

Environment »

We are committed to tackling climate change. We believe that this requires concerted effort at an international level and from all stakeholders at a national level.

“As an energy company, we realise that we have a particular responsibility to take care of the environment. That’s why we have put sustainability at the very heart of the way we do business.

Eva Eisenschimmel Chief Officer, People, Organisation & Brand Performance

We believe that climate change is one of the most important challenges facing the world today and that man-made greenhouse gas emissions are the key driver of climate change.

We are committed to tackling climate change. We believe that this requires concerted effort at an international level and from all stakeholders at a national level.

Our Climate Commitments outline our targets to reduce greenhouse gas emissions. They represent one of the biggest packages of environmental initiatives launched by any major British company. They commit EDF Energy to reducing emissions from all areas of the business.

The new Climate Change Act commits the UK to a binding target of reducing CO2 emissions by 80% by 2050. This is a challenging target. Even if the UK's electricity sector was completely decarbonised, a huge shortfall would remain. We need concerted action in all areas of society to tackle all sources of greenhouse gases.

As a leading energy company climate change presents both a challenge and opportunity to us, we must secure energy supplies for our customers', get them to use energy more efficiently whilst maintaining and building a sustainable company. Our commitments bring to life these challenges and opportunities on how we will tackle the biggest sustainability challenges facing our industry. Our climate commitments identify key issues and set bold targets, not just for ourselves but to inspire customers as well. The continued need to address climate change presents issues and opportunities for our business and for our customers as well as significant investment. Some of the issues and opportunities are outlined in the table opposite:

Key issue	Opportunity
Reducing CO ₂ emissions from electricity production	<ul style="list-style-type: none"> • So that EDF Energy generates electricity that is secure, reliable, affordable and helps the UK meet its CO₂ reduction targets.
CO ₂ emissions from offices and depots	<ul style="list-style-type: none"> • Using our experience to develop tools to assist business customers. • Reduce energy costs.
CO ₂ emissions from transport activities	<ul style="list-style-type: none"> • Improved health and safety through better driving techniques and fewer miles driven. • Reduced fuel bills and improved productivity. • Some activities can actually generate revenue, such as Backhaul (see later). • A better work life balance for employees due to less travel.
Customers' energy consumption	<ul style="list-style-type: none"> • Acquiring and retaining customers through initiatives that encourage people to use less energy. • Being a credible supplier by leading by example.
Waste from Streetworks	<ul style="list-style-type: none"> • Reduce operational costs. From April 2008 the cost of landfill in tax alone will increase to £40/tonne and rise to £50 per tonne by 2010.
Office and depot waste	<ul style="list-style-type: none"> • Reduce operational costs.
Employee behaviour	<ul style="list-style-type: none"> • Sharing climate change issues with staff so they will be more prepared to help the company achieve our Climate Commitments. (For example, discussing environmental responsibility is part of our Customer Services' Induction Day training.) • Increased employee engagement.

Energy Efficiency & CO₂ Savings

As an energy utility company, climate change is a strategically important issue for us and we're aware of our responsibility for reducing climate change emissions. Consequently, we've set some stretching targets up to 2012 and 2020 in our Climate Commitments.

We have also invested in new technology to improve the efficiency of our power stations West Burton and Cottam. However the original High Pressure (HP) turbines were designed and installed in the 1960's. Our Sutton Bridge station is already one of the most efficient fossil fuelled power stations in Europe. The HP turbine efficiency was approximately 83%, and an advanced design of blade for modern HP turbines increases the efficiency to approximately 93%. The HP Turbine replacement projects were approved in 2005, with an installation programme running from 2006 to 2010. Initial tests indicate that turbine efficiency is in the region of 91-92%. This is equivalent to an improvement in heat rate of approximately 1-2%. Further tests will be undertaken to assess and validate these initial findings.

As described throughout our environment section, we have been active in our Climate Commitments with regards a range of investment programmes and initiatives that reduce our direct and indirect impact on climate change. We started our process and initiatives during 2007 with key performance targets for 2012 and 2020. The tables below summarise our key areas of activity and the associated CO₂ reductions achieved during 2008.

We are also looking to gain the Carbon Trust Standard, which is accredited independently by the Carbon Trust in the UK. EDF Energy is working towards the standard as part of its move towards a position of compliance for the draft Carbon Reduction Commitment (CRC) Order. The CRC Order should become law at the end of 2009. EDF Energy is proposing to report its emissions on both an absolute and normalised basis. We will report two numbers. Firstly, we will report CO₂ emissions per TWh which will relate to the amount of CO₂ released from the generation of electricity. We will then use a tonnes of CO₂ per TWh sold or distributed from customers. This figure will include emissions from buildings and depots, transport emissions, business mileage, because this represents the amount of CO₂ that is required to service our customer base and to ensure we keep them supplied with affordable, safe and reliable energy to their homes and places of work. Using this metric shows that our emissions overall have not changed significantly between 2006 and 2008. This shows how our upstream generation activities dominate our emissions. However, our down stream operations show an 8.8% reduction overall between 2006 and 2008. We would expect to see this trend, until our investment in new nuclear, CCGT and renewable technologies reduce emissions from our upstream assets.



The table below outlines some of our improvements in efficiency

Energy Saving / Efficiency from Conservation Improvements		Jan-Dec	2008
Generation Area	Description of Initiative/Activity	2008 Energy Saved (Mj)	2008 CO2 Avoidance (tonnes)
Generation Plant	Savings from generation and equipment investments	Improvement of performance needs to be validated. Tests on going during 2009.	
Building Efficiency	Savings from eco-efficiency investment and staff participation actual savings only attributable for 2 out of 5 initiatives of the Env. Mandate; other consumption saving cannot be confidently attributed to investments or staff participation	43.9 GWh consumed	103 t avoided through key Env. Mandate initiatives
CHP installations for clients	Savings through direct heat energy	59 GWh	12000 t
Renewables	Savings through production of renewable Energy	45.4 GWh	45.4 GWh * EDFE 2008 CO2 intensity of 803t/GWh =36.5k t CO2
Client Management	achievements of Commercial activities with domestic consumers and business clients, carbon challenge and CERT's	CERT data is outlined in our Social Section of this report	
Network Loss Reduction	Savings from improved cabling /material investments	No data Available	
Fleet & Service Efficiency	Savings from improved fleet , mileage reduction	5% reduction of CO2 from vehicle fleet. Customers Branch operations achieved a 13% reduction of business mileage	
Staff Travel/Meetings	Savings from improved travel use/teleconferencing	Can't attribute savings to fleet efficiency, as we do not currently measure miles/ journeys saved for our video/Web and teleconferencing facilities.	

Strategic Leadership

We produce power which is the lifeblood of every community but its production generates significant CO2 emissions and uses precious resources. We believe we have a responsibility to take action.

Our intention is to provide the power which is vital to society in a way that better protects the natural environment on which we all depend upon.

To achieve this, we believe that the UK should maintain a diversity of generation sources. Nuclear power must be part of the energy mix to balance security of supply, climate change and energy prices. Over the last few years we have made this point at every level, from lobbying Government to media appearance.

The table below outlines our normalised emissions for upstream (generation) and downstream (customer facing) operations between 2006 & 2008.

		2006	2007	2008
Upstream	tonnes CO2 from Generation / TWh Generation	810,034	823,108	803,669
Downstream	tonnes CO2 from Operations / TWh Energy supplied *	628.1	607.8	577.3

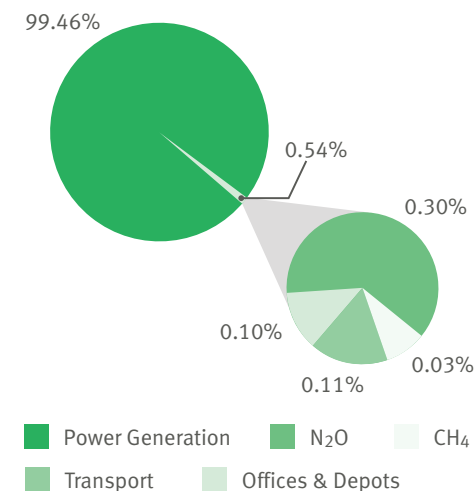
Our Carbon Footprint

We've developed a robust methodology for measuring our carbon footprint; it allows us to capture by direct and indirect energy greenhouse gas (GHG) emissions. Emissions reported as part of our carbon footprint reflect most of the emissions from sites and companies for which we have overall management control. This is consistent with the EDF Energy Financial Accounting and Health, Safety and Sustainability (HSS) reporting requirements. Our carbon footprint is reported in line with best practice, based on:

- Defra Environmental Key Performance Indicators - Reporting Guidelines for UK Business
- Guidelines to Defra's GHG conversion factors for company reporting - Annexes as updated.
- WRI/WBCSD The Greenhouse Gas Protocol - A Corporate Accounting and Reporting Standard

The carbon footprint shown below shows the relative importance of emissions from our assets. The carbon footprint shows both direct and indirect emissions as CO2 equivalents for a range of sources. The data excludes transmission losses, emissions for our contractors and products/services in our supply chain. As expected the footprint is dominated by emissions from our fossil fuelled power stations, and emissions from transport and office/depots represent less than 0.1% of our total emissions. In light of the British Energy takeover, we will need to review the scope and methodology for determining our Carbon Footprint for 2009. Going forward we expect to report our footprint in absolute and normalised terms.

The table below summarises our key emission sources



The table below outlines a summary of our CO2 Ratios

CO2 Ratio Tables		Jan-Dec 2008
Net Generation/Use	Description	Data & Units
Net Generation	(all sources)	805.1 t/GWh
Net Generation	(thermal plants only)	807.4 t/GWh
Net User Delivered	(own generation, purchased power & power loss estimates)	569 g/kWh

While we've made CO2 reductions our primary focus, we're aware that other GHGs affect climate change – namely, methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF6). CO2 is the most material GHG emission from our activities so it makes sense to focus our intentions on reducing our CO2 emissions, following our integration with British Energy we will be reviewing our plans to expand our emissions reporting capabilities to include other GHGs. Disclosing this data will be voluntary as no regulations require us to do so.

We think it's particularly important to measure and report our SF6 emissions as this gas is used in our switchgear and transformers, and is unlikely to be replaced in the near future. We use the gas in several different ways: for insulation in substations and for insulation and cooling in transformers; for insulation and arc prevention in switchgear and high and medium voltage systems. These are all closed systems, which are extremely safe and unlikely to leak.

In electrical power systems, high and medium voltage switchgear is required to cut off power if a fault occurs. When power is switched, an electric arc strikes between the circuit-breaker contacts; breakers filled with SF6 are electrically insulated and effectively control arcing. In substations where SF6 breakers are used, the magnetic and electrical fields are removed completely – a real advantage for installers, maintenance staff and people living in the vicinity.

We have records of all our electrical equipment containing SF6, although this needs to be improved and reported more efficiently. Asset Management Projects will address this issue over the next 12-18 months. We're currently reviewing our processes for reporting SF6 losses, with plans to introduce a risk assessment that will identify any potential risks. We're also providing extra training to make sure our employees are aware of the need to avoid SF6 losses.

We meet our customers' electricity demand from two sources. Half is generated through our own generation portfolio; the remainder is purchased from other power generators on the wholesale market.

The table below outlines the CO2 Equivalents of Greenhouse Gas Emission (GHG) for SF6, PFC, HFC, N2O and CH4 for 2008.

Gas/Station	Holding in Equipment (kg)	CO2 Equivalent Conversion Factor	Emissions to air (kg)	GHG potential if Holding lost to atmosphere CO2(equ) (kT)	Actual GHG losses in CO2(equ) to atmosphere (Kt)
SF6	52, 537	23, 900, 000	Not Known	1,255	Not Known
N2O	Not Applicable	310, 000	218, 000	-	68
CH4	Not Applicable	21, 000	277, 900	-	6
PFC	Not Known	-	-	-	-
HFC	Not Known	-	-	-	-

There are a number of output measures that are applicable to scoring the environmental impact of EDF Energy. One of those would be to score by the amount of SF6 that we release into the atmosphere, something that we are already required to report to DEFRA under the F-GAS regulations.

The difficulties with this are threefold: it is impossible to measure the amount of gas that we actually leak; it is difficult to accurately record the amount that we use to up plant with a low gas pressure; there is no expenditure specifically budgeted towards reducing the SF6 leaked.

On the larger items of plant that contain SF6 there are falling and low pressure alarms because these are typically on the EHV system where the gas is required to maintain the electrical insulation. Loss of SF6 from these is taken very seriously and if there are regular leaks attempts are made to locate and fix them. On the smaller items of plant the SF6 is generally required for arc extinction in the event of fault rather than maintaining insulation. As such there are no remote alarms for the gas pressure and leakage is only identified when an operative visits the site and reads the pressure gauge. These are then topped up with SF6 on the first two occasions after which they are identified for repair or replacement as their environmental impact is unacceptably high.

When a plant is topped up the amount of SF6 used should be recorded. The current method is to weigh the gas bottle before and after the fill although this method has both low accuracy and reliability. Some portable mass-flow meters (Predicta MF-1000) are being purchased and trialled to see if a more accurate and reliable system can be devised. Neither of these processes currently reviews whether there may have been gas leaked during the filling process so it is our intention to streamline and audit the amount of SF6 purchased so we can compare these figures. In the long term this will also help improve the environmental sustainability of our plant and our maintenance processes.

We use SF6 as insulation medium in switchgear due to the reduced space requirements and the greatly reduced safety risk over oil as an arc extinction material. While there is no alternative available that has a reduced environmental impact SF6 will continue to be used and in most cases provides the only practicable solution.

We hold some records of all our electrical equipment that contains SF6, and our total inventory is shown in the table above. However, as already explained, we have identified difficulties capturing and converting data from pressure (bar) to kg SF6 gas as required in the field and problems with transfer and capture of data to plant records system, Ellipse, and as a result we are unable to report our SF6 losses as effectively and efficiently as we would want. Responsibility for the HV Switchgear in our Networks Branch is the Head of Asset Management Responsibility and the responsibility for maintenance is the Head of Customer Operations. They will be reviewed over the next 12-18 months the process for reporting SF6 losses and this will include a risk assessment which will identify any equipment that may be leaking SF6. In addition, key steps: will include:

- Centralised procurement of cylinders (rather than local direct ordering).
- Review and update company Engineering Instructions, Standards and procedures.
- Roll out of training and awareness programme to providing our staff with additional training to ensure that they are competent and aware of the need to avoid the loss of SF6 from equipment during maintenance work. This requirement will also ensure we comply with the new F-Gas Regulations.



We're committed to cutting carbon emissions right across our business – including our power stations. We're also investing in low-carbon and renewable generation technologies.

In 2008 our three large power stations (two coal-fired, one gas-fired) and Combined Heat and Power (CHP) units produced CO2 emissions with a carbon intensity of 805 kilo tonnes of CO2 for every TWh of electricity produced.

A number of factors determine CO2 emissions from our power stations and CHPs, including national consumer demand for electricity, performance efficiency and the relative prices of carbon, gas and coal. In addition, a reduction in capacity across the UK electricity system caused by outages at nuclear power stations also resulted in increased generation from coal and gas-fired plants, including ours.

Emissions to Air

The table below outlines our emissions to air from our operated and owned power stations in 2007 and 2008. Data extracted from our 2007 and 2008 pollution inventory returns as provided to the Environment Agency, who regulates our power stations. The emissions detailed below are within the safe limits set by the environment agency and are emitted secondary pollutants associated with the combustion of coal. Sutton Bridge emits relatively few pollutants, because the fuel it burns, natural gas, is relatively clean and free from mineral impurities.



Releases To Air	2008			2007			Metric Unit
	Cottam	West Burton	Sutton Bridge	Cottam	West Burton	Sutton Bridge	
Carbon dioxide – ‘chemical’ 10,000,000#	51.9	59.6		59.2	62.6	BRT	KT
Carbon dioxide – ‘thermal’ 10,000,000#	10 300	9 730	2116571	10 300	9 370	1960905	KT
Carbon monoxide 100,000	4 440	4 770	BRT	4 500	BRT	111.5	T
Hydrogen chloride 10,000	118	276	BRT	624	325	BRT	T
Nitrous oxide 10,000	105	113	BRT	106	106	BRT	T
Anthracene 10	BRT	BRT	BRT	BRT	BRT	BRT	
Benzo(a)pyrene 1	3.64	3.9	BRT	BRT	3.66	BRT	KG
Benzo(b)fluoranthene 1	2.18	2.34	BRT	2.23	2.2	BRT	KG
Benzo(g,h,i)perylene 1	2.18	2.34	BRT	2.23	2.2	BRT	KG
Benzo(k)fluoranthene 1	2.18	2.34	BRT	2.23	2.2	BRT	KG
Chrysene 10	BRT	BRT	BRT	BRT	BRT	BRT	
Fluoranthene		1.95	BRT	BRT	BRT	BRT	KG
Indeno(1,2,3-cd)pyrene 1	2.18	2.34	BRT	BRT	BRT	BRT	
Methane 10,000	63.2	60.7	154	64.2	57	143	
Naphthalene 100	198	212	BRT	202	200	BRT	KG

BRT - Below Reporting Threshold

Metals and compounds reported as mass of the metal	2008			2007			Metric Unit
	Cottam	West Burton	Sutton Bridge	Cottam	West Burton	Sutton Bridge	
Antimony 1	16.4	7.11	BRT	26.3	3.42	BRT	KG
Arsenic 1	115	34.9	BRT	120	13.7	BRT	KG
Beryllium 1	11.2	5.54	BRT	18.8	2.33	BRT	KG
Boron 1,000	80 900	9 630	BRT	13 100	6 680	BRT	KG
Cadmium 1	3.17	1.01	BRT	3.67	BRT	BRT	
Chromium 10	123	60	BRT	162	25.7	BRT	KG
Copper 10	121	71.7	BRT	219	32.3	BRT	KG
Lead 100	107	BRT	BRT	210	27.9	BRT	KG
Manganese 10	859	257	BRT	891	127	BRT	KG
Mercury 1	258	134	BRT	121	120	BRT	KG
Nickel 10	157	79.4	BRT	272	36.3	BRT	KG
Selenium 100	1 700	438	BRT	586	374	BRT	KG
Vanadium 10	183	75.1	BRT	237	35	BRT	KG
Zinc 100	236	107	BRT	363	BRT	BRT	

BRT - Below Reporting Threshold

Other substance groups reported as total mass unless otherwise stated	2008			2007			Metric Unit
	Cottam	West Burton	Sutton Bridge	Cottam	West Burton	Sutton Bridge	
Chlorine and inorganic compounds – as HCl 10,000	118	276	BRT	624	325	BRT	T
Dioxins and furans (PCDDs/PCDFs) – as WHO-TEQ 0.00001	0.00004	0.00007	BRT	0.0655	0.07	BRT	G
Dioxins and furans (PCDDs/PCDFs) – as I-TEQ 0.00001	0.00004	0.00007	BRT	0.0614	0.06	BRT	G
Fluorine and inorganic compounds – as HF 1,000	104	113	BRT	110	117	BRT	T
Nitrogen oxides – NO and NO ₂ as NO ₂ 100,000	21 400	16 200	997	25 700	22 900	895	T
Non-methane volatile organic compounds (NMVOCs) 10,000	109	117	38	124	110	34.9	T
Particulate matter – PM _{2.5} 1,000	188	111	16.9	286	48.2	15.5	T
Particulate matter – PM ₁₀ 1,000	377	221	33.8	589	96.4	31	T
Particulate matter – total 10,000	471	277	33.8	737	120	31	T
Polychlorinated biphenyls (PCBs) 0.1	400	429	BRT	435	403	BRT	G
Polychlorinated biphenyls (PCBs) – as WHO TEQ 0.00001	0.727	0.78	BRT	0.00082	0.733	BRT	G
Sulphur oxides – SO ₂ and SO ₃ as SO ₂ 100,000	4 700	7.89	BRT	6 439	6 120	BRT	T

BRT - Below Reporting Threshold

Other individual acid-forming gases	2008			2007			Metric Unit
	Cottam	West Burton	Sutton Bridge	Cottam	West Burton	Sutton Bridge	
Hydrogen bromide	12.5	16.3	BRT	23.5	16.3	BRT	T
Hydrogen iodide	7.29	8.27	BRT	9.03	7.94	BRT	T
Sulphur trioxide	129	139	BRT	139	130	BRT	T

Large combustion plant directive	2008			2007			Metric Unit
	Cottam	West Burton	Sutton Bridge	Cottam	West Burton	Sutton Bridge	
Nitrogen oxides	21 400	16 200	997	25 700	22 920	895	T
Particulate matter	471	277	33.8	516	84.3	31	T
Sulphur dioxide	4 600	7 780	BRT	6 330	6 020	BRT	T

BRT - Below Reporting Threshold

As highlighted, we plan to engage with our stakeholder panel regarding the key emissions to focus on as a priority for our future performance reporting.

The following table illustrates our emission ratio, as a whole, for our generation plants for Mercury and Precipitator Dust emissions.

Emission Ratio Tables Jan-Dec 2008

Emission Type	ratio
Mercury	0.000018 Kg/MWh
Precipitator Dust	0.000030 T / MWh

Overview

In addition to the positive steps we're taking to reduce the carbon impact of our power stations, we're also working hard to reduce the greenhouse gas we produce in other parts of our business.

Through Our Climate Commitments, we've committed to achieve a 30% reduction in carbon dioxide (CO₂) emissions from the energy we use in our offices and depots by 2012, along with a 20% reduction from our transport fleet by the same date.

We believe all of our employees can play a part in reducing our impact on climate change and we've put in place a whole range of initiatives to reduce CO₂ emissions across our business – covering everything from trials of electric and hybrid fleet vehicles and award winning green travel and car sharing programmes to new building and waste management systems.

We've also developed tools to help our customers reduce their energy use, including our award winning Energy Efficiency Toolkit for business customers, which has now been adapted for use by our residential customers.

Building standards

In 2007 we set specific targets to reduce carbon dioxide emissions from our offices and depots. Given the diversity of our property portfolio, we have developed a standard approach in 2008 to help us assess the environmental qualities of our buildings and identify potential improvements.

The EDF Energy property portfolio contains buildings of many different ages and construction types. Existing environmental standards, such as ISO 14001, do not allow us to analyse performance of a single site and provide a 'snapshot' in time rather than a dynamic record of a property's environmental qualities. These standards require performance improvements to be undertaken but provide little guidance about what form they should take and little help in determining when they have been completed effectively.

We have worked with the Building Research Establishment to design a simplified assessment process that enables us to rate single properties against a set of standard environmental criteria, to identify improvement opportunities and to assess them by monitoring their potential impact on a property's overall rating. The low-cost, easy-to-use assessment system was developed as a joint venture, involving our energy management function, building management team and the Building Research Establishment.

Our new assessment tool, which is web based, will be launched by the Building Research Establishment at the Ecobuild Exhibition at London's Earl's Court in March 2009. It offers us the potential to reduce our buildings' environmental impacts and their operating costs while also improving the working environment for our employees. Our involvement in developing the system has also improved our awareness and understanding of the environmental aspects of buildings and of property management.

Building management systems

We are committed to reduce carbon dioxide emissions from our buildings by using lighting, heating, cooling technologies and other equipment more efficiently. Because our buildings vary in design, construction and age, we have reviewed them to make sure that the building management systems we use are as effective as possible.

We have completed research to assess the energy cost of the equipment we use in our buildings and to determine whether more efficient alternatives are available. As a result, more energy-efficient equipment, including voltage optimizers and chiller systems, are being installed in our buildings. We are also installing sub-metering systems and business products such as Energy View, which will allow us to make a more accurate assessment of our energy efficiency.

Building management systems can currently control up to 80% of the energy used in a building, but to be effective they must be connected to as much equipment as possible. Building controls must also be accessible and used to optimise performance. We have identified assets that need to be replaced: upgraded and centralised our building management systems; and monitor the energy efficiency of equipment against set targets. We are also investing in our building management teams to improve their performance and have appointed environmental champions to participate in regular 'energy walks' through some of our buildings to identify potential improvements in energy use.

We are working in partnership to achieve our objectives, bringing together our energy management function, property management teams and our contractors in a single project team. Our Major Business team is advising on the optimal use of Energy View.

Waste management

In Our Climate Commitments we have pledged to increase the amount of waste we recycle and to reduce the amount we send to landfill. To achieve the waste targets we set in 2007 we have introduced a company-wide waste awareness and action campaign.

EDF Energy employees currently operate from over 100 offices and depots. They create waste in the course of their daily activities, all of which must be sent to landfill unless it can be recycled. Our waste campaign is intended to make all employees more aware of their personal responsibility with respect to waste reduction.

We are consolidating waste collection from our offices and depots into a single waste management contract, undertaken by a single supplier. This will allow us to collate more accurate waste data and provide a waste breakdown for individual sites to help them divert waste from landfill to recycling more effectively. We have also introduced interim annual waste targets to motivate employees and help us track our progress more accurately.

A range of recycling initiatives is currently in place across our business. These include additional facilities to enable waste segregation at larger sites and the collection of mixed recyclable waste from our smaller offices and depots. Other actions, including the removal of desk waste bins have also improved the use of recycling and waste segregation facilities.

To date, we have increased the percentage of waste we recycle from a rate of 39% in 2006 to 62% a figure close to our company target of 65%. We are currently analysing the waste we send to landfill to identify how much of it, can be recycled. Initial reports indicate that we can still achieve a higher proportion of recycled waste in future.

At the early stages of the waste campaign our facilities management team worked closely with the waste service provider; in future, we will place greater reliance on our appointed 'waste champions' to share best practice with our employees and encourage them to improve their personal waste performance.

Improvements at our power stations

Following the fitting of Flue Gas-desulphurisation (FGD) units at our two coal fired power stations, emissions of sulphur dioxide (SO₂) and dust have fallen by 79% and 54% respectively compared to 2005 levels. Nitrogen oxide (NO_x) emissions have also fallen by 23% over the same period. Limits on NO_x emission levels are set to be reduced again in 2016 and further work will be required to match the new requirements. The table below outlines our NO_x, Dust emissions and SO₂.

Year	NO _x (kt/TWh)	SO ₂ (kt/TWh)	Dust Emissions (kt/TWh)
2005	1.839	2.196	0.056
2006	1.878	1.185	0.037
2007	1.906	0.478	0.029
2008	1.423	0.456	0.026



Promoting the use of electric cars at our offices in Hove and Worthing

EDF Energy is taking part in a trial of a new, fully electric Smart EV (electric vehicle), which has not yet gone on sale to the public. Our feedback will help Mercedes-Benz to shape the electric car of the future.

The Smart EV will be based at Hove for up to 18 months and used for short trips to and from our Worthing office. During this time, all employees at both sites will have the opportunity to use the car for business purposes after completing a brief training programme.

Two Elektromotive charging bay posts (known as Elektrobays) have been installed in the car parks at our Hove and Worthing offices – in prominent positions where they will attract maximum attention from employees and the public. The bays will be also available for use by any of our employees who currently own electric vehicles. Our trial of the electric pool car is part of a wider commitment to low carbon energy solutions, with two further Smart EVs being used by our Transport Division and Elektrobays installed in London and across the UK for use by the public.



Winning a Gold Award for our green travel scheme in Sunderland

EDF Energy was one of only two companies to win a Gold Award in Sunderland's Travel Plan Awards 2008. The awards promote sustainable travel and the reduction of congestion in the city. Three award categories – Bronze, Silver and Gold – distinguish the progress made.

Kevin Gatens, Director of Customer Services at EDF Energy explained why he feels the Gold award is justified: 'We have worked very hard to establish a successful green travel scheme. We have already made significant progress in reducing the number of car journeys taken by staff in Sunderland, which will in turn cut carbon emissions and ease congestion – in line with our Carbon Commitments, launched in 2007, which commit us to reduce carbon emissions from our fleet by 20% in or before 2012.'

EDF Energy's green travel scheme was set up to deal with parking problems in and around EDF Energy's Sunderland operations. Thanks to the scheme, around 700 of our employees now car share, while others benefit from interest free loans for bus season tickets provided by the company.

Stephen Psallidas, a Project Manager with the Tyne & Wear Smarter Choices Team, who organised the awards along with Sunderland City Council, commented that: 'EDF Energy has worked particularly hard to achieve a sustainable travel plan and we are pleased to be able to present them with a Gold Travel Plan Award.'



Exploring the use of electric cars to cut carbon dioxide emissions from our transport fleet

When we launched Our Climate Commitments on World Environment Day in 2007 we set a target to achieve a 20% cut in carbon dioxide transport emissions by 2012. One answer may be increased use of electric vehicles.

We are currently trialling a number of electric vehicles. We have taken delivery of a small test fleet of all electric cars. Additionally, we are working collaboratively with Toyota to test the plug in hybrid Prius. Unlike conventional hybrids, the plug in hybrids range can be topped up from standard electricity supplies, while their petrol engines back up the electric drive and keep batteries charged while in the more familiar hybrid mode.

The cars are being put through a serious daily workout by a variety of company drivers, who are using roadside electric charging posts, called 'Elektrobays', to top up their vehicles during the day. The 'Elektrobays' were especially developed by EDF Energy and its parent company for use by vehicles in the UK and France; by autumn 2008, around 70 had been installed, mostly in the London area.

Our efforts to date were publicly recognised when our Head of Transport, Chris Pascall, was named the private sector's Fleet Manager of the Year at the national Green Fleet Awards.



As the largest operator of public distribution networks in the UK and a major player in the development of private networks, we provide energy for homes, businesses and organisations in London and across the south and southeast of England. Quite rightly, they all rely on us to provide energy safely, securely and with as little negative impact on the natural environment as possible.

Biodiversity

Our operations can have both a positive and a negative impact on eco-systems and the animal and plant life they support. To minimise our negative biodiversity impacts, we've worked closely with independent environmental specialists, to develop ways to assess all our substations and introduce Biodiversity Actions Plans to protect the wildlife they support. We've also completed under-grounding projects to remove overhead lines from areas of Outstanding Natural Beauty and bird flight paths. Bird diverters have been fitted to some of our overhead lines to protect swans and other species.

Along with other electricity network operators we use oil as a cooling insulation medium in power transformers at our substations. The use of oil poses a threat of pollution in the event of a leak and we are currently involved in research to find an environmentally-friendly alternative.

We manage in excess of 66,000 locations throughout the South East, East Midlands and London area of England. As a result we do not hold detailed information of the biodiversity interests at our or near our locations for all of our sites. We are working with EDF Group to develop a methodology to identify the potential impact we may have on biodiversity interests at or near our assets and operations. Following this work, we will publish more detailed information in our 2009 report.

It is important, not only to care for our communities and society at large, we must care for local habitats as they are essential for sustaining flora, fauna, forests, wildlife and marine life. Many energy companies will own or be located near to important habitat sites that need to be protected. We also need to be considerate for rejuvenating damaged or poor ecosystem, and to consider opportunities enhancing biodiversity at sites that we plan to build on. In particular we must plan to offset any impacts we may have through our operations. In conjunction with our parent Company (EDF, SA) we are reviewing the opportunities and policies for the protection of biodiversity areas, and the lead for this work is being taken by EDF Energy's Principal Environmental Officer.

Within our networks we have some sites that are being managed to enhance their ecological value. These sites have individual plans in place that consider grass cutting and vegetation management and encouraging composting and mulching.

We're in the process of producing plans for a further 8 sites following the completion of ecological surveys and are working with our vegetation management teams to verify their suitability for new initiatives, such as the installation of owl nesting boxes and the planting of new hedges. We've also developed strategies, planned activities and programmes to manage our assets adjacent to forests, areas of outstanding natural beauty, wetland and freshwater ecosystems, taking into account any risks associated with the transient and seasonal

movement of animal, marine and birdlife. The identification of new sites is ongoing and the aim is to continue the growth of the project over the next few years.

It is important for us to be able to manage new and existing sites to enable us to encourage the appropriate interest and activities to engage our employees at all sites. To this end we have developed strategies, planned activities and programmes for managing our assets alongside forested areas, areas of outstanding natural beauty, wetlands and water ecosystems. We will take onboard any risks associated with the transient and seasonal movements of animals, marines and birdlife to ensure a sustainable ecosystem.

Fluid-filled cables

Our underground network still includes a proportion of fluid-filled cables (FFC), which contain oil as an insulator. We're steadily replacing FFC with modern alternatives and are set to invest £58 million between 2005 and 2010 in this work.

Our leak management strategy for FFC matches best practice and most cables have been plotted using the Environment Agency's environmental sensitivity map. We know where FFCs cross or run close to high sensitivity areas and are prioritising replacements accordingly. We're also introducing new operational techniques to replace FFCs.

FFCs are Extra High Voltage and consequently repairs can be complicated and time consuming. Many thousands of customers depend on these circuits, so they cannot be switched off without careful planning and access to them is often limited – requiring permission from local government, highways authorities and other land owners. These factors limit access periods and as a result, leaks can continue while access issues are resolved. If we're unable to replace FFCs (for example, where access is not permitted) we try to repair the leak and take steps to avoid further contamination.

Investigating the use of eco-friendly vegetable oil to cool and insulate our power transformers

Like other network operators EDF Energy has traditionally used mineral oil to cool and insulate the power transformers in our substations across the UK. This oil presents a risk of pollution following leaks. In response, we're investigating the use of vegetable oil as an eco-friendly alternative.

The first 132,000 volt transformer in Europe to use vegetable as a cooling and insulating medium has been installed on the EDF Energy network at Luton. The transformer, built by Areva T&D, has been installed on a trial basis, but if successful could be rolled out across our generation network.

The transformer uses around 30,000 litres of vegetable oil, made from edible soya beans. Oil of this kind has never been used at such high voltages in the UK. However, it is not only biodegradable but also more fire resistant than conventional mineral oil. Its use should extend the life of the Luton transformer, which can supply electricity to more than 30,000 customers.

Our decision to investigate the potential of vegetable oil, in partnership with Areva and the School of Electrical and Electronic Engineering at the University of Manchester, demonstrates EDF Energy's commitment to reduce its impact on the natural environment.



We produce a range of waste materials, from the earth we excavate to complete network upgrades to the ash and gypsum we produce at our coal-fired power stations. In every case, we aim to re-use or recycle as much of our waste as we can.

Generation

Our coal-fired power stations produce ash and gypsum as by-products during normal operation. We're investing in an ash processing plant (and are investigating the feasibility of a second) that will allow us to produce products that can be sold for use in the manufacture of cement and will also provide a low-calorific coal substitute for re-burning in our power stations.

At present both our coal-fired power stations produce nearly 1144 kilo tonnes of ash a year. Our current investment in new technology should reduce the ash sent to landfill by 50% by 2012.

	2008 Quantity (tonnes)
Pulverised Fuel Ash sent to landfill	673,158
Pulverised Fuel Ash sold	310,350
Furnace Bottom Ash sold	160,337

Excavation

Our Networks business excavates over half a million tonnes of materials from the ground every year, much of which was traditionally sent to landfill. We're determined to reduce this impact and since January 2006 the branch has been working with Surrey University to investigate ways of reducing or re-using spoil from excavations. Together with our contractors we're trying to re-use more materials during projects and are also collaborating with recycling companies and local authorities to trial a variety of recycling options.

We monitor our progress against recycling targets on a monthly basis. In 2006, 18% of the material we excavate was recycled or re-used. In 2007, we increased this percentage to 65% - cutting the emissions from associated use of vehicles in the process. During 2008 we achieved a reused and recycling rate of 81%.

Recycling

We launched a number of recycling initiatives in 2008. Through our Ambassador programme we held education sessions for employees to show them how to recycle effectively. All of our offices now have appropriate recycling facilities and we no longer use traditional under-the-desk rubbish bins at any of them.

Hazardous Waste

We handle and store hazardous waste extremely carefully before it's collected and processed by specialist contractors. The processes are managed through our certified environmental management systems. In 2008 we generated 4423 tonnes of hazardous waste, an increase of 3062 tonnes compared to 2007. We have recently recruited a Waste Manager whose sole responsibility will be to identify waste minimisation opportunities and this will include hazardous waste.

The table below illustrates that, generally, our land-fill waste tonnage has reduced by 16% between 2007 and 2008.

Waste data 2007/2008	2007	2008
Landfill hazardous(tons)	816	1039
Landfill non hazardous (tons)	199,465	118,835
Recycled hazardous (tons)	545	3384
Recycled non hazardous (tons)	356,173	484,431
Total	556,999	607,689

Note: Excludes by products from generation. Nuclear is also outside the reporting scope of this report and as such we have no licensed or unplanned radioactive waste or spillages for 2008

Environment Agency for publication on their website: www.environment-agency.gov.uk/business/topics/pollution/32254.aspx. The same data is also reported to the European Commission and forms part of the European Pollution Emission Register (EPER). In 2008 we had no have no licensed or unplanned emissions of radioactive waste to the environment.

Ash - Generation Ratio

	Landfill PFA (t)	Generated Elec. (MWh)	Ratio
Cottam	195,368	11,211,900	0.017
West Burton	477,790	10,324,400	0.046
Total	673,158	21,536,300	0.031

The table above shows our ash ratios for each of our power plants

Other Environmental Challenges

Ozone depletion is a significant environmental challenge. The most well known and widely used ozone depleting substances are CFCs and HFCs, which are used in refrigerators and air conditioning as well as some aerosols and packaging. Carbon tetrachloride and methyl chloroform, two highly potent gases used as industrial solvents, are also ozone depleting.



We don't use CFCs as fumigants or in our fire extinguishers or fire-suppression systems, and we've outsourced maintenance of our refrigeration and air conditioning units. Consequently, we can't assess the amount of CFCs and HFCs lost through these channels; but are developing processes to make sure that virgin R22 refrigerant is not used for maintenance from December 2009 and that R22 is reclaimed from any failed equipment. We'll also work to make sure that:

- All ozone depleting gases are recovered during maintenance and not allowed to escape
- All ozone depleting gases are be recovered from equipment before disposal
- Only reclaimed ozone depleting substances, such as R22 are used from December 2009
- All R22 is phased out by 2015.
- We will verify our maintenance contractors comply with the legislation
- We will undertake a review of all gases on sites, to identify where ozone depleting gases are in use and prepare a phased replacement plan for the equipment
- We will verify that the purchase procedure for new equipment ensures that HFC is excluded. This policy will be implemented by our Facilities Management team.

As a UK leader in energy generation, distribution and supply our operations impact on the environment in many different ways. To monitor, manage and minimise our adverse impacts we use an ISO 14001 environmental management system.

EDF Energy is the largest electricity network owner in the UK, covering the whole of London, the East and Southeast of England. We serve a quarter of the UK's population, distributing power to 8 million homes and businesses; our network of operational substations comprises some 71,000 sites. We take our responsibility to minimise the adverse impacts of our business very seriously, and through our ISO 14001 environmental management system (EMS) have prioritised seven key environmental challenges:

- Achieving sustainable energy supply
- Waste management and reduction
- Water and ground pollution
- Air pollution emissions
- Resource use
- Ecological impacts and environmental 'nuisance'
- Climate change

Our environmental management systems and ISO14000 accreditation are underpinned by the Environmental Compliance Group (ECG) – a sub-group that reports to the Corporate Environment & Responsibility Panel. The ECG ensures compliance with our systems and ISO14000 as we pursue our sustainability ambitions. The ECG, which comprises representatives from all our business units and liaises with our Renewables and New Nuclear teams, is chaired by the Principal Environmental Officer and meets every two months.

The ECG's remit is to:

- Develop our Environmental Strategy, ensuring a proactive, consistent and systematic approach for all of our operations and activities
- Provide specialist support on environmental issues to our Executive Board
- Recommend options for the mitigation of environmental risks that could result in legislative/regulatory action
- Oversee and monitor compliance with Environmental Standards
- Understand/influence government policy and regulatory agencies
- Identify our requirements for environmental support and investment
- Ensure our Executive Team and the CR & E panel are kept fully aware of all major environmental events or issues pertaining to our activities
- Manage and develop the Company Environmental Teams
- Report and rectify any non-compliance with the law

The ECG plays a pivotal role, enabling environmental specialists across the company to work together to develop a consistent and integrated environmental management system. It also identifies and manages key environmental risks and develops work programmes to put in place company-wide environmental KPIs to drive continuous improvement. Every business unit has its own certified environmental management systems, all of which meet requirements and standards laid out by the company.

REACH

We want to make sure that the chemicals we purchase and manufacture as a by-product meet all environmental safety requirements. We're working with our suppliers to make sure we can match the standards specified by REACH – the new regulations governing the use of chemicals in the European Union.

REACH (Registration, Evaluation, and Authorisation of Chemicals) came into force on 1 June 2007, replacing a number of different directives and regulations with a single system to ensure the effective management and control of chemical supply. REACH makes businesses responsible for showing that the chemicals they use are safe and requires all substances to be registered with the European Chemicals Agency, ECHA.

REACH impacts on our business in two ways: as a producer of products such as ash and gypsum; and as a consumer of chemicals. We have already pre-registered ash, gypsum, recycled street works aggregates and transformer and switch gear oils under the REACH regime in due course we will have to provide data concerning any environmental or health hazards associated with them. We're working with industry partners to test, assess and fully register these products; at present we are not aware that any of them present any high environmental concern.

We will use our procurement processes and work closely with suppliers to ensure that all chemicals we use are registered with ECHA – and used sparingly. We have a Pesticide Protocol in place to govern their use and do not permit the use of chemicals classified as 'substances of very high concern' (SVHC).

Environmental incidents in 2008

In 2008 we introduced a new system to improve the way we identify environmental incidents and assess their impacts. Consequently, the number of reported incidents captured has increased dramatically - indicating that our old systems were less effective. We welcome this increase because every near-hit or incident reported gives us the chance to avoid similar problems in future by learning from experience. The system was developed to give stakeholders a better understanding of the number and severity of our environmental incidents.

We received 53 environmental complaints in 2008, relating to noise, graffiti, fly-tipping on our land and other nuisance factors, 46 of these incidents were reported to enforcement agencies.

We received three fixed penalty notices to a monetary value of £75 each, for placing office waste in the wrong location, although no waste was disposed of incorrectly or created a public litter problem. We also received a £1,000 fine for an offence committed during 2008, relating to potential disturbances to the resting place of Great Crested Newts. We suspended work as soon as this was brought to our attention and commissioned external investigations; including an assessment by independent environmental consultants that concluded the area possibly affected was a poor habitat for the species and that no newts had been disturbed or injured by our operations. We chose not to contest the case, and although a fine was imposed, the presiding judge commended us for the way in which we presented our case, commenting that: 'I am satisfied that the company is highly responsible regarding the environment and I am also satisfied that it acted immediately to correct any error.'

In the light of this case, we reviewed our processes and procedures. Commencing in 2009 a new training and awareness programme, 'Its not easy Working Green' will be rolled out to more than 3,000 employees, and engineering works in areas of high biodiversity have been suspended under our new procedures.

	Recorded incidents	Reported incidents	Complaints	Prosecutions /Fines
2005	350	13	96	0
2006	429	26	117	0
2007	276	9	92	0
2008	776	46	53	4

Environmental Incidents 1st January 2008-31st Dec 2008

Notes: A reportable accident is one where a pollutant has been released to the environment in breach of licence conditions.

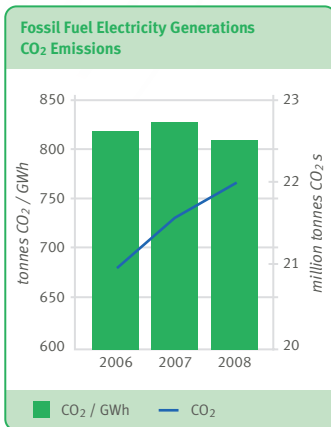
Examples	Year	2008
Spill to bund	Negligible	536
Loss to ground and cleaned up with no-long term impacts	Low	240
Loss to ground, clean-up followed by long-term monitoring and remediation	Medium	44
Reportable Incident. Clean up required, followed by long-term monitoring and remediation	High	2
Ecological impact resulting in loss of protected flora & fauna	Catastrophic	0
Complaint Received from public, regulator, business	Complaints	53

Impact Assessment of Environmental Incidents-This matrix is now used as part of our new environmental assessment process when categorising any incidents raised. We are unable to quantify the amount of oil or chemicals lost from our environmental incidents. However, where an incident has occurred we take all necessary action to remediate the site to a favourable condition. Recorded incidents are minor events that we can easily manage and they had little or no environmental impact.

Environmental Actions

In 2008 we took positive action to address environmental issues, including emissions from our power stations, noise pollution and the use of water.

We completed the third year of a five-year, £30 million investment programme to improve the efficiency of our coal-fired power stations. The programme should reduce our carbon emissions by 2.5% and with modifications to boilers and the replacement of high pressure turbines and pumps completed at our West Burton and Cottam stations, the programme is due to be completed in 2010. We will explore other ways to improve efficiency and reduce emissions in future.



Investing in low carbon generation technologies

We believe that a long-term policy framework and the removal of barriers to investment in low-carbon technologies are both required to achieve the UK's carbon emission reduction goals. We're working with government to develop robust policy proposals capable of delivering the appropriate investment levels in a range of low-carbon generation technologies, including:

- Renewable
- Nuclear
- Gas-fired generation
- Clean coal with carbon capture and storage
- Combined heat and power

Biomass

We have co-fired biomass at our Cottam and West Burton stations since 2004, using woodchip, olive cake, sunflower husks and locally grown willow. We are currently improving our biomass handling facilities and working with government and others to make sure it is used in a sustainable way.

Noise

We manage noise levels at each of our substations through our Noise Management Plan. A final version has recently been submitted to the Environment Agency for approval. It sets out all relevant noise sources, control measures and monitoring arrangements. Construction noise risks for major works are managed through the construction environmental management plan and for minor works through the main station noise plan.

Water

The abstraction of water is determined by the Environment Agency, which licenses our power stations. Abstraction licenses for rivers and other water sources are set at a sustainable level and are strictly monitored and enforced.

Materials Used by our operations

As an energy company, most of the materials we use are required by our generation plants and our Networks business. We use fuel and water during thermal generation. Our distribution networks use wires (typically copper, aluminium and steel) to deliver electricity to consumers. We also use relatively small amounts of chemicals to purify gases and liquid effluents. Our report focuses on the material we use that can have an adverse on the environment, and over which we have direct control.

Energy Use In our operations

Our office buildings consume fuel directly for heating and indirectly through the use of electricity for lighting and other purposes – consequently, we’ve set clear building energy targets in our Climate Commitments. The table below shows fuel consumption across our building portfolio, although we only report on buildings that we own or are under our management control, allowing us to achieve reductions in energy consumption. Rented buildings are not included as their energy consumption is managed by landlords, giving us limited scope to achieve energy efficiencies. The table highlights an overall reduction in energy use since 2006, achieved through efficiency measures and the closure of less efficient offices and depots. In addition, since 2006, we have undertaken a program of meter installation to improve the accuracy and management of energy in our buildings. Some work has indicated that emissions were both over and under-estimated for our buildings portfolio in 2006. However, the impact on our overall carbon footprint, and that for offices and depots was not material. The reduction of emissions and energy use in our buildings has been achieved despite a significant increase in the number of buildings we occupy and the number of staff occupying the buildings.

Energy Consumption in Buildings

	2008	2007	2006
Electricity (MWh)	39,577	40,140	42,063
Gas (MWh)	4,305	4,431	5,364

Note: Data relates to buildings where we control energy use and only includes major energy sources. Some sites have emergency generators that are run for just a few hours every year. Energy consumed by these units has not been included as they constitute a de-minimus energy source and don’t contribute materially to our use of resources. The use of our standby generators has remained constant, and they are only utilised for maintenance/testing purposes. The maintenance/testing regime has proved effective and there have been no changes to this regime in 2008.

Water Use in our operations

In comparison with climate change and waste reduction, we have not made water use in our buildings an immediate material priority and currently have no water targets in place, although their absence is currently under review as we look to improve our BREEAM position. The use of BREEAM, standing for the BRE Environmental Assessment Method, is to assess all aspects of sustainable building design and our adoption and use is a voluntary initiative that we have undertaken to help us to improve and manage the sustainability of our buildings. We don’t collect water consumption data for two reasons: first, not all of our sites and depots are currently metered; secondly, water is used in our offices and depots for personal hygiene, sanitation, catering and (in very low volumes) for vehicle washing. We will be reviewing our water meter coverage as part of an overall project to manage water efficiency.

Typically we return approximately 60% of the water abstracted from rivers close to our generation plants; and approximately 40% is lost through evaporation. We also use a number of chemicals, including sulphuric acid, sodium hypochlorite, hydrazine, sodium bisulphite and antiscalant, in significant quantities during water purification. The water used in our power station boilers must be cleaner than domestic drinking water, because naturally occurring impurities in river water would obstruct the boiler tubes. We’ve explored alternative purification methods and have already reduce the frequency and concentration at which these chemicals are used.

Other Materials used in our Operations

Although we don’t produce them as by products from our activities, we’re very aware of the hazards presented by PCB’s (polychlorobiphenyls), which were historically used in transformers and switchgear equipment. The UK PCB Regulations specify detailed requirements for their management in electrical equipment, setting 50ppm as the critical concentration threshold. For further details go to: www.opsi.gov.uk/si/2000/200001043.htm

Our power stations and networks business units follow procedures to record PCB levels and dispose correctly of equipment containing PCB’s. The oil used in our switchgear and transformers is processed by suppliers and own facilities before delivery to ensure it meets the required standard BS 148 (IEC 60296 European standard). Newly purchased equipment that contains oil is specified by the manufacturers under warranty as virgin oil. The sale of goods containing PCB’s was made illegal in 1985, so equipment after that date doesn’t need to be tested.

The following procedures enable business units to control and record PCBs in our electrical plant:

- All Grid and Primary transformers have been tested and all equipment above 500ppm removed; transformers between 50ppm and 500ppm are labelled as required by current regulations
- All transformers at our Cottam and West Burton power stations are below 20ppm, with the majority below 10 ppm; West Burton maintains a register of electrical equipment and PCB content and we're working to improve the records held at Cottam
- Arrangements are made for the decontamination or disposal of any equipment containing more than 50ppm through an approved contractor and the Environment Agency is notified
- All relevant records are kept on our Asset Management records database
- All insulating oils delivered since 1985 have been tested by the supplier prior to delivery

In compliance with legislation and our own sustainability targets, we're progressively eliminating PCB's as more benign alternative become available.

The inventory below outlines the number of sites containing PCB equipment within the thresholds listed below. The proportion of PCB contaminated equipment is less than 5% of our total networks. We do not record the litres or kilograms of oil/solid materials contaminated by PCBs, as we are only required to do so, at the point of disposal which we will continue to report on.

	High-level PCB >100 ppm	Low-level PCB 50-100 ppm	Number of Sites EDF Energy owns
Grid Sites	1	5	406
Primary Sites	4	17	1032
Secondary Sites	18	No data recorded	53, 621



Water

Water plays a vital role in power generation. Steam is used to drive our turbines, while water is used to cool equipment to maintain its operational effectiveness. The table below highlights the different ways in which we use water in our key generation activities.

Our Sutton Bridge power station doesn't use water for cooling – it has an air-cooled condenser that cools steam for re-use in the boiler. Our West Burton and Cottam power stations are too large to use air cooled condensers and extract water from the River Trent for cooling purposes.

Summarising some key figures from the above table, for all our generation plants, our river water use decreased by 6.5% to 95.8 m3 between 2007 and 2008, and with an increase of 4.6% to 31.9million m3 of evaporation losses from our main cooling towers, the volume of water returned as rejected streams and effluent reduced by 64.6% to 552,800m3. At the same time, our use of water for PFA (Ash) conditioning also dropped by 10.6% to 99,000 m3. Currently we hold two years of data relating to our Integrated Pollution Prevention Control (PPC) and we are therefore unable to provide more historical data.

Station and Year	Cottam		West Burton		Sutton Bridge		Total	
	2007	2008	2007	2008	2007	2008	2007	2008
Total Volume of river water abstracted (million m3)	59.3	54.8	43.2	41	N/A	N/A	102.5	95.8
Loss from main cooling towers (million m3)	15.9	15.9	14.6	16	N/A	N/A	30.5	31.9
Treated for boiler make up (million m3)	1.36	1.51	2.02	1.75	N/A	N/A	3.38	3.26
Supplied to boiler (m3)	862600	956200	950000	1.03	N/A	N/A	1812600	956201
Refined to water as rejected streams and effluent (m3)	492700	552800	1070000	0.72	N/A	N/A	1562700	552800.7
Supplied to FGD (million m3)	1.55	1.57	1.6	1.7	N/A	N/A	3.15	3.27
Lost by evaporation from absorbers (million m3)	1.27	1.35	22700	1.28	N/A	N/A	2.48	2.63
Incorporated into FGD gypsum (m3)	25700	22900	22700	24820	N/A	N/A	48400	47720
Returned to river as waste water treatment plant effluent	257300	193600	367800	364941	N/A	N/A	625100	558541
Used for PFA conditioning (m3)	28000	30400	87000	68600	N/A	N/A	115000	99000
Total volume of towns main water used (m3)	112950	103100	Not available	Not available	77,027	66,409	-	-
Potable water used (m3)	83440	69800	Not available	Not available	N/A	N/A	-	-
Non-potable water used (m3)	29500	33300	Not available	Not available	N/A	N/A	-	-
Total borehole water used (m3)	139600	257000	Not available	Not available	N/A	N/A	-	-

Water Discharge Quality

We have strict controls in place to make sure that the water we extract is returned to the river at a temperature that meets the Environment Agency's license conditions. The Environment Agency monitors our compliance with these conditions. We also monitor concentrations of substances in the discharge waters. Again this sample monitoring is to ensure we meet the Environment Agency's License conditions on water quality discharges back into watercourses.

The Table below demonstrates an analysis of inorganic discharges from West Burton and Cottam Power Stations for 2007 & 2008 in to the River Trent, Nottinghamshire. Samples have been sent away to an independent ISO17025 accredited laboratory.

Water contains many of the above elements naturally, and we monitor the discharges to ensure that releases are not too concentrated. These are regulated all year round. The operation of West Burton and Cottam Power Stations during 2008 has had no significant changes from previous years' data. All data is reported to the Environment Agency under the PPC (Pollution Prevention Control) regulations. The major component of the power station releases arises from the Flue Gas Desulphurisation (FGD) waste water treatment plant. The actual releases to water in 2008 are generally significantly below the maximum permitted (with the exception of cadmium at Cottam), though some of the determinants are significantly higher than pre-FGD operation. We liaise with the Environment Agency on such matters. In respect of cadmium, the FGD Waste Water Treatment Plant has a known problem with pH control. A plant modification is currently being commissioned with the existing lime milk dosing system will be replaced with a caustic soda based system, which will provide improved pH control. We will share further progress of this area within our 2009 report.

Substance	Cottam			West Burton			Grand Total
	2007	2008	Total	2008	2007	Total	
Ammoniacal N	0	0	0	0	0	0	0
Arsenic	0.3	0.2	0.5	0.9	0.8	1.7	2.2
Boron	0	0	0	0	0	0	0
Cadmium	4.1	13.3	17.4	0.75	0.9	1.65	19.05
Chromium	5.9	4.8	10.7	0.75	8.8	9.55	20.25
Copper	7.1	4.8	11.9	0.75	8.8	9.55	21.45
Fluoride	0	0	0	0	0	0	0
Iron	11.8	9.5	21.3	6.2	18.2	24.4	45.7
Lead	0.6	0.5	1.1	1.2	1.1	2.3	3.4
Mercury	0.02	0.02	0.04	0.009	0.02	0.029	0.069
Nickel	12	19.3	31.3	4.9	18.1	23	54.3
Selenium	8.2	7.8	16	25	26.1	51.1	67.1
Silver	1.2	1	2.2	0.45	1.9	2.35	4.55
Vanadium	11.2	9.5	20.7	0.9	17.8	18.7	39.4
Zinc	17.6	9.9	27.5	2.4	17.8	20.2	47.7
Grand Total	80.02	80.62	160.64	44.209	120.32	164.529	325.169

Fuel used in generation

Fuel is a major component in electricity generation. We use coal, heavy fuel oil and gas (natural and propane) to run our thermal plants and biomass substitutes to achieve pre-firing efficiencies. The table below shows our total use of the main fuel types in 2008.

Fuel Use	Power-plants	CHP units	Jan-Dec 2008 Total
Natural Gas (MWh)	11, 716, 730	13, 561	11,730,291
Coal (t)	8,600,248.09	0	8,600,248.09
Heavy Fuel Oil (t)	73,549.48	0	73,549.48
Biomass (t)	184,120.82	0	184,120.82
Other			
Imported Electricity	248, 548	94, 320	342,860

We also use electricity at our power stations to run plant, for lighting and to meet other peripheral needs. Our electricity use, referred to as 'indirect' energy use is shown in the table below. The amount of energy used in any given year reflects the availability of our power stations, market conditions and our running regime for electricity generation.

Electricity Use in Generation (MWh)

Generation source	2008	2007	2006
Cottam Power <i>Self-Generated</i>	675, 575	647,524	559,505
Cottam Power <i>Imported Energy</i>	88,394	112,024	156,398
West Burton Power <i>Self-Generated</i>	558,807	536,827	509,975
West Burton Power <i>Imported Energy</i>	160,154	145,548	137,208
Sutton Bridge <i>Self-Generated</i>	165,237	159,021	167,868
Sutton Bridge <i>Imported Energy</i>	0	0	0

Note: The table demonstrates that our power station at Cottam increased by 5.7% in 2007 and had only a moderate increase of 0.6% in 2008. At West Burton, the increase has been steady at 5.4% per annum between 2006 and 2008. Sutton Bridge however experienced a drop of 5.6% in 2007, followed by rise of 3.8% in 2009, relating to an overall 0% change in electricity consumption between 2006 and 2008. These changes are driven by the availability of the units and demands on the stations to generate more flexibly. This table does not include CHP as there is no data available. Nuclear is also not included.

Material Use – Recycled Input

The principle materials we use are fuels, water and chemicals. It is better for the environment to burn fossil fuels as cleanly and as efficiently as possible. Fossil fuels are a finite resource, which are responsible for emitting greenhouse gases into the atmosphere. We are unable to recycle the fuel; however the burning of coal produces ash, which we are able to sell as a by-product for the production of cement and other building products. In addition, we use equipment at our power stations called fuel gas de-sulphurisation (FGD) FGD removed in excess of 92% of the sulphur dioxide emissions from the power station's emissions to atmosphere. The operation of FGD also produces another by-product called gypsum, which is used in the production of building materials such as plaster-board. The use of ash and gypsum for building materials avoids these materials being sent to landfill.

The principal materials used by our Networks Branch are fuels, insulating oils, metal (ferrous and non ferrous) and wood. Fuels are not recycled, however some of our insulating oils are reprocessed, reclaimed or recycled for further reuse by EDF Energy and therefore exempt from tax. We are unable to provide data for our insulation oil losses although we are in the process of examining options to better capture this information. All of the metals we use (approx 2,300 tons a year) in overhead works, transformers, switchgear and cables are recycled – with volumes recorded every month. Most of the wood we use is in packaging for other materials and is returned to the supplier, although dealing with hazardous wood waste (for example, creosoted/CCA poles and tandalised fencing) still presents a challenge. We need to treat poles and fences to stop them rotting and our Networks Branch are currently scoping a project to decide how we can best avoid sending this material to hazardous waste landfill.

Customers

As part of our efforts to tackle climate change we've pledged to help our customers reduce their carbon emissions, setting an ambitious target to achieve a 15% reduction in the proportion of carbon dioxide arising from our customers' energy consumption by 2020.

We've put in place a range of green products and services to help customers use less energy, including smart meters and our award-winning 'Read. Reduce. Reward.' scheme, with over 540,000 customers focusing their efforts on reducing their energy consumption, in turn enabling them to save money and earn Nectar points.

Other green initiatives in place at the end of 2008 included our 'Save Today, Save Tomorrow' advertising campaign, which reassures customers that we can help them go green, and the 2012 Carbon Challenge – an invitation to our customers to set their own personal energy efficiency targets, save money by following our online coaching programme and benefit from some great offers. We're also proud to be sustainability partners of London 2012 itself.

Business customers

Supplying gas and electricity to large commercial customers, our Major Business team develops innovative products that support EDF Energy to deliver its mission. In addition, it:

- Helps deliver "Our Climate Commitments".
- Ensures our customers achieve their energy efficiency targets.
- Improves the carbon footprint of UK plc, not just EDF Energy.
- Delivers tangible business benefits stemming from taking a leading position in the sector. This makes the strategy financially sustainable, as well as helping us meet our climate commitments.

To develop innovative products we took advice and input from experts within EDF Energy and EDF Group, and combined this insight from research and other organisations to create a range of initiatives. These served to inform, educate and raise awareness among our large business customers. The initiatives were:

- The Advanced Efficiency Programme: the first entirely in-house service provided by an energy company to cater for those prepared to invest in energy audits and bespoke energy efficiency programmes.
- The Energy Efficiency Toolkit: an interactive multi-media CD-based resource that provides a vast array of free materials and advice.
- Free educational seminars to explain the mechanics, risks and opportunities of the upcoming Carbon Reduction Commitment legislation to nearly 500 business customers in 2008.

This year, we also helped over 400 business customers prepare for the Carbon Reduction Certificate through 22 'Café Energy' workshops – interactive events which take customers through the steps they must complete to comply with this new legislation in easy-to-understand stages.

Products and Services

Unlike many other products and services provided to customers and clients, the main environmental impacts from providing electricity and gas are through the generation and distribution operations.

We are obligated as a distributor of packaging and waste under the Electronic and Electrical Equipment (WEEE) regulations to make sure we pay for the recovery of packaging and electrical/electronic equipment via membership of regulated compliance schemes.

We sell or provide free products such as energy saving light bulbs, carbon monoxide testers or equipment to commercial customers. We supply products with more than 50 tonnes of

packaging per annum and have a turnover in excess of the £2m which is the legal threshold for compliance with WEEE regulations. We are registered with the Environment Agency and we manage our obligations through registered compliance schemes and Distributor Take-Back Schemes (DTS). The table below shows the amount and type of materials we have been obligated for under the Producer Responsibility Regulations to pay for our compliance scheme to recover and recycle on our behalf. The variation between years reflects the changes to our business as we have in-sourced activities that had been previously been undertaken by other companies. In addition, EDF Energy has withdrawn from some PFI contracts.

The Table below shows the recovery and recycling obligations for the Producer Responsibility (Packaging) Regulations for the years 2007 and 2008. EDF Energy meets these obligations through membership of a registered compliance scheme, through which we pay fees to enable the waste industry to develop the infrastructure and capacity to recover and recycle packaging materials. In addition, to our membership of this scheme which is a legal requirement, we also take steps to recover and recycle packaging at our own depots.

Material/Type (t)	2007	2008
Recovery Obligation	215	430
Recycling Obligation	198	396
Total Material Specific Obligation	172	186
Paper	103	85
Glass	0	0
Aluminium	0	0
Steel	53	4
Plastic	4	4
Wood	12	93

The variation between years reflects the changes to our business as we have in-sourced activities that had been previously been undertaken by other companies.

Helping our customers to reduce their carbon footprints by installing solar energy solutions

The Waters, a family of five living in Tunbridge, Kent, are among the first EDF Energy customers to obtain electricity from solar thermal panels installed on their property by our specialists.

Eco-enthusiast Mr Waters, lives with his wife and three children in a five-bedroom house in Tunbridge, Kent. His home, a modern property which has no gas supply, is already extremely energy efficient, but he's confident that the solar panels will turn his household even greener.

His family are committed to reduce their carbon footprint – a determination that matches our own Climate Commitments, in which we've pledged to reduce the carbon dioxide arising from our customers' energy consumption by 15% in or before 2020.

The panels were installed during winter, yet despite the bad weather, the Waters managed to heat some of the water in their home from via solar energy almost immediately after the system was commissioned. They're now looking forward to the summer months, when a higher level of energy will be obtained.

Mr Waters declares himself satisfied with his green energy solution and also commends EDF Energy for our 'mature and appropriate' sales technique and service standards.



Helping our major business customers understand and respond to the Carbon Reduction Commitment

Recently introduced carbon management legislation in the UK, particularly the Carbon Reduction Commitment (CRC), is complex and difficult for many businesses to understand. To help existing business customers and new prospects, our Energy Services Team has ran 22 'Café Energy' workshops in 2008 – helping over 400 businesses prepare for the CRC.

The CRC is a new emissions trading scheme that affects all business with half hourly meters and places additional requirements on any organisation that uses more than 6,000MWh of energy a year, including the need to forecast annual carbon emissions, buy carbon allowances to cover them and to reduce emissions year on year in order to maintain league table rankings that could affect their brand reputation.

The Café Energy workshops are an innovative and cost-effective way to explain the CRC to existing customers and new prospects. Run by a dedicated team of six, they are informal, interactive and succeed in bringing over 400 pages of guidelines to life in 'bite size chunks'. Participants have reacted positively to both their content and format.

The Café Energy workshops are a good opportunity for EDF Energy to enhance its reputation with existing customers and new prospects – positioning us as the first energy supplier to take the initiative in

helping businesses understand and respond to the CRC. They have also provided opportunities for us to build positive relationships with the Department of Environment, Food and Rural Affairs and the newly formed Department of Energy of Climate Change.

More than 80 EDF Energy employees have also been briefed on the Café Energy presentation content and as a result, our sales teams are now better prepared to speak to customers about its requirements.



Southwold Primary School

Southwold Primary School in Hackney, East London, has shown what can be achieved after an effective energy audit and implementation plan. Since receiving its Display Energy Certificate in October 2008, installing a Building Management System, and taking far-reaching steps to improve energy efficiency, the school has achieved a 25% reduction in energy consumption.

Gary Boyd, Headteacher of Southwold Primary School comments “As a school built in 1863, it was difficult to know where to start making changes to improve energy efficiency – yet with the support of EDF Energy, we are making real progress and have even become the first school in the Borough to have a Display Energy Certificate. We have already reduced our energy use by 25% which means that we can spend more on the children’s education as well as reducing our carbon footprint so the children can contribute to help arrest global warming.”



In line with Our Climate Commitments, we're mobilising our employees to help us make a positive difference, through our role as a sustainability partner with the London 2012 Olympic and Paralympic games and many other inspiring initiatives.

Engagement

In accordance with our ISO14000 certification, we provide environmental impact assessment, hazardous material identification and COSHH storage training for key employees. During our integration with British Energy we'll review employee skills and competences to make sure that they match the needs of our business and the environment.

Some of our Health Safety and Sustainability employees hold formal environmental qualifications (e.g. degree or IEMA diploma) and some are also members of recognised environmental bodies (i.e. IEMA). In 2009 our Corporate Sustainability team have plans to roll out a sustainability booklet which will provide employees details of our environmental policies and procedures.

Our Company wide magazine 'Connect' which is managed by our Corporate Communications department, also outlines a regular feature on our environmental performance as well as providing details of ongoing and new projects. All employees also have access to MyPlace and we also have a dedicated environmental intranet site which all employees have access to.

Engagement of Employees

We recognise that it is important for our employees in high biodiversity risk areas to be fully aware, engaged and competent to manage our biodiversity plans. So in 2008 we:

- Circulated HSS bulletins outlining the actions to be taken to protect wildlife, this was to ensure we can raise awareness of wildlife issues following a prosecution for disturbing great crested newts.
- Reviewed our GIS system Netmap to improve the way that wildlife and biodiversity information is collated.
- Invest in upgrading our Netmap software to include satellite imagery so that qualified employees can identify areas of natural habitat remotely.
- During 2009 refresher training will be provided to staff to re-enforce the environment training given on induction to the company.
- In Networks Branch a face2face briefing included a 2 hour session on wildlife preservation in February 2009.
- Where instances of sensitive species or habitats have been found, the work has been changed or stopped to reduce the risk of disturbances or incidents.

For all major projects or developments we will normally complete the following before starting a project:

- Full Environmental Impact Assessment (EIA), developed by external consultants
- EIA will identify major emissions and potential receptors
- EIA will identify whether any of the sensitive species or habitats will be adversely affected
- Mitigation options will be identified.
- EIA will be communicated to public.
- EIA may identify the need for habitat restoration/recreation or compensatory measures if over-riding nation importance.

For smaller projects and assessment of wildlife impacts will be undertaken which includes:

- In house assessment
- Desk top assessment
- Use of online tools or information to provide generic or publicly available information (i.e. Air Pollution Information System, MAGIC).

The Health Safety and Sustainability teams within each Branch are responsible for identifying and managing biodiversity issues, with additional support and guidance given by the Environmental Compliance Group to ensure that there is a consistent approach taken to biodiversity and to share best practice or issues from across the company.

Ambassador programme

In 2005 we launched our ambassador programme to make it easier for employees to contribute towards our sustainability goals. At the end of 2008, over 250 ambassadors were involved in the scheme, each spending a minimum of two hours a week to promote activities and initiatives in support of Our Climate and Social Commitments. In 2008, they were the driving force behind our World Environment Day activities and helped raise over £30,000 for charities through fundraising events such as Macmillan's World Biggest Coffee Morning and Children in Need.

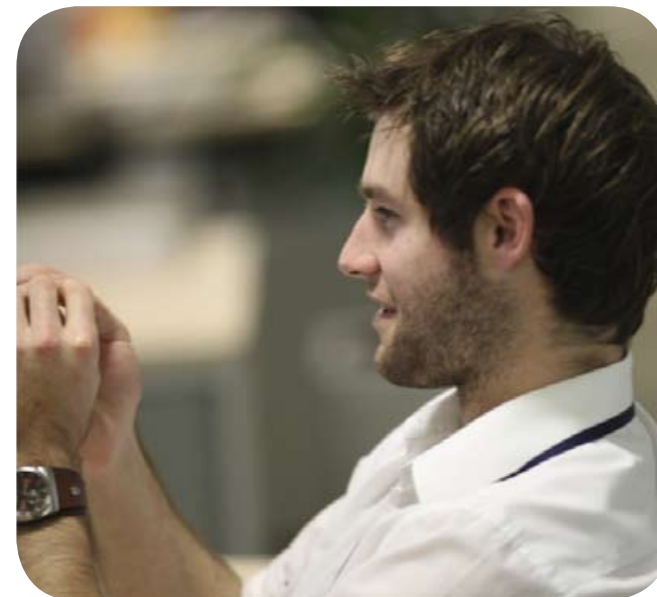
Over the past year we've worked with our ambassadors to redesign the programme and widen its appeal even further. We've created three new modules covering community, environment and education and also created an Ambassador Steering Committee, which meets every month to help drive the programme forward.

World Environment Day

On 5 June 2008, employees for all parts of EDF Energy participated in activities to promote and support World Environment Day – a global event run by the United Nations to raise awareness of environmental issues and attract attention from politicians, businesses, national leaders and the general public.

For EDF Energy the date was doubly significant as it marked the first anniversary of Our Climate Commitments, in which we set out a set of targets and pledges to help tackle climate change. The theme for World Environment Day in 2008 was 'CO2: Kick the Habit towards a low carbon economy'. It provided a focal point that set our employees thinking of innovative ways to reduce their carbon footprint.

A company-wide photography competition linked to the event, called on employees to capture their 'perfect world' on camera – an appropriate way to highlight sentiments and thinking behind EDF Energy's advertising theme, 'Save today, save tomorrow'. The range of entries captured the incredible diversity of our home planet and emphasized the need to act on climate change now.



Aligning employees behind our Climate Commitments through our 'My Perfect world' photography competition

We launched our My Perfect World employee photography competition on June 5 2008 – World Environment Day. The aim of the competition was to celebrate the positive aspects of our world and highlight the need to 'Save today, save tomorrow'.

All of our employees were invited to enter photographs that captured their 'perfect world'. Their entries were displayed on the company intranet and judged initially by branch panels, which selected finalists to go through to a company-wide competition. The first prize on offer was a visit for four to Cornwall's Eden project, including sustainable transport and back plus an overnight stay in an eco-friendly hotel.

The competition was just one of the ways in which we marked World Environment Day 2008 and its key theme of reducing carbon dioxide emissions. Emily Smith from our Sustainable Future Team believes that our activities: 'will help employees understand what we are doing to tackle climate change and the practical steps they can take to get involved.'

The winning photo will be used as the background image to all EDF Energy company credit cards issued in 2009 as well as being the image used for the cover of this report.



Improving energy efficiency and reducing carbon emissions in our new 'office of the future'

EDF Energy's new offices at Cardinal Place in London have been designed and fitted out with both improved working efficiency and better environmental improvement in mind – reflecting our Climate Commitment to achieve a 30% reduction in carbon dioxide emissions from our offices and depots by 2012.

Employees from our Energy Branch, Customers Branch, Sustainable Futures and EDF Energy Renewables moved into the new offices in two waves during May and August 2008 – allowing us to maximise the benefits that come from having a number specialist teams working closer to each other.

Employees arrived at Cardinal Place to find a building and environment designed and fitted out with environmental efficiency in mind, with valuable input from many different areas of our business, including our One Planet Ambassadors.

We achieved a zero accident, incident and near-miss record through the fit-out and installation process. We also instigated a number of processes in the temporary site office to maximise energy efficiency whilst the fit-out works were in progress, for example by switching off electrical office equipment when not in use and switching off lighting and temporary power supplies at the end of each working shift.

Our offices are fitted with light sensors to ensure that lights are only used in occupied spaces; they also benefit from efficient floor-to-ceiling and roof-top glazing which allows maximum natural light to enter. It has a BREEAM environmental assessment of 'very good' – the second highest rating that can be achieved.

Outside the building, there are ample bicycle parking spaces – even the sculptures displayed in the office are made from reclaimed steel.



Working in partnership to develop low carbon energy solutions through the Energy Technologies Institute

As a founding member of the Energy Technologies Institute (ETI), a partnership between several global industries and the UK Government, EDF Energy is actively involved in the search for viable low carbon energy technologies, including offshore, wind, wave and tidal stream energy generation solutions. These are all research and development projects and EDF Energy is part of the consortium that will deliver the projects.

The ETI is a Limited Liability Partnership between international industrial companies with a strong focus on energy, and the UK government. The private sector partners are: EDF Energy, BP, Caterpillar, E.ON, Rolls Royce and Shell. The public sector partners are the Engineering and Physical Sciences Research Council (EPSRC) and the Department for Innovation, Universities and Skills (though this has just been merged into BERR).

All partners involved are working hard to identify and support promising low carbon energy technologies from a range of industry and academic sources. Crucially, ETI members leverage their own human resources and capital to facilitate the demonstration and testing of new technologies in realistic environments – the first step towards their commercial deployment.

The ETI hopes to make a significant contribution towards meeting the UK's 2050 carbon dioxide targets and in January 2009 unveiled the first four innovative projects to benefit from a fund worth up to £1.1 billion. EDF Energy will be directly involved in two of the four projects, both of which could deliver cheaper renewable energy from 2020 onwards.

EDF Energy is developing a maintenance and grid connection strategy for the offshore wind turbines to be used in Project Deepwater Turbine, which involves the construction and deployment of a 5 MW offshore wind turbine. We're also playing a key role in Project ReDAPT, which will see a 1 MW tidal turbine installed at the European Marine Energy Centre in Orkney – enabling tidal testing to proceed at larger scale in real sea conditions than ever before. EDF Energy is developing a hydrodynamic 3D model to evaluate the turbine's performance and environmental impact.

Find out more about the ETI at www.energytechnologies.co.uk

