <sub>2</sub> e per annum, helping to reduce our Scope 2 emissions. This is a voluntary initiative and is now part of the business as usual PC build.	10000	90000	>3 years
Behavioral change	Facilities: Our network of Green Teams coordinate activities at local sites to highlight key environmental messages to employees. This includes support for our major behavioural campaign each year to promote carbon reduction among employees. Our annual Carbon Reduction Campaign in 2010 achieved an average reduction in energy use of 4% across British Gas and Centrica sites. The campaign, designed to encourage employees to save energy and reduce carbon emissions (scope 2), helped some sites reduce energy use by more than 10%. The campaign, which we ran in conjunction with facilities management company Carillion, began in July and ended 10 weeks later in October on 10.10.10. We distributed 28,000 packs to employees on reducing energy use and carbon emissions, as well as other environmental impacts such as waste. A key focus was to remind employees to switch off their computer monitors when not in use and the 'switch-off' rate rose from 83% to 90% over the course of the campaign. Our Carbon 10 campaign was run in conjunction with the national 10:10 campaign, which aimed to inspire organisations and	180000	500	<1 year



Activity type	Description of activity	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period
	individuals across the country to pledge to reduce their carbon emissions by 10% in 2010. Our 2008 and 2009 carbon reduction campaigns were both recognised by the Green Apple Awards for environmental best practice. Our annual campaign is a voluntary initiative.			
Energy efficiency: building services	In 2010 we installed more efficient lighting devices in buildings and car parks to save an estimated annual savings of 1,300MWh a year and to reduce Scope 2 emissions. This is a voluntary initiative.	90000	360000	>3 years
Low carbon energy installation	We have started installing renewable microgeneration on selected British Gas buildings. We are anticipating saving c.500 tonnes of CO <sub>2</sub> e per year once these installations have been completed in 2011. These voluntary installations will reduce our Scope 2 emissions and are expected to last 10-20 years.	200000	1500000	>3 years
Behavioral change	Travel: We have video-conferencing equipment in all our business units and have upgraded the equipment at seven sites and we have a rolling programme to promote remote working technology such as web-conferencing as an alternative to travel. 'Live meeting' software has now been installed on all UK computers and we have launched a major promotional campaign. In 2010 we promoted car-sharing software and developed site Green Travel Plans to reduce business and commuting miles. These voluntary initiatives are helping to reduce our Scope 3 emissions.		280000	1-3 years
Energy efficiency: building fabric	We are participating the UK Government's Carbon Emissions Reduction Target - a mandatory requirement for energy suppliers. CERT requires suppliers like British Gas to deliver carbon reductions by providing and supporting the delivery of energy efficiency measures to households. Such measures include insulation, energy efficient light bulbs, home appliances and energy saving devices. These help to reduce our Scope 3 emissions. Through the course of the four year programme suppliers have a target to deliver approximately 293m tonnes of CO <sub>2</sub> reductions. The CERT obligation has been extended in April 2011 to run until December 2012, and has been refocused on delivering more installed insulation, with the benefits more closely targeted towards a Super Priority Group of the most vulnerable households. We set ourselves annual targets under the scheme and have consistently exceeded these, providing household energy efficiency products with equivalent lifetime carbon savings of 15.6m tonnes in 2010, exceeding our target of 14.6m tonnes. Our overall share of the total obligation depends on our share of overall domestic energy accounts over the period, and is valued at approximately £2.1bn over the lifetime of CERT.		2100000000	>3 years

### 3.3b What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Compliance with regulatory requirements/standards	We are required to comply with the Renewables Obligation, the Carbon Emissions Reduction Target (CERT), the Community Energy Saving Programme (CESP), the CRC Energy Efficiency Scheme and the EU Emissions Trading System. We have used the platforms provided by the legislation to underpin the strategic shift in our British Gas business towards energy and energy services (not just energy supply) and to reinforce our focus on investing in lower carbon power sources, including nuclear, offshore wind and efficient CCGT.

Method	Comment
Other	Our investments in low carbon energy are not only driven by regulatory compliance, but also be the wider economics, including the price of carbon. For example, the Renewables Obligation does not require us to invest in wind farms but it helps to provide an economic rationale for doing so. We also engage with policymakers to drive the direction of policy towards greater support for renewable energy, such as a carbon floor.
Internal incentives/recognition programs,	Our Annual Incentive Scheme assesses executives against a corporate responsibility scorecard that includes performance against the strategic priorities (which are underpinned by a commitment to provide energy for a low carbon world) and environment performance indicators and incident rates. If overall business performance, including environmental performance is not deemed satisfactory, the individual's bonus for the year may be reduced or forfeited, at the discretion of the Remuneration Committee.
Other	Our corporate strategy is underpinned by a commitment to provide 'energy for a low carbon world'. In particular our strategic priority for our British Gas business is to 'Grow British Gas, leading the way to a low carbon future'. This means that the whole focus of our business model is shifting towards providing low carbon products and services and investing in lower carbon power.
Employee engagement	We have trained our drivers in efficient driving techniques, used fiscal incentives to encourage employees to choose less polluting vehicles, provided video-conferencing technology and run awareness campaigns to promote greener behaviours in all our buildings. Our network of Green Teams coordinate activities at local sites and through them we hosted events at over 20 sites group-wide to celebrate World Environment Day 2010, using the opportunity to highlight key environmental messages to employees. In 2011, we will be rolling out culture surveys across the businesses to understand attitudes and perceptions to carbon and environmental practices.
Dedicated budget for energy efficiency	In 2010 we dedicated a budget to a new insulation business to increase the speed and efficiency of a nationwide insulation rollout. We now operate nationally from 12 regional areas and employ over 750 people. The new insulation business is part of our wider aim to build the capacity of our business to deliver comprehensive services for the 'home of the future'. We also have dedicated budgets to deliver our energy efficiency obligations under the Carbon Emissions Reduction Target and the Community Energy Saving Programme. In 2010, we demonstrated the effectiveness of our energy saving measures by commissioning an independent report.
Dedicated budget for low carbon product R&D	Three of our business units within British Gas have budgets dedicated to researching and developing low carbon products and services: British Gas New Energy (BGNE); British Gas Community Energy (BGCE) and British Gas Smart Metering (BGSM). For example, BGNE invested £20m in Ceres Power to support the development of a fuel cell for boilers that will enable them to generate electricity and minimise wasted heat. BGCE is working with local authorities on 'hard to heat, hard to treat' homes, such as in Dumfries and Galloway. The remote location and stone construction of housing developments in this region make them more challenging to upgrade, but also present a valuable opportunity to expand our knowledge and capabilities as an energy services provider. BGSM is working on the technology and specification of smart meters to make their nationwide rollout more effective. Smart meters are key to increasing the uptake of microgeneration technologies and energy efficiency, and also underpin future smart grids.
Other	We are investing in the skills of our employees and new recruits to meet the needs of a low carbon economy. We plan to invest £60m by the end of 2012 to create jobs in smart meter delivery and home insulation in the UK. More than 2,000 of these jobs will be in the new British Gas Smart Metering business. We have already employed more than 500 people in the Smart Metering business, of which 496 are the Smart Energy Experts who will install the meters. We also opened a Green Skills training academy in Tredegar, South Wales in 2010. As well as delivering skills training for British Gas employees, the academy will offer training for people in the local community, where there is a high rate of unemployment, to give them the qualifications they need to become energy efficiency assessors.
Other	We have set and published targets such as our internal carbon footprint target. By achieving executive support for these commitments, this has helped to unlock investment into low carbon technologies and focus the business on initiatives to meet our goals.

4.1 Have you published information about your company's response to climate change and GHG emissions performance for this reporting year in other places than in your CDP response? If so, please attach the publication(s)

Publication	Page/Section Reference	Identify the attachment
In annual reports (complete)	Chief Executive's review (p4-7), Non-financial key performance indicators (p9), British Gas operating review (p10-13), Corporate responsibility review (p24-26), Principal risks and uncertainties (p30-36)	centrica_annual_report_2010.pdf
In voluntary communications (complete)	2010 Corporate responsibility report - Energy for a low carbon world section (NB this is an online report and attached is the PDF of just the Energy for a low carbon world section)	centrcr10_En_Low_Carb.pdf
In voluntary communications (complete)	2010 Corporate responsibility report - download of environment data held in online data centre, which includes a breakdown of our GHG emissions (www.centrica.com/datacentre)	Centrica Datacentre Environment.xls
In voluntary communications (complete)	Speech made by Centrica Chief Executive in September 2010 on 'Transforming the Energy Sector'	Sam_Laidlaw_RSA_Speech_16_Sept.ppt
In voluntary communications (complete)	Booklet aimed at consumers called 'A World of Solutions' but also provided to other stakeholders, including MPs	world_of_solutions.pdf
In voluntary communications (complete)	Our online interactive blogging portal Centrica Views has a series of blogs dedicated to discussing issues relating to 'Energy for a low carbon world'; the attachment shows screenshots listing the blogs on this topic and provides an example of one of those blogs; interested stakeholders can comment on these online	Screenshots of Centrica Views.doc
In voluntary communications (complete)	Presentation given by management to investors around interim results July 2010 including Chief Executive's introduction (p.5-9); Sam Laidlaw's answer (p.10-11); Phil Bentley's answer (p.12); Sam Laidlaw's answer (p16)	2010_interim_transcript.pdf
In voluntary communications (complete)	Presentation by managers to investors at a roadshow in July 2010; presentation available on www.centrica.com; key slides on climate change and low carbon are 16, 19, 24, 25, 26, 50 and 54	20100611_reverse_roadshow.pdf
In voluntary communications (complete)	Capital Markets day presentation to analysts and investors; presentation, transcripts etc available on Centrica.com; key slides in attached presentation on low carbon are 5, 7-9, 22-25, 26-28, 38-42, 61, 66	20100312_capital_markets.pdf

Attachments

- [https://www.cdproject.net/Sites/2011/42/3042/Investor\\_CDP\\_2011/Shared Documents/Attachments/InvestorCDP2011/4.Communication/20100611\\_reverse\\_roadshow.pdf](https://www.cdproject.net/Sites/2011/42/3042/Investor_CDP_2011/Shared_Documents/Attachments/InvestorCDP2011/4.Communication/20100611_reverse_roadshow.pdf)

- [https://www.cdproject.net/Sites/2011/42/3042/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/4.Communication/Sam Laidlaw RSA Speech 16 Sept.pdf](https://www.cdproject.net/Sites/2011/42/3042/Investor%20CDP%202011/Shared%20Documents/Attachments/InvestorCDP2011/4.Communication/Sam%20Laidlaw%20RSA%20Speech%2016%20Sept.pdf)
- [https://www.cdproject.net/Sites/2011/42/3042/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/4.Communication/centrica annual report 2010.pdf](https://www.cdproject.net/Sites/2011/42/3042/Investor%20CDP%202011/Shared%20Documents/Attachments/InvestorCDP2011/4.Communication/centrica%20annual%20report%202010.pdf)
- [https://www.cdproject.net/Sites/2011/42/3042/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/4.Communication/Centrica Datacentre Environment.xls](https://www.cdproject.net/Sites/2011/42/3042/Investor%20CDP%202011/Shared%20Documents/Attachments/InvestorCDP2011/4.Communication/Centrica%20Datacentre%20Environment.xls)
- [https://www.cdproject.net/Sites/2011/42/3042/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/4.Communication/centcr10 En Low Carb.pdf](https://www.cdproject.net/Sites/2011/42/3042/Investor%20CDP%202011/Shared%20Documents/Attachments/InvestorCDP2011/4.Communication/centcr10%20En%20Low%20Carb.pdf)
- [https://www.cdproject.net/Sites/2011/42/3042/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/4.Communication/world of solutions.pdf](https://www.cdproject.net/Sites/2011/42/3042/Investor%20CDP%202011/Shared%20Documents/Attachments/InvestorCDP2011/4.Communication/world%20of%20solutions.pdf)
- [https://www.cdproject.net/Sites/2011/42/3042/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/4.Communication/Screenshots of Centrica Views.doc](https://www.cdproject.net/Sites/2011/42/3042/Investor%20CDP%202011/Shared%20Documents/Attachments/InvestorCDP2011/4.Communication/Screenshots%20of%20Centrica%20Views.doc)
- [https://www.cdproject.net/Sites/2011/42/3042/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/4.Communication/20100312 capital markets.pdf](https://www.cdproject.net/Sites/2011/42/3042/Investor%20CDP%202011/Shared%20Documents/Attachments/InvestorCDP2011/4.Communication/20100312%20capital%20markets.pdf)
- [https://www.cdproject.net/Sites/2011/42/3042/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/4.Communication/2010 interim transcript.pdf](https://www.cdproject.net/Sites/2011/42/3042/Investor%20CDP%202011/Shared%20Documents/Attachments/InvestorCDP2011/4.Communication/2010%20interim%20transcript.pdf)

5.1 Have you identified any climate change risks (current or future) that have potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

- Risks driven by changes in regulation
- Risks driven by changes in physical climate parameters
- Risks driven by changes in other climate-related developments

5.1a Please describe your risks driven by changes in regulation

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
EMR	Uncertainty surrounding new regulation	The company is exposed to significant regulatory risk because we operate in highly regulated markets around the world, where external policy decisions or changes to regulatory regimes or industry procedures could fundamentally affect our commercial operations. The UK Government has embarked on an Electricity Market Reform programme which will continue into 2011. We have responded to the initial consultation and will engage in bilateral discussions until the White Paper is published in July 2011. The risks are that the timing of Government's decisions and the shape of the resulting policies will not align with the timing of our investment decisions, nor create a framework within which we can make those investment decisions, affecting both our upstream operations and our customer-facing businesses. As the EMR progresses, we are working to ensure an outcome to ensure the viability of investment in technologies to tackle climate change, including new nuclear build and renewables, and protects existing wind revenues. Our strategy to pursue low carbon generation means that if the economy remains high carbon and the government ceases to view climate change as a major risk, we will be at a disadvantage to other suppliers.	Other: Increased capital cost and return on investment	Current	Direct	Likely	High
EE1	Uncertainty surrounding new	The risks of failure by governments to provide a supportive framework for commercial opportunities	Other: Return on investment	1-5 years	Direct	About as likely as not	Medium

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
	regulation	provided by a low carbon economy are a risk to the profitability of our new business model for British Gas, announced in early 2010. An appropriate enabling environment for energy efficiency, microgeneration and smart metering will impact on the scale and speed at which we are able to grow this element of our residential energy services business. There is a risk of failure to establish and maintain a framework that delivers adequate financial support for renewable and low carbon power and heat generation technologies. There is also a risk that the Government fails to follow through on its low carbon commitments. In the residential and business markets a positive regulatory environment still remains for encouraging products and services such as energy efficiency, microgeneration and smart meters. The UK Government introduced an Energy Bill creating the framework for their flagship energy efficiency programme: the 'Green Deal' but this legislation is not yet drafted and uncertainty exists over important elements of the design. UK energy consumption has fallen every year since 2005 and increased revenues from the energy efficiency and microgeneration markets are essential to outweigh the reduction in revenue from energy sales. However, both markets are still emerging and UK government support to help increase demand is required to ensure appropriate risk/reward.					
PL1	General environmental regulations, including planning	An ineffective planning regime in the UK can make it difficult to achieve planning consent for the development of new assets, such as wind farms, affecting the ability to deliver on investment. In addition, regulatory interventions in the retail market have the potential to restrict our ability to offer innovative customer propositions.	Increased capital cost	1-5 years	Direct	About as likely as not	Medium
EE2	Fuel/energy taxes and regulations	There is a risk that we fail to meet our legal obligations which include the following: we must provide energy efficiency measures under the Carbon Emissions Reduction Target (CERT) and report the total carbon savings of these to Ofgem, the Regulator; we must comply with the Community Energy Savings Programme (CESP).	Increased operational cost	Current	Direct	Unlikely	High
ERO1	Cap and trade schemes	There is a risk that we fail to meet the requirements of the EU Emissions Trading System, either through failing to secure proper verification of our emissions, or	Increased operational cost	Current	Direct	Unlikely	Medium-high

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
		surrendering insufficient emission allowances to match the verified levels.					
ERO2	Emission reporting obligations	There is a risk that we fail to meet our obligations under various regional carbon and renewable energy programmes. Since purchasing gas producing assets in Wildcat Hills, we now have an obligation under Alberta Carbon, a carbon compliance market for emissions from natural gas production. We are also subject to Renewable Portfolio Standards (RPS) which vary from state to state. For example, there is a substantial obligation in California. To comply, companies must retire Renewable Energy Certificates (RECs) or make a specified alternative compliance payment. The Regional Greenhouse Gas Initiative (RGGI) is a carbon compliance market for 10 states in the US Northeast but it does not impact retail pricing directly. The costs of purchasing allowances are born by the generation owners and recovered through their energy offers (increased marginal cost of generation). RGGI is strictly a greenhouse gas initiative and does not impact RPS. Generation owners in participating states (CT, DE, MA, MD, ME, NH, NJ, NY, RI, VT) have to purchase CO <sub>2</sub> allowances to cover their GHGs from fossil fuel based generation.	Increased operational cost	Current	Direct	Likely	Low-medium
LR1	Lack of regulation	In North America, the prospects for any federal climate legislation have largely disappeared with the changed make-up of Congress following the mid-term elections. Climate change momentum has slowed at the state and provincial level as well. The risk is that a market in low carbon products and services will not develop. The lack of regulation means that we do not have the certainty required for planning and investment purposes.	Other: Insufficient support for developing market in low carbon products and services	1-5 years	Direct	Likely	Low-medium

**5.1b Please describe (i) the potential financial implications of the risk before taking action; (ii) the methods you are using to manage this risk; and (iii) the costs associated with these actions**

**EMR:** Electricity generation from renewables is not currently commercially viable against fossil fuels without government support. In the UK support is currently provided to technologies such as offshore wind where these technologies offer additional benefits such as diversity of supply, security, technological learning and creation of a UK export industry. Removal of this support would impact our investment decisions and mean loss of investment already made. Eg we have begun conducting feasibility studies in the East Irish sea zone for the development of offshore wind farms under Round 3. If government support later proves to be insufficient (and base economic conditions do not support investment), we will have lost the investment already made.

Our activity to manage political and regulatory policy developments is ongoing. Internally, an executive level Policy Group meets monthly to discuss and agree Group-wide positions on each key issue. Externally, we have been continuing to engage with governments, the regulators and parliaments, and our media relations are designed to build knowledge and trust in the business among wider stakeholder audiences. The Chief Executive's speech to the RSA on 'Transforming the energy sector' aimed to build a deeper understanding of Centrica's position in a low carbon world, put forward our views for tackling the sector's challenges and demonstrate our commitment to greater energy efficiency.

**EE1:** Government support continues to be strong for markets in low carbon products and services but there is always a risk that circumstances will change or the timing of regulation may delay our investment decisions, impacting our profitability. By making available up to £30m to 'go early' on the Green Deal and on smart meter installations, we aim to improve our understanding of the challenges and opportunities surrounding a mass rollout which will mean that we are better prepared and able to inform the shape of the national approach. This reflects our strategic priority to lead the market for low carbon products and services.

**PL1:** Planning is a major factor in the economics of major infrastructure projects and impacts on all our £15bn investment plans to 2020. Planning inquiries could substantially delay or stop new investments. We are engaging with the UK Government as it develops National Policy Statements and are supportive of planned reforms that recognise an urgent need to bring forward construction in new energy infrastructure.

**EE2:** Failure to comply with CERT and CESP can lead to fines of up to 10% of global turnover for both schemes. In 2010, our global turnover was £22.4bn, implying a max potential fine of up to £2.2bn. During 2010, the overall 5-year CERT target was increased and refocused around insulation and priority groups of vulnerable customers. These are challenging targets but suppliers have met each of the previous energy efficiency targets and we are making good progress and have over-delivered on our obligations in the past in order to trade carbon to other suppliers. We are mitigating the risks by using CERT and CESP as a platform for growth as we believe that we have a real competitive advantage in discharging these obligations. Eg we established a new insulation business during the year, which included investing £5m in insulation company Hillserve and £4m in external-wall insulation company ECL Contracts Ltd. This is helping us to deliver against CERT and gives us commercial advantages including quality, cost control and a reduced reliance on 3rd party contractors in what is likely to become a capacity constrained market. We now operate nationally from 12 regional areas, employ over 750 people and we provided insulation for 237,000 homes in 2010.

We are also investing in the development, installation and maintenance of new technologies. In 2010 this included £0.5m in the acquisition of heat pump installation company Cool Planet and £5.7m in a 15.96% stake in AlertMe. British Gas has signed a commercial agreement, potentially worth over £20m to deploy AlertMe products and services to UK customers. We have a strategic partnership with Mears, a leading provider of repairs and maintenance services to the social housing sector, to bid on repair and maintenance contracts. As a result, British Gas and Mears are able to target CERT and CESP funding opportunities within Mears' Social Housing client base. We have made a commitment to invest £60m by the end of 2012 to create jobs in smart meter delivery and home insulation in the UK.

**ERO1:** There are financial penalties associated with non-compliance of the EU ETS of €100 per tonne of CO<sub>2</sub> plus the cost of purchasing the EU emission allowance (EUA). These financial penalties are triggered if insufficient allowances are retired in any one year for compliance purposes. We manage this risk by ensuring a close match between our forecasted levels of emissions under the system, and our holding of valid emissions allowances throughout any year. The bulk of our emissions comes from our power stations covered by the system: forecast levels of emissions are determined by expected running patterns in turn dependent on plant availability and relative fuel prices, specifically gas, carbon & power. We secure necessary carbon allowances to meet any individual power volume sale at the same time as power is sold, to mitigate any risk on exposure to carbon markets. We also have firm procedures for ensuring relevant actions are undertaken in a timely manner to meet verification and retirement deadlines.

**ERO2:** Under Alberta Carbon, we met our 2010 obligation by paying into the carbon compliance fund at CAD\$15 per tonne of CO<sub>2</sub>e. Our total compliance cost will rise as our emissions intensity has had an upward trend and in 2011 we will look into opportunities to purchase offsets. We actively manage our obligations under RPS to meet compliance requirements at the lowest possible cost by purchasing RECs on the wholesale market and retiring and selling RECs from our Texas power purchase agreements. The RGGI is being factored into power prices. There are no specific costs to Direct Energy but it will feed through to higher wholesale power for all energy retailers. RGGI will likely be much more impactful in the future as the cap drops (10% reduction target) and the economies of the participating states improve.

**LR1:** The net financial implications of a lack of regulation are unclear as legislation would both impose a cost (as with all power/gas producers/sellers) and also an opportunity in selling efficiency and related services, low carbon supply solutions and energy management technology. There is a large market potential - eg, we



estimate that the market in Home Energy Management could be worth \$20-100m. Overall, we recognise hundreds of million in risk to our business, but a similar amount in opportunities as well. Until we have clear and necessary legislation in place, our numbers are directional and magnitudinal only. We continue to seek opportunities to build on the platform that the Clockwork acquisition has given us for sales of more integrated services offerings.

5.1c Please describe your risks that are driven by change in physical climate parameters

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
SWE	Other physical climate drivers	The main physical threats to our assets and operations are from the increased intensity and frequency of severe weather events and other changes to weather patterns. We believe that there is a connection between climate change and the intensity of severe weather events such as prolonged and heavy rainfall in the UK and increased intensity of hurricanes in America. If severe weather events continue to increase in frequency and intensity, our business could be at risk from increased insurance premiums. In addition, there are equity and commodity risks if supply of electricity is interrupted. For example, flooding in 2008 disrupted output at our Brigg and Killingholme power stations for a short duration. Coastal flooding is also a risk for all the nuclear stations which we jointly own with EDF and for our processing facilities at Morecambe and Easington. Our Humber and Roosecote power stations are also on the coast and we have onshore substations for our offshore wind farms.	Reduction/disruption in production capacity	Current	Direct	Unlikely	Medium
SL	Sea level rise	Rising sea levels present a threat to our operations. British Energy, in which we have purchased a 20% stake from EDF, has a fleet of nuclear power stations that are all located on the coast. Two of our gas fired power stations, Humber and Roosecote are near to the coast. Climate change through sea-level rise and coastal erosion could impact operations at all these locations. However, some of these assets are approaching the end of their scheduled accounting lives, subject to the potential for life extensions, so it is the next generation of gas and power assets that are more likely to be exposed to long-term climate change impacts. Any new assets that we invest in would need to take account of the physical climate risks which could affect their design.	Increased capital cost	>10 years	Direct	Unknown	Unknown

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
CT	Change in temperature extremes	Increasingly unpredictable and adverse weather conditions such as warmer summers may increase pressure on gas supplies while at the same time affecting the efficiency of our facilities. The efficiency and output of all gas turbines is affected by ambient temperature. As the ambient temperature rises, the efficiency and output of the gas turbine falls. This loss of efficiency is slightly more prevalent in air-cooled condensed plants, of which we have four (King's Lynn, Peterborough, Barry and Langage).	Other: Reduction in production capacity / Increased operational cost	>10 years	Direct	Unknown	Low-medium
AR	Uncertainty of physical risks	Other companies are not yet reporting comprehensively on adaptation issues and therefore it is difficult to assess the impact of physical risks on our supply chain and other parts of our value chain.	Increased operational cost	1-5 years	Indirect (Supply chain)	Unknown	Low-medium
CUS1	Other physical climate drivers	We currently focus our resources for vulnerable customers on supporting them through cold winters in the UK. But an increased frequency or intensity of heatwaves in summer may increase the costs of our support programmes further as resources are required throughout the year.	Increased operational cost	Unknown	Indirect (Client)	Unknown	Low-medium
CUS2	Snow and ice	Changing patterns of snowfall are a risk to our British Gas business. Extremes of cold weather increase the number of callouts and place additional pressure on our workforce. For example, during the sustained period of cold weather in December 2010, British Gas received record levels of breakdown call-outs, 25% higher than the corresponding period in December 2009. It was also essential that we prioritised vulnerable customers at this time.	Increased operational cost	Current	Direct	Unlikely	Medium
SDF	Change in temperature extremes	Physical changes related to climate change could reduce the accuracy with which we are able to forecast demand. Seasonal fluctuations in temperature impact long-term demand planning and short-term demand forecasting models are prone to be less accurate under extreme weather conditions.	Increased operational cost	Current	Direct	Unlikely	Medium

5.1d Please describe (i) the potential financial implications of the risk before taking action; (ii) the methods you are using to manage this risk; and (iii) the costs associated with these actions

**SWE:** Weather-related risks such as flooding can have a significant financial impact. The actual figure would depend on which facility was affected and the condition of the market at the time the power station was switched off but this gives an indication of the level of financial risk to Centrica of such an event. The cost impact would also depend on whether other power stations in the area were affected and on what the subsequent effects on the market would be. Conversely, if it was one of our smaller power stations the impact could be minimal depending on the time of year. However, a prolonged shutdown as a result of a weather-related event would be a significant financial cost to the business. It also means that we can meet less customer demand from our own resources and must purchase on the market. If weather-related damage is widespread, energy supply may be short and prices high. For all our 'at risk' facilities, flood risk was an important consideration in the design of the stations and construction of the sea defences. It also continues to be a risk that is actively managed. For example we have used the Environment Agency's emergency planning exercise and flood maps to identify those of our assets at a higher risk of potential flooding in extreme circumstances. We currently monitor and manage the risk of severe weather events to our facilities through our meteorology teams, crisis management and business continuity arrangements, although if weather risk increases, we will look for other ways to mitigate this through changes to operational standards.

There are also financial implications for us in terms of insurance costs. For example, a high number of storms off the Mexican coast in 2005 led to a large number of insurance claims which affected the entire insurance market. Although we were not directly affected by the storms themselves, we were impacted by changes to insurance premiums in 2006. In 2011, this may have an even greater impact with the earthquake in Japan, floods in Australia and the upcoming hurricane season in the Gulf of Mexico. Physical changes that result in more frequent or more destructive storms risk affecting us financially, even if there is no damage or disruption to our business.

**SL:** The financial implications of rising sea levels are more likely to affect the next generation of assets rather than current power stations. Our work on sector resilience is helping DECC to build resilience and adaptation into planning processes and we would expect to manage this risk as part of future planning requirements.

In addition, changes to rainfall would affect hydro-generation output and, therefore, the electricity supply mix in both the UK and North America. Wind resource is also uncertain and understanding future resource represents a challenge. This is an issue for us as we are pursuing a strategy to build offshore wind. In line with best practice, our wind farms are built to withstand unusually intense storm force winds by shutting down to protect the turbine blades from damage. However, adverse weather conditions can affect and delay wind farm construction.

**CT:** Higher temperatures can reduce both efficiency and output from power stations. The amount varies depending on the assets. We have assessed each power station for the effect a heatwave would have on output and efficiency. We are working closely with DECC on sector resilience plans to mitigate and manage the impact of physical risks as a result of climate change. We are also working collaboratively with the Association of Electricity Producers (AEP) to provide a sector response to our direction to report on adaptation by DEFRA. This process has involved commissioning joint studies to identify the impact of physical climate change risks on the electricity industry and the report is due to be submitted in July 2011. We are not able to report on financial implications because of the substantial uncertainties around the likelihood and magnitude of the risks identified.

**AR:** There are other industries also required to report which is helping to give adaptation issues a higher profile. We have been working to identify key stakeholder interrelationships to help us understand our wider risks.

**CUS1:** Changes to weather patterns can also have health impacts on our customers and employees. We currently focus our resources for vulnerable customers on supporting them through cold winters, spending £84m in 2010. But an increased frequency or intensity of heatwaves in summer may increase the costs of our support programmes further as resources, such as expenditure with charity partners and debt assistance, are required throughout the year. The health impact on employees is sufficiently long term and uncertain that we do not yet have any specific measures in place to adapt our programmes. Instead we manage increased health risks to employees through our business continuity plans and wider wellbeing programme. We also ensure that employees travelling or working abroad are equipped to deal with infectious diseases, the pattern of which may be affected by climate change. Our occupational health team tracks these issues and ensures that advice provided to employees is relevant and up-to-date.

**CUS2:** Failure to manage increased demand during extremes of cold weather would have a short term financial impact on the business and the potential for a long term reputational impact. To mitigate this, British Gas has worked to improve preparation for peak periods of demand, including the ability to draft in extra staff. As a result, in December 2010 our engineers were able to visit up to 35,000 customers a day – around double the amount normally visited on a typical winter's day – despite facing difficult driving conditions. In one week, our call handlers took 300,000 phone calls, the most ever received.

**SDF:** During an extreme cold spell our peak load could increase by up to 10% (or up to 5% during a heatwave). If our electricity demand forecasts are short when the system is short and system prices are high, we estimate that the potential cost of imbalance can exceed £500,000 per day, dependent upon underlying accuracy and prevailing market conditions. If climate change increases the likelihood of extreme weather then the likelihood of high imbalance cost days also increases. Gas imbalance charges are less punitive although the demand for gas is much more sensitive to temperature fluctuations and the impact of extreme weather would be seen in our revenue. Eg the warm weather in Apr 2011 reduced gas demand from normal levels by 1/3rd – representing a reduction of >3% of annual demand. Conversely, a cold spell can dramatically increase demand. We have engaged with the Met Office to ensure that the seasonal and diurnal changes that can be expected as a result of climate change are reflected in the 'seasonal normal' temperatures used in the long-term demand forecasting process. The short-term demand forecasting process utilises weather forecasts from a range of suppliers.

The majority of our actions to mitigate the physical risks of climate change are part of business-as-usual risk mitigation and it is difficult to separate out the costs to adapt specifically to the physical risks of climate change.

#### 5.1e Please describe your risks that are driven by changes in other climate-related developments

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
FEC	Changing consumer behaviour	The Group is exposed to falling energy consumption: The UK Government sees both domestic and commercial energy efficiency as a key part of meeting its carbon targets. UK energy consumption has been falling since 2005, driven by improved energy efficiency and changing customer behaviour as a result of greater environmental awareness, reaction to price changes and the general economic downturn. Continuing reduction in energy demand could, on a per customer basis, significantly reduce the profitability from British Gas' energy business. Reductions are driven by a number of factors, the most significant of which are energy efficiency measures, new boiler installations and behavioural changes. Independent analysis of 40m meter British Gas meter readings over a 4 year period has shown a 22% decline in gas consumption, driven mainly by energy efficiency measures. The report shows that customer who adopted measures such as insulation and energy efficient boilers saved an average of £322 each year and saw a 44% fall in their gas use between 2006 and 2010. This equates to a total average annual saving of £227m. Long-term UK gas demand will ultimately be driven by industry decisions around generation mix and the impact of Government climate change initiatives, as well as general economic activity. The decline in consumption in North America is more gradual than seen in the UK and varies across our chosen markets due to weather and market factors.	Reduced demand for goods/services	Current	Direct	Likely	Medium-high

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
NT	Other drivers	The future profitability of the Group will be dependent in part on its success in continuing to play a leading role in the introduction of new technologies and in implementing the necessary operational and organisational changes to meet the requirements of the new markets. Whilst representing new opportunities these developments also create threats to the future profitability of the Group. Uncertainty over new technologies constitutes a risk to our ambitions in providing energy efficiency advice and other services, which are expected to be an important part of future profitability for British Gas. There are also risks associated with the scale of implementation for new technologies. The UK Government has announced that every home will have gas and electricity smart meters by 2020, around 47m, and that the roll-out should be supplier-led.	Other: Profitability	1-5 years	Direct	About as likely as not	Medium
SK	Other drivers	There is a risk that we don't have the future skills among our employee base that we need to take maximum advantage of a low carbon economy and keep up with demand for new technologies.	Reduction/disruption in production capacity	1-5 years	Direct	Likely	Medium-high
REP1	Changing consumer behaviour	Our brand and reputation are vital assets for the future success and prosperity of our businesses. Recent high profile cases in the media such as the Deepwater Horizon incident show how reputation and brand can be quickly and fundamentally damaged. As a diverse group of businesses we have a number of different stakeholders. Maintaining a positive reputation for the Group is of vital importance to ensure the smooth operation of the existing business and to protect profitability. There is a risk that we fail to gain customer recognition of our low carbon credentials and lose market share. This would make it difficult for us to build business in new areas. In addition, we could suffer significant reputational damage if our upstream portfolio is not environmentally responsible, impacting our ability to influence government future environmental strategy and undermine our "licence to operate". As a leading integrated energy company our corporate responsibility strategy aims to show leadership in response to pressing environmental and social challenges. We are also a major contributor to policy debates in the markets in which we operate. Failure to maintain our reputation with key stakeholders could lead to more direct intervention by Government or the regulator in the Group's business or industrial action by our workforce.	Reduced demand for goods/services	Current	Direct	Unlikely	High

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
RC	Other drivers	The pricing of CO <sub>2</sub> emissions has a direct impact on the economics of our power stations and the cost of electricity that we purchase from other generators. Due to the competitive nature of wholesale power markets, the price of power includes the full opportunity cost of CO <sub>2</sub> , irrespective of whether the allowances needed to offset emissions were purchased or given out free. At present, we receive free allowances, which do not cover the total output, and purchase the remainder in the market. However, the cost of carbon is likely to rise and free allowances will be removed. A risk for the future is what the cost of CO <sub>2</sub> will be and the impact this has on the relative economics of different forms of generation from renewables to fossil-fuelled, to nuclear. Changes to carbon prices can also lead to changes in asset values and our hedged positions.	Increased operational cost	Current	Direct	More likely than not	Medium

**5.1f Please describe (i) the potential financial implications of the risk before taking action; (ii) the methods you are using to manage this risk; (iii) the costs associated with these actions**

**FEC:** Continuing reduction in consumption of gas and electricity by residential and business customers could have a significant impact on the Group's revenues and profits over the next decade. New profit streams may prove to be insufficient to offset the reduction in consumption, whilst our ability to recover any reduction in profits may be restricted by government, regulators, public opinion or competitor activity. Revenue from British Gas residential energy supply was £8,359m in 2010 but gas consumption reduced by 5.3% last year (figure adjusted to take into account variations in weather). If all British Gas households adopted all the efficiency measures open to them then these households could save up to £3.6bn over the next 5 years, equivalent to around £714m per year. We are closely monitoring our forecasts for gas and electricity demand. Our shift in focus towards energy and energy services is helping to reduce our reliance on revenue from energy supply. Rather than viewing this as a threat to demand for our product, we are driving forward to deliver energy efficiency improvements because it is in the interests of our customers, there is political support and customer demand and we see this as a business opportunity to deliver new low carbon energy services. We are well placed to grow in markets for energy efficiency, smart metering, microgeneration and other low carbon services and it is these which will replace diminishing revenue streams from electricity and gas supply. To ensure sufficient capability to deliver energy efficient measures in the UK our 10,000 engineers are working in partnership with local authorities, as well as integrating the delivery of energy efficiency packages. These include the national roll-out of smart meters, and investing in innovative schemes such as our £30m commitment to go early on the Green Deal, which allows customers to pay for energy efficiency and microgeneration measures through their bills under long-term payment plans.

**NT:** Centrica, and other leading energy suppliers, will have the responsibility for the installation and maintenance of smart meters, at an estimated cost of £11.3bn. Although new smart technologies represent a threat to the current business model, they also represent a substantial opportunity from servicing, appliance and home automation sales and customised tariff pricing. We have continued to build our capabilities in new technologies both through acquisition of businesses such as a 15.96% stake in AlertMe (a provider of home energy management services) for £5.7m and the installation of smart meters in homes and businesses. To date we have installed over 250,000 smart meters toward our target of installing 2m by 2012. Our existing interests in solar, biomass heating and fuel cell boilers support our position in microgeneration, with the opening of the UK's first plant to inject biomethane into the Grid in October 2010. We are also working with local authorities and the governments of Scotland and Wales to deliver energy efficiency in the social housing sector.

**SK:** We plan to invest £60m by the end of 2012 to jobs in smart meter delivery and home insulation in the UK. More than 2,000 of these jobs will be in the new British Gas Smart Metering business, established in 2010. We have already employed more than 500 people in the business, of which 496 are the Smart Energy Experts who will install the meters. In 2010, we invested £3.5m in a 6 month training programme for these experts, delivered through our network of energy academies. The first 272 Smart Energy Experts graduated in 2010, and we plan to recruit and train a further 600 by the end of 2011. The training carried out by British Gas in this sector will inform the development of a national standard for training Smart Meter operatives, helping other energy providers train their staff to the same high standards. Once established, the national training standard could be delivered to more than 6,000 smart metering professionals across the industry. We also opened a Green Skills training centre in Tredegar, South Wales in 2010. As well as delivering skills training for British Gas employees, the academy will offer training for people in the local community, where there is a high rate of unemployment, to give them the qualifications they need to become energy efficiency assessors.

**REP1:** To mitigate risks to our brand and reputation, we are differentiating ourselves as an energy services provider (where we have greater capability than our competitors) and embedding our commitment to 'energy for a low carbon world' throughout the business. We are also actively engaging stakeholders to build trust in our brand. For example, British Gas ran a 2010 campaign called 'We're Listening' for customers to understand more about the business through first hand experiences of our assets and operations. In North America, we recognise the importance of independent third party verification in ensuring there is adequate confidence in products such as our carbon neutral natural gas.

**RC:** The risk of rising investment costs for renewables projects demonstrates clear financial implications. Our capacity to borrow money may change as lenders consider carbon risk in the lending decision. In addition, the conventional insurance market is not well set up to support the risks inherent in the development of new technologies or in fields at the forefront of engineering, such as the development of offshore wind farms. This can make insurance arrangements for innovations such as renewables projects more challenging. To mitigate the risks around pricing of carbon emissions, we produce our own forecasts of future carbon prices, with strong emphasis on credible high and low scenarios, as well as a 'central' view. We factor the economic costs of carbon into generation dispatch decisions and recover the costs via the energy sales arrangements. The exposure of our supply business to carbon prices, via electricity prices, is recognised and treated as another 'commodity exposure' that needs to be hedged within our normal commodity risk management procedures.

## Page: 6. Climate Change Opportunities

### 6.1 Have you identified any climate change opportunities (current or future) that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

Opportunities driven by changes in regulation  
 Opportunities driven by changes in other climate-related developments

#### 6.1a Please describe your opportunities that are driven by changes in regulation

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
EMR	Other regulatory drivers	Electricity Market Reform: The Government has launched a significant programme of Electricity Market Reform (EMR). This is intended to deliver new market arrangements that provide sufficient incentives for new low carbon generation in order to meet the UK's carbon and renewable targets while maintaining security of supply, in the most affordable manner. Key elements of	Investment opportunities	1-5 years	Direct	Likely	High

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
		<p>the Government's proposals are: a carbon price floor, through an additional tax on the input fuels for power generation proportionate to their carbon emissions; revenue support for low carbon generation, either through a premium on the wholesale price (Premium Feed-in Tariff or PFIT), or a contract for difference against the wholesale price, (CFD); capacity payments to ensure security of supply, particularly in the context of intermittent renewables; and an Emissions Performance Standard for new power plants. The Government consultation on these proposals recently closed, and DECC is now working up a White Paper with its final decisions due in the summer. These will then be legislated through an Energy Bill later in 2012. This reform programme is very important as it will be required to underpin the economics of, and support investments in, low carbon generation. The UK Government's recognition that the electricity market needs to be reformed in order to deliver decarbonisation and security of supply objectives presents a huge business opportunity for Centrica. Industry will invest given the right market framework and companies that get this right early can reap significant benefits through becoming world leaders in technologies and services and building supply chains.</p>					
EE	Other regulatory drivers	<p>Energy efficiency: There are a number of energy efficiency obligations placed on energy companies by government. CERT came into effect in April 2008, obliging electricity and gas suppliers in Great Britain to help reduce carbon dioxide (CO<sub>2</sub>) emissions from homes. Through the course of the four year programme suppliers have a target to deliver approximately 293m tonnes of CO<sub>2</sub> reductions. The CERT obligation has been extended in April 2011 to run until December 2012, and has been refocused on delivering more installed insulation, with the benefits more closely targeted towards a Super Priority Group of the most vulnerable households. CESP targets households across Great Britain, in areas of low income, to improve energy efficiency standards and reduce fuel bills. CESP is funded by an obligation on energy suppliers and electricity generators. It is expected to deliver up to £350m of efficiency measures over 3 years between 2009 and 2012. CESP promotes</p>	Increased demand for existing products/services	Current	Direct	Likely	High



ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
		<p>a “whole house” approach i.e. a package of energy efficiency measures best suited to the individual property. The programme is delivered through the development of community-based partnerships between Local Authorities (LAs), community groups and energy companies, via a house-by-house, street-by-street approach. In 2010, the Government announced plans for a new Green Deal and Energy Company Obligation (ECO) that will replace CERT and CESP from 2013. The Green Deal will enable homeowners to install energy efficiency measures at no upfront cost. The details of ECO are yet to be finalised, but the powers for the Secretary of State to bring forward ECO are included in the current Energy Bill which is currently going through the House of Commons. These present opportunities and a platform for growing our energy services business and capabilities in energy efficiency and microgeneration.</p>					
SNT	Other regulatory drivers	<p>Support for new technologies: The UK Government has put in place enabling legislation to provide financial support to microgeneration that may transform the market, providing significant opportunities for our business. These include the introduction of a feed-in tariff (April 2010) and of a renewable heat incentive (July 2011). The feed-in tariff is a payment to those who generate additional electricity through decentralised technologies under 5MW and feed it back to the grid, supporting greater take-up of energy efficiency and microgeneration technologies. RHI will support renewable heat technologies. DECC published its Smart Meter Prospectus in March 2011. The prospectus sets out the Government’s blueprint for the roll-out of smart meters in all homes by 2019. It is a culmination of three years of consultation triggered by the Government decision to mandate smart meters in the 2008 Energy Act. The national roll-out of 47m smart meters is due to begin in 2012. All three of these measures support our business model for British Gas, with microgeneration and smart metering central to the development of our energy services business.</p>	New products/business services	Current	Direct	Likely	High

**6.1b Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity; (iii) the costs associated with these actions**

**EMR:** Our UK strategy is to invest in low carbon generation, offshore wind farms and nuclear to enable us to play a key role in meeting broader UK and European emissions reduction targets. It also means that we are well-positioned within the EU ETS compared to our competitors with higher carbon intensive portfolios and will benefit from higher carbon prices. We support the Government's proposed package of reforms, including the introduction of a Carbon Price Floor in April 2013, starting at around £16 per tonne of CO<sub>2</sub> and following a linear path to £30/tCO<sub>2</sub> in 2020. We believe this is a sufficiently high level to have an impact and will help to support investment in future renewables projects, including Round 3 wind, and new nuclear. Centrica is already investing significant amounts in the UK's low carbon future as part of our £15bn planned to 2020.

**EE and SNT:** The UK government is continuing to move the country towards a low carbon economy and British Gas is uniquely positioned to benefit from this, able to bring microgeneration, energy efficiency and smart meters to the mass market for residential and business customers through our 10,000 engineers. We have responded to the UK opportunities by refocusing the business model for British Gas towards energy and energy services provision - aiming to make significant revenues from the opportunities and markets provided by a low carbon economy. We are developing the skills and capabilities of our workforce to deliver advice, energy efficiency equipment and microgeneration technologies through our network of 6 engineering academies and new Green Skills Centre in Wales. In 2010, British Gas recorded £1,464m in revenue from residential services and achieved an operating margin of 16.5%, demonstrating the profit potentials within the services business.

**EE:** Our CERT programme is an important marketing and customer relationship tool. For example, over the last 5 years we have supplied in excess of 100m energy efficiency products. We carried out c237,000 loft and cavity insulations in 2010, which equates to around £30m in energy savings for our customers. This helped us to exceed our annual CERT target for 2010. The total value of CERT that British Gas will contribute overall is estimated to be £2.1bn. Through CERT, British Gas has been able to develop innovative approaches to encourage households to take up energy efficiency products, such as the British Gas Council Tax Rebate in which households receive a council tax rebate of up to £75 following the installation of insulation.

**EE:** British Gas will be delivering approximately £100m of CESP projects 2009-2012 and our existing infrastructure enabled us to be a first mover for this programme, announcing 10 projects in 2009. We have since launched 26 CESP programmes in 98 low income areas, delivering 0.45m tonnes of equivalent carbon savings. Our own obligations make up around 19% of CESP in the UK but we have also taken on the implementation of CESP obligations for two other major power generators. Combined, this means Centrica is implementing a third of all CESP programmes. We are choosing to work in more rural communities to expand our knowledge and capabilities. Because CESP is delivered through community based partnerships with Local Authorities and community groups, this has opened up significant new markets for us in the social housing sector. To make the most of this opportunity, we have partnered with Mears, a leading provider of repairs and maintenance services to the social housing sector. We now jointly bid on repair and maintenance contracts in the social housing sector, with British Gas delivering energy services as well as providing access to CERT, CESP, Feed-in tariff and Renewable Heat Incentive (RHI) funding. We also retained the Scottish Parliament's flagship fuel poverty scheme – the Energy Assistance Programme – under which we will provide insulation and energy efficient heating and hot water systems to over 30,000 households across Scotland over the next 3 years. Local level partnerships like this have enabled us to make a significant impact in specific regions and to play a strong part in taking new technologies for carbon abatement to the public sector.

**EE:** We believe it is in the area of energy efficiency that energy suppliers can and should make the greatest contribution to mitigating climate change. With the support of CERT and CESP British Gas has delivered over £1bn of energy efficiency improvements – which equates to over 2.5m insulated households and a 22% reduction in gas consumption amongst customers since 2005. To build on this, British Gas has decided to 'go early' on the UK Government's Green Deal by making available up to £30m to install energy efficiency measures in customers' homes to help identify both challenges and opportunities for full-scale implementation and we are committed to sharing our findings with the Government. The extension of CERT and the Government announcement on the Green Deal helped to provide the certainty we required to establish a new insulation business in 2010. We now operate nationally from 12 regional areas and employ over 750 people. UK regulation affecting other organisations also provides commercial opportunities for us. For example, British Gas has developed an Energy360 product to assist business customers that have to comply with the Carbon Reduction Commitment. Launched in 2009, we offer a 'Carbon Health Check' to help customers identify up to 10% energy savings and to understand carbon reduction and carbon management.

**SNT:** To meet anticipated demand as a result of enabling legislation, we are building our microgeneration installation and servicing capabilities, developing partnerships and making acquisitions and agreements. For example, in 2010 we acquired the assets of Cool Planet for £0.5m, a heat pump installation company, which will benefit from the introduction of RHI funding. British Gas has also committed to 'going early' on Smart Meters, and has already rolled out 300,000 smart meters in customers homes and businesses. We are taking a leadership position, at our own commercial risk, because we recognise that smart meters will transform our relationship with our customers. So far 9 out of 10 British Gas customers say they would recommend having a smart meter fitted to a friend or relative. The Government's Impact Assessment states that costs of rolling out smart of £11.3bn are outweighed by benefits of £18.6bn (over 20 years).

6.1e Please describe the opportunities that are driven by changes in other climate-related developments

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
CCB	Changing consumer behaviour	Consumers are becoming more environmentally aware and there is a growing market for cleaner energy and low carbon products and services. We are uniquely positioned to maximise the commercial opportunities of a low carbon economy by building on our brand, our existing installation capability and our unique combination of expertise in energy supply and our understanding of the needs of customers in their homes in each of our markets. We have identified particular opportunities to work in partnership with local authorities to deliver energy efficiency to social housing. In North America, we sell green energy products, including carbon neutral natural gas in Ontario, Alberta and Ohio as well as a product backed by Renewable Energy Certificates (RECs) for businesses from our Texas wind farm power purchase agreements. These opportunities are helping to drive sales for low carbon products.	Increased demand for existing products/services	1-5 years	Direct	More likely than not	Medium
REP1	Reputation	Our climate change commitments give us a significant opportunity to differentiate British Gas in the marketplace.	Increased demand for existing products/services	1-5 years	Direct	About as likely as not	Low-medium
PC	Other drivers	Our market-leading work in microgeneration has made us the partner of choice for other businesses, enabling us to showcase our technologies, reach new audiences and support the delivery of a wide range of low carbon technologies. For example, British Gas has become the preferred supplier of vehicle charging points for Britain's first affordable, practical 100% electric car - the Nissan Leaf. The deal means that British Gas will supply and install electric car charge points in homes and businesses across the country and help Nissan Leaf customers upgrade their home by installing solar panels - so they could charge their electric car for free with the renewable energy they generate and by taking advantage of the Feed in tariff.	New products/business services	Current	Direct	More likely than not	Medium

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
REP2	Reputation	Our approach gives us the necessary credibility to influence policy-making and our initiatives are helping to inform best practice approaches. For example our first year-long Green Streets programme aimed to find out what energy and carbon savings could be achieved at a local level. The results showed mutual benefits to customers, the environment and our business, with an average 25% reduction in energy use and 23% cut in CO <sub>2</sub> . The 64 participating households reduced total CO <sub>2</sub> over the year by c89 tonnes. The project also provided important information into consumer behaviour and the impact of low carbon and energy efficiency technologies. We launched a follow up project - Green Streets 2010 - with 14 communities competing to become Britain's most innovative green community by reducing energy usage and CO <sub>2</sub> over a year. In North America, we are working in partnership with the Alliance to Save Energy in a 16-school energy efficiency education initiative scheduled to launch in September 2011 for a period of 2 school years.	New products/business services	1-5 years	Direct	More likely than not	Medium
EMP	Other drivers	Our approach is helping to engage current and future employees, for whom climate change is an increasingly important issue. By pursuing a leadership position, we have been able to attract, recruit and engage our employees, help build pride and commitment and increase their ability to support our strategy and increase our credibility in the marketplace. The commitment of our employees was demonstrated in 2010, when Centrica became one of only three organisations to achieve re-certification to the Carbon Trust Standard, awarded for how we measure, manage and reduce our carbon emissions as an organisation.	Other: increased productivity	Current	Direct	More likely than not	Medium

6.1f Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity; (iii) the costs associated with these actions

**CCB:** Most of the financial implications are related to the commercial opportunities for British Gas and Direct Energy in low carbon products and services. We are developing products and services to meet the needs of residential and commercial customers in the UK and North America. For example, most of our customers' energy carbon footprint is generated by the gas we supply to their homes, which can be reduced by installing more efficient boilers. Our revenue from central heating installations (ie energy efficient boilers) in the UK reached £324m in 2010. Currently British Gas installs around 7% of all residential boilers, including over 120,000 high efficiency domestic boilers each year, which can reduce heating bills by up to 40%. In 2010, the number of central heating systems installed was up by more than 30% on the previous year, reflecting higher lead conversion resulting from a more competitively priced product offering, as well as the Government's boiler scrappage scheme, which we matched. We also deliver low carbon energy services to business customers through our Energy360 package, helping them cut

costs, meet their legal and regulatory obligations and reduce carbon emissions. In North America, the voluntary market for renewable energy products is growing and could represent more than 52,000GWh by 2015 (NREL/TP-6A2-45041). We market green energy products to business and residential customers and get certification from third party verifiers: Ecologo in Canada and Green-e in the US.

**REP1:** We estimate that the market for low carbon technologies and energy efficiency could be worth tens of billions of pounds over the next 10 years. We are building the capabilities within our business to ensure that we can meet demand measures on a 'whole house' or 'whole community' basis, whereby customers do not have to work with multiple suppliers for complete energy solutions.

**PC:** The Nissan-Leaf partnership opens up new growth opportunities for our business as experts predict that by 2020 electric vehicles could account for approximately 10% of all cars sold in the UK and 700,000 homes are expected to have solar panels. In addition, British Gas and CE Electric have launched a 3 year £54m smart grid project in Yorkshire and the North East to trial smart grid solutions on the higher voltage networks within the electricity grid as well as creating meaningful clusters of smart enabled homes to give consumers more flexibility over the way they use and generate electricity. The result will help the network companies make sure the electricity networks can handle the mass introduction of solar panels, electric cars and other greener technology. The project will be taking advantage of British Gas's leadership in the roll out of smart meters to provide around 11,000 customers with smart meters. Around 2,500 customers taking part will also be installing solar PV panels, heat pumps or provision for charging electric vehicles. The knowledge gained from the project could speed up the installation of low carbon technology, potentially saving homes and businesses across the UK around £8bn in energy costs and 43m tonnes of CO<sub>2</sub> emissions. British Gas will be responsible for recruiting and supporting customers involved in the trial.

In North America, we are building partnerships with technology providers that enable customers to manage their energy more effectively and are continuing to trial products and services that promote smarter energy use. For example, we have joined a Home Energy Management system partnership to develop a blueprint for an energy efficient home and developed products that help businesses measure, monitor and verify their carbon footprint and implement energy efficiency and carbon reduction strategies more effectively. The acquisition of Clockwork Home Services in 2010 for \$183m has increased our capability to offer such energy efficiency advice and services in more geographies.

**REP2:** The £2m Green Streets 2 project has provided invaluable insights into which community-based approaches to energy efficiency could work best, helping to shape future national policy and giving us the opportunity to test the latest new technologies. We are building on this with our 'go early' approach to the Green Deal (With an investment of £30m) and to the nationwide smart meter rollout. We aim to be recognised by our stakeholders as a leader in low carbon energy and committed to decarbonising the UK. Our commitments are a strong message to investors, stakeholders and consumers and give us a significant opportunity to differentiate British Gas in the marketplace. They also enable us to build positive perceptions among stakeholders such as governments, enhancing our credibility during energy and climate change consultations. The total investment in our North American schools programme is \$320,000 to be paid over a 3 year period. This will involve schools creating a baseline measurement of electricity usage in the school and then working to lower the school's usage over the 2 years. The goal is for the school to reinvest the money saved back into school programmes. Although this is a charitable programme, it is also helping to increase market opportunities and to build Direct Energy's reputation in this area.

It is difficult to quantify the reputational opportunities in terms of financial implications but we do have anecdotal evidence that our approach to climate change and corporate responsibility more widely is a factor in our graduate recruitment programme.

**EMP:** In addition we have opened the UK's first dedicated Green Skills Training Centre in partnership with the Welsh Assembly Government. The centre will train over 1,300 people each year, including British Gas employees, and help to deliver energy efficiency measures to 40,000 homes as part of the Heads of the Valleys Low Carbon Programme. As well as building our employer brand, this supports the development of skills and training to deliver on our low carbon programme.

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**6.1h Please explain why you do not consider your company to be exposed to opportunities driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure**

The physical opportunities provided by climate change are not ones that we would consider significant at present. This is mainly because they are uncertain and low in our prioritisation compared to other opportunities. However, we have identified the following low-level opportunities associated with the physical impacts of climate change.

By managing climate risk and weather risk effectively, we will be better positioned than our competitors which provides us with commercial opportunities. Eg, in the event of a severe weather event, if our facilities and processes are better protected, we are likely to be able to resume any interruption in supplies more quickly than our competitors. This opportunity to differentiate ourselves through the resilience of our assets will also be a key message for our investor audience.

Long-term changes to weather patterns will create challenges for our customers. While milder winters will lead to a reduction in energy demand for heating, warmer summers create increased demand for cooling during the day and night. This could lead to significant changes in patterns of demand. As a leading energy company, our primary opportunity is to play a major role in helping our millions of customers adapt to the effects of climate change. This includes helping them to manage their changing demand patterns through energy management solutions.

The UK government has stated its commitment to ensuring that society is adapting to the effects of climate change and identified its role as a coordinator in providing an environment conducive to adaptation (source: DEFRA). This could include changes in standards for the built environment to ensure housing stock is better prepared for future climate and weather risks. This could provide us with opportunities to expand our whole-house approach and to position ourselves as the preferred supplier able to meet new requirements in a holistic manner. We are well-placed to deliver smarter energy use through home energy management systems, able to meet changing demand and circumstances in the future.

We cannot be specific about other opportunities available to us until the physical outcomes and government responses to the physical manifestations of climate change become more certain. However, we anticipate that the infrastructure required to adapt to the unavoidable consequences of climate change, in both public and private sectors, will create further opportunities.

7.1 Please provide your base year and base year emissions (Scopes 1 and 2)

Base year	Scope 1 Base year emissions (metric tonnes CO <sub>2</sub> e)	Scope 2 Base year emissions (metric tonnes CO <sub>2</sub> e)
Mon 01 Jan 2007 - Mon 31 Dec 2007	9572002	122713

7.2 Please give the name of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

Please select the published methodologies that you use
Defra Voluntary Reporting Guidelines
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
Other

7.2a If you have selected "Other", please provide details below

The other categories selected refer to the WRI and WBCSD Greenhouse Gas Protocol Initiative, EU ETS and GRI Sustainability Reporting Guidelines.

We subscribe to best practice in environmental accounting and disclosure and apply the WRI and WBCSD Greenhouse Gas Protocol Initiative and GRI Sustainability Reporting Guidelines in our approach. In 2010 we produced a group procedure for environmental reporting, which sets out Centrica's reporting methodology based on the external publications in 7.2. We have calculated that over 95% of our activity data is directly measured, either by ourselves through methods such as continuous emissions monitoring or by third party service providers which record our consumption of their products and services. Where this is not possible we have calculated our performance using appropriate reference factors.

The data is submitted and calculated using complex spreadsheets and an online data collection system. The submitters are operational personnel who are identified as having the best access to accurate data for specific indicators. The submitters are the 'owners' of the data but it is collated and quality assessed centrally at Group level. Where possible we use independently verified data such as EU ETS emissions and in 2010 we had selected environmental key performance indicators publicly assured prior to inclusion in our CR report.

7.3 Please give the source for the global warming potentials you have used

Gas	Reference
Other: Nitrous oxide	IPCC Second Assessment Report (SAR - 100 year)
Other: Methane	IPCC Second Assessment Report (SAR - 100 year)
Other: Carbon dioxide	IPCC Second Assessment Report (SAR - 100 year)
Other: HCFC-22	IPCC Fourth Assessment Report (AR4 - 100 year)

7.4 Please give the emissions factors you have applied and their origin; alternatively, please attach an Excel spreadsheet with this data

Fuel/Material/Energy	Emission Factor	Unit	Reference
Diesel/Gas oil	0.00	metric tonnes CO <sub>2</sub> e per litre	EIA
Diesel/Gas oil	2.67	kg CO <sub>2</sub> e per litre	2010 DEFRA guidelines
Natural gas	0.19	Other: kg CO <sub>2</sub> e per kWh	2010 DEFRA guidelines
Natural gas	1.90	Other: kg CO <sub>2</sub> e per m <sup>3</sup>	EPA
Motor gasoline	2.32	kg CO <sub>2</sub> e per litre	2010 DEFRA guidelines
Motor gasoline	0.00	metric tonnes CO <sub>2</sub> e per litre	EIA
Distillate fuel oil No 2	3220.3	Other: kg CO <sub>2</sub> e per tonne	2010 DEFRA guidelines
Aviation gasoline	2.26	kg CO <sub>2</sub> e per litre	2010 DEFRA guidelines
Other: UK Electricity (GRA)	0.55	Other: kg CO <sub>2</sub> e per kWh	2010 DEFRA guidelines
Other: Norway Electricity (GRA)	0.01	Other: kg CO <sub>2</sub> e per kWh	2010 DEFRA guidelines
Other: Germany Electricity (GRA)	0.46	Other: kg CO <sub>2</sub> e per kWh	2010 DEFRA guidelines
Other: Netherlands Electricity (GRA)	0.46	Other: kg CO <sub>2</sub> e per kWh	2010 DEFRA guidelines
Other: North America Electricity		Other: kg CO <sub>2</sub> e per kWh	EIA - various factors used

**Further Information**

The system did not allow us to input the emissions factors to the level of accuracy that we use (only 2 decimal places permitted). Actual emissions factors are as follows:

Diesel/Gas oil - 2.67 kg CO<sub>2</sub>e per litre  
 Diesel/Gas oil - 0.002727 Tonnes CO<sub>2</sub>e per litre  
 Natural gas - 0.19 kg CO<sub>2</sub>e per kWh  
 Natural gas - 1.903 Kg CO<sub>2</sub> CO<sub>2</sub>e per m<sup>3</sup>  
 Motor gasoline - 2.32 kg CO<sub>2</sub>e per litre  
 Motor gasoline - 0.002366 Tonnes CO<sub>2</sub>e per litre  
 Distillate fuel oil No 2 - 3220.3 kg CO<sub>2</sub>e per tonne  
 Aviation gasoline - 2.26 kg CO<sub>2</sub>e per litre  
 UK Electricity (GRA) - 0.55 kg CO<sub>2</sub>e per kWh



Norway Electricity (GRA) - 0.00723 kg CO<sub>2</sub>e per kWh  
 Germany Electricity (GRA) - 0.46 kg CO<sub>2</sub>e per kWh  
 Netherlands Electricity (GRA) - 0.46406 kg CO<sub>2</sub>e per kWh  
 North America Electricity - Various

**Page: 8. Emissions Data - (1 Jan 2010 - 31 Dec 2010)**

**8.1 Please select the boundary you are using for your Scope 1 and 2 greenhouse gas inventory**

Equity share

**8.2a Please provide your gross global Scope 1 emissions figure in metric tonnes CO<sub>2</sub>e**

10559082

**8.3a Please provide your gross global Scope 2 emissions figure in metric tonnes CO<sub>2</sub>e**

155877

**8.4 Are there are any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions which are not included in your disclosure?**

No

**8.5 Please estimate the level of uncertainty of the total gross global Scope 1 and Scope 2 figures that you have supplied and specify the sources of uncertainty in your data gathering, handling, and calculations**

Scope	Uncertainty Range	Main sources of uncertainty	Please expand on the uncertainty in your data
Scope 1	Less than or equal to 2%	Data Gaps Assumptions Data Management	Vehicle fuel use is mainly calculated based on submissions of mileage data and not actual volume used; Vehicle size and fuel type data is not always available; Some private mileage is captured along with business mileage from company fuel card users; Fugitive gas from pipes and equipment can only be calculated and not directly measured; In some cases, building gas consumption where it is a shared building or the actual consumption data is not available, the consumption is estimated based on personnel number or historical data.
Scope 2	More than 2% but less than or equal to 5%	Data Gaps Assumptions	Shared buildings sometimes have their electricity calculated based on proportion of building occupied; Some electricity for buildings has been estimated based on full-time equivalent employee occupancy. On a few sites, where current data has not been available, historical consumption has been used.

**8.6 Please indicate the verification/assurance status that applies to your Scope 1 emissions**

Verification or assurance complete

**8.6a Please indicate the proportion of your Scope 1 emissions that are verified/assured**

More than 90% but less than or equal to 100%

**8.6b Please provide further details of the verification/assurance undertaken, and attach the relevant statements**

Type of verification or assurance	Relevant standard	Relevant statement attached
Verification	Other: EU Emissions Trading System	Verifier Opinion Statements - Power Stations.xls
Moderate assurance	AA1000 Assurance Standard	centrcr10_Assurance_Statement.pdf
Limited assurance	ISAE 3000	centrcr10_Assurance_Statement.pdf

**8.7 Please indicate the verification/assurance status that applies to your Scope 2 emissions**

Verification or assurance complete

**8.7a Please indicate the proportion of your Scope 2 emissions that are verified/assured**

More than 20% but less than or equal to 40%

**8.7b Please provide further details of the verification/assurance undertaken, and attach the relevant statements**

Type of verification or assurance	Relevant standard	Relevant statement attached
Moderate assurance	AA1000 Assurance Standard	centrcr10_Assurance_Statement.pdf
Limited assurance	ISAE 3000	centrcr10_Assurance_Statement.pdf
Verification	Other: Carbon Trust Standard	Carbon Trust Standard Certificate; Centrica_Recertification_Assessment_Final Sep 10 (shortened version)

8.8 Are carbon dioxide emissions from the combustion of biologically sequestered carbon (i.e. carbon dioxide emissions from burning biomass/biofuels) relevant to your company?

No

#### Further information

Following the assurance process for the 2010 CR report, we have revised our 2009 scope 2 emissions to 163,555 tonnes.

#### Attachments

- [https://www.cdproject.net/Sites/2011/42/3042/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/8.EmissionsData\(1Jan2010-31Dec2010\)/Centrica\\_Recertification\\_Assessment\\_Final Sep10 \(shortened version\).pdf](https://www.cdproject.net/Sites/2011/42/3042/Investor%20CDP%202011/Shared%20Documents/Attachments/InvestorCDP2011/8.EmissionsData(1Jan2010-31Dec2010)/Centrica_Recertification_Assessment_Final%20Sep10%20(shortened%20version).pdf)
- [https://www.cdproject.net/Sites/2011/42/3042/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/8.EmissionsData\(1Jan2010-31Dec2010\)/centcr10\\_Assurance\\_Statement.pdf](https://www.cdproject.net/Sites/2011/42/3042/Investor%20CDP%202011/Shared%20Documents/Attachments/InvestorCDP2011/8.EmissionsData(1Jan2010-31Dec2010)/centcr10_Assurance_Statement.pdf)
- [https://www.cdproject.net/Sites/2011/42/3042/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/8.EmissionsData\(1Jan2010-31Dec2010\)/Carbon Trust Standard Certificate.pdf](https://www.cdproject.net/Sites/2011/42/3042/Investor%20CDP%202011/Shared%20Documents/Attachments/InvestorCDP2011/8.EmissionsData(1Jan2010-31Dec2010)/Carbon%20Trust%20Standard%20Certificate.pdf)
- [https://www.cdproject.net/Sites/2011/42/3042/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/8.EmissionsData\(1Jan2010-31Dec2010\)/Verifier Opinion Statements - Power Stations.xls](https://www.cdproject.net/Sites/2011/42/3042/Investor%20CDP%202011/Shared%20Documents/Attachments/InvestorCDP2011/8.EmissionsData(1Jan2010-31Dec2010)/Verifier%20Opinion%20Statements%20-%20Power%20Stations.xls)

### Page: 9. Scope 1 Emissions Breakdown - (1 Jan 2010 - 31 Dec 2010)

9.1 Do you have Scope 1 emissions sources in more than one country or region (if covered by emissions regulation at a regional level)?

Yes

9.1a Please complete the table below

Country	Scope 1 metric tonnes CO <sub>2</sub> e
United Kingdom	8625015
Other: North America	1933994
Rest of world	73

9.2 Please indicate which other Scope 1 emissions breakdowns you are able to provide (tick all that apply)

By GHG type

9.2c Please break down your total gross global Scope 1 emissions by GHG type

GHG type	Scope 1 metric tonnes CO2e
CO2	10278025
CH4	193888
N2O	6738
HFCs	0
PFCs	0
SF6	723
Freon R22	79708

Page: 10. Scope 2 Emissions Breakdown - (1 Jan 2010 - 31 Dec 2010)

10.1 Do you have Scope 2 emissions sources in more than one country or region (if covered by emissions regulation at a regional level)?

Yes

10.1a Please complete the table below

Country	Scope 2 metric tonnes CO2e
United Kingdom	105870
Other: North America	49363
Rest of world	644

Page: 11. Emissions Scope 2 Contractual

11.1 Do you consider that the grid average factors used to report Scope 2 emissions in Question 8.3 reflect the contractual arrangements you have with electricity suppliers?

Yes

11.2 Has your organization retired any certificates, e.g. Renewable Energy Certificates, associated with zero or low carbon electricity within the reporting year or has this been done on your behalf?

No

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**Further Information**

We do not retire any certificates associated to our own energy usage but one of the measures we use to support our green energy tariffs for customers is through retirement of renewable energy certificates. Our Future Energy tariff (electricity only) has 100% Levy Exemption Certificate (LEC) retirement based on the customer's actual consumption. Our Zero Carbon tariff (Dual Fuel) has 100% LEC retirement and 20% Renewable Obligation Certificate (ROC) retirement based on the customer's consumption. British Gas is the only energy provider that retires this level of certificates for a domestic energy tariff. All Future Energy customers also get a Standby Saver when they sign up and both tariffs make a contribution to the Energy for Tomorrow fund which invests in renewable technologies in the community. These make up the additionality requirements of the Green Energy Supply Scheme.

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**Page: 12. Energy**

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**12.1 What percentage of your total operational spend in the reporting year was on energy?**

More than 0% but less than or equal to 5%

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**12.2 Please state how much fuel, electricity, heat, steam, and cooling in MWh your organization has consumed during the reporting year**

Energy type	MWh
Fuel	55610583
Electricity	340981
Heat	
Steam	
Cooling	

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**12.3 Please complete the table by breaking down the total "Fuel" figure entered above by fuel type**

Fuels	MWh
Natural gas	55327633
Diesel/Gas oil	200390
Residual fuel oil	240
Biodiesels	0
Motor gasoline	82320

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**Further Information**

For questions 12.1: As an energy company, interpreting this question presents challenges. Under one definition, virtually all operational spend may be deemed to have been spent on energy as that is the purpose of our business. However, to provide comparisons with other companies and industries, we have interpreted this as energy used in the running of our business. The figure provided is an approximate figure based on the electricity and heating used at our offices, imported electricity used at our power stations and petrol costs for our fleet. We have used an average price across our operations.

We have not included the costs of natural gas used to generate electricity or the costs of electricity purchased from third party providers for supply to our customers. These are specific to our business as an energy company and involve commercially sensitive contracts. The amount of natural gas used and electricity purchased is published by us but not the costs.

**Page: 13. Emissions Performance**

**13.1 How do your absolute emissions (Scope 1 and 2 combined) for the reporting year compare to the previous year?**

Decreased

**13.1a Please complete the table**

Reason	Emissions value (percentage)	Direction of change	Comment
Emissions reduction activities	0.05	Decrease	Reduced UK building electricity consumption and diesel consumption among company car fleet.
Divestment	8.8	Decrease	We sold our Belgian operations SPE, which has reduced Scope 1 and 2 emissions in the 'Rest of world' category'.
Change in output	5.39	Decrease	Reduced gas, fuel oil and imported electricity used at Direct Energy's power stations due to lower output in 2010.
Acquisitions	2.13	Increase	Our acquisition of Venture Production at the end of 2009 increased both our Scope 1 and Scope 2 emissions.

**13.2 Please describe your gross combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO<sub>2</sub>e per unit currency total revenue**

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Explanation
0.0000478	metric tonnes CO <sub>2</sub> e	unit total revenue	11	Decrease	Our overall emissions have decreased and our Group revenue has increased. Much of the revenue increase has been the result of increases in revenue within our lower carbon customer-facing businesses.

13.3 Please describe your gross combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO<sub>2</sub>e per full time equivalent (FTE) employee

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Explanation
306	metric tonnes CO <sub>2</sub> e	FTE Employee	11	Decrease	Our overall emissions have decreased and our employee numbers have increased.

13.4 Please provide an additional intensity (normalized) metric that is appropriate to your business operations

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Explanation
0.277	metric tonnes CO <sub>2</sub> e	megawatt hour (MWh)	9	Decrease	Our group carbon intensity has reduced from 303g CO <sub>2</sub> /kWh in 2009 to 277g CO <sub>2</sub> /kWh in 2010. This has been led by a 25% reduction in carbon intensity within our UK power generation business as a result of beginning our offtake of nuclear power from our 20% stake in British Energy in 2010. Our Langage CCGT power station also contributed a full year of output and it has one of the highest thermal efficiencies of a gas-fired power station in the world.
0.00695		megawatt hour (MWh)	25	Increase	Gas production and storage specific carbon intensity - This measures the carbon intensity of gas produced or moved to/from storage, relating to the second of our two primary production activities. We calculate this using gas production and storage emissions which are a proportion of scope 1. The intensity of our gas production and storage increased in 2010, mainly due to the incorporation of data from the Venture oil and gas production business that we acquired in 2009.

**Page: 14. Emissions Trading**

14.1 Do you participate in any emission trading schemes?

Yes

14.1a Please complete the following table for each of the emission trading schemes in which you participate

Scheme name	Period for which data is supplied	Allowances allocated	Allowances purchased	Verified emissions in metric tonnes CO2e	Details of ownership
European Union ETS	Fri 01 Jan 2010 - Fri 31 Dec 2010	6928993	8310814	1376881	Facilities we own and operate

**14.1b What is your strategy for complying with the schemes in which you participate or anticipate participating?**

The cost of carbon has become an important factor in all investment decisions taken by Centrica in the power and gas markets. We actively use all available methods to manage our exposure to the risk of rising carbon costs through abatement and emissions trading. Centrica has been actively trading in the EU Emissions Trading market for almost eight years and has also been active in the international carbon credit market. We aim to meet the cost of our CO<sub>2</sub> emissions in the most economic manner for our customers and shareholders, thus following the spirit of Kyoto.

Centrica believes that the flexible mechanisms provided under Kyoto are important options to help installations manage their carbon exposure and we are constantly looking to manage our carbon position using both abatement and carbon credits.

Using the trading markets enables us to effectively manage cost exposures arising with regards to carbon pricing through the EU ETS. We also have in place robust procedures to ensure verification of our emissions and subsequent surrender of sufficient emissions allowances is carried out inline with the scheme requirements.

**14.2 Has your company originated any project-based carbon credits or purchased any within the reporting period?**

Yes

**14.2a Please complete the following table**

Credit origination or credit purchase	Project type	Project identification	Verified to which standard	Number of credits (metric tonnes of CO2e)	Number of credits (metric tonnes CO2e): Risk adjusted volume	Credits retired	Purpose e.g. compliance
Credit Origination	Other: Commercially sensitive	Specific Information is commercially sensitive	CDM	113053	113053	No	Other: Trading / future compliance
Credit Origination	Other: Commercially sensitive	Specific Information is commercially sensitive	JI	50051	50051	No	Other: Trading / future compliance
Credit Purchase	Other: Commercially sensitive	Specific Information is commercially sensitive	CDM	1167632	1167632	Yes	Other: Trading / future compliance



15.1 Please provide data on sources of Scope 3 emissions that are relevant to your organization

Sources of Scope 3 emissions	metric tonnes CO2e	Methodology	If you cannot provide a figure for emissions, please describe them
Business travel	8702	Based on business flights in km multiplied by the appropriate conversion factors	
Business travel	290	Based on employee business rail miles multiplied by appropriate emission factors	
Other: UK helicopter and shipping	714003	Based on 3rd party helicopter and shipping fuel volume used for supporting our offshore facilities and shipping of LNG	
Other: External distribution and logistics	3762	Carbon data provided by the service providers	
Other: Outsourced operations	3363	Estimated based on energy consumption prior to outsourcing	
Other: Offshored operations	2164	Overseas call centre office energy use	
Other: Electricity purchased for resale	18928491	Calculated using country specific grid rolling average of power purchased for resale	

15.2 Please indicate the verification/assurance status that applies to your Scope 3 emissions

Verification or assurance complete

15.2a Please indicate the proportion of your Scope 3 emissions that are verified/assured

More than 0% but less than or equal to 20%

15.2b Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Type of verification or assurance	Relevant standard	Relevant statement attached
Moderate assurance	AA1000 Assurance Standard	centrcr10_Assurance_Statement.pdf - The assurance covered our internal carbon footprint metric, which included data on business travel.
Limited assurance	ISAE 3000	centrcr10_Assurance_Statement.pdf

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15.3 How do your absolute Scope 3 emissions for the reporting year compare to the previous year?

Decreased

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15.3a Please complete the table

Reason	Emissions value (percentage)	Direction of Change	Comment
Unidentified	58	Decrease	The main reason for the overall decrease in scope 3 emissions has been the result of a significant reduction in Direct Energy's electricity purchased for resale. There was an unusually high figure reported for 2009 and we are investigating the data to understand why this was the case.
Change in output	8	Decrease	In the UK, we have also decreased the amount of electricity purchased for resale. This is because we increased the amount of electricity we could supply our customers through our own generation as a result of our 20% offtake of British Energy's generation and a full year of output from our Langage CCGT power station. We calculated that the increased amount of low carbon electricity available to our UK customers helped avoid the emissions of 2.7m tonnes of CO <sub>2</sub> e had the electricity been generated by third parties from whom we source power.

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**Attachments**

- [https://www.cdproject.net/Sites/2011/42/3042/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/15.Scope3Emissions/centcr10\\_Assurance\\_Statement.pdf](https://www.cdproject.net/Sites/2011/42/3042/Investor%20CDP%202011/Shared%20Documents/Attachments/InvestorCDP2011/15.Scope3Emissions/centcr10_Assurance_Statement.pdf)

**EU0.1 Reference dates**

Please enter the dates for the periods for which you will be providing data. The years given as column headings in subsequent tables correspond to the “year ending” dates selected below. It is requested that you report emissions for: (i) the current reporting year; (ii) one other year of historical data (i.e. before the current reporting year); and, (iii) one year of forecasted data (beyond 2015 if possible).

Year ending	Date range
2010	Fri 01 Jan 2010 - Fri 31 Dec 2010
2009	Thu 01 Jan 2009 - Thu 31 Dec 2009
2015	Thu 01 Jan 2015 - Thu 31 Dec 2015

**Further Information**

Please note that 2015 figures are indicative only and represent publicly known developments, including a full year of offtake from our nuclear assets and the start of operations from the Lincs offshore wind farm. All other figures are assumed to stay the same as 2010 and recognise no other possible future changes in the generation portfolio.

**EU1.1** In each column, please give a total figure for all the countries for which you will be providing data for the “year ending” periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emission intensity (metric tonnes CO2e/MWh)
2010	9029	40054	11103221	0.277
2009		36428	12688203	0.303

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emission intensity (metric tonnes CO2e/MWh)
2015	9164	43742	11103221	0.254

#### Further Information

2015 figures indicative only and include the start of operations for Lincs wind farm, in which we have a 50% equity share and are due to take about 75% of the power generated. The figures also include a full year of offtake from our nuclear assets using 2010 figures of 9,655GWh. In 2010 our equity share of nuclear was 9,655GWh but our offtake didn't start until April and totalled 6,717GWh.

**Page: 2011-Investor-Electrical 2 - EnergyFuelSelection - Rest of world**

EU2.1 Please select the energy sources/fuels that you use to generate electricity in this country

CCGT

CCGT

Please complete the following table for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emissions intensity (metric tonnes CO2e/MWh)
2010	428	1579	565862	0.358
2009		2600	956947	0.245
2015	428	1579	565862	0.358

Total thermal including solid biomass

Please complete for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emission intensity (metric tonnes CO2e/MWh)
2010	428	1579	565862	0.358

Total figures for this country

Please enter total figures for this country for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes in CO2e)	Emission intensity (metric tonnes CO2e/MWh)
2010	428	1579	565862	0.358
2009		3905	956947	0.245
2015	428	1579	565862	0.358

#### Further Information

2015 figures are indicative only. There are currently no plans to change our generation profile in the rest of the world.

[Page: 2011-Investor-Electrical 2 - EnergyFuelSelection - United Kingdom](#)

EU2.1 Please select the energy sources/fuels that you use to generate electricity in this country

CCGT  
Nuclear  
Other renewables

#### CCGT

Please complete the following table for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emissions intensity (metric tonnes CO2e/MWh)
2010	5214	23020	8981729	0.391
2009	5016	23432	7371941	0.409
2015	5214	23020	8981729	0.391

#### Nuclear

Please complete the following table for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)
2010	1890	6717
2009	1747	0

Year ending	Nameplate capacity (MW)	Production (GWh)
2015	1890	9655

#### Other renewables

Please complete the following table for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)
2010	191	2641
2009	368	2465
2015	326	3390

#### Total thermal including solid biomass

Please complete for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emission intensity (metric tonnes CO2e/MWh)
2010	5214	23020	8981729	0.391
2009	5013	23432	7371941	0.409
2015	5214	23020	8981729	0.391

#### Total figures for this country

Please enter total figures for this country for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes in CO2e)	Emission intensity (metric tonnes CO2e/MWh)
2010	7295	32378	8981729	0.277
2009	7128	25897	9598581	0.371
2015	7430	36065	8981729	0.249

#### Further Information

Figures for production, emissions and emission intensity based on output from our own generation and from site-specific offtake contracts. Nameplate capacity based on equity share of assets.  
 2015 figures are indicative only and assume a full year of nuclear generation (in 2010 our offtake began in April; full year generation figures for our nuclear stake were 9,655GWh) and that the 270MW Lincs wind farm starts operations. We have a 50% equity share in Lincs and expect to take around 75% of the power generated.

**Page: 2011-Investor-Electrical 2 - EnergyFuelSelection - United States of America**

**EU2.1 Please select the energy sources/fuels that you use to generate electricity in this country**

CCGT  
 Other renewables

**CCGT**

Please complete the following table for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emissions intensity (metric tonnes CO2e/MWh)
2010	1306	3849	1555631	0.404
2009	1306	4982	2132675	0.429
2015	1306	3849	1555631	0.404

**Other renewables**

Please complete the following table for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)
2010	0	2249
2009	0	1645
2015	0	2249

**Total thermal including solid biomass**

Please complete for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emission intensity (metric tonnes CO2e/MWh)
2010	1306	3849	1555631	0.404
2009	1306	4982	2132675	0.429
2015	1306	3849	1555631	0.404

#### Total figures for this country

Please enter total figures for this country for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes in CO2e)	Emission intensity (metric tonnes CO2e/MWh)
2010	1306	6098	1555631	0.255
2009	1306	6627	2132675	0.321
2015	1306	6098	1555631	0.255

#### Further Information

Our renewables power purchase agreements are from the Buffalo Gap wind farms with a capacity of 813MW. To be consistent with figures reported for the UK and Rest of World, we are including the nameplate capacity of those facilities where we have equity share. However the figures for production, emissions and carbon intensity are calculated using offtake figures, which includes power from our own generation and from site-specific power purchase agreements. 2015 figures are indicative only and assume no change in the generation portfolio for North America.

#### Page: 2011-Investor-EU3 Renewable electricity sourcing regulations

EU3.1 In certain countries, e.g. Italy, the UK, the USA, electricity suppliers are required by regulation to incorporate a certain amount of renewable electricity in their energy mix. Is your company subject to such regulatory requirements?

Yes

EU3.1a Please provide the scheme name, the regulatory obligation in terms of the percentage of renewable electricity sourced (both current and future obligations) and give your position in relation to meeting the required percentages

Scheme name	Current % obligation	Future % obligation	Date of future obligation	Position in relation to meeting obligations
UK Renewables Obligation	11.1%	12.4%	2012	The date of the future obligation is April 2011-Mar 2012. Our position in relation to meeting our obligations is information will be formalised during October of this year.



Scheme name	Current % obligation	Future % obligation	Date of future obligation	Position in relation to meeting obligations
Other: Renewable Portfolio Standards (Various)				Our obligations vary from state to state across the US.

**Page: 2011-Investor-EU4 Renewable electricity development**

EU4.1 Please give the contribution of renewable electricity to your company's EBITDA (Earnings Before Interest, Tax, Depreciation and Amortisation) in the current reporting year in either monetary terms or as a percentage

Please give:	Monetary figure	%	Comment
Renewable electricity's contribution to EBITDA	54000000	7%	The achieved power price (including ROCs) for renewables in 2010 was £109.1/MWh. The total generation for which we received revenue was 493GWh. This equates to an operating profit from renewables of £54m, which is 7% of the total operating profit from our upstream UK business Centrica Energy.

EU4.2 Please give the projected contribution of renewable electricity to your company's EBITDA at a given point in the future in either monetary terms or as a percentage

Please give:	Monetary figure	%	Year ending	Comment
Renewable electricity's contribution to EBITDA				This is commercially sensitive information.

EU4.3 Please give capital expenditure (capex) planned for the development of renewable electricity capacity in monetary terms and as a percentage of total capex planned for power generation in the current capex plan

Please give:	Monetary figure	%	End year of capex plan	Comment
Capex planned for renewable electricity development				These specific figures are commercially confidential. However, in the UK we have committed to investing £1.5bn in renewable energy assets from 2008-2013.

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Please enter the name of the individual that has signed off (approved) the response and their job title

Catherine May, Group Director of Corporate Affairs