

## Carbon Disclosure Project 2009

### Top of Form

Respondent: Centrica plc

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### General Information

It is not a requirement of the CDP questionnaire to give an introduction to your answer, but if you would like to do so, please give it here in the text box below or attach a document.

#### 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 distinctive 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, North America and Europe, 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. Our business in North America is Direct Energy, which now accounts for about 25% of group turnover. Our operations in Europe are much smaller, particularly as we have just agreed to sell our majority stake in SPE to EDF as part of our recent deal to acquire a stake in British Energy.

#### Our position on climate change

We believe that climate change is one of the most important issues facing the world today and that man-made greenhouse gas emissions are a key driver of climate change. We believe energy companies have a key role to play in helping countries reduce greenhouse gas emissions.

#### Our commitment

We are committed to playing our full part in the transition to a low-carbon energy future, while ensuring the security of present and future energy supplies by:

- Sourcing and producing energy from cleaner sources
- Reducing wasted energy – by producing energy more efficiently, reducing our own internal footprint and by helping customers reduce their usage
- Developing and deploying new technology.

#### Operating context

The ever-growing need to address climate change presents risks and opportunities for our business and our customers.

Climate change issues, including energy efficiency and renewables, are subject to significant legislation and regulation at state, provincial, national and EU levels. We also need to operate within the context of planning law when developing new assets such as wind farms and other power generation infrastructure. There are opportunities for us to develop markets for new products and services, especially around new technologies, but there are risks if legislative and regulatory frameworks fail to deliver the necessary carbon price or clarity over the longer term to ensure the viability of investment.

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. As the UK's largest energy supplier and one of the largest integrated energy companies in North America, we also have a role to play in helping younger generations and consumers become more energy aware.

### **Our strategy**

Our strategy is to:

- Lead the market for products and services to help homes and businesses use less energy and use cleaner energy
- Maintain our low-carbon position in power generation
- Work with our employees and suppliers to reduce the environmental impact of our operations.

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

[Where available please can you provide the following identification numbers for your primary listings/ordinary shares and information for your company:](#)

ISIN number

GB00B033F229

SEDOL number

B033F22

## Risks and Opportunities

### 1 Regulatory Risks

#### 1.1 Is your company exposed to regulatory risks related to climate change?

Yes, Centrica is exposed to regulatory risks related to climate change.

#### **Our approach to risk management**

Identifying and assessing risks and implementing effective mitigating controls are fundamental to achieving our strategic objectives. The Board, supported by the Executive Committee, sets Centrica's strategic direction, which includes the level of risk the company is prepared to accept.

Each business unit has a Risk Management Committee. These committees seek to identify, assess and advise on the management of risks. These assessments are reported to the Group Risk Management Committee to develop the company's overall risk profile including material risks that might affect the company at Group level.

Individual risks are assessed with regard to their potential impact in financial terms and also non-financial factors including legal, regulatory, customers, employees and health and safety and environmental, together with the likelihood of the risk materialising. The assessment matrices use a 1-5 scaling for both the impact and likelihood values with overall ratings being a product of the impact and likelihood scores, i.e. impact x likelihood.

Climate change is recognised as one of the most significant risks and opportunities facing the company.

The long-term nature of the climate change risk, together with its main drivers, which are overwhelmingly external in nature and therefore outside the control or influence of Centrica, mean that this risk is unlikely to be fully mitigated for a long period of time. However, the current status of the individual risks and associated controls are continuously monitored and periodically reported to the various risk management committees.

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

Business Unit Managing Directors have responsibility for reporting to the CRC on CR risks and how they are being addressed. Potential 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.

## **Regulatory risks**

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. Policy-makers are particularly keen to understand our perspectives as a leading integrated energy company on a range of issues, including climate change.

### **Strategy**

We have chosen a strategy of maintaining our low-carbon energy portfolio including a major commitment to renewable generation and leading the market for products and services to help homes and businesses use less energy and use cleaner energy. Therefore our principal regulatory risks relate to threats to the profitability of our upstream asset portfolio, threats to the profitability of our downstream supply business, the failure of governments and regulators to follow through on commitments relating to climate change and having to bear disproportionate costs of climate change mitigation.

We are also exposed to regulatory risks from environmentally-led changes in legislation or regulation that could impact on the profitability of our upstream portfolio.

### **Regulatory risks fall into four main categories for us:**

- Non-compliance with legislation and failure to meet government targets
- Failure by governments to deliver legislative frameworks that support our low-carbon strategy
- Having to bear disproportionate costs of climate change mitigation
- Other risks related to regulation

### **Non-compliance with legislation and failure to meet government targets**

- Fulfilling increasingly stretching emissions reduction targets including the UK Government's 80% GHG reduction target by 2050 and a target of 15% of all energy coming from renewable sources by 2020
- Meeting our obligations under the Renewables Obligation
- Meeting our obligations under the EU Emissions Trading Scheme
- Meeting our obligations under the UK domestic energy efficiency programme
- Meeting our obligations under various North American regional carbon and renewable energy programmes (Alberta carbon, California RPS, RGGI, WCI, etc)

### **Failure by governments to deliver legislative frameworks that support our low-carbon strategy**

This includes:

- Failure to deliver the necessary carbon price over the longer term to ensure the viability of investment in new technologies to tackle climate change
- Failure to establish a framework that delivers adequate financial support for renewable and low-carbon power and heat generation technologies
- Failure to develop a legislative framework at Federal, State and Provincial level in North America that assigns a cost to carbon emissions and provides certainty required for planning and investment purposes
- An ineffective planning regime in the UK making it difficult to achieve planning consent for the development of new assets such as wind farms and other power generation infrastructure
- Failure of future programmes to build on proven successful delivery mechanisms such as the CERT framework for delivery of energy efficiency to UK homes
- Failure of grid reform in the UK and in North America

### **Having to bear disproportionate costs of climate change mitigation**

This includes:

- If energy suppliers are asked to pay for a significant proportion of costs for investment in low-carbon generation and technological development, this could have a detrimental impact on customers' bills

### **Other risks impacted by regulation**

These include:

- Investment risk – there is a risk that changes to carbon prices could lead to changes in asset values and our hedged positions
- Credit risk – our capacity to borrow money may change as lenders consider carbon risk in the lending decision
- Insurance risk – the cost to insure assets and our operations as insurance companies consider carbon risk in premium cost structures
- Demand risk – legislation aimed at reducing customer energy consumption can challenge our ability to help them meet such reductions whilst remaining profitable

### **2008 developments**

The past year has seen significant political and public momentum behind the climate change agenda in the UK, Europe and North America as demonstrated by the UK Energy White Paper, the EU agreement on climate change, documentation forwarding the *Turning the Corner* Plan in Canada and increasing trend of individual US states and Canadian provinces implementing climate change regulations. The election of President Obama is likely to reinforce and globalise efforts to reduce emissions, which will have significant impact on energy markets worldwide. We can expect to see this translate into a continued strong legislative and regulatory push in Europe (which given the very different nature of the major European energy companies, will have differing competitive consequences) and a transition from disjointed state-by-state and province-to-province initiatives in the USA and Canada into a more co-ordinated North American basis. There are also increased prospects for a global agreement on climate change.

## UK risks

Regulatory policies are either a risk or an opportunity to the strategies of Centrica's business units

Business unit strategy	Policies	Key
<b>Downstream</b>	FIT/RHI	
Build the microgeneration business	CERT	
Build the number one energy efficiency business	CESP	
Lead the market in products and services to help homes and businesses use less energy and cleaner energy	Post-CERT	
	Post-CESP	
	Smart metering	
	Zero Carbon Homes	<b>Policy:</b>
	Carbon Reduction Commitment	Opportunity
<b>Upstream</b>	Renewables Obligation	Risk
Increase level of generation delivered from own assets	Large Combustion Plant Directive	Either
Market neutral generation mix: significant investment in nuclear and wind and limited replacement of gas-fired generation	Industrial Emissions Directive	
	Power market design	
	Carbon pricing	
	Upstream fiscal regime	
Improve the gas hedge	Long term LNG contracts	

Further details on key risks from some of these policies are as follows:

### Feed-in tariff/Renewable heat incentive

**Key risk:** FIT and RHI funding and allocation do not support planned British Gas New Energy's business model for microgeneration deployment.

British Gas New Energy's business model assumes a significant deployment of microgeneration technologies in both the residential and business sectors. The lack of a current financial framework to support microgeneration is the key barrier to deployment. Whilst enabling legislation is in place, the details of how a feed-in tariff and renewable heat incentive will be funded and allocated are still being defined. How the mechanisms ultimately work may have a fundamental impact on BGNE's business model. The risk to us is that we could bear a disproportionate share of costs or that expected future support could fail to materialise or be adequate.

### CERT/CESP post 2012

**Key risk:** Changes to CERT delivery mechanisms in a way that limits consumer choice, restricts competition, limits our ability to innovate and/or decreases cost effectiveness.

We are recognised as having real competitive advantage in discharging our CERT obligation and are using it as a platform for growth in microgeneration. There is a risk to British Gas that after CERT ends we will be expected to fund the delivery of energy efficiency by a central agency that is less efficient than we are, removing our competitive advantage in energy efficiency and putting upward pressure on bills. In addition, there is a risk that a delivery mechanism with lower cost efficiency, could lead to less consumer choice, less competition, less innovation and restricted access to customers for us.

## **Carbon pricing**

**Key risk:** Failure to deliver a robust, market-based carbon pricing mechanism to support progress to decarbonise the UK power sector.

Centrica is pursuing a power generation strategy that assumes a long-term trend in decarbonisation of the UK power sector. Our assumptions on how the UK power section will develop include:

- Significant improvement in energy efficiency of homes and businesses
- Development of further renewable capacity, via Renewables Obligation mechanism
- Private sector new nuclear build
- Modest volume carbon capture and storage via new CCS Levy
- Increased small-scale decentralized energy

In order to create the right framework for this decarbonisation to occur, one necessary element will be a robust, market-based carbon pricing mechanism such as EU ETS.

Market based mechanisms, specifically the EU Emissions Trading Scheme are the best means of setting a carbon price, which allows the market to decide appropriate cost-effective responses. However, it may not in itself be sufficient to provide the signals necessary for long-term capital investments. Policies to support and strengthen the carbon price may be necessary but regulatory options for this carry risks of their own.

It is likely that a progressive tightening of emission caps will lead to an increasing long-term carbon price, though reliance on a 'market' framework could mean price will be subject to volatility and unlikely to provide "stability".

## **North American risks**

Over the past few years, North American energy markets have undergone a very slow evolution that recognises the importance of renewable energy resources, energy efficiency and the very real impact that carbon emissions have on climate change. Until recently, the evolution occurred mostly at the state/provincial and regional level, with the federal government, in particular in the United States, either ignoring the issues or actively working against progress on the climate change front. Federal inaction is one of the important reasons that state/provincial and regional action occurred in the first place—creating somewhat of a patchwork of climate change policy and strategy across the US and Canada.

The US federal stance on climate change issues has shifted with the election of Barack Obama as US president and the ascension of a strong Democratic majority in both houses of the US Congress. This may help guide policy in both Canada and the US.

With years of work at the state/provincial and regional levels now beginning to have an impact and a strong focus on renewable energy, efficiency and carbon at the federal level in the US, the pace of the North American evolution is quickening--substantially.

In May 2009, the Waxman-Markey bill passed first Committee of Congress in the US. While there are a number of significant votes on this bill remaining before it will become legislation, it provides the first real indication of climate legislation in the US. The intention of this proposed legislation is to make the US a leader in clean energy and technology jobs, break dependence on foreign oil and cut "global-warming" pollution. The proposed bill commits to a 17% reduction in greenhouse gas emissions by 2020 and 80% by 2050 – both using a 2005 baseline year through a myriad of options including a cap-and-trade system and renewable portfolio standard. Until we are more certain of the details of legislation, which will follow, these developments are a risk to us.

Direct Energy is well-positioned to take advantage of opportunities in this space and we are confident that clear legislation providing certainty will enable us to pursue our climate change agenda in North America.

### **National Renewable Portfolio Standard**

This is a requirement for energy retailers to supply a proportion of the energy they sell in the market using renewable sources. This is a risk to us because currently it is uncertain what will qualify as renewable and whether renewable energy certificates (RECs) will be transferable from state to state. Direct Energy is relatively well-positioned with 813MW of wind capacity, which is likely to qualify as renewable, but it is not yet known if we can move these RECs to different states. In addition, as our customer base grows and the total energy we supply increases, so will our Renewable Portfolio Standard obligation, which will impact our asset and market investment strategies.

### **Environmental Protection Agency**

In April 2009, the US Environmental Protection Agency reversed prior determinations to issue a finding that carbon and other greenhouse gases (GHGs) pose a threat to public health and welfare. This may be the first in a series of steps towards some form of carbon regulation. However, the passage of legislation is likely to be slow. While the potential for change on the carbon regulation front is real and that change is likely to be profound when it happens, it may take some time for legislation extending (or resulting from) from the proposed Waxman-Markey bill to pass and then more time for it to be implemented.

### **State/Provincial Regulations**

Even with accelerated movement at the federal level in both Canada and the US, we are continuing to see new regulations promulgated at the state, provincial and regional levels. Ontario announced the Green Energy Act earlier this year and recently proposed a regional cap-and-trade system in conjunction with Quebec. California continues to lead the way with strong targets for both renewable energy and carbon reductions. The Western Climate Initiative (WCI), which incorporates seven US states and four Canadian provinces, is continuing work on developing a regional cap-and-trade system for the management of carbon emissions. While we ultimately expect federal climate initiatives to supplant regional structures, the timing is uncertain, and Direct Energy faces risks in dealing with a variety of continually evolving regulations.

## 2 Physical Risks

### 2.1 Is your company exposed to physical risks from climate change?

Yes. The main physical threats to our assets and operations are from the increased intensity of severe weather events and other changes to weather patterns.

#### **Severe weather events**

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.

We manage the risk of severe weather events to our facilities through our crisis management and business continuity arrangements. The physical threat posed by severe weather events is exemplified by the impact of Hurricane Ike in 2008, which was estimated to have cost our Houston operations \$10 million.

Direct Energy had employees, customers and business operations in the path of Hurricane Ike. While some employees were directly affected by the storm, for example living in areas with mandatory evacuation orders, dealing with damage to property or losing power for over 14 days, the storm also affected the functioning of our offices. We put in place business continuity plans to ensure key employees were able to work from other Texan locations but we experienced approximately one week of 'downtime' per employee.

The Category 2 storm led to over 2 million customers losing power. Our office shutdowns and a slowdown of inbound customer traffic as a result of the hurricane impacted our customer acquisition rate. In addition, we lost approximately 1,000 customers, many of whom were forced to evacuate and abandon premises. As well as affecting our assets, the storm also impacted our business partners through damage and downtime.

If severe weather events continue to increase in frequency and intensity, which we expect, our business is at risk from increased insurance premiums. In addition, there are equity and commodity risks if supply chains are interrupted. For example, the UK flooding of Summer 2007 came extremely close to causing disruption at our Brigg and Killingholme power stations. Brigg, in particular, is located in a flood plain.

#### **Changes to weather patterns**

Increasingly unpredictable and adverse weather conditions such as warmer summers will increase pressure on gas supplies and affect the efficiency of our facilities.

The efficiency of all gas turbines is affected by ambient temperature. As the ambient temperature rises, the efficiency 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).

**Below is an example of the possible impact of a rise in ambient temperatures on our power generation facilities:**

	Ambient temp	Reference efficiency	Increase Ambient by 2°C			Increase Ambient by 5°C		
			Ambient temp	Efficiency	Efficiency reduction (from ref)	Ambient temp	Efficiency	Efficiency reduction (from ref)
			°C	%	%	°C	%	%
Design	7.5	49.13	9.5	49.0188	0.112	12.5	48.8525	0.2775
Summer	14.5	48.732	16.5	48.6034	0.1286	19.5	48.396	0.336
Winter	3.2	49.311	5.2	49.2265	0.0845	8.2	49.0854	0.2256

**Reference data used / assumptions made**

- 2008 summer average temperature = 14.5°C (from the Met office)
- 2008-09 winter average temperature = 3.2°C (from the Met office)
- Assuming market average CCGT net efficiency = 49.13% (Centrica's UK stations are expected to be at this point once our new power station at Langage is on line)

Rising sea levels also present a threat to our operations. British Energy, in which we have announced a deal to purchase a 20% stake from EDF, has a fleet of nuclear power stations that are all located on the coast. Three of our gas-fired power stations, Humber, Roosecote and Morecambe, are also near the coast. Climate change could impact operations at all these locations. However, these assets are approaching the end of their lives, so it is the next generation of gas and power assets that are more likely to be exposed to climate change impacts. If we decide to take up the option under our deal with EDF to participate in the construction of new nuclear units, we will need to take into account the physical climate change risks which could affect the design and location of new assets.

In addition, rainfall changes 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 significant challenge. This is a particular 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. Increased frequency and intensity of high winds would therefore impact the generation of our wind farms.

Changes to weather patterns can also have health impacts on our employees and customers. We manage increased health risks to employees through our business continuity plans. 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.

In addition, we currently focus our resources for vulnerable customers on supporting them through cold winters. 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. This health impact is sufficiently long term and uncertain that we do not yet have any specific measures in place to adapt our programmes. However, we will continue to monitor developments in climate change science.

## 3 Other Risks

### 3.1 Is your company exposed to other risks as a result of climate change?

#### **Reduced demand**

British Gas at risk from a continued reduction in energy sales per customer from the combination of warmer winter weather, regulatory drivers to increase energy efficiency and behavioural change (driven by increased awareness and higher prices).

Due to warm weather, we have experienced reduced consumption in 2006 and 2007, continuing into 2008, which has been exacerbated by improved energy efficiency and changing customer behaviour. For example in 2008 British Gas Residential had a first quarter £25m adverse impact due to warm weather, plus £3m behavioural changes on gas and £6m impact on electricity. Weather-adjusted demand has reduced by 10% due to energy efficiency measures and behaviour change.

In response to this risk, we have built additional demand forecast modelling into all our operational plans.

#### **Brand and reputation**

There is a risk that we fail to gain customer recognition of our low-carbon credentials and lose market share.

There is also a risk that if our competitors over promote their green credentials, the reputation of the energy sector as a whole could be tarnished and consumers could become cynical. This could make it difficult for us to build business in new areas, as our low-carbon credentials could be damaged by association.

In addition, we could suffer significant reputational damage if our upstream portfolio is not environmentally responsible – this would impact our ability to influence government future environmental strategy and undermine our “licence to operate” as a low-carbon supplier.

#### **Rising investment costs**

Renewables project economics have been hurt by increases in project costs due to increases in commodity costs like steel and copper, but also exchange rate movements since most components are bought in euros. The increased cost of capital is also pushing rates of return below acceptable levels. However the negative impact has been lessened by a recent UK government decision to increase the subsidy for offshore wind to two Renewable Obligation Certificates (ROCs) on a temporary basis.

In addition, the most immediate impact on our business is via the EU Emissions Trading Scheme. The pricing of CO<sub>2</sub> emissions has a direct impact on the running costs 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 wholesale 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, Centrica receives free allowances and the market price of carbon is relatively low. However, the cost of carbon is likely to rise and free allowances reduced. A major risk for the future is what the cost of carbon emissions will be and the impact this has on the relative economics of different forms of generation from renewables to fossil-fuelled, to nuclear. We produce our own forecasts of future carbon prices, with strong emphasis on credible high and low scenarios, as well as a ‘central’ view.

The economic costs of carbon are factored into generation dispatch decisions and the costs recovered 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.

## 4 Regulatory Opportunities

### 4.1 Do regulatory requirements on climate change present opportunities for your company?

British Gas is uniquely positioned to bring microgeneration to the mass market for residential and business customers. As well as being the biggest supplier of energy to Britain's homes, British Gas provides energy to the small and medium-sized enterprises, corporate and public sector. We are also the largest installer and maintainer of central heating with a long heritage of supplying Britain's home heating needs. Our 9,000 engineers give us a vast capacity to install and maintain products, backed up with a national distribution network, management capabilities and a network of training academies allowing us to up-skill our employees quickly as new technologies and products enter the market. Allied to this, we have strong relationships with established equipment manufacturers, allowing us to bring products to market quickly. We are leaders in the installation of renewable and low-carbon microgeneration technologies.

Our opportunities to build a material business in low-carbon energy services for homes and businesses are provided by:

- Our low carbon portfolio
- Our strong brand
- Our unique installation and servicing capability
- Our market leadership in energy efficiency
- Our customer relationships relating to energy itself, home heating systems and energy efficiency
- Our knowledge of how homes and business use energy
- Our supplier relationships

We have responded to the opportunities provided by a low-carbon economy in the UK by creating British Gas New Energy to grow a customer-facing business in this area.

#### **Our principal regulatory opportunities are to:**

- Develop increased revenue streams through the provision of energy efficiency products and services for example through the UK Government's Low Carbon Buildings Programme programme and other microgeneration support packages.
- Build a business providing microgeneration and renewable heat solutions to homes and business, supported by government policies.
- Be at the forefront of smart meter delivery

- Identify business to business opportunities as a result of regulation
- Further develop our existing expertise in carbon trading, in line with the EU ETS and emerging regulatory frameworks in North America, to accrue future competitive advantage in this market in the carbon-constrained economy of the future.
- In North America, ensure that Direct Energy is positioned to move quickly to take advantage of commercial opportunities as President Obama's climate change agenda is rolled out.

## **Microgeneration**

Recent corporate strategy work highlighted that low carbon energy services, and in particular low-carbon and renewable microgeneration, has the potential to create a material profit pool that can offset reductions associated with the reduced consumption highlighted above. The UK has a binding target to reduce GHG emissions by 80% by 2050 and a target of 15% of all energy coming from renewable sources by 2020. Smaller scale renewable and low-carbon technologies have a significant role to play in helping to achieve these aims.

In the UK, Government has put in place enabling legislation to provide financial support to microgeneration that may transform the market. This could provide significant opportunities for our business.

In response we are building our microgeneration installation and servicing capabilities and in 2008 we developed a range of partnerships and made a number of acquisitions and agreements to do this. This included the acquisition of Solar Technologies, a leading installer of solar photovoltaic technology, and Semplice Energy Ltd, a low carbon solutions company offering consulting, design and systems integration to help businesses reduce their energy usage. We have grown the Solar Technologies business turnover significantly since acquisition and completed some landmark installations of such as at the Sheriff's Court in Glasgow.

At the beginning of 2008, we secured a minority equity investment, development and distribution agreement with Ceres Power Holdings plc, which is developing a fuel cell domestic boiler capable of generating low carbon electricity at the same time as producing heat. We also signed an exclusive distribution agreement with Baxi Group for their new Ecogen domestic central heating boiler.

During the year we also agreed partnerships with Disenco, a developer of a micro combined heat and power appliance, VPhase, a developer of energy saving products, and Honeywell, which produces heat pump controls.

In April 2009, British Gas New Energy acquired a 19% share of Econergy Ltd for £1 million. Econergy is a leader in biomass heating, which replaces fossil fuels with renewable energy sources for combustion to produce heat. The business sells, designs, installs and maintains these systems for individual domestic properties, business and public sector customers. It also provides community solutions in the form of district heating schemes. The deal we made includes the right to acquire the remaining share capital of the business over the next four years.

British Gas has also developed a nationwide capability for the sale and installation of solar thermal panels for hot water in homes across the UK. As well as capability, we also have experience of installations on a significant scale for local authorities

In addition, we have invested and are participating in the Energy Savings Trust field trials for Air Source Heat Pumps, whilst running in parallel our own in-house trial programme for this technology.

### **Public sector partnerships**

We are working with the public sector to help improve the thermal efficiency of the existing housing stock through energy efficiency measures as part of the Social Housing Scheme. The Social Housing scheme is a flexible national programme, working in unison with social housing providers, to ensure that eligible households receive free energy saving products and services, with funding available for a wide range of energy efficiency products including microgeneration and solid wall insulation. Reducing energy consumption at rented properties not only reduces emissions but also alleviates pressures around fuel poverty.

We are currently working with 96 social housing providers nationwide. Importantly, local level partnerships of this type have enabled us to make a significant impact in specific geographic locations. Our partnership with the Walsall Housing group, for example, has helped many vulnerable customers, with over 40,000 measures installed in 6,000 homes. Our involvement is also enabling us to play a strong part in taking new technologies to this sector for carbon abatement. This includes microgeneration and other renewable technologies.

### **Low Carbon Buildings Programme II**

We have been the only supplier to offer a full range of technologies under the Government's Low Carbon Buildings Programme II, which has given us a competitive advantage and has enabled us to build our experience in this market. British Gas installed over £6m of microgeneration on public sector buildings during 2008.

### **Feed-in tariff / renewable heat incentive**

The RHI and FIT could provide essential support to our strategy for growth in microgeneration. British Gas already has considerable expertise in microgeneration, and is determined to make this a significant line of business if the incentives are there.

### **Carbon Emissions Reduction Target (CERT)**

CERT is a government obligation on energy suppliers aimed at reducing household CO<sub>2</sub> emissions through the uptake of energy efficiency products and services. Our CERT programme is an important marketing and customer relationship tool, for example over the last five years we have supported in excess of 100m energy efficiency products. In addition we have been responsible for insulating over 1.5m homes during this period.

By the end of 2008 we had delivered more than 50% of our three-year Carbon Emissions Reduction Target (CERT), and over the three years of CERT over 50% of the programme will be delivered through insulation measures.

Our distribution of four free energy saving light bulbs and energy efficiency advice to all British Gas customers, represented the largest free distribution of light bulbs ever. We delivered a total of 48m light bulbs to 12m households in seven months. We are also working with Local Authorities to offer our customers who install home insulation a Council Tax discount of up to £125. So far, more than 60 local councils are participating in the scheme and we have completed around 20,000 installations to date. We have also introduced new products to British Gas households such as the standby saver which will save 17.87m tonnes of carbon dioxide over their lifetime through the 250,000 we delivered last year.

The Government is currently consulting on their proposal to increase CERT by 20%, including for the first time behaviour based measures including real time electricity displays and in-home energy efficiency advice. Government is also consulting on how the new Community Energy Saving Programme (CESP) might work. As the scope and diversity of carbon abatement mechanisms in the domestic sector increases, we are positioned to capitalise on the opportunities this presents, whilst ensuring we maintain our competitive advantage and manage risk accordingly.

### **Community Energy Saving Programme (CESP)**

CESP is being positioned by the UK government as a pre-cursor to a more coordinated street-by-street approach to tackle domestic energy efficiency. The programme will encourage a whole house approach through the installation of multiple energy efficiency measures which will include solid wall, loft and cavity wall insulation and microgeneration in targeted deprived communities across the country. Given our infrastructure and expertise in this sector, we are well positioned to be a lead supplier under CESP.

### **Carbon Reduction Commitment**

British Gas Business is developing an energy services business to assist business customers that have to comply with the Carbon Reduction Commitment. Launched in early 2009, we are offering a 'Carbon Health Check' to help customers identify up to 10% energy savings and to understand carbon reduction and carbon management.

### **Nuclear**

In January 2008, the UK Government gave the go-ahead to a new generation of nuclear plants which would help to meet energy needs from low-carbon sources. We have taken the opportunities provided by government support for nuclear by purchasing a 20% stake in nuclear power generator British Energy from EDF for £2.3 billion (£1.1 billion in cash and the sale of our 51% stake in SPE for £1.2 billion). The deal is still subject to shareholder and regulatory approval. Under the deal, Centrica also has the option to invest in the construction, operation and decommissioning of four European Pressurised Reactors (EPRs)

New nuclear will help to deliver UK energy security at a time when UK gas production is falling and we are relying more on global sources of gas with increasingly volatile pricing. Around 90% of gas will be imported by 2020, against 50% this year.

Carbon dioxide equivalent emissions from nuclear power generation are almost zero and this will be critical in helping the UK meet its climate change targets. Realistically, there is no chance of providing secure energy by renewables alone. We need low carbon baseload power as well.

Around 25% of the existing UK generation fleet is expected to be retired by 2015 under the EU's Large Combustion Plant Directive (LCPD) and the UK's first generation nuclear fleet will be gradually decommissioned. New nuclear is needed to fill the gap that will be left by these decommissionings and retirements and help to avoid an energy crunch. A report by Ernst & Young report suggests that replacing the nuclear fleet will require major investment of at least £38bn. It is crucial that work begins on new nuclear now given the long planning and development time frame.

### **Large-scale renewables**

We aim to invest in low-carbon generation, offshore wind farms and nuclear. While we continue to invest in fossil-fuelled generation, we are focusing on high-efficiency gas-fired power stations. Our strategy will enable us to play a key role in meeting broader UK and European emissions reduction targets.

We welcomed the UK Government's announcement on the introduction of two Renewable Obligation Certificates (ROCs) for offshore wind projects meeting specified criteria. As a major developer of offshore wind, we are keen to ensure Centrica's projects are eligible and that the criteria are not needlessly restrictive. Budget 2009 also announced that UK renewable and energy projects stand to benefit from up to £4 billion of new capital from the European Investment Bank (EIB) through direct lending to energy projects and intermediated lending to banks. The Government believes that this initiative can bring forward £1 billion of consented small and medium-sized UK renewables projects to deployment.

We are well positioned to take advantage of a fiscal regime that supports renewable energy projects. During the year, we completed construction of the Lynn and Inner Dowsing wind farm development off the Lincolnshire coast, the largest operational offshore wind farm development in the world. In October 2008 our proposed 250MW Lincs offshore wind farm project, received official consent and we are currently considering the investment case. If built, the Lincs project would be capable of supplying around 170,000 British Gas customers and delivering CO<sub>2</sub> savings of between 300,000 and 710,000 tonnes per annum.

Centrica is also exploring opportunities for two further wind farms in the Greater Wash at Docking Shoal and Race Bank, totalling 1160MW. Subject to approval and construction, by the middle of the next decade these three projects, together with our existing operational wind assets, would give us more than 1.6GW of generating capacity in the UK, capable of meeting the annual needs of more than 1.1m homes. This would help to reduce our exposure to volatile wholesale gas prices.

In addition, we intend to play a part in the round three process.

### **North American regulatory opportunities**

#### **American Reinvestment Recovery Act (ARRA)**

The American Reinvestment and Recovery Act (ARRA) was signed into law in February 2009, with roughly \$20 billion in spending on energy efficiency renewable energy, \$20 billion in tax incentives for renewable and advanced energy, and \$60 billion for renewable energy loan guarantees. The available funding presents huge opportunities for Direct Energy.

For example, the Weatherisation Assistance Program distributes federal funds to state agencies who issue Requests for Proposals (RFPs) to complete the work.

Direct Energy is well-positioned to deliver this service and is actively working with government agencies to secure work.

As part of the ARRA, there is also US\$4.5 billion available for smart grid development. Direct Energy already has experience of this type of programme. For example, in Canada, we are working with the Ontario Power Authority (OPA) to cut demand for electricity at peak times when the Ontario grid is under stress. Direct Energy's commitment is to reduce demand by 25MW when requested by the OPA, which also provides an opportunity to our business customers who receive financial incentives for participating in the programme.

### **Renewable Energy Certificates**

Direct Energy currently operates a renewable energy certificate (REC) trading practice in line with voluntary and state and provincial legislation. This continues to be an advantageous opportunity for our company. We use these REC's to offer low-carbon energy to our customers, provide liquidity to the market and develop additional products and services while building our experience, reputation and brand.

The introduction of a legislated national renewable energy certificate system is likely to present Direct Energy with opportunities, although how this system will work is not yet certain (see Regulatory risks section). Direct Energy has power purchase agreements with AES Corporation for the renewable electricity produced by the Buffalo Gap wind farms in Texas. Buffalo Gap 3 started commercial operation in September, bringing Direct Energy's total operational offtake agreements to 813MW. These wind assets are Direct Energy's principle supply of RECs.

### **Bill 33-25 – Waxman-Markey Bill**

The introduction of the first national climate change legislation in the US provides Direct Energy with a myriad of opportunities. This proposed bill, which includes provisions for national clean energy and technology initiatives, carbon cap-and-trade, and a renewable portfolio standard complements our companies capacity and ability to deliver low-carbon solutions.

### **Regulatory opportunities in Spain**

The regulatory framework in Spain has been beneficial to our Spanish business unit Centrica Energía, which is one of the three 100% green suppliers in the country and now supplies approximately 2TWh of power to its business customers. Centrica Energía continues to be a major participant of the Special Regime market, enabling renewable energy producers to supply the Spanish power market on a more economic basis. In July 2008, the removal of the high voltage regulated tariff enabled increased access to the high voltage power market. Centrica Energía is the largest new entrant in the supply market in Spain and in 2008 completed a second major photovoltaic project, a €1m (£790,000) solar farm, which will generate about 200,000kWh a year.

## 5 Physical Opportunities

### 5.1 Do physical changes resulting from climate change present opportunities for your company?

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.

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

## 6 Other Opportunities

### 6.1 Does climate change present other opportunities for your company?

#### **Products and services**

Developments in understanding of climate change mean that consumers and business customers are becoming more environmentally aware and there is a growing market for cleaner energy and low-carbon products and services. Consumers are also demanding higher environmental standards from the companies that they buy their products from. We believe 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.

#### **Green energy tariffs**

We offer green energy tariffs to our residential and business customers and have signed up to Ofgem's Green Supply Guidelines, which stipulates that a Green Tariff must deliver an additional environmental benefit. This will raise the standard of industry products, ensure genuine benefits for the environment and provide transparent and consistent information to reduce consumer confusion around tariff labelling. We have also developed green energy customer products that can be sold alongside any tariff.

Direct Energy offers green energy in our North American markets by providing customers with low-carbon electricity and gas plans. We were the first energy retailer in North America to introduce low-carbon natural gas and we remain one of the largest providers of low-carbon energy in our markets. In early 2009 Direct Energy Business launched an 'Event Greening Program' to help organisers make their conferences and meetings in Alberta and Ontario low carbon.

### **High efficiency condensing boilers**

The majority of our customers' energy carbon footprint is generated by burning the gas we supply to their homes. In many cases, an effective way to reduce these emissions is to install more efficient boilers. Currently British Gas installs around 7% of all residential boilers, including over 120,000 high efficiency domestic boilers each year. British Gas' energy-saving boilers release less CO<sub>2</sub> emissions than conventional boiler and can help to reduce our customers' heating bills by as much as 40%. When recommending a new boiler we also recommend other improvements that a customer may make to improve the efficiency of their heating system, for example improved controls and we also have the capability to install solar heating equipment or other renewable sources of energy.

In addition, we are investing in Ceres Power to develop grid-connected Combined Heat and Power ("CHP") products that can import and export power to the grid. The Ceres CHP product integrates the Company's 1kW Fuel Cell Module with all of the ancillary boiler components into a single unit meeting all of the home's hot water and central heating requirements, thereby avoiding the need for a separate boiler.

### **Private sector partnerships**

Our market-leading work in microgeneration has made us the partner of choice for other businesses. We have established a number of partnerships to showcase our technologies, reach new audiences and support the delivery of a wide range of energy efficiency measures. For example, the British Gas partnership with B&Q has seen the roll out of a number of innovative energy efficiency programmes.

In February 2009, British Gas supported B&Q in offering 1m rolls of loft insulation for £1 per roll. This offer saw 45,000 homes insulated, generating energy bill savings for the British public of over £9m. This offer was a huge success, with B&Q selling all 1m rolls in less than 2 weeks. In the first year of CERT, our partnership with B&Q resulted in the fitting of 12m square meters of insulation (equivalent to 460,000 homes).

British Gas and B&Q also partnered on Britain's first ever light bulb amnesty in 2008, allowing customers to trade a traditional bulb for two energy efficient bulbs. Each energy efficient bulb can save £6 from energy bills per year, and reduce CO<sub>2</sub> emissions by 11kg.

In 2009 B&Q trialled an energy shop, an area of the store dedicated to energy efficiency where customers can go to receive expert advice on the latest products and services to help them save both energy and money in their homes. The energy shop was staffed by energy efficiency experts from British Gas who offer advice on anything from choosing the best insulation and installing thermostatic radiator valves to fitting draft excluders and generating your own energy. British Gas experts also advise on the various grants and free insulation services available as well as assisting customers in completing the online Energy Savers Report.

Towards the end of 2008, the Co-operative selected British Gas as its green energy partner for 2009. The partnership means that British Gas will work with the Co-operative to achieve 20,000 green energy sales using the Co-operative's marketing channels.

### **Building infrastructure to support electric cars**

British Gas recently announced a partnership with ROMAG to collaborate in the testing, marketing, distribution and installation of British Gas branded solar power canopies and other related Power Park Products. Romag's 'PowerPark' product is a solar car parking canopy made of PowerGlaz PV panels and will be targeted at

airport car parks, stations, supermarkets, shopping centres, offices and public buildings, including sports and leisure facilities.

The canopy generates electricity for the charging of electric vehicles. Excess power can then be exported to the Grid. This project has been spurred by Government encouragement to demonstrate that the infrastructure is being put in place to support the manufacture of electric cars and will furthermore be beneficial to commercial organisations when the feed in tariff is introduced in 2010.

### **Energy Savers Report**

We've provided energy saving advice to over 2.2m people who have completed our British Gas Energy Savers Report, a bespoke home energy efficiency audit, by recommending behavioural changes and low-carbon products and services. Work is now underway on the latest version of the ESR, planned for release in May 2009. This will see the report becoming more interactive (with a 3D house) and more intuitive with recognition for current energy efficiency measures put in place. We aim to broaden the appeal of the report to customers off the grid and bundles of energy-efficient packages will be available to buy from British Gas based on the customer's requirements, including new microgeneration technologies.

In 2008, we expanded the Energy Savers Reports to our SME customers to provide them with energy efficiency information and energy efficiency products and services that can help them reduce their consumption and bills. Businesses can complete their ESRs online where they can find sector specific energy efficient advice. The ESRs will also evaluate how much they are spending on energy annually and will benchmark their energy efficiency rating relative to other businesses of their size and type.

### **Council Tax rebate scheme**

Through our innovative partnerships with Local Authorities, British Gas has led the way in promoting the efficient use of energy in the home while simultaneously delivering our CERT obligations. In total, British Gas is working with 68 councils, with over 23,500 installations taking place to date as a direct result of this scheme. Local partnerships have enabled us to make a significant, focused impact.

### **Carbon calculator**

In 2008, Direct Energy re-developed and re-launched a carbon calculator, which provides customers an online carbon measurement platform. Our carbon calculator yields an indicative annual absolute carbon emission based on information provided by the user. We currently enjoy reputational benefits through this tool and we are exploring ways to connect this to our product and service offerings to derive additional opportunities as well.

### **'Green' engagement programmes**

In 2007, we developed a unique social experiment, Green Streets, which concluded in February 2009. This year-long competition between eight communities promoted awareness of low-carbon solutions for householders and showed how different microgeneration and energy efficiency technologies, alongside greater awareness of behavioural change, can deliver real benefits to customers. The competing streets achieved average energy savings of more than 25%, with the Leeds street leading the way with energy savings of 35%. The 64 participating households reduced their total carbon emissions over the year by almost 89 tonnes.

In April 2008, we launched Generation Green, our ground-breaking community-based programme, which aims to educate children and families about saving energy

and reducing carbon emissions. This builds on our Think Energy programme for schools through which we have shared our energy expertise for over ten years. In the first year of the programme, more than 9,000 schools had signed up for Generation Green, making it the fastest growing schools programme in the UK. The programme provides free teaching materials such as lesson plans and rewards green behaviours with green prizes for schools.

### **Business markets**

We have developed a shared business plan between British Gas New Energy and British Gas Business to deliver a range of low-carbon energy services to business customers including microgeneration.

We have designed Energy360 to help our business customers reduce costs, meet their legal and regulatory obligations and reduce their carbon emissions. We provide advice on energy management strategy and we have the capabilities to monitor and manage infrastructure and energy consumption on behalf of our customers. For example, our Automatic Monitoring and Targeting (aM&T) product enables customers to collect energy consumption data automatically, analyse it and ensure that targets are being met. This identifies issues and ensures that appropriate corrective measures can be taken as early as possible. We also offer smart metering and energy consultancy.

In October 2008, British Gas Business acquired BMSi, one of the UK's leading providers of installation and contract servicing of specialist building controls systems. This means that for customers who have control of their building management systems, we offer energy efficiency measures such as boilers, lighting and HVAC equipment.

In 2009 we will look for further acquisition opportunities to increase our range of low-carbon products and services.

### **North American products and services**

We have identified opportunities around the sale, implementation and servicing of energy efficiency solutions for customers; the sale and servicing of renewable energy and low-carbon efficient distributed generation; and the development of tools for home energy management for customers. Examples of the type of programmes and initiatives we are developing are below.

#### **Houston Residential Energy Efficiency Program**

Direct Energy is already building its brand in energy efficiency and demand management. For example, in Houston, Texas, we have been taking part in a pilot scheme sponsored by the city authorities to retro-fit – free of charge – energy saving features such as insulation and low-energy light bulbs as part of a weatherization.

The City of Houston's Residential Energy Efficiency Program has successfully weatherized over 5,000 Houston homes using a neighborhood by neighborhood approach. As a result of Direct Energy's marketing expertise, neighborhood participation rates have exceeded 60% of all single family households representing a significant increase over prior programs. The city cites an average reduction in energy usage of 19.1% or 229 kilowatt hours (kWh) on an average monthly consumption of 1,200 kWh (annual saving of \$412.56 based on \$0.15/kWh).

Direct Energy demonstrated an ability to quickly ramp operations to meet increased demand made available through additional funding via the Agencies in Action (AIA) and Houston Job Order Contract (JOC) programs.

### **Energy audits**

Direct Energy is continuing to certify additional home energy auditors, in both Canada and the US, to help residential customers identify energy efficiency improvements and access government grants for these activities.

### **Milton web-interface**

Direct Energy, in partnership with Bell Canada and Milton Hydro, piloted a home automation/demand response system in 200 residential homes. This pilot, in addition to providing Direct Energy with insight on customer wants and needs from energy management systems, reduced energy consumption in homes by up to 20%. Direct Energy is continuing to explore options with Milton Hydro for further installations that build upon the learnings from this pilot.

### **E-Radio**

We invested in eRadio, a Canadian-based company that is developing a system to help balance energy use at times of high demand in a given area. We are piloting eRadio products in various locations across North America, most recently in Corpus Christi, Texas.

### **Brand and reputation**

We aim to be recognised by our stakeholders as a leader in low-carbon energy and committed to decarbonising the UK. Our 2008 activities to seize the reputational and commercial opportunities of climate change included the launch of the Your Energy Experts campaign with strong green messaging.

Our commitment to reduce the carbon intensity of our power generation activities by 2012 and 2020 is a strong message to investors, stakeholders and consumers. In 2008, we continued to have the lowest carbon intensity of the major UK energy suppliers giving us a significant opportunity to differentiate British Gas in the market place. It also enables us to build positive perceptions among our wider stakeholders such as governments, which ensures that during consultations on energy and climate change issues, we have the necessary credibility.

Our environmental performance has also contributed to our inclusion in the Dow Jones Sustainability Index (DJSI) and FTSE4Good. DJSI represents an investor base worth \$6 billion.

### **Employee engagement**

As climate change has risen up the public agenda, it is not just our customers wanting us to reduce our impact on the environment; it is also an increasingly important issue for our employees. By pursuing a leadership position, we have been able to use our environmental performance as an engagement tool for our employees. This helps to build pride and commitment among our employees and increases their ability to support our energy efficiency strategy and increase our credibility in the marketplace.

For example, in 2008 we launched a campaign to double the number of Green Teams in the UK, a network of volunteer employees who act as environmental ambassadors. In May 2009 Centrica was awarded the NQA Environmental Leadership Award for Culture Change. The award recognises organisations that demonstrate total commitment to environmental responsibility through effective engagement with their staff and integrating the environment into the heart of its culture. Our submission

highlighted the work of the Green Teams and our UK businesses in engaging and motivating our employees to make real performance improvements.

In North America, Direct Energy's Climate Change Committee developed a renewable energy plan that offers employees the opportunity to purchase renewable energy for their homes at discounted rates.

Greenhouse Gas (GHG) Emissions Accounting, Emissions Intensity, Energy and Trading

## **7 Reporting Year**

Please also provide CDP with responses to questions 7, 8, 9, 10.1, 11.1 and 11.2 for the three years prior to the current reporting year if you have not done so before or if this is the first time you have answered a CDP information request

7.1 Please state the start date and end date of the year for which you are reporting GHG emissions

1 January 2008 – 31 December 2008

## **8 Reporting boundary**

8.1 Please indicate the category that describes the company, entities, or group for which Scope 1 and Scope 2 GHG emissions are reported.

Companies over which financial control is exercised – per consolidated audited financial statements;  
Companies over which operational control is exercised;  
Companies in which equity share is held;  
Other (please provide details).

We report on all emissions from sources we operate regardless of ownership (with the exception of the Langeled Receiving Facility for which Centrica holds the PPC permit but not the EU ETS responsibility). For increased transparency we also account for emissions (prorated) from facilities operated by a third party of which we are an equity shareholder, as in our operations in Belgium.

8.2 Please state whether any parts of your business or sources of GHG emissions are excluded from your reporting boundary.

We have not reported on activities where we have an equity share in the business, but that neither we nor the company we have an equity share in, operate.

We do not report emissions data from facilities that we operate or part own, where a third party holds the EU ETS Licence (such as the Langeled Receiving Facility).

## **9 Methodology**

9.1 Please describe the process used by your company to calculate Scope 1 and Scope 2 GHG emissions including the name of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 GHG emissions.

We subscribe to best practice in environmental accounting and disclosure and apply the WRI Greenhouse Gas Protocol and GRI Sustainability Reporting Guidelines in our approach. This year, for the first time, we have included consumption and emissions data from all of our global operations. 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 who 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. 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.

[Please also provide:](#)

### [9.2 Details of any assumptions made](#)

Where possible we have avoided making assumptions, however in certain cases data availability has necessitated the use of assumptions. These include:

- In the small portion of vehicle business emissions, where casual claimants claim for mileage on unspecified vehicles, it is assumed the ratio of diesel and petrol cars is the same as that of the general public
- In a few instances where we have not been able to obtain actual data we have had to use average energy usage/ emissions per full time equivalent employee for buildings. Where practicable we have used country-specific references to maximise accuracy
- Not all personnel book their travel through the company agents. In North America we have applied a conversion factor to account for this missing data. In the UK, we have only accounted for the travel booked through the company agents. This captures the majority of the relevant data.

### [9.3 The names of and links to any calculation tools use.](#)

No branded calculation tools were used. Calculations were either completed using DEFRA conversion factors or site/material specific conversion factors. For example:

Emissions covered by the EU ETS are calculated based on fuel consumption and an energy emissions factor expressed in tCO<sub>2</sub>/TJ:  $tCO_2 = \text{Fuel consumed} \times \text{Net Calorific Value of fuel (TJ/tonne)} \times \text{Fuel's Emissions Factor (tCO}_2\text{/TJ)} \times \text{Oxidisation Factor}$ . Emissions from other operational sources are calculated using the same formula.

Emissions data from energy use, transportation etc, are collected both via manual and automated data feeds from across the Centrica Group of companies and the CO<sub>2</sub> emissions calculated using standard emission factors such as those published by DEFRA.

### [9.4 The global warming potentials you have applied and their origin. The emission factors you have applied and their origin.](#)

Where relevant the Global Warming Potentials published by the IPCC in its second Assessment Report are used. The GWP based on 100-year value are used.

### 9.5 The emission factors you have applied and their origin

The 2008 Guidelines to DEFRA's GHG Conversion factors are used in all cases, unless more regional/site specific or substance specific data is available. Eg North American data typically uses North American conversion factors provided by the EPA, WRI or similar and gas production and power generation facilities use conversion factors specific to their gas produced/ consumed.

When providing answers to questions 10, 11 and 13, please do not deduct offset credits, Renewable Energy Certificates etc, or net off any estimated avoided emissions from the export of renewable energy, carbon sequestration (including enhanced oil recovery) or from the use of goods and services. Opportunities to provide details of activities that reduce or avoid emissions are provided elsewhere in the information request.

Carbon dioxide emissions from biologically sequestered carbon e.g. carbon dioxide from burning biomass/biofuels should be reported separately from emissions Scopes 1, 2 and 3. If relevant, please report these emissions in question 15. However, please do include any nitrous oxide or methane emissions from biomass/biofuel combustion in your emissions under the three scopes.

## 10 Scope Direct GHG Emissions

Electric utilities should report emissions by country/region using the table in question EU3.

Please provide:

### 10.1 Total gross global Scope 1 GHG emissions in metric tonnes of CO<sub>2</sub>-e

Carbon footprint – Scope 1	Unit	2008	2007	2006	2005
<b>Total</b>	TCO <sub>2</sub> e	<b>10,871,403</b>	<b>9,572,002</b>	<b>7,532,811</b>	<b>7,056,810</b>

Please break down your total gross global Scope 1 emissions by:

### 10.2 Country or region

Carbon footprint – Scope 1	Unit	2008	2007	2006	2005
UK	TCO <sub>2</sub> e	8,386,376	7,011,393	5,144,755	7,056,810
North America	TCO <sub>2</sub> e	2,031,200	2,129,814	1,922,399	NA
Belgium	TCO <sub>2</sub> e	453,221	430,795	465,657	NA
Rest of World	TCO <sub>2</sub> e	606	NA	NA	NA
<b>Total</b>	TCO <sub>2</sub> e	<b>10,871,403</b>	<b>9,572,002</b>	<b>7,532,811</b>	<b>7,056,810</b>

### Rest of World breakdown

Scope 1 Rest of World 2008	TCO <sub>2</sub> e
----------------------------	--------------------

Netherlands	332
Spain	101
Norway	0
Germany	5
Nigeria	168
Total	606

No data is available for 'Rest of world' previous years

Note: In regard to table EU3 the data above is the total data for the company as Centrica is a mixed activity company, including electricity generation, gas production and other activities

Where it will facilitate a better understanding of your business, please also break down your total global Scope 1 emissions by:

10.3 Business division

And/or

10.4 Facility

10.5 Please break down your total global Scope 1 GHG emissions in metric tonnes of the gas and metric tonnes of CO<sub>2</sub>-e by GHG type.

<b>Scope 1 by GHG Type</b>		
<b>Gas type</b>	<b>Tonnes of gas</b>	<b>TCO<sub>2</sub>e</b>
CO <sub>2</sub>	10,610,405	10,610,405
Methane	8,604	180,685
Nitrous Oxide (N <sub>2</sub> O)	35.6	11,036
HFCs	46,185	69,278
PFCs	0	0
SF <sub>6</sub>	0	0
<b>Total</b>		<b>10,871,403</b>

10.6 If you have not provided any information about Scope 1 emissions in response to the questions above, please explain your reasons and describe any plans you have for collecting Scope 1 GHG emissions information in the future.

## 11 Scope 2 Indirect GHG emissions

Important note about emission factors where zero or low carbon electricity is purchased:

The emissions factor you should use for calculating Scope 2 emissions depends upon whether the electricity you purchase is counted in calculating the grid average emissions factor or not – see below. You can find this out from your supplier.

Electricity that IS counted in calculating the grid average emissions factor:

Where electricity is sourced from the grid and that electricity has been counted in calculating the grid average emissions factor, Scope emissions must be calculated using the grid average emissions factor, even if your company purchases electricity under a zero or low carbon tariff.

Electricity that is NOT counted in calculating the grid average emissions factor: Where zero or low carbon electricity is sourced from the grid or otherwise transmitted to the company and that electricity is not counted in calculating the grid average, the emissions factor specific to that method of generation can be used, provided that any certificates quantifying GHG-related environmental benefits claimed for the electricity are not sold or passed on separately from the electricity purchased.

Please provide:

#### 11.1 Total gross Scope 2 GHG emissions in metric tonnes of CO<sub>2</sub>-e

<b>Carbon footprint – Scope 2</b>	<b>Unit</b>	<b>2008</b>
<b>Total</b>	TCO <sub>2</sub> e	<b>232,294</b>

Please break down your total gross global Scope 2 emissions by

#### 11.2 Country or region

<b>Carbon footprint – Scope 2</b>	<b>Unit</b>	<b>2008</b>
UK	TCO <sub>2</sub> e	104,572
North America	TCO <sub>2</sub> e	124,641
Belgium	TCO <sub>2</sub> e	2,555
Rest of World	TCO <sub>2</sub> e	526
<b>Total</b>	TCO <sub>2</sub> e	<b>232,294</b>

<b>Scope 2 Rest of World 2008</b>	<b>Unit</b>	<b>2008</b>
Netherlands	TCO <sub>2</sub> e	413
Spain	TCO <sub>2</sub> e	93
Norway	TCO <sub>2</sub> e	0
Germany	TCO <sub>2</sub> e	16
Nigeria	TCO <sub>2</sub> e	5
<b>Rest of World Total</b>	TCO <sub>2</sub> e	<b>526</b>

NB Norway power used is renewable, consistent with the criteria stated

Where it will facilitate a better understanding of your business, please also break down your total global Scope 2 emissions by:

#### 11.3 Business division

And/or

#### 11.4 Facility

11.5 If you have not provided any information about Scope 2 emissions in response to the questions above, please explain your reasons and describe any plans you have for collecting Scope 2 GHG emissions information in the future.

## **12 Contractual Arrangements Supporting Particular Types of Electricity Generation**

12.1 If you consider that the grid average factor used to report Scope 2 emission in question 11 above does not reflect the contractual arrangements you have with electricity suppliers, (for example, because you purchase electricity using a zero or low carbon electricity tariff), you may calculate and report a contractual Scope 2 figure in response to this question, showing the origin of the alternative emission factors and information about the tariff.

Centrica supports the use of grid average intensity to ascertain Scope 2 emissions and does not believe that a nominal carbon intensity of electricity purchased should be the determinant of carbon intensity. It is our strong belief that zero and low carbon electricity tariffs should be based firmly on the concept of additionality, not on the theoretical source of generation. This additionality should not be used to offset reporting Scope 3 emissions.

12.2 If you retire any certificates (eg Renewable Energy Certificates) associated with zero or low carbon electricity, please provide details.

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.

## **13 Scope 3 Other Indirect GHG Emissions**

For each of the following categories, please:

Describe the main sources of emissions

Report emission in metric tonnes of CO<sub>2</sub>-e

State the methodology, assumptions, calculation tools, databases, emission factors (including sources) and global warming potentials (including sources) you have used for calculating emissions.

### **13.1 Employee business travel**

Scope 3 emissions are calculated from data feeds from our procurement of rail and flight data, data submissions from our service providers such as shipping and helicopter service companies. Conversion to tonnes CO<sub>2</sub>e is calculated using recognised emission factors e.g. DEFRA. Where relevant the Global Warming Potentials published by the IPCC in its second assessment report are used. The GWP based on 100-year value are used.

These include:

### Business flights (based on business travel by aeroplane in 000 miles)

Business travel	Unit	2008
<b>Business flights</b>		
Total Air travel	000 miles	22,857
Total CO <sub>2</sub> e produced	tonnes	4,580

The Business flight CO<sub>2</sub>e is calculated based on the DEFRA (2008) guidelines. Flights are separated into domestic, short-haul international and long-haul international. All the UK and European mileage data is then converted to CO<sub>2</sub>e using the appropriate DEFRA conversion factor and uplift factor. The North American flight CO<sub>2</sub>e is calculated using WRI conversion factors. The majority of flight data is supplied by the relevant booking agents. The 2008 North American flight data set was incomplete so some estimations and calculations had to be made to avoid under-accounting.

### Business rail travel (Distance travelled by rail for business purposes - UK and abroad)

Rail journeys	Unit	2008
Total rail journey distance	000 miles	1,407
CO <sub>2</sub> e produced	tonnes	136

The rail journey CO<sub>2</sub>e is calculated using the DEFRA 2008 conversion factors for National Rail. The mileage data is sourced from booking agencies. No rail travel was identified outside of the UK. There will be some minor under reporting as a result of personnel booking their travel themselves and not through the travel booking agent.

### Shipping and Helicopter travel

This includes the helicopter flights to our offshore facilities, as well as, the safety and supply shipping that supports our offshore facilities.

UK Helicopter and Shipping CO <sub>2</sub> e calculated	TCO <sub>2</sub> e	13,984
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The helicopter and shipping data is calculated based on fuel data (000 litres) submissions from our service providers. The fuel volumes are converted into TCO<sub>2</sub>e using the relevant DEFRA 2008 conversion factors. The service providers apportion out fuel usage if a journey included non-Centrica personnel/supplies

### 13.2 External distribution / logistics

DHL - Supply Chain is our major logistics provider. DHL collects waste generated by our service engineers following such activities as replacing a residential boiler and transport it to the local waste facility.

DHL have 68 vehicles supporting Centrica British Gas, of which 45 are dedicated vehicles (greater than 95% dedication to service). All vehicles are DHL-owned or leased. A typical five-day week would see the fleet averaging between 65,000-85,000km depending on activity.

The carbon associated with the fuel use of these vehicles equates to 1972 TCO<sub>2</sub>e. DHL has a target to reduce this footprint by 5% in 2009 through driver training, speed limiting and logistic management.

The data is collected by DHL from monthly reporting of fuel usage resulting from work undertaken on behalf of Centrica.

### 13.3 Use / disposal of company's products and services

The generation of electricity that is purchased and then resold to end users is captured under our scope 3 emissions.

This purchased electricity includes power purchased through tolling agreements, Power Purchase Agreements (PPA) and purchases from the National Reserve.

<b>Carbon footprint for electricity purchased for resale</b>	<b>Unit</b>	<b>2008</b>
Total	TCO <sub>2</sub> e	23,284,806

Where the electricity purchased for resale, is purchased under a specific purchase agreement (PPA or Tolling), the power generation energy source is known and therefore the correct conversion factors for the relevant fuel type can be used to calculate the actual CO<sub>2</sub>e.

Calculation of the CO<sub>2</sub>e resulting from the sale of purchased electricity from the National Reserve, that is sold to the end user, is made using approved fuel mix factors (BERR).

### 13.4 Company supply chain

We currently calculate and disclose upstream supply chain emissions related to off-shored business activities (outsourced services occurring in another country including call centres in India and South Africa) and outsourced services (eg data centres, print centres).

<b>Scope 3: Outsourced services and off-shored business activities</b>	<b>TCO<sub>2</sub>e</b>
Outsourced services	4,108
Off-shored activities	6,676
Total	10,784

We outsourced our data centres in early 2007. Due to difficulties in obtaining the power usage of the data centres, the CO<sub>2</sub>e has been estimated based on the power usage when they were run in-house. We hope to obtain actual usage data in future years.

The CO<sub>2</sub>e for the off-shored business activities has been calculated from the power use submissions provided by the off-shored businesses. DEFRA conversion factors have been used, including the UK electricity grid rolling average conversion factors although we hope to be able to use country-specific factors in future years where possible.

#### **Transactional Mailings**

In late 2006, Centrica outsourced the transactional mailing work of its print centres to Communisis. Communisis are conscientious in the collection of carbon footprint data

relating to the products and services they provide to Centrica. In 2008 this equated to 744.3 tonnes of CO<sub>2</sub>e. DEFRA conversion factors are used in their GHG calculations.

### 13.5 Other

13.6 If you have not provided information about one or more categories of Scope 3 GHG emissions in response to the questions above, please explain your reasons and describe any plans you have for collecting Scope 3 indirect emissions information in future.

We are making improvements year on year, however as with most organisations, there is still more we can do to fully account for the scope 3 carbon emissions associated with our supply chain.

We are currently consulting with our major suppliers as to the quality and magnitude of their carbon footprint calculations and how it relates to the products and services supplied to Centrica.

In our next submission we aim to include the carbon for major suppliers who have data relevant to the goods and services purchased by Centrica.

## 14 Emissions Avoided Through use of Goods and Services

14.1 If your goods and/or services enable GHG emissions to be avoided by a third party, please provide details including the estimated avoided emissions, the anticipated timescale over which the emissions are avoided and the methodology, assumptions, emission factors (including sources), and global warming potentials (including sources) used for your estimations.

British Gas New Energy's business involves helping customers to reduce their carbon emissions.

### Carbon savings under CERT

Under the Carbon Emissions Reduction Target (CERT), we provided energy efficiency products to customers equivalent to lifetime carbon savings of 17.87m tonnes of CO<sub>2</sub> equivalent in 2008. As well as the range of traditional energy saving measures such as insulation the products we supplied also included 250,000 standby savers and 48 million energy saving light bulbs. The give away delivered over 6.6 million tonnes of CO<sub>2</sub> savings, and customer savings of over £200m per year can be expected, or £2bn over the lifetime of the bulbs. We also provide energy saving advice through our free Energy Savers Report, which recommends behavioural changes and low-carbon products and services. So far we have provided advice to more than 2 million people.

We calculated the total carbon savings using both Ofgem's published guide to the kg CO<sub>2</sub> savings attributable to each energy efficiency measure in their Suppliers' Guidance and also for newer products with agreement with Ofgem based on then energy saving performance of that product.

### Council Tax rebate scheme

Through our innovative partnerships with Local Authorities, British Gas has led the way in promoting the efficient use of energy in the home while simultaneously delivering our

CERT obligations. Private households purchasing loft and cavity insulation receive up to £125 council tax rebate, jointly funded by British Gas, and on average these measures reduce heating bills by £365 per year. Households also qualify for a rebate of up to £400 when purchasing solar water systems.

In total, British Gas is working with 68 councils, with over 23,500 installations taking place to date as a direct result of this scheme. Local partnerships have enabled us to make a significant, focused impact. Through our partnership with Croydon Council for example, 1,500 homes have benefited from the scheme, saving approximately 340 tonnes of CO<sub>2</sub>.

### **Green Streets**

In addition, we developed a unique social experiment, Green Streets, which was a year-long competition between eight communities to reduce their energy usage and carbon footprint. Green Streets promoted awareness of low-carbon solutions, showcased microgeneration technologies and demonstrated how simple behavioural changes can deliver real benefits to customers.

The competing streets achieved average energy savings of more than 25%, with the Leeds street leading the way with energy savings of 35%. The 64 participating households reduced their total carbon emissions over the year by almost 89 tonnes. The average reduction in carbon emissions over the course of the project was 23%. If this project was rolled out across all UK households, the reduction in carbon emissions would equate to 35 million tonnes (re: IPPR's independent report on Green Streets).

The Institute of Public Policy Research (IPPR) conducted an independent assessment of the Green Streets experiment, validating and analysing the energy data and interviewing participants and drawing out policy lessons. The IPPR conducted basic analysis on the energy data using an Excel spreadsheet and then investigated outliers to check the data quality.

In about a quarter of cases, the initial meter figure was an estimate from the reading nearest to the end of January 2007. However, margins of error are estimated to be low, in the region of 5-10%. The lack of accurate monthly readings throughout the baseline year also means that for many cases industry-standard modelling had to be used to produce monthly baseline data. The IPPR also assessed the actual energy changes against the energy changes that would be expected from the installed measures, using spreadsheets developed for the Energy Efficiency Commitment, based on the Building Research Establishment's Domestic Energy Model.

National average carbon emissions from domestic energy in the base year 2007-2008 were calculated at 6 tonnes per household, using figures from the Committee on Climate Change (2008: 114).

The full IPPR report is available here:

[http://www.centrica.com/files/pdf/responsibility/green\\_streets\\_final.pdf](http://www.centrica.com/files/pdf/responsibility/green_streets_final.pdf)

### **Milton web-interface**

Direct Energy, in partnership with Bell Canada and Milton Hydro, piloted a home automation/demand response system in 200 residential homes between October 2007 and September 2008. This pilot, which was independently monitored by the

University of Waterloo, and provided Direct Energy with insight on customer wants and needs from energy management systems.

The top 10% of participants saved 16% off their electricity usage over 12 months and saved 18% off their consumption during peak periods. The 16% of average consumption is equal to 1,680kWh saving in a year which could translate to a reduction of 1.3 metric tonnes of CO<sub>2</sub> for each of the participants. A select group of participants saw savings of 44% during provincial demand response periods. Direct Energy is continuing to explore options with Milton Hydro for further installations that build upon the learnings from this pilot.

## 15 Carbon Dioxide Emissions from Biologically Sequestered Carbon An example would be carbon dioxide from burning biomass/biofuels

15.1 Please provide the total carbon dioxide emissions in metric tonnes CO<sub>2</sub> from biologically sequestered carbon.

Source	TCO <sub>2</sub> e emitted
GHG emissions from the combustion of biologically sequestered carbon	3,172

Note: This is our equity share of SPE's biofuel (palm oil) combustion for power generation

## 16 Emissions Intensity

16.1 Please supply a financial emissions intensity measurement for the reporting year for your combined Scope 1 and 2 emissions, including a description of the measurement,

16.1.1 The units, and

Financial Emissions Intensity = Carbon TCO<sub>2</sub>e / Group Revenue (£m)

16.1.2 The resulting figures

Total scope 1 + scope 2 (TCO<sub>2</sub>e) = 11,103,697

Group Revenue (£m) = 21,345

Financial emissions intensity	TCO <sub>2</sub> e/£m	520
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16.2 Please supply an activity related intensity measurement for the reporting year for your combined Scope 1 and 2 emissions, including a description of the measurement,

16.2.1 The units, and

**Carbon intensity of energy generated and handled**

The first two activity-based intensity measurements relate to the two primary production activities from our wholly-owned assets:

- power generation
- gas production and storage

The third intensity measurement is our standard UK power generation carbon intensity, which is reported in our Corporate Responsibility Report. It is this figure that is one of our key performance indicators and on which we base our carbon intensity targets. It includes power purchased under site-specific purchase agreements as well as power generated from our own assets.

#### **Power generation carbon intensity**

Units = g CO<sub>2</sub>e emitted / kWh of energy exported from our wholly-owned facilities

#### **Gas production and storage specific carbon intensity**

Units = g CO<sub>2</sub>e emitted / kWh of gas produced or moved

#### **Key performance indicator - carbon intensity**

Units = g CO<sub>2</sub>e emitted / kWh of energy exported from our facilities and under site-specific contracts

### 16.2.2 The resulting figure

#### **Power generation carbon intensity**

<b>Centrica's average intensity</b>	g CO <sub>2</sub> /kWh	392
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#### **Gas production and storage specific carbon intensity**

<b>Average carbon intensity</b>	g CO <sub>2</sub> /kWh	6.17
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This includes the CO<sub>2</sub>e emitted from our gas production and from the storage and retrieval of ours and client's gas from our storage facility

The gas and power specific carbon intensities do not include the carbon generated by our downstream businesses.

#### **Key performance indicator carbon intensity**

<b>Carbon intensity of our power</b>	<b>Unit</b>	<b>2008</b>
UK <sup>1</sup>	g CO <sub>2</sub> /kWh	379
Direct Energy	g CO <sub>2</sub> /kWh	264
SPE <sup>1</sup>	g CO <sub>2</sub> /kWh	290
<b>Average carbon intensity</b>	g CO <sub>2</sub> /kWh	<b>351</b>

<sup>1</sup>Based on verified emissions data under the requirements of the EU Emissions Trading Scheme

## 17 Emissions History

17.1 Do emissions for the reporting year vary significantly compared to previous years?

Yes, overall there has been a significant variation compared to historical figures. This includes a 14% increase in the scope 1 footprint in comparison to last year. This equates to approximately 1.4 million tonnes of CO<sub>2</sub>e.

The upstream emissions which make up the major component of our scope 1 emissions relate to the operating profile of our facilities. There are a number of factors which influence our emissions profile including the price of gas and outages.

There have also been noticeable changes in the scope 2 and 3 emissions.

If so, please explain why and:

The increase in scope 1 emissions is as a result of the increased power generation at our wholly-owned UK power generating assets. While the total emissions from these have increased the actual emission intensity has improved from 407g CO<sub>2</sub>e/kWh to 399g CO<sub>2</sub>e/kWh.

The scope 2 increase is a result of more comprehensive reporting from all our worldwide assets.

The scope 3 decrease is mainly attributable to the reduced quantity of power purchased by our North American business for resale to downstream customers.

17.1.1 Estimate the percentage by which emissions vary compared with the previous reporting year

Significant change in emissions from previous years	
Indicator	% increase
Scope 1	14%
Scope 2	89%
Scope 3	-18%

## 18 External Verification / Assurance

18.1 Has any information reported in response to questions 10-15 been externally verified / assured in whole or in part?

Yes

If so, please:

18.2 State the scope/boundary of emissions included with the verification / assurance exercise.

### EU ETS

All EU ETS data has been verified in accordance with the emissions trading requirements.

## Corporate Responsibility Report

Our Corporate Responsibility Report, within which there is a large quantity of environmental data and details of initiatives, targets and commitments, is assured by Corporate Citizenship.

We calculate our greenhouse gas (GHG) emissions in accordance with the WRI GHG Protocol and report them as Direct Emissions (scope 1) and Indirect Emissions (scopes 2 and 3). We report on all emissions from sources we operate regardless of ownership (with the exception of the Langede Receiving Facility for which Centrica holds the PPC permit but not the EU ETS responsibility). For increased transparency we also account for emissions (prorated) from facilities operated by a third party of which we are an equity shareholder, as in our operations in Belgium. We convert emissions to tonnes carbon dioxide equivalent (TCO<sub>2</sub>e) using recognised and published conversion factors.

[18.3 State what level of assurance, \(eg: reasonable or limited\) has been given.](#)

#### **EU ETS**

All EU ETS data has been verified in accordance with the emissions trading requirements.

#### **Corporate Citizenship (CR Report assurance)**

The level of assurance offered is moderate as defined by AA1000AS (2008), using the Type 2 assurance process. That is to say, Corporate Citizenship's work obtained sufficient evidence to support the statement that the risk of their conclusion being in error is reduced.

[18.4 Provide a copy of the verification / assurance statement.](#)

#### **Assurance statement**

Centrica has commissioned Corporate Citizenship to provide external assurance and a commentary on its Corporate Responsibility Report 2008, contained within this site. The assured material is denoted by a "2008 Reporting" badge on relevant pages.

#### **The scope of our assurance**

The assurance provides the reader with an independent, external assessment of the report and, in particular, with how it corresponds with the AA1000 standard. It is intended both for the general reader and for more specialist audiences who have a professional interest in Centrica's corporate responsibility performance.

Centrica has chosen to use the new iteration of the AA1000 standard, AA1000AS (2008). Our assurance is a Type 2 assurance as defined by the standard, in that it evaluates the nature and extent of adherence to the AA1000AS principles of inclusivity, materiality and responsiveness and assures the behaviour of the organisation as reported here. It used disclosed information as its starting point and then investigated the underlying systems, processes and sustainability performance information to arrive at its conclusions. It has verified the reliability of selected reported sustainability performance information.

The level of assurance offered is moderate as defined by AA1000AS (2008). That is to say, our work obtained sufficient evidence to support the statement that the risk of our conclusion being in error is reduced.

Centrica is entirely and solely responsible for the contents of the report, Corporate Citizenship for its assurance. As noted above, the disclosures covered by this assurance are denoted by a “2008 Reporting” badge on relevant pages. A detailed note on our assurance methodology appears at the end of this statement.

### **Opinion and conclusions**

In our opinion the *Centrica Corporate Responsibility Report 2008* reflects the principles of AA1000 (2008), namely inclusivity, materiality and responsiveness. The specified sustainability performance information is reliable and accurate. The level of assurance is that defined by AA1000 as moderate.

Centrica engages with key stakeholder groups, gives balanced consideration to their views and issues, assesses which are material, and responds by altering practice and innovating as appropriate.

### **Commentary**

Our work was considerably assisted by the thorough, deep and ordered way in which the Centrica Corporate Responsibility Committee engages with the corporate responsibility agenda. Within the work of the Committee, the regular presentation by businesses of their responsibility engagement, agenda and response was a notable feature, providing significant evidence of the application of relevant policies and targets within the businesses.

In our opinion future reports could be strengthened by further addressing the five aspects that we identify below.

### **Climate change**

As a member of the Carbon Disclosure Leadership Index, Centrica has an independently acknowledged claim to leadership in this field. In our judgement the current report meets current expectations of stakeholders with regard to climate change. However, Centrica should note that this area needs to be held under review. A shift upwards in the generally reported assumptions about the likely extent of climate change is evident, and 2009 will be marked by the Copenhagen Climate Conference.

In particular, future coverage should show the extent to which Centrica’s policies and programmes seek to maintain a leadership position by addressing the latest public and scientific understanding of the issue, including consideration of the main physical and social risks that may accompany climate change.

### **Responsible procurement**

In last year’s statement we noted the progress made in the development and initial deployment of a responsible procurement policy. We note that suitable measures for this activity have been devised and data is being collected. Performance data should be published as soon as there is sufficient information to inform Centrica’s implementation of the policy and to give readers insight into the policy’s effectiveness.

Given the importance of climate change issues to the group, Centrica should ensure that environmental considerations are embedded into the supply chain contracts alongside responsible business behaviour.

### **Comparability of data**

The *Exposure Draft of Guidance for the Use of AA1000 AS (2008)* cites comparability, also a GRI principle as a test of information quality, as a positive attribute of a report. In particular, the guidance notes that comparability includes:

year-on-year comparability, comparability with industry peers, and comparability with appropriate benchmarks.

Centrica has developed a style of reporting that is built upon a broad base of performance data. The quantity of data disclosed has grown. Centrica as a norm gives a five-year range of data showing changing performance over time. Currently Centrica includes relatively few comparisons with peers or external benchmarks and should, we believe, consider including comprehensive benchmarking of a limited number of key performance indicators in future reporting.

#### **Process for deciding what issues to include in the report**

The section *Our approach* provides a succinct explanation of how Centrica judges what are its material corporate responsibility issues. Some leading reporters include a brief section explaining how and why they decided on what information to include in the report and where other relevant information may be found. Inclusion of such a section in future report would further strengthen the materiality and responsiveness of Centrica's reporting.

#### **Review of report and underlying documentation against the scale of business activities**

We considered whether the contents of the report fully reflected the balance of Centrica's different businesses and geographies. We concluded that the report was appropriately balanced. However, the review raised two issues.

Centrica has made progress on management information and key performance indicators. Whilst good progress has been made over the last 12 months in Direct Energy, Centrica's North American business that accounts for roughly one-quarter of Centrica's turnover with evidence of stronger governance, a necessary next step is that Direct Energy should address the fact that it has fewer, less well-embedded indicators than Centrica's UK businesses and maintain this progress in 2009.

Given the material contribution made to turnover by business customers and by domestic customers who are not vulnerable, we are also of the view that Centrica should continue to provide coverage for these groups, with future coverage reflecting any material changes of impact.

#### **Corporate Citizenship**

*London, 29 April 2009*

[www.corporate-citizenship.com](http://www.corporate-citizenship.com)

#### **Methodological notes**

A team of three, led by an associate director, undertook the assurance and commentary process. A second director acted as adviser to the group. The team has extensive relevant professional and technical competencies and experience. For a fuller description please refer to our website [www.corporate-citizenship.com](http://www.corporate-citizenship.com).

The work was commissioned in December 2008 and was completed on 29 April 2009. Detailed records were kept of meetings, assurance visits and correspondence relating to the inclusivity, materiality and responsiveness of the report, as well as to technical matters relating to the accuracy and presentation of data.

Our external assurance and commentary process for Centrica's Corporate Responsibility Report 2008 has involved, but not been limited to, the following elements:

- 1 Examination of the report at set stages in its development and thorough testing of the assertions throughout on a section-by-section basis drawing from evidence and supporting documentation.
- 2 Interview with the Senior Independent Director and Chair of Corporate Responsibility Committee, and the senior executive in charge of corporate responsibility.
- 3 Meetings and discussions with a cross section of Centrica's managers and staff about its approach to corporate responsibility, its policies and performance, its future challenges and its relations with stakeholders.
- 4 More detailed engagement with representatives of the Centrica Energy business to test the application of Centrica's corporate responsibility policies within the business. In particular Centrica Energy's stakeholder engagement practice was subject to detailed scrutiny.
- 5 Analysis of the agendas of, minutes of and papers presented to the Centrica Corporate Responsibility Committee and a correlation of these with Centrica's reporting.
- 6 Review of key media coverage of Centrica corporate responsibility and related items.
- 7 Reviews of internal consumer research documents underpinning the customer section of report; of reports on equal pay, on ethnic origin and on employee engagement underpinning the employee section.
- 8 Checks on a sample basis of elements of the report's contents to underlying records, particularly of the numerical data within the report.
- 9 Assessment of report coverage against contribution made by business to revenue and profit.

Our work did not extend to a complete audit of the report's contents. We have not been responsible for the preparation of the 2008 report nor in devising the internal management and reporting systems that yielded the data contained therein. The opinions expressed in this external assurance statement and commentary are intended to extend understanding of Centrica's non-financial performance and should not be used or relied upon to form any judgments, or take any decisions, of a financial nature.

Corporate Citizenship is a leading assessor of corporate responsibility reports. The company is a member of AccountAbility.

We have worked with Centrica on corporate responsibility reporting since 2000 and have provided assurance for the last six years. During the 2008 reporting period, except as noted below our work with Centrica focused exclusively on assurance and stakeholder engagement.

Centrica is a member of the LBG (London Benchmarking Group [www.lbg-online.net](http://www.lbg-online.net)), an evaluation framework for corporate community involvement which we manage on behalf of its members and adherents.

[18.5 Specify the standard against which the information has been verified / assured.](#)

#### **EU ETS**

All EU ETS data has been verified in accordance with the emissions trading requirements.

#### **Corporate Citizenship (CR Report assurance)**

Corporate Citizenship used the new iteration of the AA1000 standard, AA1000AS (2008). The assurance is a Type 2 assurance as defined by the standard, in that it evaluates the nature and extent of adherence to the AA1000AS principles of inclusivity, materiality and responsiveness and assures the behaviour of the organisation as reported here. It used disclosed information as its starting point and then investigated the underlying systems, processes and sustainability performance information to arrive at its conclusions. It has verified the reliability of selected reported sustainability performance information.

[18.6 If not, please state whether you have plans for GHG emissions accounting information to be externally verified / assured in future.](#)

We will develop and introduce a global environmental reporting system to improve the scope and quality of our environmental performance monitoring and reporting by January 2010. We also plan to investigate options for further verification of our GHG emissions.

## **19 Data Accuracy**

[19.1 What are the main sources of uncertainty in your data gathering, handling and calculations e.g.: data gaps, assumptions, extrapolation, metering / measurement inaccuracies etc?](#)

We have continued to improve our data collection, both in terms of scope and accuracy, however there are still some areas where there is uncertainty. These include:

### **Scope 1**

- Vehicle fuel use is mainly calculated based on submissions of mileage data and not actual volume used.
- Some private mileage is captured along with business mileage from company fuel card users
- Vehicle size and fuel type data is not always available
- Fugitive gas from pipes and equipment can only be calculated and not directly measured

### **Scope 2**

- 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 – this is very uncommon though

### **Scope 3**

- Data centre energy use has been estimated based on previous year's data
- Not all suppliers and logistics data relevant to Centrica is captured
- Air and rail data can have some minor inaccuracy if trips are not booked via company travel agent (which is done through online booking)

Local conversion factors are not always available for non-UK countries, in this instance, DEFRA conversion factors are applied.

We have experienced delays in the implementation of a new data management system that would reduce human error. We intend to implement the new system and associated guidelines by the end of 2009.

**19.2 How do these uncertainties affect the accuracy of the reported data in percentage terms or an estimated standard deviation?**

We have calculated that less than 5% of the data is estimated. The vast majority of our carbon footprint is from emissions from facilities with EU ETS permits. As a result these emissions are externally verified with a high level of confidence in their accuracy.

**19.3 Does your company report GHG emissions under any mandatory or voluntary scheme (other than CDP) that requires an accuracy assessment?**

Yes

If so, please provide:

**19.3.1 . The name of the scheme.**

European Union Emissions Trading Scheme (EU ETS)

**19.3.2 The accuracy assessment for GHG emission reported under that scheme for the last report delivered.**

All EU ETS emissions data is verified according to ETS guidelines.

Over 95% of our EU ETS emissions are reported at the top tier of accuracy.

## **20 Energy and Fuel Requirements and Costs**

Please provide the following information for the reporting year:

### **Cost of purchased energy**

**20.1 The total cost of electricity, heat, steam and cooling purchased by your company.**

Indicative total cost of purchased electricity	£19,740,497
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This is calculated based on total MWh purchased by us and the BERR energy price statistics for UK 2008 (for UK and Worldwide) which give the average prices of fuels. The actual costs incurred are confidential as they relate to commercially sensitive contracts.

**20.1.1 Please break down the costs by individual energy type**

No heat, steam and cooling was purchased so the total cost of purchased fuel of £19,740,497 relates directly to electricity, with the other energy types at zero cost.

### **Cost of purchased fuel**

## 20.2 The total cost of fuel purchased by your company for mobile and stationary combustion.

Indicative total cost of fuel for combustion	£887,884,193
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This is calculated based on the BERR energy price statistics for UK 2008 (for UK and Worldwide) which give the average prices of fuels. The actual costs incurred are confidential as they relate to commercially sensitive contracts.

### 20.2.1 Please breakdown the costs by individual fuel type.

Energy Usage	Indicative cost (£)
<b>Fuel for combustion</b>	
Gas consumption	854,524,346
Stationary diesel	6,886,009
Fleet diesel	20,005,223
Fleet petrol	6,468,615
Upstream biofuel	0
Fuel for combustion total	887,884,193

This is calculated based on the BERR energy price statistics for UK 2008 (for UK and Worldwide) which give the average prices of fuels. The actual costs incurred are confidential as they relate to commercially sensitive contracts.

Biodiesel prices are unavailable.

This assumes gas production facilities do not purchase gas externally.

## Energy and fuel inputs

The following questions are designed to establish your company's requirements for energy and fuel (inputs). Please note that MWh is our preferred unit for answers as this helps with comparability and analysis. Although it is usually associated with electricity, it can equally be used to represent the energy content of fuels (see CDP 2009 Reporting Guidance for further information on conversions to MWh).

### Purchased energy input

#### 20.3 Your company's total consumption of purchased energy in MWh.

<b>Total</b>	283,611MWh
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This includes all upstream and downstream purchased electricity. No heat, steam or cooling was purchased.

### Purchased and self produced fuel input

20.4 Your company's total consumption in MWh of fuels for stationary combustion only. This includes purchased fuels, as well as biomass and self-produced fuels where relevant.

<b>Total</b>	54,329,033MWh
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20.4.1 Please break down the total consumption of fuels reported in answer to question 20.4 by individual fuel type in MWh.

<b>Fuel consumption</b>	<b>MWh</b>
Total gas consumption	54,169,749
Total stationary diesel	147,705
Upstream biofuel	11,579
<b>Total</b>	<b>54,329,033</b>

This includes upstream and downstream fuel consumption.

To make an effective assessment of our power generation efficiency (refer to 20.5 below), only the fuel consumption at the power generating plants should be considered. The other energy is consumed for non power generation activities such as upstream and downstream office heating and gas production compressors.

Total fuels combusted for power generation only = 50,837,323MWh  
(Note excludes power purchased)

### Energy output

In this question we ask for information about the energy in MWh generated by your company from the fuel that it uses. Comparing the energy contained in the fuel before combustion (question 20.4) with the energy available for use after combustion will give an indication of the efficiency of your combustion processes, taking your industry sector into account.

20.5 What is the total amount of energy generated in MWh from the fuels reported in question 20.4?

<b>Total</b>	24,097,615MWh
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Note: This is power generated not exported (some power is used in self feeds, etc). It excludes power generated from renewables. It includes power generation from biomass.

20.6 What is the total amount of MWh of renewable energy, excluding biomass, that is self-generated by your company?

<b>Total</b>	902,110MWh
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Excludes biomass.

### Energy exports

This question is for companies that export energy that is surplus to their requirements. For example, a company may use electricity from a combined heat and power plant but export the heat to another organisation.

20.7 What percentage of the energy reported in response to question 20.5 is exported / sold by your company to the grid or to third parties?

Percentage of energy generated that is exported	97.5%
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The 2.5% difference relates to self feed and other losses in generation and export.

20.8 What percentage of the renewable energy reported in response to question 20.6 is exported / sold by your company to the grid or to third parties?

The figure provided in question 20.6 is the exported figure. We have no data on losses between generation and export for our renewables, though it is anticipated there will be small losses.

## 21 EU Emissions Trading Scheme

Electric utilities should report allowances and emissions using the table in question EU5.

21.1 Does your company operate or have ownership of facilities covered by the EU Emissions Trading Scheme (EU ETS)?

Yes

If not, please proceed to question 22.

If yes, please give details of:

21.2 The allowances allocated for free for each year of Phase II for facilities which you operate or own. (Even if you do not wholly own facilities, please give the full number of allowances).

2008 – 4,783,406  
2009 – 4,783, 406\*  
2010 – 6,116,798  
2011 - 6,116,798  
2012 - 6,116,798

\*The free allowances for 2009 will depend on the commissioning date of our new Langage Power Station in Devon. This will happen in 2009 and the allowances will be pro-rated accordingly.

The total allowances purchase through the national auctioning processes for the period 1 January 2008 to 31 December 2008 for facilities that you operate or own. (Even if you do not wholly own facilities, please give the total number of allowances purchased through auctions by the facilities for this period).

Number of CERs/ERUs received/purchased for compliance purposes and projections for the rest of Phase II

2008 – 444,857  
2009 - 444,857

2010 - 444,857  
2011 - 444,857  
2012 - 444,857

21.4 The total CO<sub>2</sub> emissions for 1 January 2008 to 31 December 2008 for facilities which you operate or own. (Even if you do not wholly own facilities, please give the total emissions for this period).

Absolute emissions CCGT for 1 January 2008 – 31 December 2008 = 7,382,413 tCO<sub>2</sub>e

## 22 Emissions trading

Electric utilities should read EU6 before answering these questions.

22.1 Please provide details of any emissions trading schemes, other than the EU ETS, in which your company already participates or is likely to participate within the next two years.

The EU ETS is the only mandatory trading scheme we participate in at present, although we are also involved in the flexibility mechanisms of the Kyoto Protocol, Clean Development Mechanism and Joint Implementation Scheme. In addition we participate in voluntary carbon markets in North America and will participate in any mandatory trading scheme that emerges in the coming years in this region.

22.2 What is your overall strategy for complying with any schemes in which you are required or have elected to participate, including the EU ETS?

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 five 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.

### CDM/JI

Centrica is active in the CER and ERU markets and has invested in numerous CDM and JI projects across the globe. We are also an investor in Climate Change Capital's second Carbon Fund which is widely considered as the world's largest private carbon fund.

### CCX

Direct Energy is able to provide a suite of carbon and renewable product offerings to our broad North American customer base. Within the voluntary carbon market, Direct Energy strives to book and trade high quality voluntary emission reduction credits to our customers. In the regulated carbon markets, we offer carbon offsets eligible as compliance options, where available. In anticipation of broader carbon emission

regulations and further carbon market evolution, we are actively positioning ourselves to provide pre-compliance carbon alternatives to our counterparties. International carbon offerings, including EU Allowances, Certified Emissions Reductions and Emission Reduction Units, are also available.

### 22.3 Have you purchased any project-based carbon credits?

Yes

If so, please indicated whether the credits are to meet one or more of the following commitments:

Primarily for compliance purposes,  
Primarily for voluntary offsetting of your own emissions,  
Other (please describe).

The purchase of CERs and ERUs have been primarily for compliance purposes (see 22.2 for further information on our involvement).

Please also:

### 22.4 Provide details including the type of unit, volume and vintage purchased and the standard/scheme against which the credits have been verified, issued and retired (where applicable).

Centrica supports the use of project credits from the regulated market. It embodies the principles of international emissions trading and additionally encourages engagement from countries that do not have a Kyoto target.

Centrica has been active in the market for project credits for some time as we see value in having a diversity of contract types and sources to cover a number of risks. We use a range of intermediaries from banks to specialist boutiques and brokers and we tend to invest in a number of proven methodologies rather than a specific technology.

Centrica is involved in both the CDM and JI project markets. All the credits that we obtain for use within the EU ETS and for offsetting purposes are from verified sources under these two initiatives. Unfortunately, we are unable to provide details of individual projects due to commercial confidentiality or contractual reasons.

### 22.5 Have you been involved in the origination of project-based carbon credits?

See 22.4

If so:

### 22.6 Please provide details including:

Your role in the project(s),  
The locations and technologies involved,  
The standard/scheme under which the projects are being/have been developed,  
Whether emissions reductions have been validated or verified,  
The annual volumes of generated / projected carbon credits,  
Retirement method if used for own compliance or offsetting.

See 22.4

22.7 Are you involved in the trading of allowances under the EU ETS and/or project-based carbon credits as a separate business activity, or in direct support of a business activity such as investment fund management or the provision of offsetting services?

See 22.4

If so:

22.8 Please provide details of the role performed.

See 22.4

## Performance

### 23 Reduction plans

23.1 Does your company have a GHG emission and/or energy reduction plan in place?

Yes

If not:

23.2 Please explain why and answer question 23.8 if possible.

If your company does have a plan, please provide the following information:

#### Goal setting

23.3 Do you have an emissions and/or energy reduction target(s)?

Yes.

We have emissions and energy reduction targets across all three elements of our climate change strategy.

23.4 What is the baseline year for the target(s)?

Some of our targets are for absolute figures or goals for which there is no baseline year, although prior year comparisons for our carbon intensity are available.

For the targets involving percentages, the baseline years are as follows:

- 5% reduction in office energy use – baseline year is 2008
- 10% reduction in UK office waste production – baseline year is 2008
- 15% reduction in amount of waste sent to landfill – two-year target using 2007 baseline
- 8.5% reduction in the absolute internal carbon footprint of our Direct Energy business by 2013 – baseline year is 2007

We also have historical data for all these indicators available.

23.5 What is the emissions and/or energy reduction target(s)?

We have a carbon intensity target for our UK power generation:

- We aim to reduce power generation carbon intensity<sup>^</sup> to 380g CO<sub>2</sub>/kWh by 2012 and to 350g CO<sub>2</sub>/kWh by 2020.

We have targets around investments that will help us to reduce our emissions:

- We will invest £1.5bn in renewable energy assets in the period 2008-2013.
- We aim to achieve planning consent for Race Bank and Docking Shoal wind farm developments.
- We will fully commission Langage CCGT power station.

We have operational targets for office energy usage:

- We aim to achieve a 5% year-on-year reduction in UK office energy use.
- We aim to achieve a 10% reduction in UK office waste production during 2009.
- We aim to increase the percentage of UK office waste recycled to 65% and reduce the amount of waste sent to landfill by 15% (two year target using 2007 baseline).
- We aim to reduce the absolute internal carbon footprint of our Direct Energy business by 8.5% by 2013 (using a 2007 baseline).

We have a target to help reduce our Scope 3 emissions:

- We will provide energy-efficiency products in 2009 with total lifetime carbon savings of 13.2m tonnes of CO<sub>2</sub> to meet our CERT obligation.

### 23.6 What are the sources or activities to which the target(s) applies?

Carbon markets and climate change policy are currently more advanced in the EU than they are in North America. The market structures and operating contexts are also very different. Therefore most of our emissions targets apply to our activities in the UK, where the majority of our operations are focused. However, in 2008 we concentrated on aligning Direct Energy's key performance indicators with UK methodology. In addition, the new US administration is putting a greater focus on climate change issues and should lead to greater certainty in North American markets over climate change policy. This means that we are more likely to be in a position to identify clearer targets in our Direct Energy business for 2010, although it makes sense to keep UK and North American targets separate in recognition of different market structures.

We are also selling our majority stake in Belgian energy company SPE as part of our British Energy deal with EDF and so we have no targets relating to this business.

Our carbon intensity targets apply to our UK power generation.

Our office energy usage targets apply to our UK and North American operational footprint. This includes energy usage in our offices and call centres. In 2007, we restricted the choice of UK company cars to those that emit a maximum of 200g CO<sub>2</sub>/km, helping to lead to a reduction in the carbon intensity of our UK company car fleet from 164g CO<sub>2</sub>/km in 2007 to 158g CO<sub>2</sub>/km in 2008.

Our main Scope 3 target aims to help customers reduce their own GHG emissions. British Gas New Energy also has internal targets to increase take-up of low-carbon products and services and to build markets in energy efficiency and microgeneration.

In addition, we increasingly measure and aim to reduce the operational footprint of our outsourced and offshored services and supply chain.

### 23.7 Over what period / timescale does the target(s) extend?

Most of the targets are for 2009. Our carbon intensity targets are longer term, aiming for reductions by 2012 and 2020. Our target for reducing the internal carbon footprint of our Direct Energy business is a six-year target to 2013. All timescales are indicated above.

## GHG emissions and energy reduction activities

### 23.8 What activities are you undertaking or planning to undertake to reduce your emissions / energy use?

#### 1. Carbon intensity

Our strategy is to invest in low-carbon and efficient generation. This currently includes high efficiency gas-fired power stations, offshore wind farm developments and new nuclear generation.

We are building an 885MW gas-fired station project in Langage, the UK's first major power station development for almost five years. This project is expected to commence full commercial operation towards the end of 2009.

In 2008, we completed construction of the Lynn and Inner Dowsing wind farm development off the Lincolnshire coast, the largest offshore wind farm development in the world, that will be fully operational in 2009. In October our proposed 250MW Lincs offshore wind farm project, received official consent and we are currently considering the investment case. The Lincs project would, subject to investment approval, be capable of supplying around 170,000 British Gas customers and delivering CO<sub>2</sub> savings of between 300,000 and 710,000 tonnes per annum.

Centrica is also exploring the opportunities for two further wind farms in the Greater Wash at Docking Shoal and Race Bank, totalling 1160MW. Subject to approval and construction, by the middle of the next decade these three projects, together with our existing operational wind assets, would give us more than 1.6GW of generating capacity in the UK, capable of meeting the annual needs of more than 1.1m homes.

Direct Energy has power purchase agreements with AES Corporation for the renewable electricity produced by the Buffalo Gap wind farms in Texas. Buffalo Gap 3 started commercial operation in September, bringing Direct Energy's total operational offtake agreements to 813MW.

In 2009, we announced a deal with EDF to purchase a 20% stake in nuclear power generator British Energy and to offtake 20% of available power. We also agreed terms for an additional power purchase contract representing 18TWh of electricity over the period from 2011 to 2016. Under the deal, we have the option to invest in four new nuclear reactors planned by EDF. Should the deal go ahead, we will reassess our carbon intensity target.

#### 2. Operational footprint

The key to reducing emissions from our operations is to engage our employees effectively in energy efficient behaviour. In line with our commitment to reduce our operational impact, we met or exceeded all UK internal environmental targets during 2008 relating to energy, water and resource consumption and waste reduction. This performance reflects the growing support from an increasingly well-informed workforce towards our goal of building a sustainable business.

### **Employee engagement**

In 2008 we launched a campaign to double the number of 'Green Teams' and cover all our main UK offices. Our Green Teams are a network of volunteers who act as ambassadors to cascade and spread the 'Being Green' message of sustainability within our UK sites, from energy saving and waste recycling to car-sharing and joining local community eco-projects.

During the year, we also developed online learning materials around climate change and energy efficiency to help employees change their own behaviour and to provide knowledge and understanding to improve the advice given to customers.

The success of our approach in engaging employees, combined with a three-month energy campaign, helped to cut UK office energy consumption by over 7% in 2008. This exceeded our target of 5% and saved the mid and downstream businesses over £300,000. A similar campaign run during 2007 led to British Gas Business collecting the Green Organisation's 'Green Apple Award' for environmental best practice in November 2008.

In May 2009 Centrica was awarded the NQA Environmental Leadership Award for Culture Change. The award recognises organisations that demonstrate total commitment to environmental responsibility through effective engagement with their staff and integrating the environment into the heart of its culture. Our submission highlighted the work of the Green Teams and our UK businesses in engaging and motivating our employees to make real performance improvements.

In North America, Direct Energy's Climate Change Committee is leading a carbon footprint management programme to address employee engagement, the impact of the fleet, business travel and buildings. The renewable energy plan offers Direct Energy employees the opportunity to purchase renewable energy for their homes at discounted rates, while the Carbon Offset initiative enables employees to calculate and offset their personal carbon footprint. Environmental Champions meet on an ongoing basis to identify opportunities to reduce our carbon footprint and environmental impact.

### **Using technology to cut consumption**

We have approximately 35 offices in the UK and during the last six years, we have reduced energy consumption by over 40%. This equates to a 38% reduction in CO<sub>2</sub> emissions representing 17,000 tonnes and an estimated financial saving of over £2million. Between 2002 and 2005, we operated in line with the Government's 'Make a Corporate Commitment' initiative, and we achieved a 15% reduction in energy usage. From 2005 onwards, we have defined our own annual targets, based on a reduction in energy (electricity and gas) consumption.

Our property team has developed a process for recording all energy reduction initiatives and building them into planned refurbishments. This has made energy efficiency central to all office improvements. And in 2007 we began a review of the building environment management system at all sites to ensure that minimum control standards are being met.

Working with our partners Carillion and Concept Energy Ltd, we have also implemented a semi-automated system of energy data collection for each site. Facility Managers now receive email alerts should consumption rise above the expected levels, which enables them to take prompt action. Other measures have included lighting system upgrades, external lighting controls, boiler replacement and thermal imaging studies.

The group environmental management system (GEMS) was launched early in 2008 as an online tool to assist the businesses in complying with our policy commitment for certified EMS across all our activities. GEMS provides a common approach to environmental management across Centrica and covers such areas as power supply, energy use, waste, travel and company vehicles, employee behaviour, wildlife and influencing customers.

All our British Gas brands, together with property, information systems and fleet departments implemented GEMS in 2008 and received certification to the international environmental standard ISO 14001 following a rigorous assessment by independent auditors. The certification covers more than 26,000 people and 30 locations in the UK. The British Standards Institute (BSI), which conducted the audit, reported that: "This was a very strong performance by the company with commitment and awareness demonstrated by staff spoken to at all locations and at all areas within the business."

Certification to ISO 14001 was successfully retained by the UK upstream power and gas assets and Ringvaart and Seraing power stations in our Belgian operations. South Humber and Killingholme power stations maintained their registration to the EU Eco-management and Audit Scheme (EMAS). A GEMS implementation plan for Direct Energy received approval in 2008 and we aim to complete certification across the business by the end of 2010. We are also progressing plans to implement GEMS within our UK renewable energy business and our Spanish business, Centrica Energía.

We also achieved certification to the Carbon Trust Standard for property management within the UK.

### **Transport**

We are working to replace our fleet with cars that have smaller, cleaner engines. In 2007, we restricted the choice of company cars to those that emit a maximum of 200g CO<sub>2</sub>/km, helping to lead to a reduction in the carbon intensity of our company car fleet from 164g CO<sub>2</sub>/km in 2007 to 158g CO<sub>2</sub>/km in 2008. We also began trials of our Safe and Fuel Efficient Driving (SAFED) package; an online tool aimed at educating our 15,000 fleet and company car drivers in how to drive in a more environmentally friendly manner.

We introduced a bike4work scheme to encourage more employees to use a bicycle for commuting. Direct Energy was recognised by Metrolinx as 'Smart Commute Employer of the Year' for encouraging carpooling, cycling, teleworking and public transport usage among employees.

## Goal evaluation

### 23.9 What benchmarks or key performance indicators do you use to assess progress against the emissions / energy reduction goals you have set?

Our climate change strategy has three main pillars:

- Maintain our low-carbon position: Reducing the carbon intensity of our upstream power generation
- Lead the consumer market: Helping our customers to reduce their energy usage and become more energy efficient
- Reducing our operational footprint: Reducing the energy usage of our offices and from our fleet of company cars and vans

#### Key performance indicators

We have identified three key performance indicators to track progress against our strategic priorities for climate change:

- Carbon intensity
- Lifetime carbon savings of energy efficiency products provided under the Carbon Emissions Reduction Target (CERT)
- Office energy consumption

Carbon intensity is reported by all our main UK competitors, with each assessing their own carbon intensity according to internal criteria. We use this data to help us benchmark our progress effectively. CERT delivery is a major annual expenditure and a key component of making British Gas the leading green brand in energy. The reduction in office energy consumption demonstrates our wider climate change commitment and indicates the level of employee engagement in our strategy.

#### Other performance indicators

In addition to the key indicators, we have a large number of other performance indicators related to GHG emissions. These include:

- Compliance
- Energy consumed in power generation
- Power generation CO<sub>2</sub>e emissions
- Fuel mix
- Gas production and storage – energy use
- Gas production and storage - CO<sub>2</sub>e emissions
- Carbon intensity of our gas production and storage
- CO<sub>2</sub>e from office and building energy consumption
- Outsourced services energy consumption
- CO<sub>2</sub>e from outsourced services energy consumption
- SO<sub>2</sub> emissions
- NOx emissions
- Ozone Depleting Substances
- Air travel in miles
- CO<sub>2</sub>e produced from air travel
- Rail journey distance in miles
- CO<sub>2</sub>e produced from rail journeys
- Distance travelled by business cars
- Distance travelled by operational vehicles

- CO<sub>2</sub>e produced from operational vehicles and business cars
- Carbon footprint of electricity purchased for resale

We report on all these indicators publicly in our Corporate Responsibility Report ([www.centrica.com/climatechange](http://www.centrica.com/climatechange)).

British Gas New Energy's business model also has a set of operational indicators around the sale of energy efficiency and low-carbon products and services.

## Goal achievement

23.10 What emission reductions, energy savings and associated cost savings have been achieved to date as a result of the plan and / or the activities described above? Please state the methodology and data sources you have used for calculating these reductions and savings.

The carbon intensity of the power we supplied to our British Gas customers remained significantly lower than the other five major UK suppliers in 2008. The figure relates to total power supplied, calculated using the government's standard emission factors to allow comparison. And during the year we exceeded our 2012 target to reduce our power generation intensity to 380g CO<sub>2</sub>/kWh by achieving 379g CO<sub>2</sub>/kWh.

The generation from our renewable assets, especially our wind farm assets, which are variable in nature, was higher than we expected in 2008 and this coupled with some unplanned outages within our traditional generation assets has led to a higher reduction in our carbon intensity figures than we would otherwise expect.

Direct Energy owns and operates a small fleet of modern gas-fired power generating facilities and has site-specific wind power offtake agreements. The carbon intensity of the power supplied by Direct Energy from these facilities was 264g CO<sub>2</sub>/kWh in 2008, compared to 305g CO<sub>2</sub>/kWh in 2007. The reduction was primarily due to an increase in wind-generated power.

Our Belgian business – SPE – retained a low-carbon intensity of 290g CO<sub>2</sub>/kWh, primarily due to its high proportion of renewable wind and hydroelectric generation.

We cut UK office energy consumption by over 7% in 2008. This exceeded our target of 5% and saved the mid and downstream businesses over £300,000. We have approximately 35 offices in the UK and during the last six years, we have reduced energy consumption by over 40%. This equates to a 38% reduction in CO<sub>2</sub> emissions representing 17,000 tonnes and an estimated financial saving of over £2 million. Between 2002 and 2005, we operated in line with the Government's 'Make a Corporate Commitment' initiative, and we achieved a 15% reduction in energy usage. From 2005 onwards, we have defined our own annual targets, based on a reduction in energy (electricity and gas) consumption.

By the end of 2008 we had delivered more than 50% of our three-year Carbon Emissions Reduction Target (CERT), which was increased by 20% over the course of the year. The products we supplied under CERT, including 250,000 standby savers to British Gas households and 48 million energy saving light bulbs, will save 17.87m tonnes of carbon dioxide over their lifetime.

23.11 What investment has been required to achieve the emissions reductions and energy savings targets or to carry out the activities listed in response to question 23.8 above and over what period was that investment made?

Centrica has already made a significant commitment to develop renewables assets as part of our energy portfolio. In July 2003 we announced plans to invest in our own renewable generation assets, primarily offshore wind farm developments although we continue to keep other forms of renewable energy generation under review.

We are currently investing in a number of wind farm projects:

- Barrow Offshore Wind is now operational. This is a 50/50 joint venture with DONG Energy: total investment £100 million.
- Lynn and Inner Dowsing (LID) is currently the world's largest operational offshore wind project: total investment approx £300 million
- Glens of Foudland is a wholly-owned onshore wind farm in Aberdeenshire: total investment approx £31 million
- Braes of Doune is an onshore wind farm in Stirlingshire in which we acquired 50% ownership from Airtricity in July 2007: total investment approx £42 million.

We also invest in a range of power purchase agreements with renewable electricity developers which increases the amount of green electricity that we buy through offtake contracts in the UK. These projects cover a diverse range of technologies such as wind, landfill gas and biomass generation.

We are also investing in a range of distributed generation technologies. We recently sponsored a BERR report into the potential of microgeneration in the UK, which showed that with ambitious policy measures there was significant potential in this market for both renewable, and low-carbon technologies.

Under our CERT obligations, the energy efficiency products that British Gas will install in customers homes over the three years from April 2008, will deliver an estimated value of over £1 billion.

### **Goal planning and investment**

Electric utilities should read the table in question EU3 for giving details of forecasted emissions.

23.12 What investment will be required to achieve the future targets set out in your reduction plan or to carry out the activities listed in response to question 23.8 above and over what period do you expect payback of that investment?

### **Maintaining our low-carbon position**

Assuming they are all built, our existing renewables plans will cost over £3bn, and will provide around 1.5GW of capacity. The EU 20% renewable target is likely to bring about a significant increase in investment in renewable generation. With 10% of the overall UK electricity market (including 23% of the residential market), we expect to be one of the largest investors in renewable electricity generation in the future, and we are currently evaluating a major step change in our renewables investments.

However, as indicated elsewhere in this submission, rising investment costs and uncertainties around carbon pricing mean that it is not yet possible to put a clear figure on future plans or the expected payback.

We have achieved planning consent for the Lincs wind farm and we are submitting applications for two more: Race Bank and Docking Shoal.

In 2009, we announced a deal with EDF to purchase a 20% stake in nuclear power generator British Energy and to offtake 20% of available power for £2.3 billion. We also agreed terms for an additional power purchase contract representing 18TWh of electricity over the period from 2011 to 2016. Under the deal, we have the option to invest in four new nuclear reactors planned by EDF.

### **Reducing our operational footprint**

We will continue to invest in energy-saving initiatives and employee engagement campaigns.

### **Making our customers more energy efficient**

British Gas New Energy is continuing to invest in acquisitions, partnerships and agreements to increase the capabilities of the business to deliver microgeneration and energy efficiency products and services.

[23.13 Please estimate your company's future Scope 1 and Scope 2 emissions for the next five years for each of the main territories or regions in which you operate or provide a qualitative explanation for expected changes that could impact future GHG emissions.](#)

Please note, the statements in the answer to question 23.13 are based on assumptions and are for scenario modelling only; they are not necessarily representative of the actual company's strategy. Our answer indicates the impact that our publicly announced plans would have on our scope 1 and scope 2 emissions but do not take into account:

- additional investments
- external market factors
- levels of customer demand

### **Scope 1**

#### **Total stations emissions forecast in TCO<sub>2</sub>e**

	<b>2009</b>	<b>2010</b>	<b>2011</b>
Estimated emissions from UK power generation (TCO <sub>2</sub> e)	6,695,591	6,788,477	6,857,392

These figures are based on a number of assumptions (see above) and exclude Spalding.

It should be noted that the majority of our direct scope 1 emissions are produced by our fleet of gas-fired power stations, and the level of emissions are largely dictated by the volume of electricity produced. Running patterns are affected by a number of

highly variable factors including relative movements in volatile wholesale commodity prices, and as such forecasts for the volume of electricity and therefore emissions produced over the coming years are likely to be largely inaccurate and therefore uninformative. It is for this reason that we instead target a significant reduction in our emissions intensity of electricity production.

Our future scope 1 emissions over the next five years are likely to increase slightly in the UK after Langage power station comes on stream but our carbon intensity should reduce as we diversify our portfolio and increase the efficiency of our gas-fired power stations.

There are a number of future projects that would affect our scope 1 emissions over the next five years. For example, we have received planning consent to build the Lincs wind farm, which could be capable of supplying around 170,000 British Gas customers and delivering CO<sub>2</sub> savings of between 300,000 and 710,000 tonnes per annum. We have also submitted planning applications to build two additional offshore wind farms, Race Bank and Docking Shoal with capacities of 620MW and 540MW, respectively. If these were to go ahead, they would have a significant impact on the carbon intensity of our own generation portfolio.

In addition, if the deal with British Energy is finalised, this would significantly reduce Centrica's carbon intensity.

In North America, we have not announced any planned investments. Our scope 1 emissions over the next five years are therefore mainly dependent on levels of consumer demand.

Note on calculations: Generation from wind creates zero emissions of carbon dioxide. The savings quoted compare these zero emissions against Britain's portfolio of power generation, which includes a range of technologies such as nuclear, coal and gas-fired power stations. As fossil fuel technologies emit different amounts of CO<sub>2</sub>, the savings achieved will therefore vary and so a range of savings is quoted.

## Scope 2

Assuming we achieved our 2009 UK energy reduction target and there were no other factors to consider:

UK office Energy Target 2009	2008 MWh Usage	2009 Reduction target	Theoretical 2009 value MWh	Theoretical energy saving MWh	TCO <sub>2</sub> e saving
UK Office Gas	16,661	10%	14,995	1,666	308
UK Office Electricity	45,733	5%	43,446	2,287	1,228

Assuming no other factors, if the UK office energy reduction targets are maintained at the same annual reductions for 5 years, then the GHG emission saving at the end of the 5 year period would be 6,818 TCO<sub>2</sub>e.

If Direct Energy achieves an incremental improvement in carbon emissions reduction, culminating in 8.5% after 5 years, then the GHG emissions saving would be 11,946 TCO<sub>2</sub>e.

However, if the deal with British Energy is finalised, our scope 2 emissions are likely to increase over the next five years as we would include 20% of the power used by British Energy (in line with our equity share) and the associated emissions.

Over the next five years, we will continue to aim for emissions reductions from our own operational footprint but the majority of our efforts will be focused on lowering the carbon emissions from our upstream power generation assets where our emissions are most significant.

[23.14 Please estimate your company's future energy use for the next five years for each of the main territories or regions in which you operate or provide a qualitative explanation for expected changes that could impact future GHG emissions.](#)

## **Scope 2**

Assuming no other factors, if the UK office energy reduction targets are maintained at the same annual reductions for 5 years, then the saving at the end of the 5 year period would be 17,168MWh of energy.

However, if the deal with British Energy is finalised, our scope 2 power use is likely to increase over the next five years as we would include 20% of the power used by British Energy (in line with our equity share).

[23.15 Please explain the methodology used for your estimations and any assumptions made.](#)

The largest source of direct emissions for Centrica is our fleet of gas-fired power stations and the level of emissions is dictated primarily by the economics of the wholesale fuel markets, including the cost of carbon.

Any estimates of future running patterns, and hence emissions will therefore have to make assumptions of the likely future cost of carbon. In this way the full cost of carbon is fully factored into the operational decisions made on all our generating assets.

When forecasting our future emissions costs we use several high and low scenario cases, these ensure that the planning process contains a range of possible outcomes and therefore costs for CO<sub>2</sub> emissions. These assumptions are updated on a regular basis and contain market data collected from a range of sources, including phase II and III caps, current and future EUA prices and CDM issues.

Investment decisions we make in the wholesale energy markets also take into account levels of emissions and their costs, in particular how this can best be managed. We actively trade in gas, power and CO<sub>2</sub> emissions, protecting the company's position and assets. The emissions trading is undertaken as a hedging tool as a direct result of changing policy as well as to mitigate the effects of the EU ETS and Renewables Obligation for Centrica.

We are large investors in low carbon technology, including the building of both onshore and offshore wind farms and the investigation of developing a carbon capture and storage power generator.

## 24 Planning

24.1 How do you factor the cost of future emissions into capital expenditures and what impact have those estimated costs had on your investment decisions?

Any capital expenditure in the power sector area will use this range of carbon prices as part of the cost assessment process. Therefore any new investment decisions will have the cost of carbon factored into them.

We actively trade in gas, power and CO<sub>2</sub> emissions, protecting the Company's position and assets. The emissions trading is undertaken as a hedging tool as a direct result of changing policy as well as to mitigate the effects of the EU ETS and Renewables Obligation for Centrica.

We are large investors in low-carbon technology, including the building of both onshore and offshore wind farms.

## Governance

### 25 Responsibility

25.1 Does a Board Committee or other executive body have overall responsibility for climate change?

Yes. Please see 25.3

If not:

25.2 Please state how overall responsibility for climate change is managed and indicate the highest level within your company with responsibility for climate change.

If so, please provide the following information:

25.3 Which Board Committee or executive body has overall responsibility for climate change?

The Corporate Responsibility Committee, a Board-level Committee, has overall responsibility for monitoring Centrica's climate change strategy.

The CR Committee reports regularly to the Board on the effectiveness of the company's climate change strategy and its performance in relation to key targets and management indicators.

Sam Laidlaw, Chief Executive, has overall responsibility for climate change.

25.4 What is the mechanism by which the board or other executive body reviews the company's progress and status regarding climate change?

At the end of each quarter, the **Centrica Executive Committee** (CEC) reviews three climate change key performance indicators:

- Carbon intensity
- Lifetime carbon savings of energy efficient products provided

- Office energy consumption

The CEC also reviews a dashboard of indicators for British Gas New Energy, which are all related to low-carbon products and services.

The **Corporate Responsibility Committee** reviews climate change key performance indicators on a quarterly basis and ensures that targets are sufficiently stretching. In 2008, the Corporate Responsibility Committee's objectives were to:

- Review the CR strategies of each business unit and ensure that key impact areas are being effectively managed
- Oversee further work to improve the scope and quality of the Group's CR performance indicators
- Monitor the implementation of the Group business principles and responsible procurement policy.

Within each business unit a senior CR representative is responsible for coordinating CR strategy and reporting back to the Committee. This is an added level of visibility and accountability for CR issues, including climate change, within the Centrica Group.

Direct Energy has a **Corporate Responsibility Committee** to oversee CR activities in our North America operations. The committee comprises senior executives from Direct Energy and meets quarterly.

Throughout 2008 the Committee undertook a review of CR strategy in British Gas, Centrica Energy and Direct Energy. Managing Directors presented to the Committee an outline of the non-financial risks to their businesses. This process ensured that the key impact areas relevant to our different business divisions were discussed and challenged at a senior level with actions identified as part of a process of continual improvement.

Climate change is one of Centrica's priority risks. As such it is also managed through the risk management process from business units all the way up to the **Audit Committee** and **Board**. The status of the individual risks and associated controls are continuously monitored and periodically reported to these Committees.

We set up a new **health, safety and environment (HSE) sub-committee** of the Executive to determine the policies, targets and key performance indicators we need to meet our strategic vision and objectives for HSE and to drive forward the improvement strategy. This is chaired by a member of the Board and Executive Committee, Mark Hanafin, who is the Managing Director of Centrica Energy. We also issued a new Group HSE standards manual for managing health and safety across Centrica, providing a consistent, best practice approach wherever we operate and whatever our role. The manual highlights the importance of leadership at all levels in the organisation in delivering our operational environmental objectives.

**Group Environment** is responsible for managing and reporting Centrica's operational environmental footprint, including office energy consumption and business travel. Power station efficiency is the responsibility of Centrica Energy in the UK and Direct Energy in North America. British Gas New Energy has responsibility for our customer-facing performance on climate change issues.

## 26 Individual performance

### 26.1 Do you provide incentives for individual management of climate change issues including attainment of GHG targets?

Yes we do.

All employees within British Gas New Energy have targets and incentives directly related to environmental objectives, such as sales of low-carbon products and services.

HSE employees in Group Environment also have targets directly related to climate change which impacts their overall performance rating.

For 2009 a Health, Safety and Environment (HS&E) modifier has been added to the Annual Incentive Scheme (AIS) architecture for each business unit to highlight its importance in our business. Each business unit has a HS&E balanced scorecard and at the end of the year the Chief Executive/ Remuneration Committee will assess performance against the scorecard. They reserve the right to adjust downwards the overall Business Unit metric results based on this assessment.

If so:

### 26.2 Are those incentives linked to monetary rewards?

The achievement of scorecard targets is linked to the payments of an employee's Annual Incentive. Failure of the employees within a business unit to achieve these targets could result in a reduction in the payment of business related elements within the Annual Incentive Scheme. A component of this scheme is individual performance, this component looks at whole job performance and poor HSE performance could form part of this assessment.

### 26.3 Who is entitled to benefit from those incentives?

The annual incentive scheme is designed for employees undertaking professional and managerial roles across the UK and North America/Canada. The scheme does not cover sales related roles or call centre roles which are subject to commission and quarterly bonus plans respectively.

## 27 Communications

### 27.1 Do you publish information about the risks and opportunities presented to your company by climate change, details of your emissions and plans to reduce emissions?

Yes – we are committed to full transparent disclosure on these areas.

If so, please indicate which of the following apply and provide details and/or a link to the documents or a copy of the relevant excerpt:

### 27.2 The company's Annual Report or other mainstream filings

Within the Annual Report, we include a Corporate Responsibility Review which includes a large section on climate change and the environment:  
<http://www.centrica.com/files/reports/2008ar/index.asp?pageid=35>.

Climate change risks are also addressed in the Principal Risks and Uncertainties: <http://www.centrica.com/files/reports/2008ar/index.asp?pageid=37>.

Excerpts from both are below (please note, the Annual Report was published before our carbon intensity figures were verified, therefore there is a difference between the numbers reported below and our final year end data):

## **Corporate Responsibility Review**

### **Climate change and the environment**

The energy efficiency products provided by British Gas in 2008 equated to lifetime savings of 17.87 million tonnes of carbon dioxide

We reduced our UK carbon intensity to 377g CO<sub>2</sub>/kWh, the lowest of the major energy suppliers in Britain

Centrica is playing a crucial role in creating a sustainable low-carbon future, whilst securing energy supplies over the long term. We formed British Gas New Energy (BGNE) in 2007 as a commercial response to the challenge of global climate change.

Our climate change and environment strategy is to lead the market in responding to growing consumer demand for low-carbon products and services; maintain our low-carbon position on power generation; and work with our employees and suppliers to reduce the environmental impact of our operations.

Our work in these areas has been recognised for the second year running by our inclusion in the leadership index of the Carbon Disclosure Project.

### **Leading the consumer market for low-carbon products and services**

The UK has a binding target to reduce CO<sub>2</sub> emissions by 80% by 2050 with a corresponding target of 15% of all energy coming from renewable sources by 2020. Smaller scale renewable technologies have a significant role to play in helping to achieve these aims and during the year BGNE made a number of acquisitions to help develop our capability in microgeneration.

These investments will enable us to install solar photovoltaic technology in the UK; develop combined heat and power systems for residential properties based on solid oxide fuel cell technology; and offer consulting services to help businesses reduce their energy usage. We will continue to look for acquisition opportunities to increase our range of low-carbon products and services.

We continue to offer green energy tariffs, although encouraging take-up of these remains challenging.

We have signed onto Ofgem's Green Supply Guidelines which define a Green Tariff as one that must deliver an additional environmental benefit. This will raise the standard of industry products, ensure genuine benefits for the environment and provide transparent and consistent information to reduce consumer confusion around tariff labelling.

In North America, Direct Energy is working with the Canadian government to develop a standard for carbon offset calculations from energy efficiency projects.

Within British Gas, our 18-month-long Green Streets competition between eight communities has highlighted practical solutions for consumers to make their homes more energy efficient.

We have also linked our expertise in energy efficiency to our programme of work with vulnerable customers. These customers are some of the main recipients of energy-saving products which we supply under our carbon emission reduction target (CERT) obligations.

British Gas is already the UK's leading supplier of A-rated high-efficiency boilers. The energy efficiency products provided under CERT in 2008, which included the distribution of 48 million low-energy light bulbs to our customers, equated to a lifetime carbon saving of 17.87 million tonnes of carbon dioxide. By the end of 2008 we had completed 50% of our three-year CERT target.

### **Maintaining our low-carbon position**

We aim to invest in low-carbon generation. This currently includes high-efficiency gas-fired power stations and offshore wind farms, but we are also actively pursuing an interest in nuclear power through a proposed acquisition of 25% of British Energy.

Our new efficient gas-fired power station at Langage, Devon will generate its first power in 2009. And our offshore wind farm development at Lynn and Inner Dowsing – currently the largest of its type in the world – has now been commissioned. In October 2008, we also obtained consent for the Lincs wind farm development.

In North America, commercial operation began at the 170MW Buffalo Gap 3 wind farm near Abilene, Texas, from where all the electricity produced will be purchased by Direct Energy under a seven-year power purchase agreement.

During 2008 we further reduced our carbon intensity in line with our target of achieving a figure of 350g CO<sub>2</sub>/kWh by 2020. In 2008, the energy we supplied had the lowest carbon emissions of any major supplier in Britain.

### **Reducing our operational footprint**

We are also focused on reducing our own operational carbon footprint and are creating an understanding and culture among our employees appropriate for a business leading the way towards a low-carbon future. In 2008, British Gas joined our upstream assets in achieving certification to ISO 14001 from the British Standards Institute. This Standard covers our 26,000 employees in the UK, highlighting their commitment to and awareness of our environmental management systems. We aim to complete certification across Direct Energy by the end of 2010.

Employee engagement as a result of internal communication campaigns and the work of locally based 'Green Teams' of employee champions has cut UK office energy consumption by 7.23% exceeding our target of 5%. In 2008, 14% less waste was sent to landfill when compared to 2007 and 64% of our UK waste was recycled, exceeding both our targets in these areas.

In 2008 Direct Energy's Climate Change Committee approved a carbon footprint management programme that addresses the greenhouse gas emissions of the North American fleet, business travel and facilities. Direct Energy reduced emissions by an estimated 7%, although these reductions are mainly attributable to a slowing economy and fewer business miles travelled.

<b>KPI</b>	<b>2008</b>	<b>2007</b>
Carbon intensity of UK power generation (g CO <sub>2</sub> /kWh) <b>What's next:</b> Reduce UK power generation carbon intensity to 350g CO <sub>2</sub> /kWh by 2020.	377*	390
Lifetime carbon savings for UK household energy efficiency products provided (million tonnes) <b>What's next:</b> Provide energy efficiency products in 2009 with total lifetime carbon savings of 13.2m tonnes of CO <sub>2</sub> to meet our CERT obligation.	17.87	n/a†
Year-on-year percentage reduction in energy (electricity and gas) consumption savings across our UK property portfolio <b>What's next:</b> Achieve 5% reduction in UK office energy use in 2009.	7.23%	-

\* 2008 data subject to final verification.

†The basis on which carbon savings are calculated has changed making a comparison with 2007 inapplicable

## **Principal risks and uncertainties**

### **Climate change**

Centrica's approach to climate change will shape our future operations and, ultimately, the long-term success of our business. Our strategy is to lead the consumer market for low-carbon energy products and services; to maintain our low-carbon position in power generation, and to reduce the environmental impact of our operations.

However, operating in a low-carbon economy may present significant additional risks. For example, the need to comply with recent legislation – such as European Union environmental directives and UK renewable energy and energy efficiency targets – may lead to higher costs. In addition, there are risks if the legislative framework fails to deliver the necessary carbon price over the longer term to ensure the viability of investment in new technologies. An ineffective UK planning regime could make it difficult to develop new assets such as wind farms and other power generation infrastructure. There are also risks – and opportunities – in potential investment in nuclear power generation as a means of reducing our exposure to volatile wholesale gas and electricity prices.

The US approach to carbon legislation could shift following the election of President Obama, and we are monitoring the situation closely. The move towards energy efficiency could have a positive effect on our services business, especially in North America, where government subsidies are being made available for this work.

Changing customer behaviour, including a growing demand for low-carbon products and services, could result in reduced sales volumes. In the medium term, new technologies such as micro combined heat and power units, and smart metering, could also affect demand and therefore the Group's earnings. We cannot be certain that our strategy will successfully mitigate against the risks or enable us to take advantage of opportunities that may present themselves.

### [27.3 Voluntary communications \(other than to CDP\) such as Corporate Social Responsibility reporting.](#)

We produce a large online corporate responsibility report which includes a major section on climate change and the environment:  
<http://www.centrica.com/index.asp?pageid=472>.

This report covers our commitment, the operating context, our impact and our strategy. We also provide details of our performance including whether we made progress against previous commitments, tables of performance data with commentary, descriptions of our initiatives and future targets and commitments.

The report includes climate change case studies and a video to explain our strategy and operating context.

We also report on our performance to the Dow Jones Sustainability Index, FTSE4Good and Business in the Community.

## **28 Public Policy**

### [28.1 Do you engage with policymakers on possible responses to climate change including taxation, regulation and carbon trading? If so, please provide details.](#)

We are committed to playing a full and active role in the political process to support the creation of competitive energy markets that deliver consumer choice, and facilitate the move towards a low-carbon society.

We operate in highly regulated markets around the world, where policy decisions can fundamentally affect our commercial operations. As a leading integrated energy company, policy-makers are particularly keen to understand our perspectives on issues such as securing energy supplies and carbon emissions reduction strategies.

We maintain a programme of comprehensive engagement with politicians, regulators and opinion formers on climate change related issues to ensure we are as informed as is practical and responsible. In many cases, these engagements help the company mitigate risks and ensure that we maximise opportunities. We also work with political stakeholders to increase their understanding of our business and to shape the policy environment in which we operate.

#### **Key political stakeholders**

Our key political stakeholders include UK MPs and their advisers, MEPs, Members of the Scottish Parliament, Welsh and London Assembly members. We also engage with civil servants, NGOs and trade associations. In North America we engage with regulators on federal, national, state and provincial levels, as well as a wide variety of other public officials and stakeholders, through four dedicated Government and Regulatory Affairs teams: Canada East, Canada West, US North and US South.

## **Engagement**

We respond to formal consultations by Government, opposition parties, select committees and others and often join forces with other organisations to raise awareness of key issues. We arrange for officials to visit our sites to gain first-hand experience of our business. We also work closely with the UK Foreign and Commonwealth Office to support our international gas exploration and procurement activities.

We have an active MP engagement programme. For example, we try to ensure regular contact with MPs who have Centrica/British Gas sites within their constituency. We have also developed resource materials to help MPs help their constituents especially with what support is available to help people struggling to pay their energy bills. We also provide briefing papers in advance of Parliamentary debates on energy. We are committed to giving a prompt response to issues that MPs forward to us on behalf of their constituents.

## **Reducing carbon emissions**

During 2008 we supported the introduction of 100% auctioning for power generation under phase III of the EU emissions trading scheme. We advocated a streamlining of the planning system to allow the delivery of crucial offshore and onshore infrastructure, where profound – and expensive – investment decisions need to be made in the near future.

We welcomed enabling clauses in the 2008 Energy Act on feed-in tariffs and renewable heat incentives and we are working with other industry stakeholders to ensure their speedy introduction.

In North America, Direct Energy continued to engage with federal, state and provincial policy-makers as well as industry groups to inform thinking on carbon legislation. In 2008, we developed the first protocol for the aggregation of carbon from energy efficiency projects and lobbied the Canadian federal and Alberta governments to adopt this. The US approach to carbon legislation could shift following the election of President Obama and we are monitoring the situation closely. The new administration announced plans for \$150bn investment in clean energy over the next ten years.

The move towards energy efficiency could have a positive effect on our services business, especially in North America, where government subsidies are being made available for this work. This investment will be in the areas where Direct Energy is well equipped to deliver, such as incentives to install new home insulation and energy efficient boilers, together with increased renewable generation.

## **Energy efficiency**

We supported the extension of the Carbon Emissions Reduction Target (CERT) and will be one of the leaders in the delivery of the community energy saving programme (CESP), focusing on deprived communities.

## **Consultation responses**

In 2008 we responded to consultations on carbon emissions and renewables including:

- Response to the Revision of the EU Emissions Trading System
- Response to the UK Renewables Consultation 2008
- Response to Renewables Obligation Order 2009

- Response to DEFRA consultation on the proposed EU emissions trading scheme for 2013
- Response to 'Towards carbon capture and storage' consultation 2008

All of these are available to download from our website at <http://www.centrica.com/index.asp?pageid=704> (see section on Consultation responses and select committee enquiries).