United Kingdom

Contents

Figures and tables

1. SOURCES OF INFORMATION

UK's national report submitted to the European Commission under the Monitoring Mechanism, Decision 280/2004/EC. Report submitted 31 May 2007.

UK's *EU Emissions Trading Scheme - Approved Phase II National Allocation Plan 2008-2012.*

The European Community's initial report under the Kyoto Protocol - Report to facilitate the calculation of the assigned amount of the European Community pursuant to Article 3, paragraphs 7 and 8 of the Kyoto Protocol (Submission to the UNFCCC Secretariat), EEA Technical report No 10/2006.

European Climate Change Programme (ECCP), Database on Policies and Measures in Europe http://www.oeko.de/service/pam/index.php

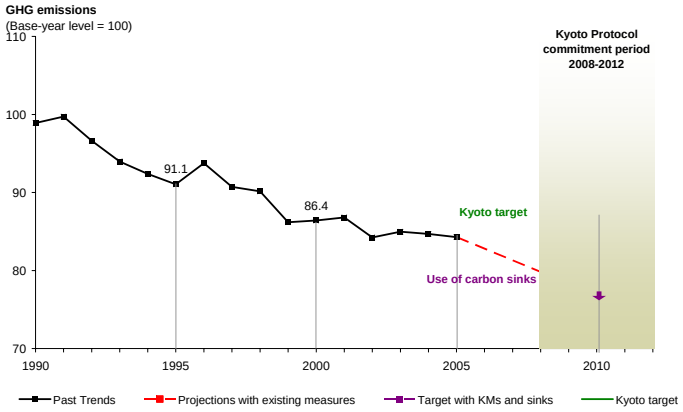
Base-year emissions

Base-year emissions of greenhouse gases are calculated using 1990 emissions for carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O) and 1995 emissions for fluorinated gases (SF_6, HFCs and PFCs). These base-year emissions include emissions from LULUCF under Article 3.7 of the Kyoto Protocol.

Base-year data is as reported by the UK in the sources noted above. Base year data is not consistent with data reported in *The European Community's initial report under the Kyoto Protocol - Report to facilitate the calculation of the assigned amount of the European Community pursuant to Article 3, paragraphs 7 and 8 of the Kyoto Protocol (Submission to the UNFCCC Secretariat)*, EEA Technical report No 10/2006. This data is currently undergoing a review procedure by UNFCCC and is therefore subject to change.

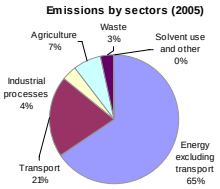
2. SUMMARY

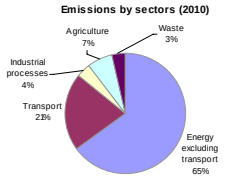
UNITED KINGDOM	
Share in total EU-15 GHG emissions 2005	15.7 %
Emissions base year incl. 3.7 (initial report)	779.9 Mt
Emissions 2005	657.4 Mt
Emissions base year (for projections)	775.2 Mt
Projections 2010 with existing measures	624.9 Mt
+ETS effect	595.6 Mt
No projections with additional measures	n.a.
Kyoto target (absolute)	682.4 Mt
Kyoto target (% from base year)	– 12.5 %
Change base year to 2005	– 15.7 %
Change 2004–05	- 0.5 %
Change base year to 2010 with existing measures	– 19.4 %
+ ETS effect	- 23.2 %
Change base year to 2010 with additional measures	n.a.
Distance to linear target path 2005	– 6.7 (-6.3) % points
Use of Kyoto mechanisms	n.a.
Sinks (Articles 3.3 and 3.4)	4.1 Mt
Emissions in 1990 (Article 3.7)	0.3 Mt

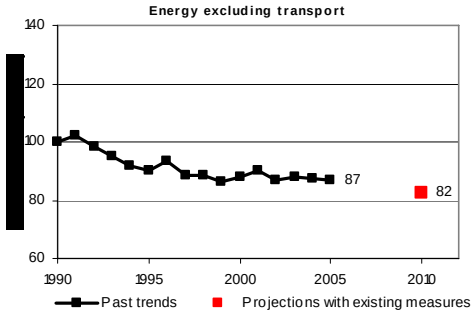


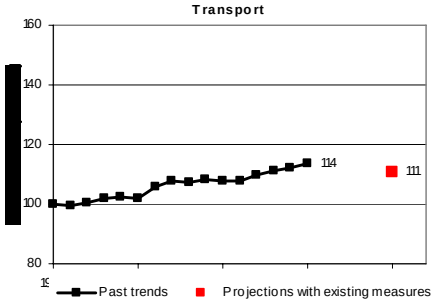
Past emissions: The UK's GHG emissions were 0.5 % below those of 2004 and 15.7 % below base-year levels in 2005. The main factors for decreasing emissions with regard to 2004 were decreases in fossil fuel combustion from households and services. From 1990 to 2005, the liberalisation of the energy market and subsequent fuel shifts in electricity production from coal to gas was a major factor for emission reductions. Other important factors were emission abatement in adipic acid and HCFC production, emission reductions from landfills and the decline of coal mining.

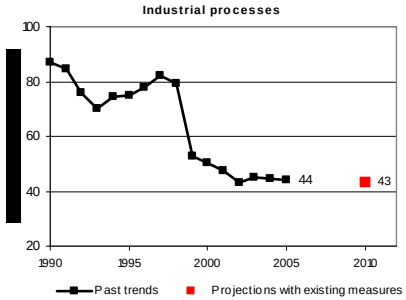
Emission projections: Emissions in 2005 were eight percentage points above projections with existing measures (including ETS effect) for 2010. The UK will be eleven percentage points below the Kyoto target with existing measures. No quantification for Kyoto mechanisms have been provided so far, as the amount will depend on private action. The UK will make use of carbon sinks according to Articles 3.3 and 3.4 of 4.1 Mt.

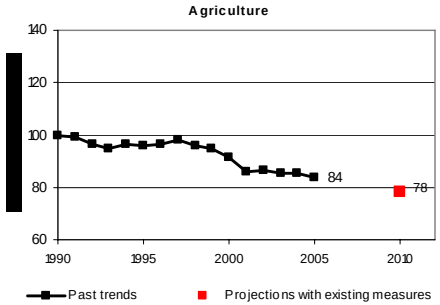


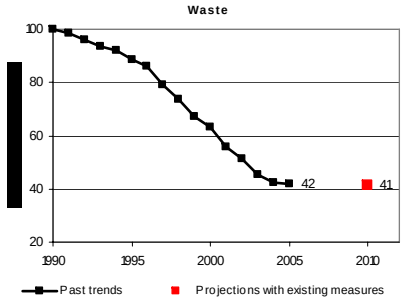




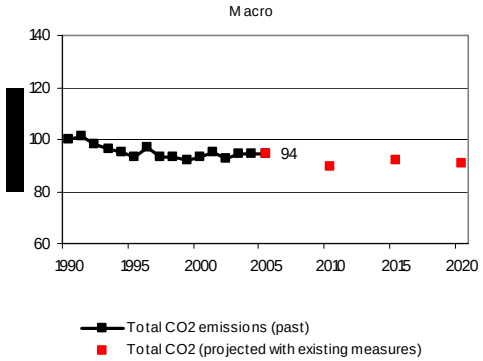


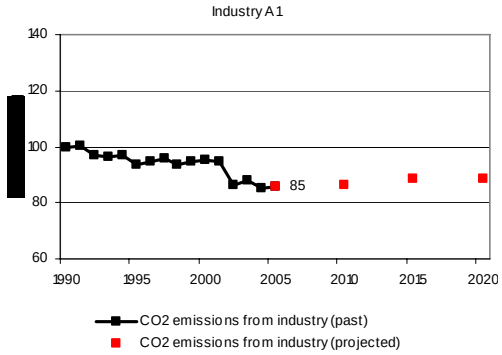


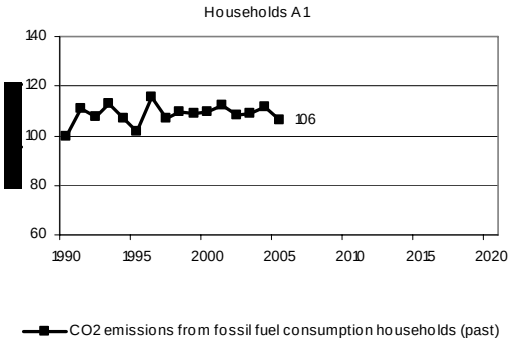


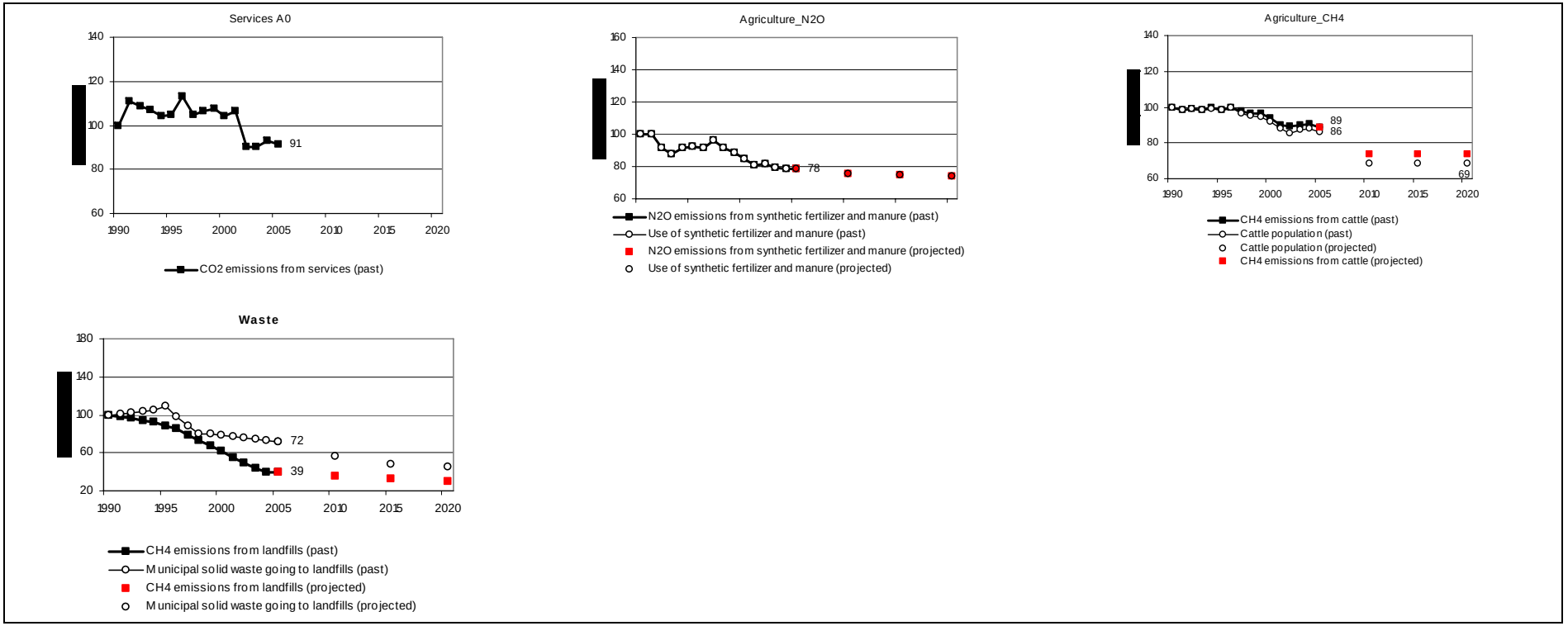


3. REPORTED INDICATORS








Services A0
140
120
100
80
60
1990
1995
2000
2005
2010
2015
2020
91
CO2 emissions from services (past)
Agriculture_N2O
160
140
120
100
80
60
78
N2O emissions from synthetic fertilizer and manure (past)
Use of synthetic fertilizer and manure (past)
N2O emissions from synthetic fertilizer and manure (projected)
Use of synthetic fertilizer and manure (projected)
Agriculture_CH4
140
120
100
80
60
89
86
69
CH4 emissions from cattle (past)
Cattle population (past)
Cattle population (projected)
CH4 emissions from cattle (projected)
Waste
180
140
100
60
20
72
39
CH4 emissions from landfills (past)
Municipal solid waste going to landfills (past)
CH4 emissions from landfills (projected)
Municipal solid waste going to landfills (projected)

Priority Indicators		**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Macro	Total CO_2 emissions, kt	590,341	597,271	580,813	567,061	559,473	549,788	571,623	549,035	551,335	542,252	550,494	561,465	545,611	557,575	557,841	557,546
	GDP, Bio Euro (EC95)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,121	1,147
Macro B0	CO_2 emissions from energy consumption, kt	567,560	576,881	560,827	546,858	537,991	526,385	547,010	526,984	529,730	521,165	530,401	542,620	527,358	538,799	538,754	537,776
	GDP, Bio Euro (EC95)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,121	1,147
Transport C0	CO_2 emissions from passenger cars, kt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71,292	69,910
	Number of kilometres by passenger cars, Mkm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	413,802	411,982
Industry A1	CO_2 emissions from industry, kt	99,554	99,618	96,634	95,709	96,356	93,129	94,324	95,161	93,319	94,536	94,692	94,502	86,143	87,359	84,595	85,093
	Gross value-added total industry, Bio Euro (EC95)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	224	251
Households A1	CO_2 emissions from fossil fuel consumption households, kt	78,712	87,321	84,747	88,652	84,276	79,968	91,084	84,027	86,043	85,480	86,020	88,259	85,141	85,950	87,626	83,572
	Stock of permanently occupied dwellings, 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25,055
Services A0	CO_2 emissions from fossil fuel consumption in commercial and institutional sector, kt	25,595	28,347	27,801	27,317	26,716	26,845	28,908	26,774	27,177	27,538	26,737	27,274	23,115	23,140	23,769	23,376
	Gross value-added services, Bio Euro (EC95)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	647	764
Transformation B0	CO_2 emissions from public and autoproducer thermal power stations, kt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	170,655	173,071
	All products - output and autoproducer thermal power stations, PJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-		2,312
Additional Priority Indicators		**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Transport D0	CO_2 emissions from freight transport on road, kt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45,409
	Freight transport on road, Mtkm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	163,000
Industry A1.1	Total CO_2 emissions from iron and steel, kt	25,960	24,965	24,432	24,953	25,892	25,991	27,253	27,685	25,567	26,364	22,005	20,071	17,291	19,662	19,907	19,745
	Gross value-added - iron and steel industry, Bio Euro (EC95)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22
Industry A1.2	Energy related CO_2 emissions chemical indsutries, kt	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
	Gross value-added - chemical industry, Bio Euro (EC95)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26
Industry A1.3	Energy related CO_2 emissions - glass pottery and building materials industry, kt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA
	Gross value added - glass pottery and building materials industry, Bio Euro (EC95)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Industry C0.1	Total CO_2 emissions from iron and steel, kt	25,960	24,965	24,432	24,953	25,892	25,991	27,253	27,685	25,567	26,364	22,005	20,071	17,291	19,662	19,907	19,745
	Production of oygen steel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA
Industry C0.2	Energy related CO_2 emissions from glass, pottery and building materials, kt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA
	Cement production, kt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA

Supplementary Indicators		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Transport B0 (diesel)	CO_2 emissions of diesel-driven cars, kt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13,681
	Number of km, of diesel-dirven passenger cars, Mio km	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83,632
Transport (B0) (petrol)	CO_2 emissions of petrol-driven cars, kt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56,049
	Number of km, of petrol-driven passenger cars, Mio km	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	238,350
Transport C0	CO_2 emissions from passenger cars, kt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	69,910
	Passenger trasnsport by cars, Mpkm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	675,651
Transport E1	CO_2 emissions from domestic air transport, kt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,465
	Domestic air passenger, Mio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25
Industry A1.4	Energy related CO_2 emissions food industry, kt	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
	Gross Value Added food, drink and tobacco industry, Mio EUR (EC95)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18,260
Industry A1.5	Energy related CO_2 emissions - paper and printing industry, kt	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
	Gross value added paper and printing industry, Mio EUR (EC95)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17,431
Households A0	Surface area of permanently occupied dwellings, Mio m^2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA
	Specific CO_2 emissions of households for space heating, t/m^2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA
Services B0	CO_2 emissions from space heating in commercial and institutional, kt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA
	Surface area of services buildings, Mio m^2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA
Transformation D0	CO_2 emissions from public thermal power stations, kt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	173,071
	All products output by public thermal power stations, PJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,312
Transformation E0	CO_2 emissions from autoproducer, kt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA
	All products output by autoproducer thermal power stations, PJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA
Transformation	CO_2 emissions from classical power production, kt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA
	All products output by public and autoproducer power stations, PJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA
Transport	CO_2 emissions from transport, kt	116,841	116,172	117,493	118,711	118,870	117,850	122,651	124,095	123,321	124,164	123,483	123,099	125,109	126,494	127,937	129,254
	Total final energy consumption from transport, PJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,800
Industry	Energy related CO_2 emissions paper and printing industries, kt	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
	Physical output of paper, kt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NA
Industry	CO_2 emissions form the industry sector	99,554	99,618	96,634	95,709	96,356	93,129	94,324	95,161	93,319	94,536	94,692	94,502	86,143	87,359	84,595	85,093
	Total final energy consumption form industry, PJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,135
Households	CO_2 emissios from houesholds, kt	78,712	78,712	87,321	84,747	88,652	84,276	79,968	91,084	84,027	86,043	85,480	86,020	88,259	85,141	85,950	87,626
	Total final energy consumption from households, PJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,407

4. OVERVIEW OF CCPM IMPLEMENTATION IN UNITED KINGDOM

Table 1. Information provided on the implementation of policies and measures

Sector	CCPM	Status
Cross-cutting	Kyoto Protocol project mechanisms 2004/101/EC	
Cross-cutting	Emissions trading 2003/87/EC	R
Cross-cutting	Integrated pollution prevention and control 96/61/EC	
Energy supply	Promotion of cogeneration 2004/8/EC	N
Energy supply	Taxation of energy products 2003/96/EC	B
Energy supply	Internal electricity market 2003/54/EC	
Energy supply	Promotion of electricity from RE sources 2001/77/EC	N
Energy supply	Internal market in natural gas 98/30/EC	
Energy supply	Emissions from large combustion plants 88/609/EEC	
Energy consumption	Directives on energy labelling of appliances	N
Energy consumption	End-use efficiency and energy services 2006/32/EC	
Energy consumption	Ecodesign requirements for energy-using products 2005/32/EC	
Energy consumption	Energy performance of buildings 2002/91/EC	N
Energy consumption	Eco-management & audit scheme (EMAS) EC 761/2001	
Energy consumption	Energy-efficiency labelling for office equipment Regulation No. 2422/2001	
Energy consumption	Efficiency fluorescent lighting 2000/55/EC	
Energy consumption	Efficiency of hot water boilers 92/42/EEC	N
Transport	Environmental performance freight transport (Marco Polo Programme)	
Transport	Motor challenge, voluntary EC programme	
Transport	Promotion of biofuels for transport 2003/30/EC	N
Transport	Integrated European railway area (2nd + 3rd Railway package) (COM(2002)18 final)	
Transport	Transport modal shift to rail 2001/12/EC etc.	N
Transport	Consumer information on cars 1999/94/EC	N
Transport	Agreement with car manufacturers ACEA etc.	R
Industrial Process	F-gas regulation (Regulation No 842/2006)	
Industrial Process	Industrial Process: HFC emissions from air conditioning in motor vehicles 2006/40/EC	
Agriculture	Support under CAP (1782/2003)	N
Agriculture	Support under CAP - amendment (1783/2003)	N
Agriculture	Nitrates 91/676/EEC	
Agriculture	Transition to rural development support No 2603/1999	
Agriculture	Agricultural production methods compatible with environment Regulation (EEC) No 2078/92	
Agriculture	Aid scheme for forestry measures in agriculture (Regulation (EEC) No 2080/92)	
Agriculture	Emission by engines to power agricultural or forestry 2000/25/EC	
Agriculture	Pre-accession measures for agriculture and rural development Regulation (EC) No 1268/1999	
Waste	Directive on waste 2006/12/EC	
Waste	Landfill directive 1999/31/EC	N

Waste	Packaging and packaging waste (Directive 94/62/EC, 2004/12/EC, 2005/20/EC)	

Legend

***New** national PAM implemented after CCPM was adopted*	***N***
*Existing national PAM **re-enforced** by CCPM*	***R***
*National PAM already in force **before** CCPM was adopted*	***B***
Not reported	

Source: MS responses to the CCPMs questionnaire, 2005. Personal communications.

5. COMPLETENESS OF REPORTING

Table 2. Information provided on policies and measures

Information provided	Level of information provided	Comments
Policy names	+++	Clear description given
Objectives of policies	+++	Clear description given
Which greenhouse gases?	+++	Specified for each PAM
Status of Implementation	++	Mostly clear but several "with measures" PAMs have "planned" status.
Implementation body specified	++	Described for most PAMs
Quantitative assessment of implementation	+++	All PAMs quantified.
Interaction with other policies and measures discussed	++	Not discussed but provides a total effect of all PAMs together, to take account of interactions.

Table 3. Information provided on projections

Category of Information	Level of information provided	Comments
Scenarios considered	++	'With measures' projection. Two policies and measures given as 'with additional measures' (WAM) although there was no WAM projection scenario available.
Expressed relative to base year	+++	Clear base years (1995 for F-gases, 1990 for other gases)
Starting year for projections	2005	
Split of projections	+++	By all 6 gases and all sectors as per CRF sector split
Presentation of results	+++	Results provided in Excel template
Description of model (level of detail, approach and assumptions)	+++	Clear description
Sensitivity analysis (key inputs to model / high, central and low projections scenarios / robustness of model)	+	Some indication of model key inputs and uncertainties
Discussion of uncertainty	++	Uncertainty range provided ($MtCO_2$-eq. per year)
Details of parameters and assumptions	++	Most indicators and parameters provided.

6. ASSESSMENT OF POLICIES AND MEASURES

Table 4. Summary of the effect of policies and measures included in the 2010 projections (Mt CO_2–eq.)

	With measures	With additional measures
Energy (total, excluding transport)	61.6	
Energy supply	9.5	
Energy – industry, construction		
Energy – other (commercial, residential, agriculture)	52.1	
Transport (energy)	24.6	
Industrial processes		
Waste		
Agriculture	2.9	
Cross-sectoral	30.4	
Total (excluding LULUCF)	89.7	0.0

The UK quantifies the expected impact of all 35 policies and measures listed for the years 2010, 2015 and 2020. The total impact in 2010 is estimated to be 89.7 $MtCO_2$-eq. rather than the sum of the sectors in the above table (119.5) due to the interaction between policies and measures.

No 'with additional measures' (WAM) projections were available by 31 May 2007, the cut-off date for submission of data for Country Profiles. However, the UK's Monitoring Mechanism submission provides emission reduction potentials for two additional policies and measures:

- EU Emission Trading Scheme (ETS) 2008-2012 (29.333 $MtCO_2$-eq.)
- Products Policy: Consumer information and standards for lights and other energy using products (0.733 $MtCO_2$-eq.)

The projected emissions reductions in the UK resulting from the EU ETS are already included in the 'with measures' projections. The 29.333 $MtCO_2$-eq. reduction mentioned above is the amount by which the UK National Allocation Plan (NAP) is 'underallocated'. In other words, 29.333 Mt is the shortfall between projected emissions from ETS participants and the NAP cap, and is thus the amount that participants will need to buy in European Allowance Units or carbon credits from Kyoto mechanisms. This reduction will not occur in the UK and is not included in the 89. 7 $MtCO_2$-eq. of reductions projected to occur within the UK.

Table 5. Detailed information on policies and measures

Policies and measures in the "with measures" projection

Sector	Projection Scenario	Name	Type	GHG	Status	Absolute Reduction [kt CO_2 eq. p.a.] 2005	2010	2020	Costs [EUR/t]
Cross-cutting	WM	Carbon Trust	Fiscal Information Research	CO_2	implemented		4,033	4,033	
Cross-cutting	WM	EU emission Trading Scheme 2005-2007	Economic	CO_2	implemented				
Cross-cutting		EU Linking directive	Economic	CH_4 CO_2 HFC N_2O PFC SF_6	implemented				
Cross-cutting	WM	UK emissions trading scheme	Economic	CH_4 CO_2 HFC N_2O PFC SF_6	expired		1,100	1,100	
Energy supply	WM	Renewables Obligation	Regulatory	CO_2	implemented		9,166	9,166	175
Energy supply		Combined heat and power	Economic	CO_2	implemented				
Energy supply		Micro-generation	Economic Information	CO_2	implemented				

Energy supply		Carbon abatement technology strategy	Research	CO_2	planned			
Energy supply		Coalmine methane	Economic	CH_4	planned			
Energy supply		Micro-CHP	Economic	CO_2	implemented			
Energy supply	WM	Subsidy for biomass heat	Fiscal	CO_2	planned	366	366	
Energy consumption	WM	Climate change agreements	Voluntary/ negotiated agreement	CO_2	implemented	10,633	10,633	< 90
Energy consumption	WM	Building Regulations 2005	Regulatory	CO_2	implemented	733	733	
Energy consumption	WM	Energy Efficiency Commitment (EEC) (2002-2005)	Regulatory	CO_2	implemented	1,466	1,100	< 270
Energy consumption	WM	Market transformation including Appliance standards and labels	Information Regulatory	CO_2	implemented	733	733	
Energy consumption	WM	Building regulations 2006 including 2005 condensing boiler update	Regulatory	CO_2	implemented	2,933	2,933	
Energy consumption	WM	Energy Efficiency Commitment (EEC) (2005-2008)	Regulatory	CO_2	implemented	2,200	1,833	
Energy consumption	WM	Energy Efficiency Commitments (2008-2011)	Regulatory	CO_2	implemented	2,200	2,200	
Energy consumption	WM	Better Billing and metering	Fiscal Information	CO_2	planned	733	733	

Energy consumption	WM	Stimulate early replacement of inefficient boilers and implementation of the energy performance of buildings directive	Information Regulatory	CO_2	planned	733	733
Energy consumption	WM	Central Government, NHS, UK universities and English Schools including Carbon Trust activities	Economic Information	CO_2	implemented	733	733
Energy consumption	WM	Measure to encourage of assist SMES to take up energy saving opportunities	Information	CO_2	planned	366	366
Energy consumption	WM	Increased activity in Energy Efficiency Commitement (EEC) 2008-2011	Regulatory	CO_2	planned	1,833	1,833
Energy consumption	WM	Package of measures to improve energy efficiency in buildings	Fiscal Information Regulatory	CO_2	planned	366	366
Energy consumption	WM	Additional effort by local authorities	Economic Planning	CO_2	planned	733	733
Energy consumption	WM	Revolving loan fund for the public sector	Economic	CO_2		366	367
Energy consumption		Energy performance commitment	Voluntary/ negotiated agreement	CO_2	planned		4,400
Energy consumption	WM	Building Regulations 2002 in the domestic sector	Regulatory	CO_2	implemented	2,566	2,566

Energy consumption	WM	Building Regulations 2002 in the business sector	Regulatory	CO_2	implemented	1,466	1,466
Energy consumption		Climate Change Communications Initiative	Information	CO_2	implemented		
Energy consumption		Economic instruments	Economic Fiscal	CO_2	implemented		
Energy consumption		Decent homes	Economic	CO_2	implemented		
Energy consumption		Sustainable communities	Voluntary/ negotiated agreement	CO_2	implemented		
Energy consumption		Energy services	Regulatory	CO_2	planned		
Energy consumption		Energy service directive		CO_2	planned		
Energy consumption		Energy service company		CO_2	planned		
Energy consumption		Energy saving trust	Information	CO_2	implemented		
Energy consumption		Salix finance	Economic	CO_2	implemented		
Energy consumption		The Government Estate	Voluntary/ negotiated agreement	CO_2	implemented		
Energy consumption		Sustainable Procurement Action Plan	Other	CO_2			
Energy consumption		Schools	Information Voluntary/ negotiated agreement	CO_2			

Energy consumption		The UK's National Health Service (NHS) estate	Economic Information	CO_2	implemented			
Energy consumption	WM	Carbon Trust support for Energy Efficiency in small and medium sized business	Economic Information	CO_2		366	366	
Energy consumption	WM	Climate Change Levy	Fiscal	CO_2	implemented	13,566		< 100
Energy consumption	WM	Warm Front and fuel poverty programs	Economic	CO_2	implemented	1,466	1,466	
Transport	WM	Fuel duty escalator	Fiscal	CO_2	expired	6,966	6,966	< 371
Transport	WM	EU level voluntary agreements on CO2 from cars, backed up by changes to company cars taxation and vehicle excise duty	Fiscal Voluntary/ negotiated agreement	CO_2	implemented	8,433	8,433	542
Transport	WM	Sustainable distribution in Scotland and Wales	Information	CO_2	implemented	366	366	
Transport	WM	Renewable transport fuel obligation (RTFO)	Regulatory	CO_2		5,866	5,866	55
Transport	WM	Wider transport measures	Fiscal	CO_2	implemented	2,933	2,933	
Transport		Transport strategy	Planning	CO_2	implemented			
Transport		Fiscal measures	Fiscal	CO_2	implemented			
Transport		Developing and promoting new vehicle technologies	Economic	CO_2	implemented			
Transport		Aviation	Economic	CO_2	planned			
Industrial		IPPC	Information	CH_4	planned			

Processes			Regulatory	CO_2 HFC N_2O PFC				
Agriculture Cross-cutting	WM	Non Food Crops	Economic Education Fiscal Information Regulatory Research	CO_2		366	366	20,76
Agriculture		Common agricultural policy	Economic Regulatory	CH_4 CO_2 N_2O	implemented			
Agriculture		Rural development	Planning	CH_4 CO_2 N_2O	planned			
Agriculture		Environmental stewardship		CH_4 CO_2 N_2O				
Agriculture		Integrated Pollution Prevention and Control (IPPC)	Information Regulatory	CH_4 N_2O	implemented			
Agriculture		Catchment Sensitive Farming (CSF)	Regulatory	N_2O	implemented			
Forestry	WM	Woodland Planting since 1990 (Scotland)	Economic	CO_2	implemented	1,833	1,833	
Forestry	WM	Woodland Grant sheme (England)	Economic	CO_2	implemented	733	733	
Waste		Waste management	Fiscal Regulatory	CH_4	implemented			

Policies and measures in the "with additional measures" projection

As described in section 5, the EU ETS 2008-2012 and Products policy on energy using products are nominally assigned 'with additional measures' (WAM) status although there is no reported WAM projection scenario.

Sector	Projection Scenario	Name	Type	GHG	Status	Absolute Reduction [kt CO_2 eq. p.a.] 2005	2010	2020	Costs [EUR/t]
Cross-cutting	WAM	EU emission Trading Scheme 2008-2012	Economic	CO_2			29,333	29,333	
Energy consumption	WAM	Products Policy: Consumer information and standards for lights and other energy using products (EUPs)	Regulatory Voluntary/ negotiated agreement	CO_2	planned		733	733	

Source: Öko Institut, (accessed 24 July 2007), ECCP Policies and Measures database, http://www.oeko.de/service/pam/index.php

7. EVALUATION OF PROJECTIONS

Base year emissions for the UK, Portugal and Netherlands include LULUCF, however all Country Profiles compare projections without LULUCF. LULUCF will be covered in the main report.

The UK does not provide an 'additional measures' projection for 2010. A 'without measures' projection is provided for CO_2 only.

Table 6. Summary of projections by gas in 2010 (Mt CO_2–eq.)

	Base year	With measures	With additional measures
Carbon dioxide	590.7	529.7	NE
Methane	103.6	45.8	NE
Nitrous oxide	63.6	39.2	NE
HFCs	15.5	9.1	NE
PFCs	0.5	0.3	NE
SF_6	1.2	0.8	NE
Total	775.2	624.9	NE
% change relative to base year		-19.4%	

Base year is 1990 except for F-gases where base year is 1995.
The effect of Article 3.7 of the Kyoto Protocol is included in the base year emissions and excluded from the projections.

Table 7. Summary of projections (6 gas basket) by sector in 2010 (Mt CO2–eq.)

	Base year	with measures	% change relative to base year	with additional measures	% change relative to base year
Energy (total, excluding transport)	492.5	405.4	-18%	NE	
Energy supply	273.7	217.8	-20%	NE	
Energy – industry, construction	101.5	87.6	-14%	NE	
Energy – other (commercial, residential, agriculture)	117.3	100.0	-15%	NE	
Transport	118.7	131.4	11%	NE	
Industrial processes	57.0	24.5	-57%	NE	
Waste	52.9	21.8	-59%	NE	
Agriculture	53.7	41.8	-22%	NE	
Total	775.2	624.9	-19%	NE	

The effect of Article 3.7 of the Kyoto Protocol is included in the base year emissions and excluded from the projections.

Table 8. Summary of projections by sector and by gas in 2010 (Mt CO_2–eq.) compared to base-year emissions

	Carbon dioxide			**Methane**			**Nitrous oxide**			**F-gases** (SF_6, HFCs and PFCs)		
	Base-year	With measures	With additional measures	Base-year	With measures	With additional measures	Base-year	With measures	With additional measures	Base-year	With measures	With additional measures
Energy (excl. transport)	457.3	392.2	NE	30.6	9.6	NE	4.6	3.5	NE	0.0	0.0	NE
Transport (energy)	116.8	125.1	NE	0.6	0.1	NE	1.3	6.3	NE	0.0	0.0	NE
Industrial processes	15.0	11.7	NE	0.2	0.1	NE	24.7	2.5	NE	17.2	10.2	NE
Waste	1.2	0.8	NE	50.6	19.7	NE	1.1	1.3	NE	0.0	0.0	NE
Agriculture	0.0	0.0	NE	21.6	16.3	NE	32.1	25.6	NE	0.0	0.0	NE
Total	590.7	529.7	NE	103.6	45.8	NE	63.6	39.2	NE	17.2	10.2	NE

The effect of Article 3.7 of the Kyoto Protocol is included in the base year emissions and excluded from the projections.

Figure 1. Share by sector of 2010 greenhouse gas emissions according to the "With existing measures" projections

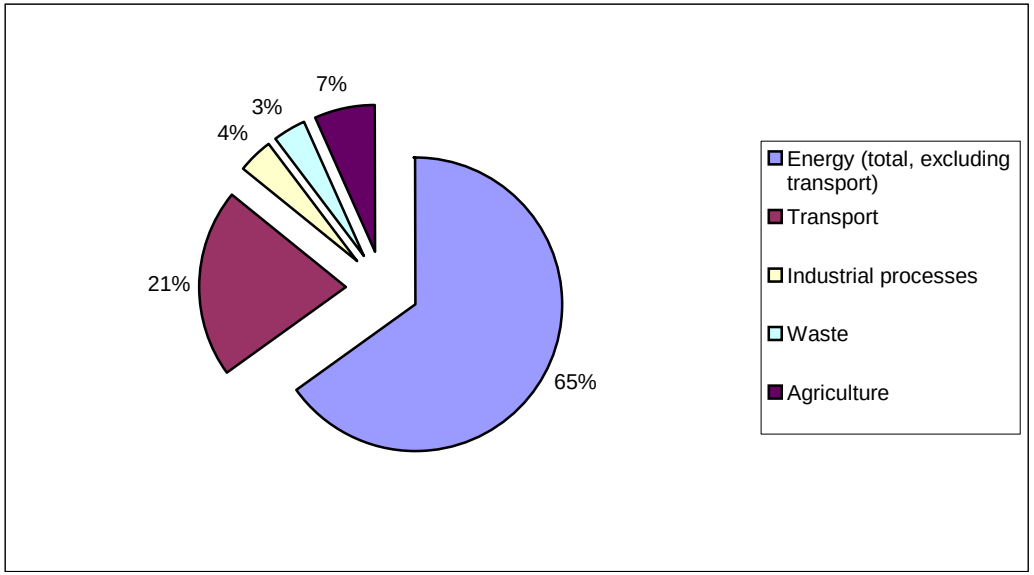


Table 9. Summary of projections (6 gas basket) in 2010, 2015 and 2020 (Mt CO_2–eq.)

	Base-year*	2010	2010 % of base-year level	2015	2015 % of base-year level	2020	2020 % of base-year level
Total	775.2	624.9	80.4%	633.5	81.5%	624.4	80.3%

*Base year is 1990 except for F-gases where base year is 1995.
The effect of Article 3.7 of the Kyoto Protocol is included in the base year emissions and excluded from the projections.

Table 10. Assessment of the target (6 gas basket), with a comparison of 2010 projections in 2005, 2006 and 2007 national reports

	Emissions in MtCO2-equiv. (excluding LULUCF)			
	2010 projections from 2005	2010 projections from 2006	2010 projections from 2007	2010 projections from 2007, % of base year level
Base year emissions used for projections	753.9	766.7	775.2*	100%
Kyoto Commitment/burden sharing	659.6	670.9	678.3	-12.5%
With existing P&Ms projections	598.8	622.2	624.9	80.6%
Gap (-ve means overachievement of target)	-60.8	-48.7	-53.4	-6.9%
With additional P&Ms projections	598.8	588.7	624.9	80.6%
Remaining gap	-60.8	-82.2	-53.4	-6.9%
Effect of EU ETS not included in projections**	0.0	0.0	29.3**	3.8%
Effect of flexible mechanisms	0.0	0.0	0.0	0.0%
Remaining gap (including use of flexible mechanisms and EU ETS not included in projections)	-60.8	-82.2	-82.7	-10.7%

Source for 2005 data is UK's report made under Decision 280/2004/EC (Monitoring Mechanism report), June 2005. Source for 2006 data is UK's 4th National Communication to the UNFCCC.

* Base year data is not consistent with data reported in *The European Community's initial report under the Kyoto Protocol - Report to facilitate the calculation of the assigned amount of the European Community pursuant to Article 3, paragraphs 7 and 8 of the Kyoto Protocol (Submission to the UNFCCC Secretariat)*, EEA Technical report No 10/2006 (779.904 $MtCO_2$-eq). This data is currently undergoing a review procedure by UNFCCC and is therefore subject to change.
** Projections indicate that ETS participants in the UK will need to purchase 29.333 $MtCO_2$-eq. of European Allowance Units or carbon credits from Kyoto mechanisms.

Table 11. Comparison with projections for the trading sector (EU ETS)

Table 11 provides a comparison of projections in the Monitoring Mechanism submission (MMS) and National Allocation Plan (NAP). The projections are almost identical for the Energy and Industry sectors together. Differences within each sector are assumed to be due to different apportioning of activities and their energy usage to either 'Energy' or 'Industry'.

	Monitoring Mechanism projections	NAP 2 projections	Difference
Energy sector	405.37 [a]	402.70 [b]	--
Energy sector included in EU ETS	--	188.16 [c]	--
Industry sector	24.48 [d]	27.18 [e]	--
Industry sector included in EU ETS	--	87.58 [f]	--
Total Energy & Industry	429.84	429.88	100.01%

[a] Included are all GHG emissions from the "Energy (total, excluding transport)" sector
[b] Included are all GHG emissions from "Energy generation" (which includes energy use by industry), "Commercial and institutional, Residential and Agricultural energy use" and "All other sectors"
[c] Included are CO_2 emissions from the ETS sectors "Energy generation" (which includes energy use by industry), "Commercial and institutional, Residential and Agricultural energy use" and "All other sectors"
[d] Included are all GHG emissions from the sector "Industrial processes"
[e] Included are all GHG emissions from the sector "Industrial processes"
[f] Included are CO_2 emissions from the sector "Industrial processes"

8. DESCRIPTION OF MODELLING APPROACH

Overview of modelling approach

The UK's Monitoring Mechanism submission provides the following description of the modelling approach. The report does not state whether the models have been verified.

Energy Model

The DTI Energy Model is a partial equilibrium model linked to a linear optimizing model of the electricity generating sector. It is primarily a top down model based around econometrically estimated relationships between energy demand, economic activity (income) and energy prices, and an optimizing model for the electricity supply industry. The projections provide a view of possible future levels of CO_2 emissions and composition of energy demand based on different scenarios for economic growth and world energy prices. The updated energy projections provide a "with measures" central baseline projection. Currently the model has about 130 econometric equations representing energy demand in 13 sectors of the UK economy which have been aggregated as required by the UNFCCC reporting guidelines.

Non-Carbon dioxide Model

Non-CO_2 projections are derived from a bottom-up model of emissions by sector and by gas based on a sectoral assessment of trends, maintaining consistency with the energy model where appropriate. The projections are derived from close consultation with sector representatives and other UK government departments.

LULUCF Model

Land use change emission estimates are from a spreadsheet model developed by the Centre for Ecology and Hydrology under contract to Defra. The model uses land use data derived from periodic surveys, supplemented by an annual census of agricultural land uses. The model is based on continuation of current patterns of land use change taking account of plans to expand the residential sector. It is combined with information on soil carbon density and dynamics to estimate annual gains and losses associated with the transitions involved.

Assumptions

In previous projections, carbon savings of current policies and measures were assumed, in all sectors, with the exception of transport, to continue at the absolute level achieved by 2010. The projections presented here are more sophisticated, with certain measures (such as replacement of inefficient boilers) having an increased impact after 2010. 'With additional measures' projections have been calculated outside the model. Basic appraisal of the impact of additional policies has been subtracted from the central baseline projection of the 'with measures' scenario. No correction has been made for possible correlation between policies in the 'with additional measures' scenario.

Sensitivity analysis

The Monitoring Mechanism report provides a so-called sensitivity analysis but this is actually an uncertainty analysis, reproduced in the section below. The report does not provide high/central/low projection scenarios or comment on the robustness of the model.

Details of the uncertainty assessment

The report states that four sources of uncertainty in the projections were identified in the 4th National Communication , as given in the table below.

Source of uncertainty in projections relative to base year emissions estimate

Source of uncertainty	Uncertainty estimated as ± $MtCO_2$ per year relative to central scenario
Combination of GDP and fuel price	± 15
Economic modeling process for energy related CO_2	± 33
Area and parameter assumptions driving land use change emissions projection	± 7
Non-CO_2 greenhouse gas range	± 4
Combination (overall uncertainty)	± 37

9. PROJECTION INDICATOR REPORTING

All indicators are reported for the year 2005. For the years 2010, 2015 and 2020, only indicators 1, 4, 8, 9 and 10 are reported. Denominators are provided for all indicators and all years to 2020, however, numerators are missing for the indicators 2, 3, 5, 6 and 7 for the years 2010, 2015 and 2020.

10. REPORTING OF PARAMETERS ON PROJECTIONS

Almost all the mandatory parameters are provided for the base year, 2005, 2010, 2015 and 2020 although some are given in a different format. Of the recommended parameters, only general economic and energy sectors values are reported.

Table 12. Indicators for projections to monitor and evaluate progress with policies and measures (2005/166/EC) Annex III

Table 11) Indicators for projections to monitor and evaluate progress with policies and measures, Annex III Commission Decision (2005/166/EC)													
No	Eurostat Sectors	Indicator	Base Year	2005	2010	2015	2020	Numerator/denominator	Base Year	2005	2010	2015	2020
1	Macro	CO_2 intensity of GDP, t/Euro million	479.66	315.84	261.94	236.79	206.77	Total CO_2 emissions, kt	590340.70	557545.91	529684.53	541739.78	535220.61
								GDP, bio Euro (EC95)	1230.755	1765.268	2022.122	2287.846	2588.487
2	Transport C0	CO_2 emissions from passenger cars, kt	NE	79770.00	84743	81537	81934						
		Number of kilometres by passenger cars, Mkm	NE	418881.00	484674.00	497569.00	513253.00						
3	Transport D0	CO_2 emissions from freight transport (all modes), kt	NE	48571	51374	53764	55718						
		Freight transport (all modes), Mtkm	NE	178627.00	183519.00	194630.00	201250.00						
4	Industry A1	Energy related CO_2 intensity of industry, t/Euro million	NE	350.82	282.04	241.79	202.07	CO_2 emissions from fuel consumption industry, kt	99553.54	85092.59	85779.79	87988.06	88229.08
								Gross value-added total industry, Bio Euro (EC 95)	NE	242.55394	304.14223	363.90559	436.63505
5	Households A1	Specific CO_2 emissions of households, t/dwelling	3.43	3.18	0.00	0.00	0.00	CO_2 emissions from fossil fuel consumption households, kt	78698.16	83557.95			
								Stock of permanently occupied dwellings, 1000	22939.00	26241.23	27634.12	29086.29	30500.00
6	Services A0	CO_2 intensity of the services sector, t/Euro million	NE	28.79	0.00	0.00	0.00	CO_2 emissions from fossil fuel consumption services, kt	25105.72653	23331.00803			
								gross value-added services, bio Euro (EC95)	NE	810.38	943.89	1063.11	1188.59
7	Transformation B0	Specific CO_2 emissions of public and autoproducer power plants, t/TJ	0.91	0.62	0.00	0.00	0.00	CO_2 emissions from public and autoproducer thermal power stations, kt	204608.2031	173071.059			
								all products-output by public and autoproducer thermal power stations, Gwhe (NB: not PJ)	224000	279900	276079.6	335160.8	367145.2
8	Agriculture	Specific N_2O emissions of fertilizer and manure use, kg/kg	0.02	0.02	0.02	0.02	0.02	N_2O emissions from synthetic fertilizer and manure use, kt	37.49	29.29	28.35	28.01	27.67
								use of synthetic fertiliser and manure, kt nitrogen	1908.70	1491.06	1443.44	1426.05	1408.65
9	Agriculture	Specific CH_4 emissions of cattle production, kg/head	0.05	0.05	0.06	0.06	0.06	CH_4 emissions from cattle, kt	642.11	570.23	471.75	471.75	471.75
								cattle populations, 1000 head	12124.65	10690.61	8287.89	8287.89	8287.89
10	Waste	Specific CH_4 emissions from landfills, kt/kt	NE	0.02	0.02	0.02	0.02	CH_4 emissions from landfills, kt	2370.12	930.82	852.14	775.11	714.95
								Municipal solid waste going to landfills, kt	75648.95	54151.27	42444.49	36508.12	34203.21

Table 13. List of parameters on projections (Annex IV of Implementing Provisions[1])

1. Mandatory parameters on projections	Base Year	2005	2010	2015	2020
Assumptions for general economic parameters					
GDP (Mio Euro 2000 basis)	1230755	1765268	2022122	2287846	2588487
GDP (annual growth rate)	78.38	112.25	127.93	144.74	163.76
Population (Thousand people)	57237	60217950	61619.29	63016.25	64449.07
Population (% of 2005 value)	95.05	100.00	102.33	104.65	107.03
International coal prices (Euro per GJ[1])	2.58	1.25	1.01	0.97	0.93
International oil prices (Euro per bbl[1])	18.86	28.61	20.81	22.11	23.41
International gas prices (Euro per GJ[1])	2.07	3.70	3.03	3.17	3.30
Assumptions for the energy sector					
Total gross inland consumption (PJ)	8745.44	9547.08	9410.72	9494.41	9298.98
Oil (Fossil)	3751.00	3731.12	3702.01	3777.87	3823.15
Gas (Fossil)	2144.00	3948.93	3898.23	4233.15	4240.82
Coal	2804.44	1673.35	1496.17	1091.42	867.21
Renewable	46.00	193.68	314.31	391.97	367.80
Nuclear (IEA definition for energy calc.)	681.07	769.45	708.21	320.39	368.97
Net electricity import (-+)	43.02	24.29	41.63	54.41	54.41
Total electricity production by fuel type	224000.00	279900.00	276079.60	335160.80	367145.20
Oil (Fossil)	15000.00	1900.00	2554.13	2163.72	1520.51
Gas (Fossil)	0.00	134800.00	121609.30	163698.90	219069.60
Coal	204000.00	126100.00	118852.37	116293.38	93511.09
Renewable	5000.00	17100.00	33063.80	53004.80	53044.00
Nuclear (IEA definition for energy calc.)	59000.00	75200.00	72538.50	33624.40	25845.50
Net electricity import (-+)	43.02	24.29	41.63	54.41	54.41
Total electricity production by fuel type	224000.00	279900.00	276079.60	335160.80	367145.20
Oil (Fossil)	15000.00	1900.00	2554.13	2163.72	1520.51
Gas (Fossil)	0.00	134800.00	121609.30	163698.90	219069.60
Coal	204000.00	126100.00	118852.37	116293.38	93511.09
Renewable	5000.00	17100.00	33063.80	53004.80	53044.00
Nuclear (IEA definition for energy calc.)	59000.00	75200.00	72538.50	33624.40	25845.50
Other [2]	14000.00	13800.00	13769.95	13770.00	13767.90
Energy demand by sector split by fuel	5296.30	5576.40	5563.84	5743.03	5877.43
Industry	1410.11	1207.05	1258.97	1292.05	1337.68
Oil (Fossil)	374.30	285.54	290.98	288.47	286.80
Gas (Fossil)	555.17	594.94	599.97	634.72	679.52
Coal	480.64	317.78	359.23	360.06	362.58
Renewable	0.00	8.79	8.79	8.79	8.79
Commercial (Tertiary)	504.93	450.08	429.15	446.31	461.80
Oil (Fossil)	150.72	44.38	38.94	38.10	38.10
Gas (Fossil)	312.75	401.10	384.77	400.68	414.91
Coal	41.45	2.09	1.67	1.67	1.67
Renewable	0.00	2.51	3.77	5.86	7.12
Residential	1359.45	1535.30	1368.66	1380.81	1404.25
Oil (Fossil)	103.83	129.37	113.88	102.58	92.95

[1] Commission Decision of 10 February 2005 laying down rules implementing Decision No 280/2004/EC of the European Parliament and of the Council concerning a mechanism for monitoring Community greenhouse gas emissions and for implementing the Kyoto Protocol

Gas (Fossil)	1081.45	1357.78	1229.24	1258.55	1295.40
Coal	174.17	43.54	20.93	15.07	11.30
Renewable	0.00	4.61	4.61	4.61	4.61
Transport	2021.81	2383.96	2507.06	2623.87	2673.69
Oil (Fossil)	1937.23	2299.39	2422.48	2539.29	2589.12
Gas (Fossil)	0.00	0.00	0.00	0.00	0.00
Renewable	84.57	84.57	84.57	84.57	84.57
Assumptions on weather parameters					
Heating Degree Days	NE	2105	2075	2045	2015
Cooling Degree Days	72.06	72.48	77.59	82.69	87.80
Assumptions for the industry sector					
The share of the industrial sector in GDP and growth rate					
Gross value-added total industry (Bio Euro)	NE	242553.94	304142.23	363905.59	436635.05
The production index for industrial sector [3]					
PAP (paper only exc pulp)	74.35	91.33	100.12	106.56	112.82
I&S (iron and steel industry)	117.72	87.40	110.94	112.47	112.93
NFM (non ferrous metals)	94.58	118.80	125.45	129.41	132.85
FDT(food drink and tobacco)	96.12	103.95	106.57	110.42	113.98
TLC (textiles leather and clothing)	139.81	70.64	56.54	46.38	37.86
CHEM Chemicals & Man-made Fibres	73.05	111.65	127.04	147.14	169.61
MIN Other Non-metallic Minerals	109.92	109.51	116.97	122.86	128.71
ENGV Engineering & vehicles	94.33	93.07	103.24	110.50	118.18
COI DTI 'Other industry' category	100.90	109.89	120.25	128.71	137.83
Assumptions for the transport sector					
For Member States using macroeconomic models:					
The growth of transport relative to GDP	NE	NE	NE	NE	NE
For Member States using other models:					
The growth of passenger person kilometres (Million passenger km) [4]	678365.94	777536.06	889225.97	911714.90	938851.03
Number of kilometers by passenger cars (Mkm)	343054.20	418880.73	484674.32	497568.83	513252.70
The growth of freight tonne kilometres	142341.75	183922.86	197210.70	214912.07	228149.23
Freight transport5 (all modes) (Mtkm)	142341.75	183922.86	197210.70	214912.07	228149.23
Assumptions for buildings (in residential and commercial or tertiary sector)					
Gross value-added - services (Bio Euro) (EC95)	NE	810.38	943.89	1063.11	1188.59
For Member States using macroeconomic models:					
The level of private consumption (excluding private transport)	NE	NE	NE	NE	NE
The share of the tertiary sector in GDP and the growth rate	NE	NE	NE	NE	NE
For Member States using other models:					
The rate of change of floor space for tertiary buildings and dwellings					
Number of occupants per dwelling	2.54	2.33	2.27	2.21	2.16
Average floor space per employee (m2/employee)	27.44	28.65	29.70	29.75	29.87
The number of dwellings and number of employees in the tertiary sector					
The number of dwellings (1000 dwellings)	22939.00	26241.23	27634.12	29086.29	30500.00

Number of employees in the tertiary sector (1000 employees)	20331.00	24456.75	26096.99	27220.93	28474.99
Assumptions in the agriculture sector					
For Member States using macroeconomic models:					
The share of the agriculture sector in GDP and relative growth	NA	NA	NA	NA	NA
For Member States using other models:					
Livestock numbers by animal type (1000 heads)					
Total Cattle	12124.65	10690.61	8287.89	8287.89	8287.89
Dairy cattle	2863.89	2090.82	1996.52	1996.52	1996.52
Non-dairy cattle	9260.76	8599.79	6291.37	6291.37	6291.37
sheep	45361.15	36134.41	35957.03	35957.03	35957.03
swine	7552.99	5143.04	5117.33	5117.33	5117.33
poultry	136888.94	170576.78	170576.78	170576.78	170576.78
The area of crops by crop type					
Fertilizer used (Synthetic & Manure) (kt Nitrogen)	1634.00	1280.78	1261.45	1242.13	1222.80
Emissions factors by type of livestock for enteric fermentation and manure management (t CO2e/Thousand heads)					
enteric fermentation Dairy cattle	1849.01	2148.75	2148.75	2148.75	2148.75
enteric fermentation Non-dairy cattle	890.36	900.92	900.92	900.92	900.92
enteric fermentation sheep	97.90	100.85	100.85	100.85	100.85
manure management Dairy cattle	454.15	526.33	526.33	526.33	526.33
manure management Non-dairy cattle	88.89	88.67	88.67	88.67	88.67
manure management sheep	2.33	2.40	2.40	2.40	2.40
manure management Swine	63.00	63.00	63.00	63.00	63.00
manure management Poultry	1.64	1.64	1.64	1.64	1.64
fertilizer use & Crops					
Synthetic fertilizers (kg N2O-N/kg N)	0.0125	0.0125	0.0125	0.0125	0.0125
Manure (kg N2O-N/kg N)	0.0125	0.0125	0.0125	0.0125	0.0125
All crop types (t N2O per t N applied)	0.0125	0.0125	0.0125	0.0125	0.0125
Assumptions in the waste sector [5]					
Municipal solid waste (kt)	38595.87	44183.72	49600.24	55417.16	
The organic fractions of municipal solid waste (%)	63.36%	63.36%	63.36%	63.43%	
Municipal solid waste disposed to:					
Landfills	62.63%	28.21%	13.15%	7.61%	
Incinerated	9.31%	20.75%	20.40%	20.63%	
Composted	6.61%	24.05%	32.13%	33.61%	
Landfills (kt)	24170.96	12462.13	6524.90	4220.00	
Assumptions in the forestry sector					
Forest definitions	Land spanning more than 0.1 hectares with trees higher than 5 meters				
	and a canopy cover of more than 20				

	% or trees able to reach				
	the set thresholds in situ				
Areas of:					
managed forests		1651000	1718000	1785000	1852000
unmanaged forests		822000	822000	822000	822000

Footnotes:
[1] 1990 real prices, taking 2006 exchange rate
[2] Includes imported electricity and gross pumped storage output
[3] Index, 2000 base year
[4] Road only - estimates for other modes not available
[5] Taken from LAWRD model

2. Recommended parameters on projections	**2005**	**2010**	**2015**	**2020**
Assumptions for general economic parameters				
GDP growth rates split by industrial sectors in relation to 2000				
PAP (paper only exc pulp)	91.33	100.12	106.56	112.82
I&S (iron and steel industry)	87.40	110.94	112.47	112.93
NFM (non ferrous metals)	118.80	125.45	129.41	132.85
FDT(food drink and tobacco)	103.95	106.57	110.42	113.98
TLC (textiles leather and clothing)	70.64	56.54	46.38	37.86
CHEM Chemicals & Man-made Fibres	111.65	127.04	147.14	169.61
MIN Other Non-metallic Minerals	109.51	116.97	122.86	128.71
ENGV Engineering & vehicles	93.07	103.24	110.50	118.18
COI DTI 'Other industry' category	109.89	120.25	128.71	137.83
Comparison projected data with official forecasts				
Assumptions for the energy sector				
Average domestic sector gas euros/therm(euro 2000 basis)	0.84	0.98	1.00	1.02
Domestic solid fuel prices euros/therm (euro 2000 basis)	0.95	0.92	0.91	0.91
Domestic burning oil euros/therm (euro 2000 basis)	0.99	0.67	0.70	0.73
Gas to industrial users euros/therm (euro 2000 basis)	0.77	0.61	0.64	0.66
Coal to industrial users euros/therm (euro 2000 basis)	0.29	0.26	0.25	0.24
Fuel oil to industrial users euros/therm (euro 2000 basis)	0.95	0.74	0.77	0.81
Gas to public and miscelaneous sector euros/therm (euro 2000 basis)	0.87	0.77	0.80	0.82
price of coal to service sector euros/therm (euro 2000 basis)	0.37	0.32	0.32	0.31
price of gasoil to the service sector euros/therm (euro 2000 basis)	1.11	0.76	0.79	0.83
National electricity prices per sector as above (may be model output)				
Price of electricity for industrial sector euros/therm (euso 2000 basis)	1.75	1.86	1.86	1.86
Price of electricity for domestic sector euros/therm (euso 2000 basis)	3.64	3.75	3.75	3.75
Price of electricity for service sector euros/therm (euso 2000 basis)	2.05	2.16	2.16	2.16
National coal, oil and gas energy prices per sector (including taxes)				

2. Recommended parameters on projections	2005	2010	2015	2020
National electricity prices per sector as above (may be model output)				
Total production of district heating by fuel type				
Assumptions for the industry sector				
Assumptions fluorinated gases:				
Aluminium production and emissions factors				
Magnesium production and emissions factors				
Foam production and emissions factors				
Stock of refrigerant and leakage rates				
For Member States using macroeconomic models:				
Share of GDP for different sectors and growth rates				
Rate of improvement of energy intensity (1990 = 100)				
For Member States using other models:				
Index of production for different sectors				
Rate of improvement or index of energy efficiency				
Assumptions for buildings (in residential and commercial / tertiary sector)				
For Member States using macroeconomic models:				
Share of tertiary and household sectors in GDP				
Rate of improvement of energy intensity				
For Member States using other models:				
Number of households				
Number of new buildings				
Rate of improvement of energy efficiency (1990 = 100)				
Assumptions for the transport sector				
For Member States using econometric models:				
Growth of transport relative to GDP split by passenger and freight				
Improvements in energy efficiency split by vehicle type				
Improvements in energy efficiency split by vehicle type, whole fleet/new cars				
Rate of change of modal split (passenger and freight)				
Growth of passenger road kilometres				
Growth of passenger rail kilometres				
Growth of passenger aviation kilometres				
Growth of freight tonne kilometres on road				
Growth of freight tonne kilometres by rail				
Growth of freight tonne kilometres by navigation				

2. Recommended parameters on projections	2005	2010	2015	2020
Assumptions for the agriculture sector				
For Member States using econometric models:				
Agricultural trade (import/export)				
Domestic consumption (e.g. milk/beef consumption)				
For Member States using other models:				
Development of area of crops, grassland, arable, set-aside, conversion to forests etc				
Macroeconomic assumptions behind projections of agricultural activity				
Description of livestock (e.g. by nutrient balance, output/animal production, milk production)				
Development of farming types (e.g. intensive conventional, organic farming)				
Distribution of housing/grazing systems and housing/grazing period				
Parameters of fertiliser regime:				
Details of fertiliser use (type of fertiliser, timing of application, inorganic/organic ratio)				
Volatilisation rate of ammonia, following spreading of manure on the soil				
Efficiency of manure use				
Parameters of manure management system:				
Distribution of storage facilities (e.g. with or without cover):				
Nitrogen excretion rate of manures				
Methods of application of manure				
Extent of introduction of control measures (storage systems, manure application), use of best available techniques				
Parameters related to nitrous oxide emissions from agricultural soils				
Amount of manure treatment				

11. COUNTRY CONCLUSIONS

The UK's 2007 Monitoring Mechanism submission projects total emissions of 624.9 Mt CO_2–eq. in 2010, around 19.6% below the base year. In addition, ETS participants are expected to purchase 29.333 MtCO_2-eq. of European Allowance Units or carbon credits from Kyoto mechanisms. In total the UK should overachieve its Kyoto target of 678.3 Mt CO_2–eq. by around 82.7 Mt. This amount of overachievement is slightly greater than reported in 2006. However it is worth noting the substantial increases in the implied Kyoto commitment between 2005 and 2007 reports due to upwards revisions of the base year emissions, and in projections of UK emissions (588.7 Mt in 2006 report; 624.9 in 2007 report). The UK has since advised that it has developed a 'with additional measures' projection scenario based on the Energy White Paper released in May 2007.

The 2007 Monitoring Mechanism submission and accompanying Excel template provided good description and quantification of policies and measures – all were quantified individually and cumulatively.

The projections were also clearly and comprehensively reported, with a split of projections by the six greenhouse gases and by sectors according to the Common Reporting Format (CRF). However the situation regarding emissions reductions from the ETS 2008-2012 was not entirely clear from the report and was subsequently clarified in personal communications with UK Defra.

Most projection indicators and parameters were provided. Limited information was provided about model sensitivity and uncertainty.