Approximated EU GHG inventory for the year 2007

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Cover page photo: *Example of green house gas emittor: EDF power plant just South of the village Point-à-Mousson, France, on the West bank of river Moselle and along highway E25. Photo© by Frank de Leeuw, 2008.*

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Abbreviations

AF	Adjustment factor
AR	Activity rate
CITL	Community independent transaction log
CRF	Common reporting format
E	Emission
EC	European Commission
ETS	Emissions trading scheme
EU	European Union
GHG	Greenhouse gas
IEA	International Energy Agency
IEF	Implied emission factor
IPPC	Intergovernmental Panel on Climate Change
LULUCF	Land use, land-sue change and forestry
UNFCCC	United Nations Framework Convention on Climate Change
VAT	Value added tax

1 Summary

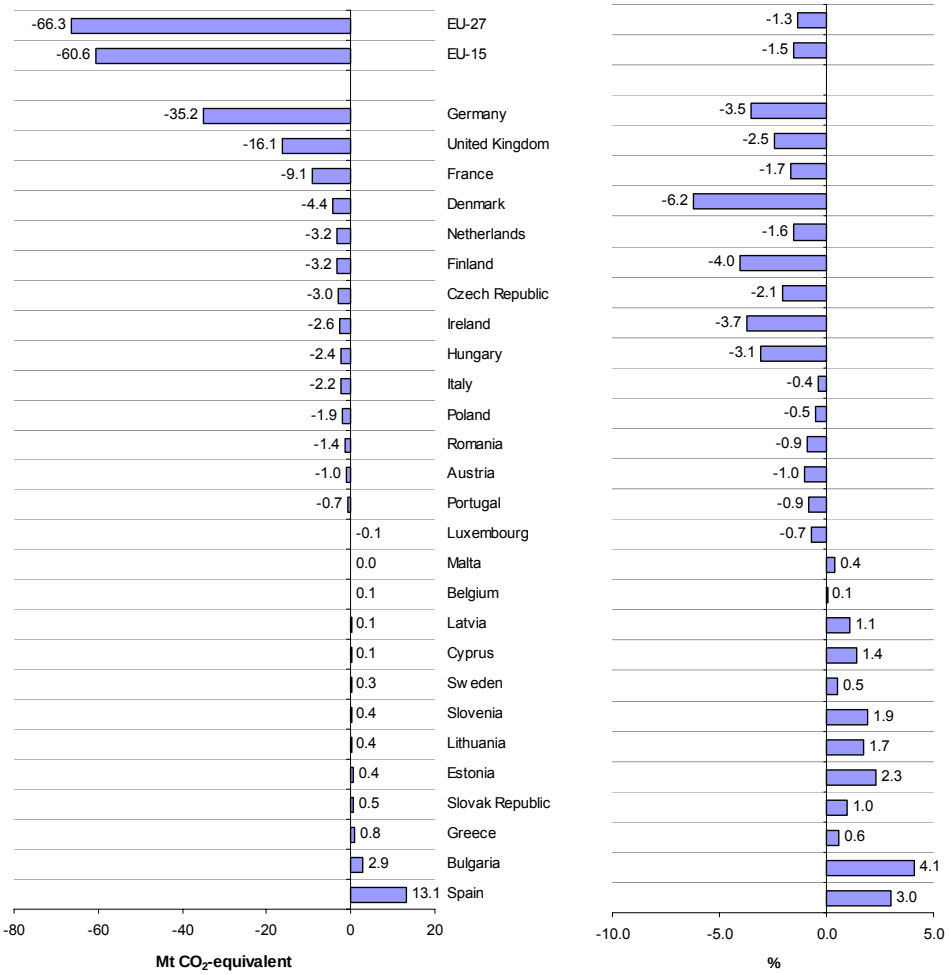
The national GHG (greenhouse gas) inventories of the EU-27 Member States under the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol are only available with a delay of 1.5 years (inventories submitted in April in year Y include data until the year Y-2). For the assessment of the status of emission reductions compared to targets under the Kyoto Protocol and the EU burden sharing agreement during the first commitment period, it would be useful to have inventory data in the year after the emissions occurred. This would enable governments an improved planning of their activities to ensure compliance with Kyoto targets at the end of the first commitment period.

This report presents GHG emissions for EU Member States, EU-15 and EU-27 for the year 2007 (Y-1). Methodologies were developed to derive GHG emissions from data sources that are published in the year after the emissions occur. Due to the methodological development it took rather long to finalize this inventory for 2007, which will not be much earlier than the official submission of GHG inventories to the European Commission (15 January 2009). However, in future years the preparation of such an inventory will mostly depend on the availability of the data sources used for the year Y-1. These data become available until mid-July each year and approximated GHG inventories can be released earlier in future years.

The approximated GHG inventory covers total GHG emissions as reported under the Kyoto Protocol and the UNFCCC excluding the LULUCF sector. Estimations are performed for all major source categories in all sectors. For the most important source categories data sources with updated activity or emission data for the year-1 were identified that were used to calculate emissions. For source categories for which no international datasets with updated activity data exist or which are too complex for such approach, emissions were extrapolated from past trends (linear extrapolation) or emissions from the previous year were kept constant if historic data did not show a linear trend. On this basis, a detailed bottom-up approach was developed that covers the full scope of emissions of a GHG inventory submission. Such bottom-up approach was calculated for each Member State as well as for EU-15 and EU-27.

According to the approximated estimation for the year 2007 based on aggregate methodologies total EU emissions (without LULUCF) decline in 2007 by -1.5% for EU-15 and by -1.3% for EU-27 compared to the previous year (see Figure 1). The largest relative decrease with -6.2% takes place in Denmark mainly arising from reduced emissions from fuel combustion, followed by Finland with -4.0%. The largest absolute reductions occur in Germany (-35.2 Mt CO_2eq) and UK (-16.1 Mt CO_2eq). The biggest relative and absolute emission increases compared to 2006 are estimated for Bulgaria (4.1% of total GHG emissions) and Spain (3% of total GHG emissions).

Figure 1 Changes in GHG emission trends in Europe, 2006-2007 (total GHG emissions without LULUCF), (left figure Mt CO2eq, right figure %)[1]



Source: 2008 CRF inventory submissions to UNFCCC and EC for the year 2006 and authors' calculations for the year 2007.

Figure 2 shows the emission trend for total GHG emissions without LULUCF between the year 1990 and 2007.[2] According to the approximated estimation total EU-15 emis-

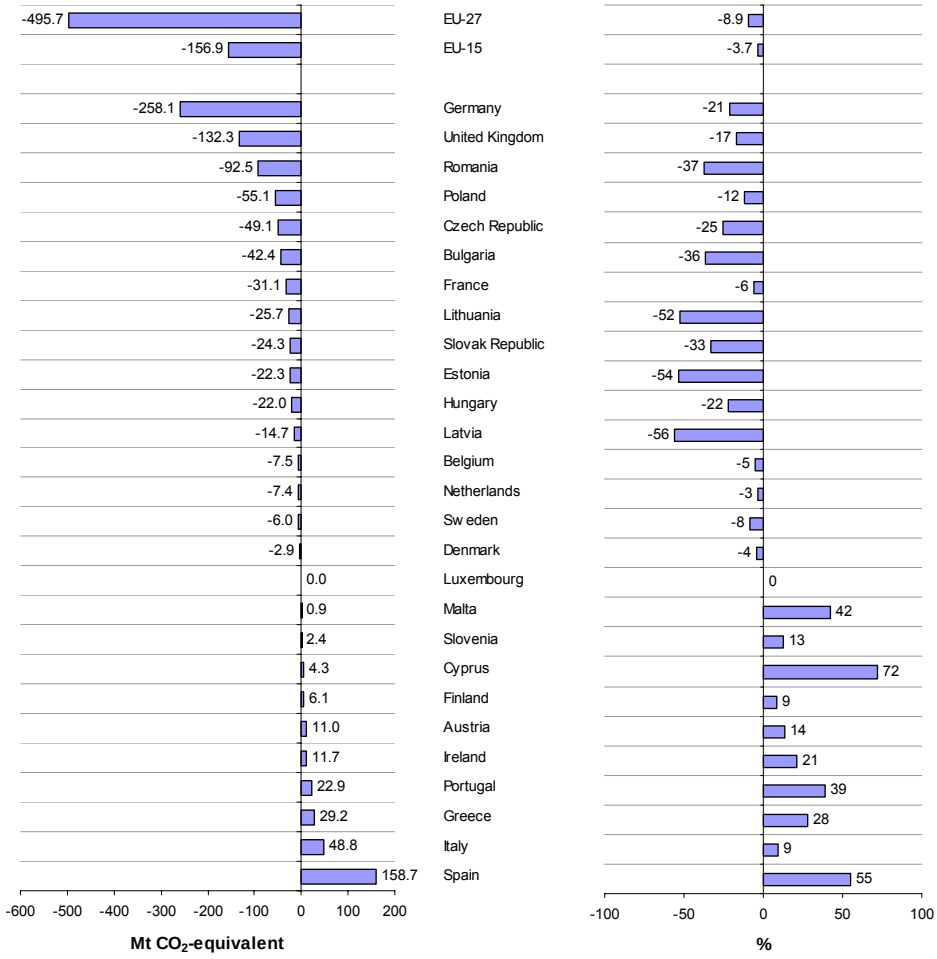
[1] For two Member States, Denmark and UK, inventories submitted to the UNFCCC are different to the inventories submitted under the EC Monitoring Mechanism Decision due to the fact that Kyoto inventories include Non-EU territories. The comparison in this table refers to the EC GHG inventory as consistent with the inventory submitted under the EC Monitoring Mechanism Decision.

[2] This is not equivalent to the difference to base year emissions due to accounting rules such as the election of the base year for F-gases as well as due to the ongoing recalculations in GHG inventories.

sions in 2007 will be -3.7% below the 1990 level. For EU-27 total GHG emissions in 2007 are estimated to be almost -9% below 1990 emissions.

According to this approximated estimation, four Member States (Germany, UK, France and Sweden) will have reached in 2007 the reduction or limitation level agreed for EU-15 Member States in accordance with Article 4 of the Kyoto Protocol (without taking account of LULUCF activities or flexible mechanisms).

Figure 2 Changes in greenhouse gas emission trends in Europe for total GHG emissions without LULUCF, 1990-2007, (left figure Mt CO2eq, right figure %)



Source: 2008 CRF inventory submissions to UNFCCC and EC for the year 1990 and authors' calculations for the year 2007

Figure 3 Changes in GHG emissions between 2006 and 2007 at sectoral level

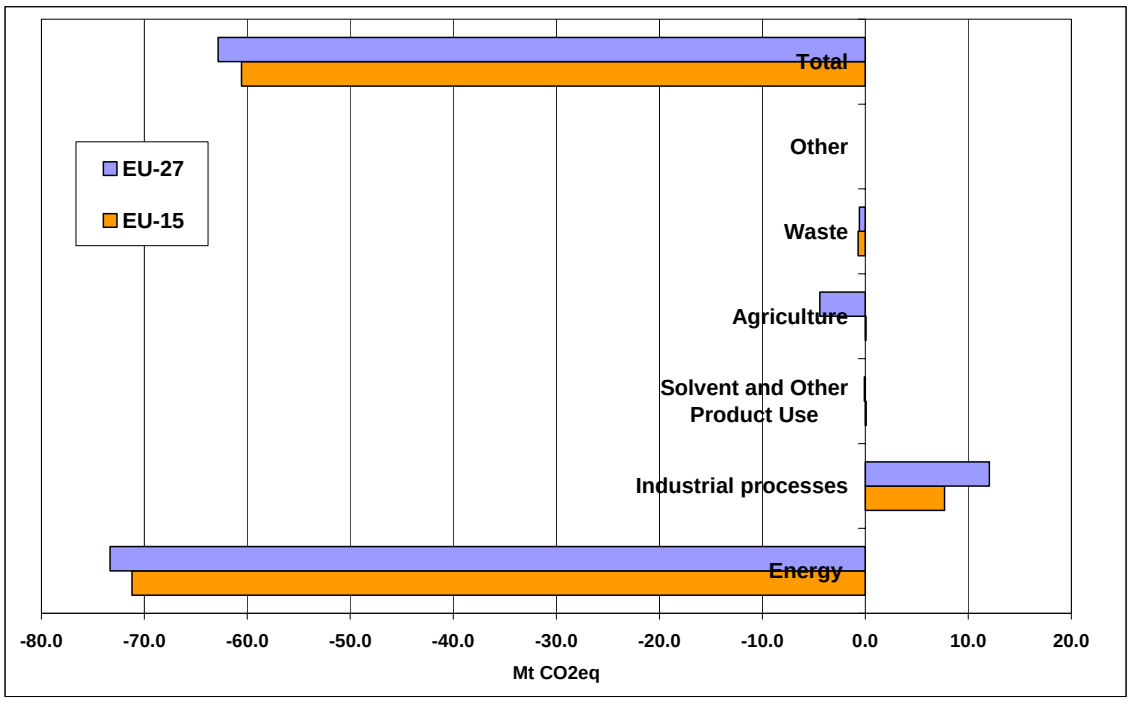


Table 1 Changes of GHG emissions between 2006 and 2007 in absolute and relative terms at sectoral level

Sector	Change 2006/07			
	EU-15		EU-27	
	Mt CO_2eq	%	Mt CO_2eq	%
Energy	-71.2	-2.1%	-73.3	-1.8%
Industrial processes	7.7	2.3%	12.1	2.9%
Solvent and Other Product Use	0.1	1.0%	-0.1	-0.8%
Agriculture	0.1	0.0%	-4.4	-0.9%
Waste	-0.7	-0.7%	-0.6	-0.4%
Other	0.0	0.0%	0.0	0.0%
Total	***-60.6***	***-1.5%***	***-62.8***	***-1.2%***

Figure 3 and Table 1 indicate the changes between 2006 and 2007 at sectoral level for EU-15 and EU-27. The largest absolute emission reductions will occur in the energy sector with -71 Mt CO_2eq for EU-15 and -73.3 Mt CO_2eq for EU-27 which is equivalent to an emission reduction by 2.1% and 1.8% respectively. This emission decline in the energy sector is partly due to a mild winter in 2007. Eurostat heating degree days for EU-27 for 2007 are 5% lower than the average heating degree days of the 5 previous years and 4% lower for EU-15. Another reason for the emission decline in the energy sector is the fuel price increase in 2007. High fuel prices resulted in reduced consumption, e.g. in major German cities the strong fuel price increases were mirrored by a significant increase in public transport demand. Due to high oil prices existing oil stocks for heating purposes were depleted completely before they were refilled while consumers were waiting for a price decline. In Germany this effect was even more pronounced

because at the beginning of 2007 VAT rates increased which let to a refill of fuel stocks at the end of 2006 that were subsequently used in 2007 and not refilled during the period of high fuel prices.

The comparison between 2006 and 2007 also shows that GHG emissions increase in the industrial processes sector where the increase is higher for new Member States (increase by 7.7 Mt CO_2eq. or 2.3% for EU-15 and by 12.1 Mt CO_2eq or 2.9% for EU-27). GHG emissions from the agriculture sector remain constant for EU-15 and show a decline for EU-27 by -1.3% or -6.2 Mt CO_2eq. However methodological changes in the emission estimation methodologies in the agriculture sector due to the implementation of 2006 IPCC Guidelines for GHG inventories may lead do more drastic changes in GHG emissions in the agriculture sector in 2009. However, such methodological changes at Member States' level cannot be reflected in the approximated inventory which assumes constant inventory methodologies.

The waste sector is expected to show small emission reductions for both EU-15 and EU-27.

2 Background and objective

The national GHG (greenhouse gas) inventories of the EU-27 Member States under the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol are available for policy and market analysis with a delay of normally 16 to 18 months (to the services of the European Commission a few months earlier).

After the start of the first commitment period under the Kyoto Protocol and the second phase of the European Union Emissions Trading Scheme (EU ETS) the availability of real-time projections of GHG emissions could be useful additional information for the EU ETS market as well as for the European Commission, the European Parliament and the Member States governments for the assessment of the status of compliance with Kyoto targets.

Emissions covered by the EU emissions trading scheme become available sooner (in March for year Y-1) and a number of other data sources also become available in the year after the activities occurred. In 2007 a feasibility study was conducted to identify appropriate data sources and methodologies to provide a more recent estimate for GHG emissions of the past year.[3]

In this report these data sources were used and methodologies were refined to estimate GHG emissions for EU Member States, EU-15 and EU-27 for the year 2007 (X-1). The results and methodologies used are presented in the following sections of this report.

The approximated GHG inventory covers total GHG emissions as reported under the Kyoto Protocol and the UNFCCC excluding the LULUCF sector.

For the most important source categories data sources with updated activity or emission data for the year-1 were identified that were used to calculate emissions. For source categories for which no international datasets with updated activity data exists or which are too complex for such approach from a methodological point of view, emissions were extrapolated from past trends (linear extrapolation) or emissions from the previous year were held constant if historic data did not show a linear trend. On this basis a detailed bottom-up approach was developed that covers the full scope of emissions of a GHG inventory submission. Such bottom-up approach was calculated for each Member State as well as for EU-15 and EU-27.

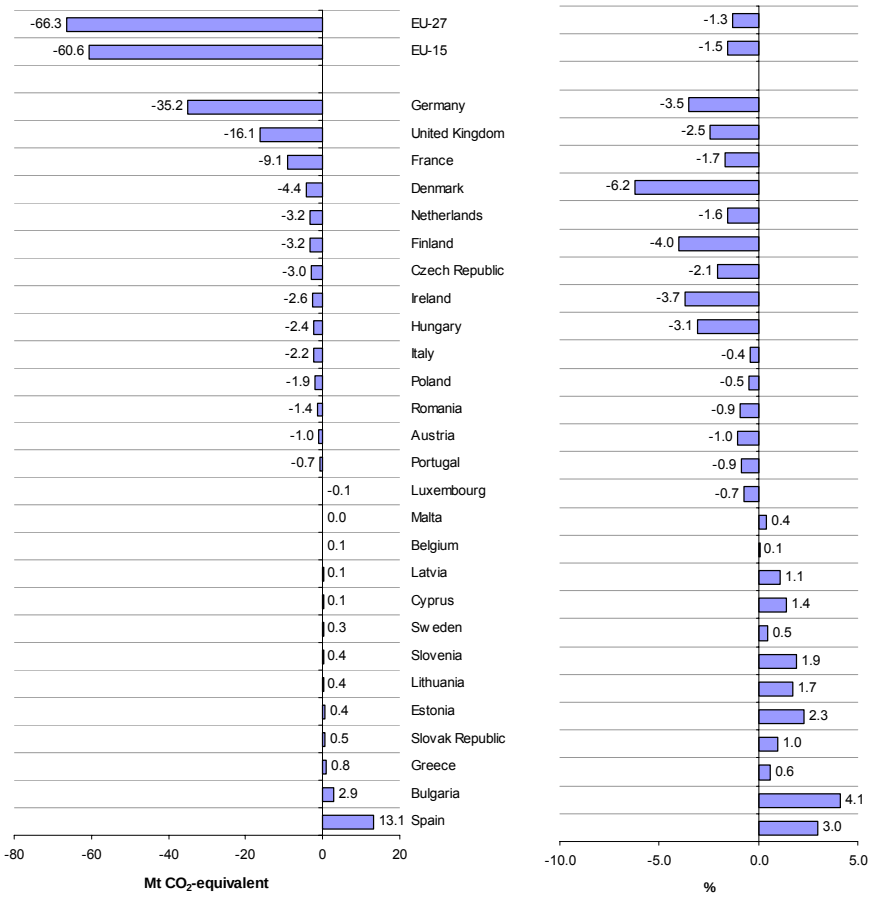
[3] Herold, A., Mattes F.C., Ziesing, H.J. 2007: A 'Proxy-Inventory' for GHG Emissions from the EU-27 Member States – Feasibility Study. ETC/ACC Technical Paper No 2007/, December 2007.

3 General results

3.1 European GHG emissions in 2007

According to the approximated estimation for the year 2007 based on aggregate methodologies total EU emissions (without LULUCF) decrease in 2007 by -1.5% for EU-15 and by -1.3% for EU-27 compared to the previous year (see Figure 4).

Figure 4 Changes in GHG emission trends in Europe, 2006-2007 (total GHG emissions without LULUCF), (left figure Mt CO2eq, right figure %)[4]



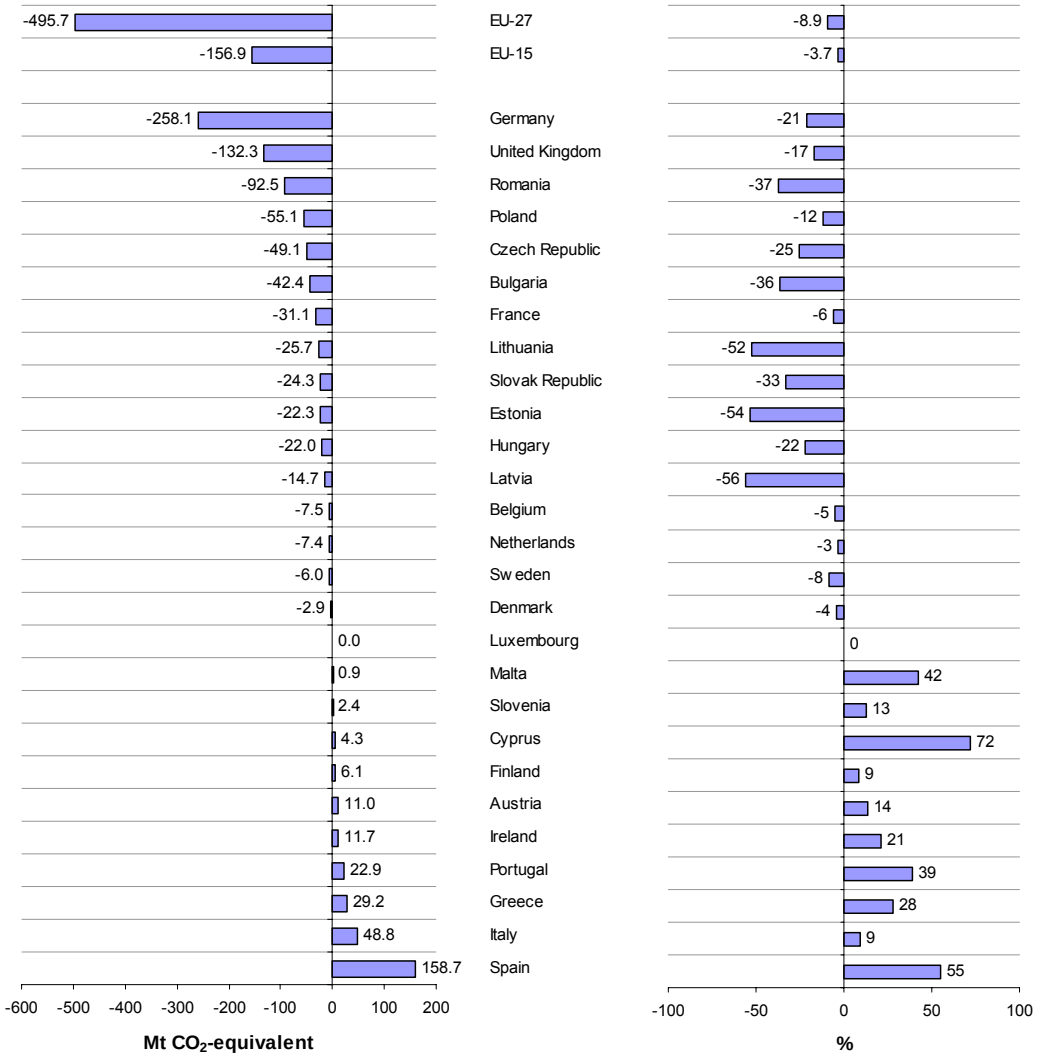
Source: 2008 CRF inventory submissions to UNFCCC and EC for the year 2006 and authors' calculations for the year 2007.

[4] For two Member States, Denmark and UK, inventories submitted to the UNFCCC are different to the inventories submitted under the EC Monitoring Mechanism Decision due to the fact that Kyoto inventories include Non-EU territories. The comparison in this table refers to the EC GHG inventory as consistent with the inventory submitted under the EC Monitoring Mechanism Decision.

Denmark shows the biggest relative decrease with -6.2% mainly arising from fuel combustion, followed by Finland with -4.0%.

The largest absolute reductions will arise in Germany (-35.2 Mt CO_2) and UK (-16.1 Mt CO_2). The largest relative increases compared to the last inventory submission are estimated for Bulgaria (4.1% of total GHG emissions) and Spain (3% of total GHG emissions).

Figure 5 Changes in greenhouse gas emission trends in Europe for total GHG emissions without LULUCF, 1990-2007, (left figure Mt CO2eq, right figure %)



Source: 2008 CRF inventory submissions to UNFCCC and EC for the year 1990 and authors' calculations for the year 2007

Figure 5 shows the emission trend for total GHG emissions without LULUCF between the year 1990 and 2007.[5] According to the approximated estimation total EU-15 emissions in 2007 will be -3.7% below the 1990 level and almost -9% for EU-27.

According to the approximated estimation, four Member States (Germany, UK, France and Sweden) will have reached in 2007 the reduction or limitation level agreed for EU-15 Member States in accordance with Article 4 of the Kyoto Protocol.

Table 2 and Figure 6 show the changes between 2006 and 2007 at sectoral level for EU-15 and EU-27. The largest absolute emission reductions will occur in the energy sector with -71 Mt CO_2eq for EU-15 and -73.3 Mt CO_2eq for EU-27 which is equivalent to an emission reduction by 2.1% and 1.8% respectively. This emission decline in the energy sector is partly due to a mild winter in 2007. Eurostat heating degree days for EU-27 for 2007 are 5% lower than the average heating degree days of the 5 previous years and 4% lower for EU-15. Another reason for the emission decline in the energy sector are high fuel prices in 2007. High fuel prices resulted in reduced consumption, e.g. in major German cities the strong fuel price increases were mirrored by a significant increase in public transport demand. Due to high fuel prices existing oil and gas stocks for heating purposes were depleted completely before they were refilled while consumers were waiting for a price decline. In Germany this effect was even more pronounced because at the beginning of 2007 VAT rates increased which let to a refilling of fuel stocks at the end of 2006 which were subsequently used in 2007 and not refilled during the period of high fuel prices.

The comparison between 2006 and 2007 shows that GHG emissions increase in the industrial processes sector where the expected increase is higher for new Member States (increase by 7.7 Mt CO_2eq. or 2.3% for EU-15 and by 12.1 Mt CO_2eq or 2.9% for EU-27). GHG emissions from the agriculture sector remain constant for EU-15 and show a decline for EU-27 by -1.3% or -6.2 Mt CO_2eq. However methodological changes in the emission estimation methodologies in the agriculture sector due to the implementation of 2006 IPCC Guidelines for GHG inventories may lead do more drastic changes in GHG emissions in the agriculture sector in 2009. Such changes cannot be reflected in the approximated inventory which assumes constant inventory methodologies.

The waste sector is expected to show small emission reductions for both EU-15 and EU-27.

[5] This is not equivalent to the difference to base year emissions due to accounting rules such as the election of the base year for F-gases as well as due to the ongoing recalculations in GHG inventories.

Table 2 Changes of GHG emissions between 2006 and 2007 in absolute and relative terms at sectoral level

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	EU-15		EU-27	
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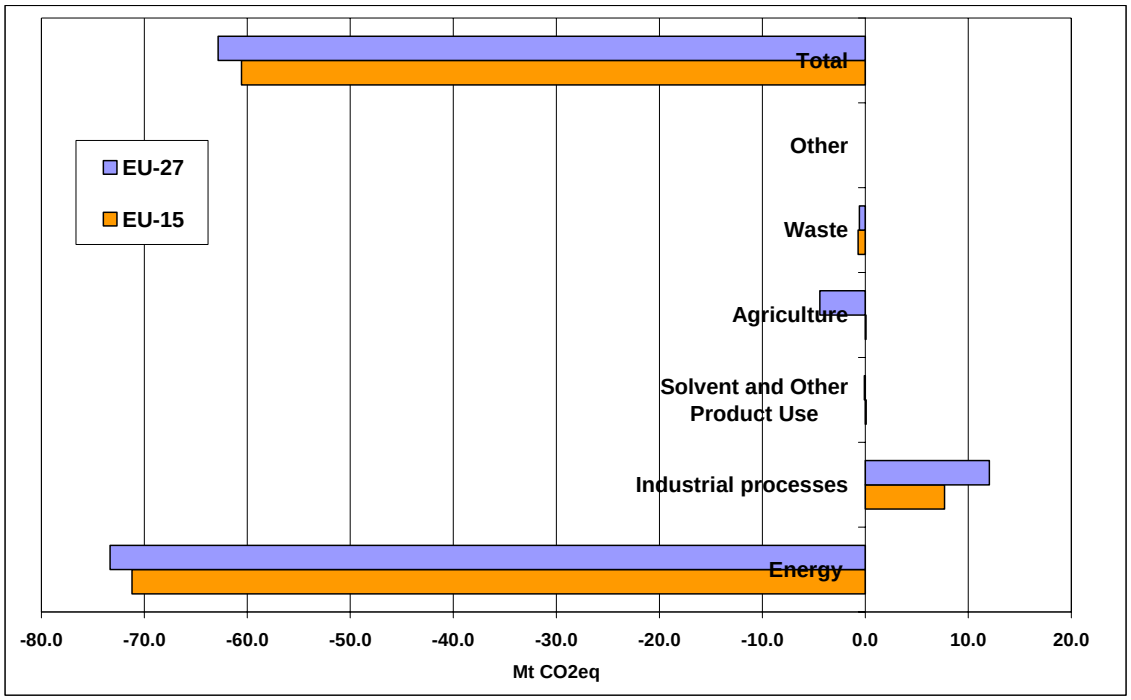
Agriculture	0.1	0.0%	-4.4	-0.9%
Waste	-0.7	-0.7%	-0.6	-0.4%
Other	0.0	0.0%	0.0	0.0%
Total	***-60.6***	***-1.5%***	***-62.8***	***-1.2%***

Figure 6 Changes of GHG emissions between 2006 and 2007 at sectoral level



Annex 2 includes summary tables for 2007 for EU-27, EU-25 and for each Member State. Table 3 and Table 4 show the detailed results for EU-15 and EU-27.

Table 3 Summary table approximated GHG emissions for the year 2007 for EU-15 (Total emissions without LULUCF)

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
EU-15

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**3,406,968**	**302,579**	**308,975**	**58,922**	**4,201**	**8,874**	**4,090,519**
1. Energy	**3,170,300**	**43,918**	**41,529**				**3,255,748**
A. Fuel Combustion (Sectoral Approach)	3,153,001	10,324	41,433				3,204,759
1. Energy Industries	1,189,130	1,189	9,913				1,200,231
2. Manufacturing Industries and Construction	562,246	1,093	6,780				570,120
3. Transport	870,591	1,740	18,694				891,025
4. Other Sectors							
5. Other	531,034	6,302	6,047				543,382
B. Fugitive Emissions from Fuels	17,299	33,594	96				50,989
1. Solid Fuels	1,394	10,942	NE				12,336
2. Oil and Natural Gas	15,905	22,652	NE				38,557
2. Industrial Processes	**229,072**	**622**	**34,003**	**58,922**	**4,201**	**8,874**	**335,694**
A. Mineral Products	123,889	13	NE				123,902
B. Chemical Industry	31,966	414	33,899				66,279
C. Metal Production	72,874	151	8				73,033
D. Other Production	31	7	89				127
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	312	37	7				355
3. Solvent and Other Product Use	**5,093**		**3,101**				**8,194**
4. Agriculture		**165,501**	**219,029**				**384,531**
A. Enteric Fermentation		118,821					118,821
B. Manure Management		44,574	22,753				67,327
C. Rice Cultivation		2,327					2,327
D. Agricultural Soils(3)		-621	196,191				195,569
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		400	86				486
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**2,502**	**92,537**	**11,312**				**106,351**
A. Solid Waste Disposal on Land	13	80,508	3				80,524
B. Waste-water Handling		9,962	10,104				20,066
C. Waste Incineration	2,489	506	349				3,344
D. Other	NE	1,561	856				2,417
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	4,090,519
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

Table 4 Summary table of approximated GHG emissions for the year 2007 for EU-27 (Total emissions without LULUCF)

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2008 (Proxy) v1.0
EU-27

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**4,203,211**	**412,326**	**385,161**	**64,543**	**5,418**	**9,300**	**5,079,957**
1. Energy	**3,892,686**	**84,003**	**48,671**				**4,025,360**
A. Fuel Combustion (Sectoral Approach)	3,874,863	16,075	48,574				3,939,513
1. Energy Industries	1,580,605	1,339	12,448				1,594,391
2. Manufacturing Industries and Construction	679,984	1,396	7,432				688,812
3. Transport	992,474	2,136	21,714				1,016,324
4. Other Sectors							
5. Other	621,800	11,205	6,981				639,986
B. Fugitive Emissions from Fuels	17,823	67,928	96				85,847
1. Solid Fuels	1,573	28,934	NE				30,508
2. Oil and Natural Gas	16,249	38,993	NE				55,243
2. Industrial Processes	**300,358**	**1,170**	**47,848**	**64,543**	**5,418**	**9,300**	**428,636**
A. Mineral Products	159,598	18	NE				159,617
B. Chemical Industry	41,232	738	47,744				89,715
C. Metal Production	97,848	370	8				98,226
D. Other Production	31	7	89				127
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	1,648	37	7				1,692
3. Solvent and Other Product Use	**6,347**		**3,793**				**10,140**
4. Agriculture		**197,416**	**271,089**				**468,505**
A. Enteric Fermentation		142,557					142,557
B. Manure Management		52,561	32,445				85,006
C. Rice Cultivation		2,393					2,393
D. Agricultural Soils(3)		-621	238,506				237,884
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		527	138				665
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**3,820**	**129,736**	**13,760**				**147,316**
A. Solid Waste Disposal on Land	13	110,199	3				110,215
B. Waste-water Handling		17,408	12,369				29,777
C. Waste Incineration	3,807	506	463				4,775
D. Other	NE	1,624	925				2,549
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	5,079,957
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

3.2 Methodologies and data sources

For the estimation of approximated emissions the following data sources for emissions or activities in the year 2007 were used:

- BP's Statistical Review of World Energy 2008[6];
- Verified emissions recorded in the CITL[7];
- Eurostat monthly production data of hard coal and lignite from Eurostat;
- Eurostat monthly data on crude oil input to refineries (indicator code 101008, product code 3100);
- Eurostat monthly data on crude oil production (indicator code 100100, product code 3100;
- Eurostat monthly total consumption data for natural gas (indicator code 100900, product code 4100);
- Eurostat production data for natural gas (indicator code 100100, product code 4100);
- Eurostat annual data for the final energy consumption of motor spirit, automotive diesel oil and kerosene/jet fuels;
- Eurostat monthly data for the internal market deliveries of motor spirit, automotive diesel oil and kerosene/jet fuels;
- Cement production data from CEMBUREAU;
- Cement and cement clinker production data from Eurostat's Prodcom database;
- Lime production from Eurostat's Prodcom database;
- monthly production data for crude steel production of the International Iron and Steel Institute (IISI);
- Eurostat annual statistics on livestock population for dairy cattle, non-dairy cattle, swine, sheep, goats and laying hens.

The activity rates were multiplied by the implied emission factors from the 2008 inventory submissions to achieve the emissions, except when CITL data were used that already present CO_2 emissions.

6 http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/reports_and_publications/statistical_energy_review_2008/STAGING/local_assets/downloads/pdf/statistical_review_of_world_energy_full_review_2008.pdf

7 http://dataservice.eea.europa.eu/atlas/viewdata/viewpub.asp?id=3529

Based on these data sources 2007 emission estimates were estimated for the following source categories:

- Energy
  - 1.A Fuel combustion
    - 1.A.1 Energy industries
    - 1.A.2 Manufacturing Industries and Construction
  - 1B Fugitive emissions
    - 1.B.1 Solid Fuels
    - 1.B.2.a Oil and Natural Gas, Oil
    - 1.B.2.b Oil and Natural Gas, Natural Gas
    - 1.B.2.c Oil and Natural Gas, Venting and Flaring
  - 1.A.3 Transport
- Industrial processes
  - 2.A Mineral Products
  - 2.C Metal Production

Agriculture

  - 4.A Enteric Fermentation
  - 4.B Manure management

The alternative sources of AD and emissions listed above were only used if the resulting emissions matched well with real inventories for past years. If large discrepancies occurred for individual Member States, different approaches (trend extrapolation, constant values from previous year) were used.

For the waste sector and all other inventory source categories not listed above no 2007 activity data was available that could be combined with IEFs from GHG inventories. These categories were extrapolated from 2006 GHG inventories, either by trend extrapolation or by taking the constant values of the year 2006. Constant values were used when past trends were inconsistent and strongly fluctuating and trend extrapolation was used when historic time series showed good correlations with a linear trend.

Annex 1 provides a detailed overview of methods and data sources used for each source category and Member State.

3.3 Inventories of GHG emissions for the year X-1 in future years

The estimation of the approximated GHG inventories for European Member States was delayed in 2008 due to the methodological development that resulted in a complex selection of methodologies and estimation approaches for each Member State. On the basis of the methodological work undertaken in 2008, future approximated GHG inven-

tories can be released earlier in future years. The timing of future releases will depend on the release of the underlying data sources used for the estimation. The availability of data sources is shown in Table 5.

The latest data sources become available in July each year which are Eurostat Prodcom data and updated verified emissions in the CITL. CITL data become available earlier, but experiences with data releases in 2006-2008 have shown that before July each year CITL data were not yet complete for all Member States and delays occurred for some countries while data in July had been consolidated. This situation may improve in the future, but for the time being it seems preferable to work on the basis of CITL data downloads from July.

Table 5 Time of data availability of data sources used for the approximated inventory

Data source	Availability
Community Independent Transaction Log (CITL) emissions	March - April, significant updates until July
BP Statistical Review of World Energy	15 June
Monthly IEA oil market report	about two weeks after each month
Eurostat monthly production data for hard coal and lignite	3 months after reporting period
Eurostat monthly data on crude oil input to refineries	3 months after reporting period
Eurostat monthly production data for crude oil	3 months after reporting period
Eurostat monthly total consumption data for natural gas	3 months after reporting period
Eurostat monthly production data for natural gas	3 months after reporting period
CEMBUREAU cement production data	in 2008 in October, planned for earlier release
Eurostat Prodcom cement and cement clinker production data	July
Eurostat Prodcom lime production	July
IISI monthly production data for crude steel production	2 months after reporting period
Eurostat annual statistics on livestock population for dairy cattle, non-dairy cattle, swine, sheep, goats and laying hens.	April
CRF inventory submissions	end of May (final submitted changes)

3.4 Robustness of approximated GHG inventories

Where possible, the methods used for the approximated GHG inventory for 2007 were compared with real inventory years for the available past years in order to assess the correspondence of the proxy methodology compared to the inventory data.

The detailed results of these comparisons are reported sections “Results for past trends” in chapter 4. However, such comparison for past trends was not possible for all methods because some of the underlying datasets are only available since 2006. For transport emissions such checks for the entire time-series would have been very time consuming and costly and were therefore not performed. However, for most other source categories such quality checks for past years were undertaken and differences to real inventory data assessed.

The approximated inventory methodology cannot take changes into account that results from methodological changes in Member States’ GHG inventories or from changes in implied emission factors in the subsequent inventory submission. Inventory compliers are requested to continuously improve the methods and data sources used. In particular the ongoing work of implementing 2006 IPCC Guidelines and the closure of existing gaps in emissions can result in deviations from the proxy data. However, it is impossible to forecast such methodological changes. In 2009 a comparison of the proxy estimation results with Member States inventory submissions is planned that may also show the impacts of methodological changes and Member States’ recalculations.

3.4.1 Robustness of approach for Fuel combustion

At the level of total emissions from fuel combustion, results of the approximated GHG inventory have been compared with real inventory data for the historic time series (see Table 10). For all past 5 years (2002-2006) deviations between both approaches were

- below ± 1% for France, Italy, Portugal, Spain and United Kingdom;
- below ± 3% for Austria, the Czech Republic, Germany, Denmark, Hungary and Poland;
- below ± 5% for Bulgaria, Ireland and Lithuania and
- below ± 7% for Belgium, Finland, Greece, the Netherlands and Slovakia.

The data for Luxembourg showed a deviation of -10.3% for 2004, but deviations around 2% for other recent years. In Romania approximated results deviated by -6.3% in 2003 and 7.8% in 2005, but only by 0.5% in 2006 and 1.4% in 2004. Sweden showed rather small discrepancies of around 2% throughout the entire time series, but a large discrepancy of 11.7% in 2006. In many countries the deviation for the last estimated inventory year (2006) is higher than for earlier years of the time series. For the latest inventory year frequently preliminary data is used which is often recalculated in later years with final data. These deviations largely determine the total uncertainty of the approximated GHG inventory due to the large share of CO_2 emissions from fuel

combustion in total GHG emissions. For the quality of the total estimate it is important that the largest contributors to CO_2 emissions from fuel combustion (Germany, France, Italy, Spain and United Kingdom) are mostly within the range of < ± 1% deviation, only Germany lies in the ± 3% range.

Detailed results for deviations between the proxy methodology and real inventories are presented for 1A1 Energy industry section 4.1.2.3 and for 1A2 Manufacturing Industries and construction in section 4.1.3.3

3.4.2 Robustness of approach for Fugitive emissions from fuels

The significance of Fugitive emissions from fuels in Member States' GHG inventories depends on the relevance of coal mining activities as well as the relevance of oil and gas production sectors. The proxy methodology could only be compared with real inventories for four historic years because Eurostat data is not available before. Section 4.1.4.3 shows the detailed results of these comparisons.

Deviations between both approaches for CH_4 emissions from solid fuels were

- below ± 1% for the Czech Republic, Poland, Greece and Slovenia for most years;
- below ± 10% for Germany, Spain, UK, Bulgaria, Romania and Slovakia.

The data for Hungary showed an exact match for the last year, but large deviations (50-80%) for the years before.

Deviations between both approaches for CH_4 emissions from oil were mostly below 5%. Fugitive CO_2 emissions from gas showed discrepancies of below 5%, except for Italy for which deviations of up to 14% occurred. For fugitive CH_4 emissions from gas the trend between both approaches matches very well with only a deviation of ± 2% for the most recent year 2005/2006. The deviations for fugitive emissions from venting and flaring were higher in the range of 5%-10%.

3.4.3 Robustness of approach for Industrial processes

For CO_2 emissions from 2A Mineral Products, results of the approximated GHG inventory were compared with real inventory data for either the last year or the historic time series (see 4.2.1.3). Deviations between both approaches were

- below ± 1% for Belgium, Germany, France, Greece, Ireland Italy and Sweden;
- below ± 3% for Austria, Cyprus, the Czech Republic, Estonia, Spain, Finland, Hungary., Portugal, Romania, Slovenia and Slovakia;
- below ± 5% for Bulgaria, United Kingdom, Luxembourg and Poland;
- below ± 10% for Denmark, Lithuania and the Netherlands.

For Latvia the deviation was rather high with 23.4% for 2006. It can be expected that these deviations further decrease over time when a longer time series of data from the European ETS become will be available for a better trend comparison.

For CO_2 emissions from 2C Metal production results of the approximated GHG inventory were compared with real inventory data for the historic time series 1996-2006 (see 4.2.2.3). Deviations between both approaches were

- below ± 1% for Germany and Hungary for the past 5 years;
- below ± 10% for Austria, Bulgaria and Slovakia.

Many Member States show rather good results for most years, but larger deviations for single years of the historic time series. For the last year 2006 the proxy approach shows larger deviations from real inventories (> 10%) for France (19%), UK (16%, Luxembourg (-10.8%), the Netherlands (-21%), Poland (-15%), Romania (-17%), Sweden (19%) and Slovenia (14%).

3.4.4 Robustness of approach for agriculture source categories

For CH_4 emissions from 4A Enteric Fermentation results of the approximated GHG inventory were compared with real inventory data for the historic time series 1990-2006 (see 4.3.1.3). For the past 5 years deviations between both approaches were

- below ± 3% for Austria, Belgium, the Czech Republic, Germany, Denmark, Spain, France, UK, Hungary, Italy, Luxembourg, Latvia, Poland, Romania, Sweden and Slovenia;
- below ± 5% for Bulgaria, Greece, Ireland, Lithuania and Portugal;
- below ± 10% for Estonia, Finland and Slovakia.

Only for the Netherlands rather high deviations of around 20% occurred during most years of the historic time series 1990-2006.

For CH_4 emissions from 4B Manure Management results of the approximated GHG inventory were compared with real inventory data for the historic time series 1990-2006 (see 4.3.2.3). For the past 5 years deviations between both approaches were

- below ± 3% for Austria, Belgium, the Czech Republic, Germany, UK, Ireland, Lithuania, Latvia, Poland, Portugal Romania, Slovenia and Slovakia;
- below ± 5% for, Denmark, Greece, France, Hungary, Italy and Luxembourg;
- below ± 10% for Bulgaria, Spain, and Finland.

For Estonia results deviate by 32% and for Sweden by 13% for 2002, but are closer afterwards. Also for manure management, the approximated emissions for the Netherlands show a discrepancy of around -10% to real inventory emissions.

4 Sectoral results

4.1 Energy

4.1.1 1.A Energy fuel combustion

4.1.1.1 Methods and data sources used

Based on the results of the National GHG emission inventories in the previous year, the main source for the estimation of CO_2 emissions from source category 1.A (Energy - fuel combustion) is the most recent BP Statistical Review of World Energy, which contains individual data for 20 EU Member States and combined data for Belgium and Luxembourg. No data are published for Cyprus, Estonia, Latvia, Malta and Slovenia in this source. The share of these (small) countries in energy consumption amounts to less than 1% of total EU emissions, with some differences regarding individual energy sources. The BP data refer to primary energy consumption and covers only commercially traded fuels. The data source excludes non-commercial fuels such as wood, peat and animal wastes which, though important in many countries, are unreliably documented in terms of consumption statistics. In addition wind, geothermal and solar power generation are not covered in the BP data.

The primary energy consumption reported by BP covers the three fossil fuel categories, oil, natural gas, coal which are relevant for CO_2 emissions as well as nuclear energy and hydro electric energy. On the basis of the fossil fuels the respective CO_2 emissions can be calculated with assumed emission factors. As a result, we estimated the changes of total CO_2 emissions from previous year Y-1 to Y of each country.

Based on these data the emissions were calculated as following:

$$E^{Y}_{1A,CO2} = \frac{E^{Y}_{BP(CO2,\,fossil)}}{E^{Y-1}_{BP(CO2,\,fossil)}} \cdot E^{Y-1}_{1A,CO2}$$

with

$E^{Y}_{1A,CO2}$ $CO2\ emissions\ for\ source\ category\ 1A$

$E^{Y-1}_{1A,CO2}$ $CO2\ emissions\ for\ source\ category\ 1A\ from\ previous\ year$

$E^{Y}_{BP(...)}$ $Calculated\ CO2\ emissions\ with\ BP\ energy\ data$

$E^{Y-1}_{BP(...)}$ $Calculated\ CO2\ emissions\ with\ BP\ energy\ data\ from\ previous\ year$

For five countries (Cyprus, Estonia, Latvia, Malta and Slovenia) no sufficient and consistent data were available from BP. For these countries the inventory data from the last available submission were used or extrapolated.

The estimation for CH_4 emissions from source category 1.A (Energy fuel combustion) is similar to CO_2 and based on the following equation:

$$E^{Y}_{1A,CH4} = \frac{E^{Y}_{BP(CO2,\,fossil)}}{E^{Y-1}_{BP(CO2,\,fossil)}} \cdot E^{Y-1}_{1A,CH4}$$

with

$E^{Y}_{1A,CH4}$ $CH4$ *emissions for source category* $1A$

$E^{Y-1}_{1A,CH4}$ $CH4$ *emissions for source category* $1A$ *from previous year*

$E^{Y}_{BP(...)}$ *Calculated* $CO2$ *emissions with BP energy data*

$E^{Y-1}_{BP(...)}$ *Calculated* $CO2$ *emissions with BP energy data from previous year*

For five countries (Cyprus, Estonia, Latvia, Malta and Slovenia) no sufficient and consistent data were available from BP. For these countries the inventory data from the last available submission were used or extrapolated.

The estimation for N_2O emissions from source category 1.A (Energy fuel combustion) is similar to CO_2 and based on the following equation:

$$E^{Y}_{1A,N2O} = \frac{E^{Y}_{BP(CO2,\,fossil)}}{E^{Y-1}_{BP(CO2,\,fossil)}} \cdot E^{Y-1}_{1A,N2O}$$

with

$E^{Y}_{1A,N2O}$ $N2O$ *emissions for source category* $1A$

$E^{Y-1}_{1A,N2O}$ $N2O$ *emissions for source category* $1A$ *from previous year*

$E^{Y}_{BP(...)}$ *Calculated* $CO2$ *emissions with BP energy data*

$E^{Y-1}_{BP(...)}$ *Calculated* $CO2$ *emissions with BP energy data from previous year*

For five countries (Cyprus, Estonia, Latvia, Malta and Slovenia) no sufficient and consistent data were available from BP. For these countries the inventory data from the last available submission were used or extrapolated.

4.1.1.2 Results for 2007

In the energy sector results show a decline of GHG emissions by 70,400 Mt CO_2eq. between 2006 and 2007- Table 6 indicates the sub-sector contribution to this drop in emissions. 1A4 Other Sectors and Other are the main contributors to the emission reductions in the energy sector due to a relatively warm winter in 2007 which reduced the

fuel consumption for heating purposes. Emissions from Manufacturing Industries and Construction show an increase by 4.6%.

Table 6 Changes between 2006 and 2007 for main source categories in the energy sector

Sector	Change 2006/07			
	EU-15		EU-27	
	Mt CO_2eq	%	Mt CO_2eq	%
A. Fuel Combustion (Sectoral Approach)	-70.4	-2.1%	-70.0	-1.7%
1. Energy Industries	-4.4	-0.4%	3.2	0.2%
2. Manufacturing Industries and Construction	24.9	4.6%	23.0	3.5%
3. Transport	13.1	1.5%	24.0	2.4%
4 Other sector and 5 Other	-104.0	-16.1%	-120.3	-15.8%
B. Fugitive Emissions from Fuels	-0.8	-1.5%	-3.3	-3.7%
1. Solid Fuels	-0.2	-1.5%	-1.1	-3.4%
2. Oil and Natural Gas	-0.7	-1.8%	-2.4	-4.1%

Figure 7 Changes between 2006 and 2007 for main source categories in the energy sector

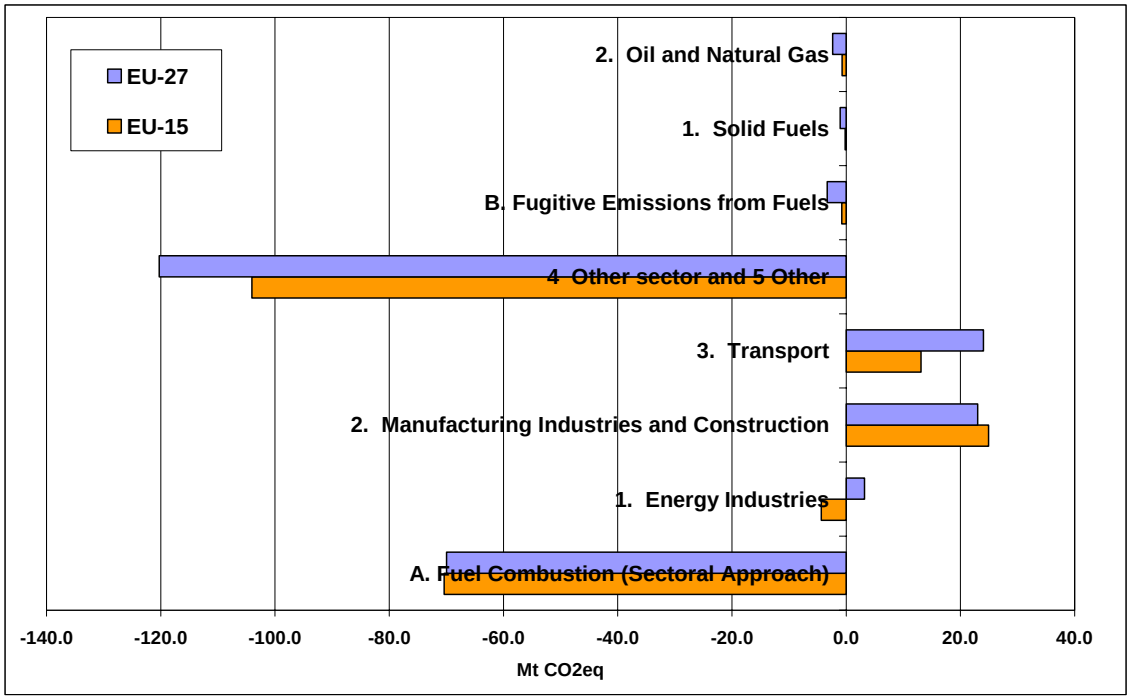


Table 7, Table 8 and Table 9 show the results for the proxy inventory in 2007 compared to the inventory time series for the EU and all Member States for CO_2-, CH_4- and N_2O emissions respectively.

Table 7 CO_2 emissions for source category 1A Fuel Combustion

Source Category	1A	Fuel Combustion (Sectoral Approach)						
Gas	CO2							
Member State	**Inventory data**							**Proxy**
	BY	**1990**	**1995**	**2000**	**2004**	**2005**	**2006**	**2007**
	Gg							
AT	54,094	54,094	56,255	57,804	68,937	70,417	67,818	66,436
BE	110,546	110,546	114,372	114,261	116,533	113,281	108,885	107,923
BG	90,726	78,673	59,376	45,869	48,289	48,921	49,823	53,575
CY	4,067	4,067	5,058	6,125	6,847	7,043	7,247	7,356
CZ	145,613	145,613	117,653	114,345	113,159	113,769	114,516	111,113
DE	948,015	948,015	840,010	800,409	819,110	798,893	799,359	769,233
DK	51,198	51,198	58,576	50,680	51,515	48,109	55,423	51,332
EE	35,413	35,413	17,181	14,697	16,536	15,943	15,392	15,662
ES	205,409	205,409	233,259	280,755	322,626	337,887	328,664	338,327
FI	53,068	53,068	54,731	53,177	64,336	52,829	64,057	61,455
FR	362,590	362,590	360,791	376,360	385,467	389,637	378,883	370,273
GB	567,495	567,495	526,171	529,874	538,951	538,532	538,479	519,681
GR	75,316	75,316	79,386	95,568	101,922	102,333	101,665	101,885
HU	79,768	67,879	58,303	55,406	56,741	57,801	56,471	54,849
IE	30,233	30,233	33,150	41,914	43,338	45,033	44,641	42,147
IT	402,039	402,039	415,290	436,058	460,608	460,940	456,795	449,076
LT	32,672	32,672	13,666	10,517	11,962	12,597	12,770	13,947
LU	10,615	10,615	8,328	8,316	11,501	11,439	11,435	11,334
LV	18,591	18,591	8,921	6,845	7,405	7,527	7,999	8,139
MT	1,848	1,848	2,285	2,321	2,587	2,664	2,627	2,654
NL	149,980	149,980	161,522	161,408	172,473	167,268	163,500	162,178
PL	440,389	347,372	346,126	301,700	299,479	299,567	310,341	309,649
PT	39,056	39,056	47,217	57,062	58,850	60,930	56,362	55,288
RO	159,419	148,406	110,753	81,908	96,423	89,441	92,817	92,558
SE	50,732	50,732	52,127	48,024	49,565	46,955	46,120	46,432
SI	15,175	13,632	14,085	14,296	15,344	15,631	15,710	15,985
SK	57,931	57,931	40,691	36,628	36,879	36,567	35,837	36,375
EU-15	3,110,388	3,110,388	3,041,184	3,111,673	3,265,732	3,244,482	3,222,087	3,153,001
EU-25	3,941,855	3,835,406	3,665,153	3,674,554	3,832,670	3,813,590	3,800,998	3,728,730
EU-27	4,192,000	4,062,484	3,835,283	3,802,332	3,977,381	3,951,952	3,943,639	3,874,863
EU-10	831,467	725,018	623,969	562,881	566,937	569,108	578,911	575,728
EU-2	250,144	227,079	170,129	127,778	144,712	138,362	142,641	146,133

Table 8 CH_4 emissions for source category 1A Fuel Combustion

Source Category	1A	Fuel Combustion (Sectoral Approach)						
Gas	CH4							
Member State	Inventory data							Proxy
	BY	1990	1995	2000	2004	2005	2006	2007
	Gg							
AT	22,13	22,13	20,46	15,13	14,26	14,42	13,73	13,72
BE	21,06	21,06	18,91	16,19	15,05	14,35	14,34	14,09
BG	7,72	6,92	5,83	8,19	9,35	9,08	9,51	9,42
CY	0,40	0,40	0,46	0,44	0,60	0,63	0,67	0,69
CZ	69,53	69,53	32,76	20,14	24,57	23,19	23,58	23,71
DE	215,98	215,98	80,31	60,73	55,03	56,57	55,10	54,51
DK	8,80	8,80	21,34	26,64	27,47	25,68	23,66	23,15
EE	3,97	3,97	5,73	5,03	5,31	4,73	4,56	4,55
ES	56,08	56,08	52,44	49,51	53,85	54,85	55,12	55,16
FI	14,61	14,61	14,16	13,58	13,86	13,33	13,61	13,56
FR	218,09	218,09	210,63	168,66	132,73	123,61	113,35	111,51
GB	125,29	125,29	87,19	74,53	55,12	56,36	53,92	52,11
GR	10,41	10,41	12,34	14,02	12,80	12,49	13,89	13,80
HU	29,63	18,19	14,80	12,62	13,94	17,41	18,95	18,95
IE	7,93	7,93	5,73	5,59	5,23	5,35	5,03	4,97
IT	67,79	67,79	79,13	75,60	69,90	67,13	66,98	66,49
LT	14,77	14,77	10,81	11,22	10,44	10,54	10,88	11,18
LU	1,59	1,59	1,83	1,85	1,73	1,53	1,50	1,50
LV	12,22	12,22	13,34	11,29	13,23	13,26	12,99	13,27
MT	0,08	0,08	0,10	0,11	0,11	0,12	0,12	0,13
NL	32,36	32,36	31,11	29,67	29,63	29,56	28,44	27,63
PL	230,52	114,06	188,15	119,96	115,90	125,58	139,30	139,91
PT	22,07	22,07	21,94	21,02	21,05	20,99	20,83	21,09
RO	19,04	21,02	50,99	36,34	41,80	42,32	40,34	41,14
SE	20,10	20,10	21,47	18,26	17,99	18,81	18,43	18,33
SI	8,68	7,49	7,47	6,89	5,91	6,36	5,73	5,78
SK	22,28	22,28	10,77	8,01	5,16	5,07	5,04	5,12
EU-15	844,30	844,30	679,00	591,00	525,70	515,02	497,92	491,63
EU-25	1236,39	1107,30	963,39	786,70	720,87	721,91	719,76	714,93
EU-27	1263,16	1135,24	1020,21	831,22	772,01	773,31	769,61	765,48
EU-10	392,09	263,00	284,39	195,70	195,17	206,89	221,83	223,31
EU-2	26,77	27,95	56,82	44,52	51,14	51,40	49,85	50,55

Table 9 N_2O emissions for source category 1A Fuel Combustion

Source Category	1A	Fuel Combustion (Sectoral Approach)						
Gas	N2O							
Member State	Inventory data							Proxy
	BY	1990	1995	2000	2004	2005	2006	2007
	Gg							
AT	2,20	2,20	2,47	2,58	2,75	2,67	2,61	2,61
BE	2,59	2,59	3,09	3,73	3,96	3,66	3,62	3,56
BG	1,64	1,41	1,20	1,10	1,23	1,23	1,25	1,24
CY	1,21	1,21	1,52	2,01	2,42	2,33	2,40	2,47
CZ	2,15	2,15	2,27	3,07	3,52	3,59	3,60	3,62
DE	25,46	25,46	22,82	21,53	21,67	21,13	21,36	21,13
DK	1,28	1,28	1,49	1,46	1,47	1,43	1,51	1,48
EE	0,15	0,15	0,13	0,12	0,14	0,14	0,12	0,12
ES	5,70	5,70	8,09	11,10	13,72	14,30	14,56	14,57
FI	3,24	3,24	3,49	3,95	4,68	4,42	4,81	4,80
FR	10,48	10,48	11,06	12,12	12,42	12,75	12,56	12,35
GB	18,74	18,74	20,36	24,98	28,04	29,20	29,71	28,72
GR	2,92	2,92	3,34	4,42	5,27	3,60	3,59	3,56
HU	3,05	3,73	2,82	2,55	2,64	2,89	2,72	2,72
IE	2,97	2,97	3,42	4,16	4,00	4,19	3,98	3,93
IT	16,84	16,84	18,27	21,84	25,69	25,78	25,99	25,79
LT	0,96	0,96	0,45	0,38	0,45	0,47	0,48	0,50
LU	0,18	0,18	0,35	0,58	0,89	0,96	0,92	0,92
LV	0,50	0,50	0,39	0,38	0,50	0,50	0,54	0,55
MT	0,02	0,02	0,01	0,01	0,01	0,02	0,02	0,02
NL	1,61	1,61	2,34	2,37	2,43	2,44	2,46	2,39
PL	7,47	6,20	7,01	8,31	8,03	8,26	8,69	8,72
PT	1,67	1,67	2,28	2,90	3,07	3,07	3,07	3,11
RO	1,29	1,14	1,48	1,09	1,28	1,24	1,29	1,31
SE	4,37	4,37	4,73	4,48	4,75	4,69	4,76	4,73
SI	0,57	0,50	0,59	0,72	0,80	0,85	0,90	0,91
SK	0,98	0,98	0,65	0,69	0,79	0,88	0,84	0,86
EU-15	100,24	100,24	107,59	122,20	134,81	134,29	135,51	133,66
EU-25	117,29	116,63	123,43	140,43	154,11	154,21	155,81	154,14
EU-27	120,21	119,19	126,10	142,63	156,63	156,69	158,35	156,69
EU-10	17,04	16,39	15,84	18,23	19,30	19,92	20,30	20,48
EU-2	2,92	2,56	2,67	2,20	2,51	2,47	2,54	2,55

4.1.1.3 Results for past trends

Table 10 shows the percentage deviation in results if the proxy methodology is applied to the past time series and compared to reported inventory data. This shows that for most Member States and years results match within a range of 1 to 3 %. Only in very few years the deviation is higher than 10 % (Bulgaria in 1997 and 1998; Lithuania in 1993; Luxembourg in 1995, 1998 and 2004; Sweden in 2006). Altogether the applied approach seems to result in emissions of acceptable uncertainties.

Table 10 Deviation of results for past time series applying the proxy methodology in comparison to the reported inventory emissions for CO_2 emission from energy fuel combustion (CRF 1A)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
AT		-1,3%	1,9%	-1,5%	0,2%	-3,3%	-0,9%	3,5%	2,5%	2,5%	-1,9%	-2,9%	-0,5%	-2,8%	-0,3%	0,2%	2,3%
BE		0,7%	2,5%	-4,1%	-2,4%	3,9%	-1,9%	6,2%	0,5%	5,1%	4,1%	-4,1%	2,2%	2,9%	4,7%	4,8%	6,8%
BU		-3,0%	7,1%	1,9%	-1,4%	-0,7%	6,8%	-10,9%	13,2%	-7,2%	-3,6%	1,6%	3,8%	1,0%	-2,5%	0,7%	3,5%
CY																	
CZ		-5,2%	-2,8%	-3,8%	8,3%	0,8%	-3,0%	2,9%	-0,4%	-3,2%	0,7%	0,6%	0,4%	1,5%	2,1%	-0,8%	-1,8%
DE		-0,4%	1,8%	-0,4%	1,2%	-0,2%	-0,7%	1,6%	0,0%	-0,4%	1,1%	-1,3%	0,1%	-0,7%	-0,8%	0,6%	1,2%
DK		-1,8%	0,0%	2,5%	1,2%	0,8%	-1,5%	2,1%	-0,4%	0,8%	1,6%	-3,9%	-0,4%	-1,5%	2,2%	0,6%	0,0%
EE																	
ES		-2,6%	1,1%	0,7%	-1,4%	0,4%	4,7%	1,0%	2,6%	-2,8%	0,4%	-0,4%	-1,0%	0,3%	-0,7%	-0,9%	0,2%
FI		3,4%	-5,9%	-2,7%	1,6%	-3,9%	0,3%	5,2%	1,0%	3,1%	3,7%	-5,4%	0,3%	1,2%	-1,7%	6,1%	-6,3%
FR		-1,2%	0,2%	0,2%	-2,3%	0,8%	-0,1%	-0,5%	1,0%	2,2%	0,5%	-2,0%	0,3%	0,0%	0,0%	-0,8%	0,7%
GB		-0,3%	0,8%	0,4%	-0,6%	1,7%	-0,7%	0,0%	0,4%	0,2%	0,2%	-1,0%	0,2%	0,2%	1,0%	0,4%	0,2%
GR		-1,8%	2,0%	0,2%	0,1%	2,0%	-2,8%	-4,6%	0,2%	5,1%	-0,1%	-1,4%	2,9%	-6,8%	4,2%	-1,6%	1,5%
HU		-1,4%	-2,1%	-4,5%	3,9%	1,2%	-0,3%	1,3%	0,5%	-0,5%	-0,4%	1,9%	-1,2%	-0,8%	2,1%	2,3%	2,6%
IE		2,4%	-0,4%	2,1%	1,7%	-0,5%	0,4%	4,5%	0,0%	1,5%	-0,4%	0,6%	0,6%	-0,7%	1,6%	-1,6%	4,3%
IT		0,2%	0,2%	-2,1%	1,2%	0,3%	-0,4%	-0,2%	-0,2%	0,7%	0,9%	-1,0%	-0,3%	0,1%	0,4%	0,2%	0,3%
LT		-1,1%	-2,1%	-11,2%	6,5%	4,7%	2,7%	5,2%	-0,3%	8,4%	-0,3%	3,4%	-3,0%	1,3%	-2,0%	1,1%	0,4%
LU		0,6%	0,8%	-6,4%	7,0%	30,4%	0,8%	7,8%	14,2%	-7,0%	-0,8%	-7,5%	-7,8%	1,8%	-10,3%	2,4%	2,6%
LV																	
MT																	
NL		-0,9%	-0,6%	-1,0%	0,9%	1,9%	-2,8%	5,1%	-2,1%	1,3%	2,7%	-1,5%	1,2%	-0,8%	2,4%	5,3%	0,3%
PL		-4,8%	-3,9%	-0,3%	0,5%	-0,9%	1,1%	-0,4%	2,0%	-0,1%	-0,1%	0,5%	1,7%	-1,3%	1,9%	-0,8%	0,8%
PT		-0,5%	-1,4%	0,5%	0,4%	4,4%	-0,9%	2,1%	1,9%	-5,8%	6,5%	-4,5%	-0,3%	0,9%	-0,1%	0,9%	0,2%
RO		4,8%	0,2%	-3,6%	-0,7%	3,2%	-6,9%	3,2%	1,0%	1,5%	-0,4%	-4,7%	-1,3%	-6,3%	1,4%	7,8%	0,5%
SE		-4,3%	2,9%	-0,5%	0,5%	-2,8%	1,4%	-0,2%	-0,9%	4,2%	-2,6%	-0,5%	-1,4%	2,3%	0,0%	3,5%	11,7%
SI																	
SK		-0,1%	4,1%	-2,9%	0,0%	8,3%	6,4%	0,3%	1,9%	-2,3%	-0,7%	-2,0%	4,0%	-4,9%	-0,5%	6,6%	-2,7%

4.1.2 1.A.1 Energy industries

4.1.2.1 Methods and data sources used

The GHG emissions for source category 1.A.1 (Energy Industries) were estimated on the basis of a separate analysis of the following source categories

- Public Electricity and Heat Production (1.A.1.a)
- Petroleum Refining (1.A.1.b)
- Manufacture of Solid Fuels and Other Energy Industries (1.A.1.c)

The main data source for the estimation of CO_2 emissions from source category 1.A.1.a (Public Electricity and Heat Production) is an analysis of the verified emissions data reported by installations covered under the EU ETS and recorded in the CITL. Öko-Institut undertook a supplementary analysis on an installation-by-installation basis to separate the electricity generation installations from industrial combustion installations which are both reported under main activity code 1 in the ETS data (Combustion installations with a rated thermal input exceeding 20 MW combustion installations with an capacity of more than 20 MW). Based on these data the emissions were calculated as following:

$$E^{Y}_{1A1a,CO2} = \frac{E^{Y}_{CITL(1\ w/o\ power)}}{E^{Y-1}_{CITL(1\ w/o\ power)}} \cdot E^{Y-1}_{1A1a,CO2}$$

with

$E^{Y}_{1A1a,CO2}$ *CO2 emissions for source category 1A1a*

$E^{Y-1}_{1A1a,CO2}$ *CO2 Emissions for source category 1A1a from previous year*

$E^{Y}_{CITL(...)}$ *CITL emissions for electricity generation installations*

$E^{Y-1}_{CITL(...)}$ *CITL emissions for electricity generation installations from previous year*

For three countries (Bulgaria, Romania, Sweden) no sufficient and consistent data were available from CITL data. For these countries the inventory data from the last available submission were used.

For CH_4 emissions from source category 1.A.1.a (Public Electricity and Heat Production) two different approaches were used

1. For the Member States with no strong correlation between CO_2 and CH_4 emissions in the previous years the CH_4 emission data from the last inventory submission were used.
2. For the Member States with a significant correlation for the trends of CO_2 and CH_4 emissions in the previous years, the projection of CH_4 emissions is based on the following equation:

$$E^{Y}_{1A1a,CH4} = \frac{E^{Y}_{1A1a,CO2}}{E^{Y-1}_{1A1a,CO2}} \cdot E^{Y-1}_{1A1a,CH4}$$

with

$E^{Y}_{1A1a,CH4}$ *CH4 emissions for source category 1A1a*

$E^{Y-1}_{1A1a,CH4}$ *CH4 emissions for source category 1A1a from previous year*

$E^{Y}_{1A1a,CO2}$ *CO2 emissions for source category 1A1a (see above)*

$E^{Y-1}_{1A1a,CO2}$ *CO2 emissions for source category 1A1a from previous year*

The first option was used for Austria, Belgium, Czech Republic, Denmark, Estonia, Spain, Finland, France, Hungary, Ireland, Lithuania, Latvia, and Malta. For all other EU-27 Member States the CH_4 emissions were estimated on the basis of the trend dynamics for CO_2 emissions (option 2).

For N_2O emissions from source category 1.A.1.a (Public Electricity and Heat Production) two different approaches were used

1. For the Member States with no strong correlation between CO_2 and N_2O emissions in the previous years the CH_4 emission data from the last inventory submission were used.
2. For the Member States with a significant correlation for the trends of CO_2 and N_2O emissions in the previous years, the projection of CH_4 emissions is based on the following formula.

$$E^{Y}_{1A1a,N2O} = \frac{E^{Y}_{1A1a,CO2}}{E^{Y-1}_{1A1a,CO2}} \cdot E^{Y-1}_{1A1a,N2O}$$

with

$E^{Y}_{1A1a,N2O}$ *N2O emissions for source category 1A1a*

$E^{Y-1}_{1A1a,N2O}$ *N2O emissions for source category 1A1a from previous year*

$E^{Y}_{1A1a,CO2}$ *CO2 emissions for source category 1A1a (see above)*

$E^{Y-1}_{1A1a,CO2}$ *CO2 emissions for source category 1A1a from previous year*

The first option was used for Austria, Belgium, Cyprus, Denmark, Estonia, Finland, Lithuania, Latvia, the Netherlands, Romania, and Sweden. For all other EU-27 Member States the N_2O emissions were estimated on the basis of the trend dynamics for CO_2 emissions (option 2).

The main source for the estimation of CO_2 emissions from source category 1.A.1.b (Petroleum Refining) are the Eurostat monthly data on crude oil input to refineries (indicator code 101008, product code 3100). Based on these data the emissions were calculated as following:

$$E^{Y}_{1A1b,CO2} = \frac{AR^{Y}_{ref-inp}}{AR^{Y-1}_{ref-inp}} \cdot E^{Y-1}_{1A1b,CO2}$$

with

$E^{Y}_{1A1b,CO2}$ *CO2 emissions for source category 1A1b*

$E^{Y-1}_{1A1b,CO2}$ *CO2 Emissions for source category 1A1b from previous year*

$AR^{Y}_{ref-inp}$ *Crude oil input to refineries*

$AR^{Y-1}_{ref-inp}$ *Crude oil input to refineries for previous year*

For six countries (Czech Republic, Cyprus, Estonia, Luxembourg, Latvia, Malta) no sufficient and consistent data were available. For these countries the inventory data from the last available submission (submission in 2008) were used.

For CH_4 emissions from source category 1.A.1.b (Petroleum Refining) two different approaches were used

1. For the Member States with no strong correlation between CO_2 and CH_4 emissions in the previous years the CH_4 emission data from the last inventory submission were used.
2. For the Member States with a significant correlation for the trends of CO_2 and CH_4 emissions in the previous years, the projection of CH_4 emissions is based on the following formula.

$$E^{Y}_{1A1b,CH4} = \frac{E^{Y}_{1A1b,CO2}}{E^{Y-1}_{1A1b,CO2}} \cdot E^{Y-1}_{1A1b,CH4}$$

with

$E^{Y}_{1A1b,CH4}$ *CH4 emissions for source category 1A1b*

$E^{Y-1}_{1A1b,CH4}$ *CH4 emissions for source category 1A1b from previous year*

$E^{Y}_{1A1b,CO2}$ *CO2 emissions for source category 1A1b (see above)*

$E^{Y-1}_{1A1b,CO2}$ *CO2 emissions for source category 1A1b from previous year*

The first option was used for Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Spain, Greece, Hungary, Ireland, Italy, Luxembourg, Latvia, Malta, the Netherlands, Romania, and Slovenia. For all other EU-27 Member States the CH_4 emissions were estimated on the basis of the trend dynamics for CO_2 emissions (option 2).

For N_2O emissions from source category 1.A.1.b (Petroleum Refining) two different approaches were used

1. For the Member States with no strong correlation between CO_2 and N_2O emissions in the previous years the CH_4 emission data from the last inventory submission were used.
2. For the Member States with a significant correlation for the trends of CO_2 and N_2O emissions in the previous years, the projection of CH_4 emissions is based on the following formula.

$$E^{Y}_{1A1b,N2O} = \frac{E^{Y}_{1A1b,CO2}}{E^{Y-1}_{1A1b,CO2}} \cdot E^{Y-1}_{1A1b,N2O}$$

with

$E^{Y}_{1A1b,N2O}$ *N2O emissions for source category 1A1b*

$E^{Y-1}_{1A1b,N2O}$ *N2O emissions for source category 1A1b from previous year*

$E^{Y}_{1A1b,CO2}$ *CO2 emissions for source category 1A1b (see above)*

$E^{Y-1}_{1A1b,CO2}$ *CO2 emissions for source category 1A1b from previous year*

The first option was used for Austria, Belgium, Cyprus, Czech Republic, Estonia, Spain, Great Britain, Greece, Hungary, Luxembourg, Latvia, Malta, Romania, Slovenia, and Slovakia. For all other EU-27 Member States the N_2O emissions were estimated on the basis of the trend dynamics for CO_2 emissions (option 2).

For the source category 1.A.1.c (Manufacture of Solid Fuels and Other Energy Industries) for CO_2, CH_4 as well as N_2O the data from the last inventory submission were used.

The total greenhouse gas emissions for source category 1.A.1 (Energy Industries) were calculated as sum of the estimates for the source categories 1.A.1.a, 1.A.1.b and 1.A.1.c (see above).

4.1.2.2 Results for 2007

Table 11, Table 12 and Table 13show the results for the proxy inventory in 2007 for 1A1 Energy Industries compared to the inventory time series for the EU and all Member States for CO_2-, CH_4- and N_2O emissions respectively.

Table 11 CO_2 emissions for 1.A.1 Energy Industries

Source Category	1A1	1. Energy Industries						
Gas	CO2							
Member State	**Inventory data**							**Proxy**
	BY	**1990**	**1995**	**2000**	**2004**	**2005**	**2006**	**2007**
	Gg CO2e							
AT	13,792	13,792	12,919	12,353	16,351	16,096	15,426	14,293
BE	29,947	29,947	29,567	28,148	29,624	29,244	27,554	26,922
BG	43,217	39,601	31,572	26,216	28,298	28,685	29,041	29,038
CY	1,737	1,737	2,153	2,975	3,707	3,472	3,653	3,802
CZ	57,707	57,707	56,621	59,616	57,277	57,275	56,631	62,390
DE	414,936	414,936	356,779	347,471	369,698	362,125	366,139	372,140
DK	26,173	26,173	31,934	25,114	25,396	22,136	29,470	24,571
EE	28,783	28,783	14,588	12,231	13,521	12,791	12,103	15,296
ES	77,357	77,357	86,201	105,024	115,048	125,173	116,322	120,096
FI	19,055	19,055	23,921	21,893	32,591	21,691	32,541	30,531
FR	66,157	66,157	57,831	64,287	62,870	68,025	64,480	65,634
GB	236,423	236,423	199,424	194,646	209,983	212,340	216,471	212,451
GR	42,445	42,445	44,948	54,887	57,402	57,651	54,744	57,352
HU	26,953	21,998	23,599	23,451	20,133	18,316	19,198	20,422
IE	11,159	11,159	13,317	16,050	15,284	15,657	14,907	14,383
IT	134,092	134,092	137,973	147,924	157,806	159,239	159,108	153,595
LT	13,849	13,849	6,512	5,209	5,667	5,884	5,414	4,910
LU	1,302	1,302	817	315	1,455	1,415	1,462	1,301
LV	6,332	6,332	3,440	2,490	2,077	2,068	2,091	1,895
MT	1,350	1,350	1,680	1,665	1,924	1,960	1,976	2,017
NL	52,492	52,492	61,513	63,527	70,041	67,364	61,913	65,876
PL	268,295	228,012	190,614	176,946	181,022	180,012	187,501	186,054
PT	15,944	15,944	19,269	20,615	21,746	24,824	21,772	19,355
RO	106,012	97,771	67,169	46,657	49,000	46,269	48,788	48,788
SE	10,050	10,050	11,290	9,433	12,255	11,102	10,867	10,628
SI	6,701	6,239	5,564	5,488	6,287	6,358	6,350	6,579
SK	15,967	15,967	11,810	12,120	12,812	11,827	11,152	10,285
EU-15	1,151,325	1,151,325	1,087,704	1,111,690	1,197,549	1,194,084	1,193,175	1,189,130
EU-25	1,578,999	1,533,299	1,404,288	1,413,880	1,501,977	1,494,046	1,499,244	1,502,779
EU-27	1,728,228	1,670,672	1,503,029	1,486,753	1,579,275	1,569,001	1,577,073	1,580,605
EU-10	427,674	381,974	316,583	302,191	304,429	299,963	306,069	313,649
EU-2	149,229	137,373	98,741	72,873	77,298	74,954	77,829	77,826

Table 12 CH_4 emissions for 1.A.1 Energy Industries

Source Category	1A1	1. Energy Industries						
Gas	CH4							
Member State	**Inventory data**							**Proxy**
	BY	**1990**	**1995**	**2000**	**2004**	**2005**	**2006**	**2007**
	Gg							
AT	0.16	0.16	0.16	0.16	0.27	0.23	0.30	0.30
BE	0.25	0.25	0.27	0.35	0.48	0.55	0.62	0.62
BG	0.84	0.91	0.56	0.43	0.45	0.45	0.45	0.45
CY	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03
CZ	0.67	0.67	0.70	0.73	0.96	0.76	0.78	0.78
DE	8.51	8.51	6.03	5.57	6.14	6.14	6.16	6.26
DK	1.11	1.11	11.84	15.28	15.18	13.20	11.42	11.42
EE	0.31	0.31	0.28	0.30	0.35	0.39	0.33	0.33
ES	2.61	2.61	2.59	3.33	5.52	6.42	6.86	6.86
FI	0.39	0.39	0.62	0.73	1.18	0.98	1.21	1.21
FR	3.53	3.53	2.76	1.84	1.58	1.58	1.51	1.50
GB	6.85	6.85	5.64	7.94	7.53	12.34	10.56	10.48
GR	0.34	0.34	0.36	0.44	0.46	0.83	0.84	0.88
HU	0.86	0.67	0.54	0.53	0.61	1.03	0.69	0.69
IE	0.04	0.04	0.03	0.04	0.07	0.05	0.04	0.04
IT	9.27	9.27	8.63	6.86	6.22	6.34	6.43	6.26
LT	0.70	0.70	0.35	0.32	0.47	0.48	0.49	0.47
LU	0.04	0.04	0.04	0.05	0.07	0.07	0.07	0.06
LV	0.27	0.27	0.23	0.22	0.21	0.18	0.20	0.20
MT	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03
NL	3.40	3.40	4.29	5.26	6.39	7.19	6.46	6.87
PL	3.58	3.22	2.32	2.16	2.41	2.69	2.91	2.89
PT	0.21	0.21	0.25	0.25	0.31	0.35	0.33	0.30
RO	1.93	1.94	1.33	0.88	0.92	0.83	0.96	0.96
SE	1.06	1.06	1.81	2.20	3.11	3.42	3.55	3.54
SI	0.09	0.09	0.07	0.06	0.07	0.09	0.09	0.09
SK	0.27	0.27	0.26	0.25	0.29	0.25	0.24	0.23
EU-15	37.78	37.78	45.32	50.30	54.52	59.69	56.38	56.60
EU-25	44.56	44.02	50.11	54.91	59.95	65.59	62.16	62.34
EU-27	47.33	46.87	52.01	56.21	61.32	66.87	63.57	63.75
EU-10	6.78	6.24	4.79	4.61	5.43	5.91	5.78	5.74
EU-2	2.77	2.86	1.90	1.30	1.37	1.28	1.41	1.41

Table 13 N_2O emissions for 1.A.1 Energy Industries

Source Category	1A1	1. Energy Industries						
Gas	N2O							
Member State	Inventory data							Proxy
	BY	1990	1995	2000	2004	2005	2006	2007
	Gg							
AT	0.15	0.15	0.16	0.17	0.25	0.22	0.24	0.24
BE	0.70	0.70	0.71	0.72	0.72	0.43	0.40	0.40
BG	0.97	0.80	0.84	0.76	0.81	0.80	0.81	0.81
CY	1.02	1.02	1.25	1.73	2.21	2.08	2.14	2.14
CZ	0.81	0.81	0.79	0.83	0.84	0.81	0.81	0.89
DE	14.75	14.75	12.58	12.00	12.71	12.32	12.59	12.80
DK	0.38	0.38	0.50	0.48	0.50	0.46	0.54	0.54
EE	0.06	0.06	0.04	0.04	0.05	0.05	0.04	0.04
ES	0.91	0.91	1.80	2.03	2.27	2.42	2.29	2.38
FI	0.39	0.39	0.61	0.66	1.00	0.81	1.06	1.07
FR	1.91	1.91	2.25	2.75	2.62	2.83	2.69	2.75
GB	6.09	6.09	4.63	3.99	4.19	5.15	5.32	5.26
GR	0.34	0.34	0.52	0.68	0.72	0.63	0.59	0.62
HU	0.72	0.66	0.62	0.61	0.63	0.72	0.63	0.67
IE	1.34	1.34	1.67	1.93	1.71	1.81	1.68	1.62
IT	1.63	1.63	1.64	1.62	1.89	1.90	1.86	1.79
LT	0.35	0.35	0.17	0.13	0.15	0.15	0.15	0.13
LU	0.01	0.01	0.01	0.01	0.03	0.03	0.03	0.02
LV	0.05	0.05	0.04	0.03	0.03	0.02	0.03	0.03
MT	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
NL	0.45	0.45	0.54	0.63	0.73	0.78	0.77	0.77
PL	3.85	3.32	2.79	2.56	2.59	2.63	2.77	2.75
PT	0.20	0.20	0.25	0.30	0.35	0.39	0.36	0.32
RO	0.83	0.71	0.61	0.43	0.49	0.47	0.53	0.53
SE	1.10	1.10	1.18	1.05	1.37	1.34	1.40	1.39
SI	0.09	0.08	0.08	0.07	0.08	0.09	0.09	0.09
SK	0.19	0.19	0.10	0.10	0.10	0.10	0.10	0.09
EU-15	30.37	30.37	29.04	29.03	31.06	31.51	31.82	31.98
EU-25	37.50	36.91	34.92	35.14	37.75	38.18	38.58	38.82
EU-27	39.31	38.42	36.37	36.34	39.05	39.44	39.91	40.15
EU-10	7.13	6.54	5.88	6.11	6.69	6.67	6.76	6.84
EU-2	1.81	1.51	1.45	1.19	1.30	1.26	1.34	1.34

4.1.2.3 Results for past trends

No quality check of the methodological approach chosen was possible for historic time series at the level of source category 1.A.1 because CITL data are not available for the years before 2005. Therefore quality checks could only be performed for one year (trend 2006/2005). Additional checks will be made in 2009, when at least 3 consecutive years of verified emissions will be available from EU ETS and from GHG inventories.

Table 14 shows the deviation of CITL data trend from CRF data trend for 2006/2005 for CO_2 emissions from category 1A1a Public Electricity and Heat Production for all Member States for which data was available. For 11 from 25 Member States the trend in 2006/2005 matched completely between both sources or by at least 99%, for 12 Member States the trend showed differences of up to 5% and only for two Member States the deviation was higher (-6% for France and +7% for Sweden).

Table 14 Comparison of trend of CO_2 emissions for 2006/2005 for category 1A1a Public Electricity and Heat Production between CRF data and CITL data as used for the approximated methodology

MS	2006/2005 trend dynamics for 1A1a Public Electricity and Heat Production			CITL data used
	CRF	CITL	Explanation	
AT	94.5%	92.4%	98%	✓
BE	92.5%	89.9%	97%	✓
CY	105.2%	105.2%	100%	✓
CZ	99.4%	103.6%	104%	✓
DE	101.2%	100.7%	99%	✓
DK	137.0%	144.3%	105%	✓
EE	94.2%	93.1%	99%	✓
ES	92.1%	92.0%	100%	✓
FI	157.7%	162.5%	103%	✓
FR	93.2%	87.6%	94%	✓
GB	105.0%	105.4%	100%	✓
GR	94.7%	97.0%	103%	✓
HU	103.3%	98.6%	95%	✓
IE	95.2%	95.2%	100%	✓
IT	101.3%	100.9%	100%	✓
LT	95.4%	94.7%	99%	✓
LU	103.3%	105.3%	102%	✓
LV	101.2%	103.0%	102%	✓
MT	100.8%	100.7%	100%	✓
NL	91.4%	95.3%	104%	✓
PL	104.5%	102.3%	98%	✓
PT	86.1%	85.9%	100%	✓
SE	96.7%	103.8%	107%	
SI	99.8%	101.1%	101%	✓
SK	94.0%	97.7%	104%	✓

Notes: No data for Bulgaria and Romania for 2005 available, therefore no trend could be calculated

dark green: deviation ≤ 1%, light green: deviation ≤ 5%, orange: deviation > 5%

Table 15 shows the deviation of the Eurostat data trend from CRF data trend for four consecutive years for CO2 emissions from category 1A1b Petroleum and for all Member States for which data was available. For the latest year 2005/2006 7 from 20 Member States the trend in 2006/2005 matched at least by 99%, for 10 Member States the trend showed differences of up to 5% and only for three Member States the deviation was higher (-27% for France, -14% for Finland, -12% for UK).

Table 15 Comparison of deviation in CO_2 emission trend of for the years 2003-2006 for category 1A1b Petroleum Refining between CRF data and Eurostat data (used for the approximated methodology)

MS	emission trends for 1A1b Petroleum Refining compared to previous year CRF/ Eurostat data			
	2003	2004	2005	2006
AT	108%	107%	97%	102%
BE	110%	97%	105%	105%
BU	22%	117%	78%	95%
CZ	26%	107%	84%	73%
DE	96%	97%	102%	99%
DK	98%	99%	102%	100%
ES	100%	102%	96%	97%
FI	103%	100%	101%	86%
FR	89%	104%	101%	98%
GB	96%	92%	113%	88%
GR	92%	110%	108%	94%
HU	25%	75%	139%	101%
IE	102%	103%	102%	97%
IT	96%	108%	104%	99%
LT	25%	96%	99%	95%
NL	102%	98%	99%	98%
PL	29%	99%	97%	101%
PT	95%	103%	98%	99%
SE	94%	96%	97%	100%
SK	26%	114%	76%	95%

Notes: Not all Member States report CO_2 emissions from refineries therefore list of MS is not complete

dark green: deviation ≤ 1%, light green: deviation ≤ 5%, white: deviation > 5% and < 10%, orange: deviation > 10%

Table 16 shows the deviation of CITL data trend from CRF data trend for 2006/2005 for CO_2 emissions from category 1A1b Petroleum Refining for all Member States for which data was available. The CITL data would be another source for the estimation of CO_2 emissions from source category 1A1b Petroleum Refining For 5 from 19 Member States the trend in 2006/2005 matched completely between both sources or by at least 99%, for 9 Member States the trend showed differences of up to 5% and for five Member States the deviation was higher (-49% for the Czech Republic, 16% for UK, 20% for Greece, -17% for Poland and 12% for Sweden). This comparison shows that both data sources – Eurostat data and CITL data – provide rather good results for most Member States. Eurostat data was used because the number of Member States with large deviations was smaller and because a longer time series of data was available. Both data sources indicate relatively large discrepancies for the Czech Republic and UK.

Table 16 Comparison of trend of CO_2 emissions for 2006/2005 for category 1A1b Petroleum Refining between CRF data and CITL data (not used for the approximated methodology)

MS	2006/2005 trend dynamics for 1A1b Petroleum Refining		
	CRF	CITL	Explanation
AT	100.1%	100.1%	100%
BE	103.9%	101.1%	97%
CZ	74.3%	110.9%	149%
DE	97.1%	96.9%	100%
DK	105.4%	110.9%	105%
ES	98.7%	100.2%	102%
FI	103.4%	106.0%	103%
FR	99.0%	101.6%	103%
GB	83.8%	97.4%	116%
GR	98.7%	118.3%	120%
HU	104.4%	102.1%	98%
IE	91.6%	91.6%	100%
IT	95.4%	96.9%	102%
LT	84.8%	86.8%	102%
NL	94.1%	94.7%	101%
PL	115.1%	95.7%	83%
PT	101.1%	100.3%	99%
SE	100.8%	113.3%	112%
SK	92.0%	95.5%	104%

Notes: Not all Member States report CO_2 emissions from refineries therefore list of MS is not complete

No data for Bulgaria and Romania for 2005 available, therefore no trend could be calculated

dark green: deviation ≤ 1%, light green: deviation ≤ 5%, orange: deviation > 5%

4.1.3 1.A.2 Manufacturing industries and construction

4.1.3.1 Methods and data sources used

The main source for the estimation of CO_2 emissions from source category 1.A.2 (Manufacturing Industries and Construction) is an analysis of the verified emissions data from the CITL. The emissions represent the sum of verified emissions for the main activity codes 1 (Combustion installations with a rated thermal input exceeding 20 MW, without power generation installations from supplementary analysis), activity code 4 (Metal ore (including sulphide ore) roasting or sintering installations), activity code 7 (Installations for the manufacture of glass including glass fibre), activity code 8 (Installations for the manufacture of ceramic products by firing, in particular roofing tiles, bricks, refractory bricks, tiles, stoneware or porcelain), activity code 9 (Industrial plants for the production of (a) pulp from timber or other fibrous materials (b) paper and board), and activity code 99 (Other activity opted-in pursuant to Article 24 of Directive 2003/87/EC).[8] Based on these data the emissions were calculated as follows

$$E^{Y}_{1A2,CO2} = \frac{E^{Y}_{CITL(1,4,7,8,9,99)}}{E^{Y-1}_{CITL(1,4,7,8,9,99)}} \cdot E^{Y-1}_{1A2,CO2}$$

with

$E^{Y}_{1A2,CO2}$ *CO2 emissions for source category 1A2*

$E^{Y-1}_{1A2,CO2}$ *CO2 Emissions for source category 1A2 from previous year*

$E^{Y}_{CITL(...)}$ *CITL emissions for installations repoprted under main acitivities 1(w/o power),4,7,8,9,99*

$E^{Y-1}_{CITL(...)}$ *CITL emissions for installations repoprted under main acitivities 1(w/o power),4,7,8,9,99 from previous year*

For 15 countries (Belgium, Bulgaria, Cyprus, Estonia, Spain, Finland, Greece, Hungary, Lithuania, Luxembourg, Latvia, Malta, Romania, Sweden, Slovakia) no sufficient and consistent data were available. For these countries the inventory data from the last available submission were used.

For all CH_4 and N_2O emissions from source category 1.A.2 (Manufacturing Industries and Construction) the emissions data from the last inventory submissions were used.

[8] The emissions reported in the CITL under the main activity codes 2 (Mineral oil refineries), 3 (Coke ovens), 5 (Installations for the production of pig iron or steel (primary or secondary fusion) including continuous casting), 6 (Installations for the production of cement clinker in rotary kilns or lime in rotary kilns or in other furnaces) are mainly relevant for other source categories and were not considered for the emission estimates for source category 1.A.2.

4.1.3.2 Results for 2007

Table 17, Table 18 and Table 19 show the results for the proxy inventory in 2007 for 1A2 Manufacturing Industries and Construction compared to the inventory time series for the EU and all Member States for CO_2-, CH_4- and N_2O emissions respectively.

Table 17 CO_2 emissions from 1A2 Manufacturing Industries and Construction

Source Category	1A2	2. Manufacturing Industries and Construction						
Gas	CO2							
Member State	**Inventory data**							**Proxy**
	BY	**1990**	**1995**	**2000**	**2004**	**2005**	**2006**	**2007**
	Gg							
AT	13,445	13,445	14,168	14,491	15,275	15,908	15,812	16,227
BE	33,126	33,126	32,409	32,782	29,275	27,824	27,523	27,523
BG	24,755	21,821	18,023	11,868	10,818	10,421	10,264	10,264
CY	770	770	894	638	520	782	776	776
CZ	46,616	46,616	32,766	28,185	26,003	26,632	27,706	27,190
DE	154,482	154,482	112,278	98,312	102,007	103,644	101,394	100,322
DK	5,424	5,424	5,891	6,008	5,816	5,607	5,630	5,377
EE	1,759	1,759	543	475	471	541	539	539
ES	46,266	46,266	53,120	57,879	69,880	70,920	69,840	69,840
FI	13,231	13,231	12,090	11,902	11,637	11,296	11,548	11,548
FR	84,801	84,801	78,674	79,207	77,902	78,807	76,233	74,905
GB	99,422	99,422	92,862	92,498	83,122	83,662	82,336	101,103
GR	10,370	10,370	9,856	10,614	9,406	8,277	9,549	9,549
HU	20,860	15,676	11,791	9,196	8,958	10,149	8,650	8,650
IE	3,969	3,969	4,349	5,666	5,758	5,837	5,688	5,755
IT	88,937	88,937	87,955	88,273	86,320	81,697	82,083	90,592
LT	6,197	6,197	1,754	1,106	1,247	1,353	1,565	1,565
LU	5,303	5,303	2,677	1,783	1,699	1,520	1,665	1,665
LV	3,773	3,773	1,862	1,147	1,105	1,127	1,188	1,188
MT	60	60	61	58	60	74	45	45
NL	33,045	33,045	28,155	26,795	27,166	27,182	27,487	26,615
PL	42,536	42,423	62,400	47,280	38,206	34,380	33,724	32,454
PT	9,155	9,155	10,127	11,740	10,839	10,217	9,817	10,484
RO	37,425	31,958	26,695	17,614	21,691	20,679	19,303	19,303
SE	10,943	10,943	12,080	11,305	11,414	10,489	10,742	10,742
SI	4,353	3,092	2,600	2,241	2,259	2,455	2,551	2,440
SK	24,291	24,291	16,415	12,834	12,342	12,170	13,324	13,324
EU-15	611,921	611,921	556,691	549,255	547,517	542,887	537,347	562,246
EU-25	763,135	756,576	687,776	652,414	638,689	632,550	627,415	650,417
EU-27	825,315	810,355	732,494	681,896	671,198	663,650	656,982	679,984
EU-10	151,215	144,656	131,085	103,159	91,172	89,662	90,068	88,171
EU-2	62,180	53,779	44,718	29,483	32,509	31,100	29,567	29,567

Table 18 CH_4 emissions from 1A2 Manufacturing Industries and Construction

Source Category	1A2	2. Manufacturing Industries and Construction						
Gas	CH4							
Member State	**Inventory data**							**Proxy**
	BY	**1990**	**1995**	**2000**	**2004**	**2005**	**2006**	**2007**
	Gg							
AT	0.40	0.40	0.45	0.48	0.57	0.59	0.62	0.62
BE	3.72	3.72	2.88	3.25	3.27	2.80	3.04	3.04
BG	0.57	0.35	0.34	0.23	0.23	0.21	0.23	0.23
CY	0.04	0.04	0.05	0.03	0.03	0.01	0.02	0.02
CZ	4.31	4.31	3.30	3.03	3.02	3.41	3.45	3.45
DE	11.48	11.48	5.64	5.32	5.10	5.34	5.39	5.39
DK	0.71	0.71	0.84	1.57	1.49	1.29	1.16	1.16
EE	0.07	0.07	0.02	0.03	0.08	0.08	0.04	0.04
ES	2.99	2.99	3.64	5.34	7.89	8.56	8.60	8.60
FI	0.61	0.61	0.69	0.72	0.69	0.66	0.73	0.73
FR	5.09	5.09	3.92	3.94	3.73	3.82	3.74	3.74
GB	15.44	15.44	15.53	15.16	13.28	13.06	13.15	13.15
GR	0.90	0.90	0.88	0.84	0.61	0.54	0.50	0.50
HU	7.98	4.67	3.45	3.23	2.73	2.99	3.07	3.07
IE	1.18	1.18	0.66	1.09	1.41	1.55	1.38	1.38
IT	6.74	6.74	7.07	5.76	5.77	6.29	6.23	6.23
LT	0.38	0.38	0.14	0.12	0.25	0.26	0.27	0.27
LU	0.17	0.17	0.10	0.08	0.09	0.08	0.08	0.08
LV	0.26	0.26	0.16	0.15	0.22	0.25	0.28	0.28
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NL	2.70	2.70	2.31	2.28	2.22	2.21	2.24	2.24
PL	2.22	3.18	5.87	4.21	3.59	3.29	3.70	3.70
PT	1.81	1.81	2.21	2.57	2.72	2.78	2.84	2.84
RO	2.59	2.24	2.30	1.52	1.79	1.69	1.61	1.61
SE	2.19	2.19	2.70	2.02	2.14	2.09	2.36	2.36
SI	0.51	0.38	0.27	0.22	0.32	0.36	0.33	0.33
SK	2.26	2.26	1.54	1.31	1.34	1.30	1.39	1.39
EU-15	56.12	56.12	49.53	50.41	50.98	51.63	52.06	52.06
EU-25	74.16	71.68	64.33	62.74	62.56	63.59	64.62	64.62
EU-27	77.32	74.28	66.96	64.49	64.58	65.49	66.46	66.46
EU-10	18.04	15.56	14.80	12.33	11.58	11.95	12.56	12.56
EU-2	3.15	2.60	2.63	1.75	2.02	1.90	1.84	1.84

Table 19 N_2O emissions from 1A2 Manufacturing Industries and Construction

Source Category	1A2	2. Manufacturing Industries and Construction						
Gas	N2O							
Member State	Inventory data							Proxy
	BY	1990	1995	2000	2004	2005	2006	2007
	Gg							
AT	0.52	0.52	0.55	0.57	0.50	0.49	0.51	0.51
BE	0.19	0.19	0.16	0.16	0.15	0.12	0.14	0.14
BG	0.14	0.21	0.11	0.07	0.07	0.06	0.06	0.06
CY	0.07	0.07	0.09	0.05	0.05	0.00	0.00	0.00
CZ	0.58	0.58	0.42	0.37	0.36	0.41	0.42	0.42
DE	5.15	5.15	3.24	2.51	2.68	2.75	2.96	2.96
DK	0.18	0.18	0.18	0.19	0.19	0.18	0.19	0.19
EE	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00
ES	1.29	1.29	1.47	1.66	1.98	2.00	2.01	2.01
FI	0.56	0.56	0.54	0.61	0.59	0.55	0.52	0.52
FR	2.73	2.73	2.63	2.73	2.75	2.88	2.98	2.98
GB	5.21	5.21	4.83	4.35	4.23	4.32	4.37	4.37
GR	0.18	0.18	0.43	0.52	0.49	0.40	0.40	0.40
HU	1.14	0.89	0.62	0.39	0.38	0.40	0.44	0.44
IE	0.36	0.36	0.47	0.59	0.58	0.59	0.55	0.55
IT	4.93	4.93	4.52	4.66	5.03	5.02	5.05	5.05
LT	0.15	0.15	0.05	0.03	0.05	0.05	0.05	0.05
LU	0.03	0.03	0.02	0.01	0.01	0.01	0.01	0.01
LV	0.03	0.03	0.02	0.02	0.02	0.03	0.03	0.03
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NL	0.11	0.11	0.07	0.07	0.07	0.07	0.08	0.08
PL	0.73	0.78	1.10	0.78	0.68	0.63	0.68	0.68
PT	0.22	0.22	0.24	0.29	0.31	0.30	0.31	0.31
RO	0.23	0.18	0.17	0.13	0.16	0.15	0.16	0.16
SE	1.64	1.64	1.81	1.69	1.74	1.72	1.80	1.80
SI	0.14	0.08	0.07	0.07	0.08	0.08	0.10	0.10
SK	0.26	0.26	0.16	0.14	0.15	0.14	0.16	0.16
EU-15	23.28	23.28	21.16	20.62	21.30	21.43	21.87	21.87
EU-25	26.37	26.13	23.70	22.48	23.08	23.18	23.76	23.76
EU-27	26.75	26.52	23.98	22.67	23.31	23.40	23.97	23.97
EU-10	3.09	2.84	2.54	1.86	1.78	1.75	1.88	1.88
EU-2	0.37	0.39	0.28	0.20	0.23	0.22	0.22	0.22

4.1.3.3 Results for past trends

No quality check of the methodological approach chosen was possible for a historic time series at the level of source category 1.A.2 because CITL data are not available for the years before 2005. Therefore quality checks could only be performed for one year (trend 2006/2005). Additional checks will be made in 2009, when at least 3 consecutive years of verified emissions will be available from EU ETS and from GHG inventories.

Table 20 Comparison of trend of CO_2 emissions for 2006/2005 for category 1A2 Manufacturing Industries and Construction between CRF data and CITL data

MS	2006/2005 trend dynamics for 1A2 Manufacturing Industries and Construction			CITL data used for proxy inventory
	CRF	CITL	Explanation	
AT	99.4%	99.6%	100%	✓
BE	98.9%	105.8%	107%	
CY	99.3%	106.9%	108%	
CZ	104.0%	97.9%	94%	✓
DE	97.8%	96.1%	98%	✓
DK	100.4%	95.5%	95%	✓
EE	99.7%	111.3%	112%	
ES	98.5%	121.3%	123%	
FI	102.2%	110.3%	108%	
FR	96.7%	94.9%	98%	✓
GB	98.4%	93.6%	95%	✓
GR	115.4%	93.3%	81%	
HU	85.2%	94.4%	111%	
IE	97.5%	102.0%	105%	✓
IT	100.5%	103.9%	103%	✓
LT	115.7%	99.0%	86%	
LU	109.5%	99.6%	91%	
LV	105.4%	98.5%	93%	
NL	101.1%	96.3%	95%	✓
PL	98.1%	97.5%	99%	✓
PT	96.1%	99.8%	104%	✓
SE	102.4%	98.6%	96%	
SI	103.9%	98.6%	95%	✓
SK	109.5%	87.1%	80%	

Notes: Not all Member States report CO_2 emissions from refineries therefore list of MS is not complete

dark green: deviation ≤ 1%, light green: deviation ≤ 5%, white: deviation > 5% and < 10%, orange: deviation > 10%

Table 14 shows the deviation of CITL data trend from CRF data trend for 2006/2005 for CO_2 emissions from category 1A2 Manufacturing Industries and Construction for all Member States for which data was available. For only 2 Member States out of 24 Member States the trend matches within 1% deviation, but for 12 Member showed differences smaller than 5%, for another 4 Member States the trend deviated by a percentage between 5 and 10% and for six Member States the deviation was higher than 10% (12% for Estonia, 23% for Spain, -19% for Greece, 11% for Hungary, 14% for Lithuania and 20% for Slovakia). Thus the trend for CO_2 emissions from Manufacturing Industries and Construction between CITL data and CRF data matched less well than for the other categories compared, however the results seem still quite good given the

fact that under the ETS CO_2 emissions from manufacturing industries may also be allocated in a wide range of categories and the difficulties in comparability of ETS and CRF data in this particular source category.

4.1.4 1.B Fugitive Emissions from Fuels

4.1.4.1 Methods and data sources used

The CO_2 and CH_4 emissions for source category 1.B (Fugitive Emissions from Fuels) were estimated on the basis of a separate analysis of the following source categories

- Solid Fuels (1.B.1)
- Oil and Natural Gas, Oil (1.B.2.a)
- Oil and Natural Gas, Natural Gas (1.B.2.b)
- Oil and Natural Gas, Venting and Flaring (1.B.2.c)

For the CO_2 emissions for source category 1.B.1 (Solid Fuels) the inventory data from the last submission were used.

The estimates for CH_4 emissions for source category 1.B.1 (Solid Fuels) are based on the monthly production data for hard coal and lignite from Eurostat.

$$E^{Y}_{1B1,CH4} = \frac{AR^{Y}_{coal-prod}}{AR^{Y-1}_{coal-prod}} \cdot E^{Y-1}_{1B1,CH4}$$

with

$E^{Y}_{1B1,CH4}$ *CH4 emissions for source category 1B1*

$E^{Y-1}_{1B1,CH4}$ *CH4 Emissions for source category 1B1 from previous year*

$AR^{Y}_{coal-prod}$ *Hard coal or lignite production*

$AR^{Y-1}_{coal-prod}$ *Hard coal or lignite production for previous year*

For the countries where hard coal production is the main determinant for CH_4 emissions from source category 1.B.1 (Czech Republic, Germany, Spain, United Kingdom, Poland) the primary hard coal production (Eurostat indicator code 100100, Eurostat product code 2111) was used for the projection of CH_4 emissions from this source category. For countries with a dominating lignite production (Bulgaria, Estonia, Greece, Hungary, Romania, Slovenia, Slovakia) the primary production data for lignite (Eurostat indicator code 100100, Eurostat product code 2210) were used. For 15 Member States (Austria, Belgium, Cyprus, Denmark, Finland, France, Ireland, Italy, Lithuania, Luxembourg, Latvia, Malta, the Netherlands, Portugal,and Sweden) no sufficient and consistent data were available. For these countries the inventory data from the last available submission were used.

For the CO_2 emissions for source category 1.B.2.a (Oil and Natural Gas, Oil) the inventory data from the last submission were used.

The estimates for CH_4 emissions for source category 1.B.2.a (Oil and Natural Gas, Oil) are based on the monthly production data for crude oil from Eurostat (indicator code 100100, product code 3100):

$$E^{Y}_{1B2a,CH4} = \frac{AR^{Y}_{oil-prod}}{AR^{Y-1}_{oil-prod}} \cdot E^{Y-1}_{1B2a,CH4}$$

with

$E^{Y}_{1B2a,CH4}$ *CH4 emissions for source category 1B2a*

$E^{Y-1}_{1B2a,CH4}$ *CH4 Emissions for source category 1B2a from previous year*

$AR^{Y}_{oil-prod}$ *Crude oil production*

$AR^{Y-1}_{oil-prod}$ *Crude oil production for previous year*

This equation was used for Austria, Germany, Hungary, Italy, Poland and Romania. For all other Member States the emissions data for this source category from the last inventory submission were used.

The estimates for CO_2 emissions for source category 1.B.2.b (Oil and Natural Gas, Natural Gas) are based on the monthly total consumption data for natural gas from Eurostat (indicator code 100900, product code 4100):

$$E^{Y}_{1B2b,CO2} = \frac{AR^{Y}_{gas-cons}}{AR^{Y-1}_{gas-cons}} \cdot E^{Y-1}_{1B2b,CO2}$$

with

$E^{Y}_{1B2b,CO2}$ *CO2 emissions for source category 1B2b*

$E^{Y-1}_{1B2b,CO2}$ *CO2 Emissions for source category 1B2b from previous year*

$AR^{Y}_{gas-cons}$ *Total natural gas consumption*

$AR^{Y-1}_{gas-cons}$ *Total natural gas consumption for previous year*

This equation was used for Belgium, Germany, Italy, the Netherlands, and Poland. For all other Member States the emissions data for this source category from the last inventory submission were used.

The estimates for CH_4 emissions for source category 1.B.2.b (Oil and Natural Gas, Natural Gas) are based on the monthly total consumption data for natural gas from Eurostat (indicator code 100900, product code 4100):

$$E^{Y}_{1B2b,CH4} = \frac{AR^{Y}_{gas-cons}}{AR^{Y-1}_{gas-cons}} \cdot E^{Y-1}_{1B2b,CH4}$$

with

$E^{Y}_{1B2b,CH4}$ *CH4 emissions for source category 1B2b*

$E^{Y-1}_{1B2b,CH4}$ *CH4 Emissions for source category 1B2b from previous year*

$AR^{Y}_{gas-cons}$ *Total natural gas consumption*

$AR^{Y-1}_{gas-cons}$ *Total natural gas consumption for previous year*

This equation was used for Belgium, Germany, Spain, United Kingdom, Italy, the Netherlands, Poland, Romania, and Slovenia. For all other Member States the emissions data for this source category from the last inventory submission were used.

The estimates for CO_2 emissions for source category 1.B.2.c (Oil and Natural Gas, Venting and Flaring) are based on the monthly production data for natural gas from Eurostat (indicator code 100100, product code 4100):

$$E^{Y}_{1B2c,CO2} = \frac{AR^{Y}_{oil-prod}}{AR^{Y-1}_{oil-prod}} \cdot E^{Y-1}_{1B2c,CO2}$$

with

$E^{Y}_{1B2c,CO2}$ *CO2 emissions for source category 1B2c*

$E^{Y-1}_{1B2c,CO2}$ *CO2 Emissions for source category 1B2c from previous year*

$AR^{Y}_{gas-prod}$ *Natural gas production*

$AR^{Y-1}_{gas-prod}$ *Natural gas production for previous year*

This equation was used for United Kingdom, Hungary, Italy, and the Netherlands. For all other Member States the emissions data for this source category from the last inventory submission were used.

The estimates for CH_4 emissions for source category 1.B.2.c (Oil and Natural Gas, Venting and Flaring) are also based on the monthly production data for natural gas from Eurostat (indicator code 100100, product code 4100):

$$E^{Y}_{1B2c,CH4} = \frac{AR^{Y}_{oil-prod}}{AR^{Y-1}_{oil-prod}} \cdot E^{Y-1}_{1B2c,CH4}$$

with

$E^{Y}_{1B2c,CH4}$ *CH4 emissions for source category 1B2c*

$E^{Y-1}_{1B2c,CH4}$ *CH4 Emissions for source category 1B2c from previous year*

$AR^{Y}_{gas-prod}$ *Natural gas production*

$AR^{Y-1}_{gas-prod}$ *Natural gas production for previous year*

This equation was used for Great Britain, Italy, the Netherlands, and Romania. For all other Member States the emissions data for this source category from the last inventory submission were used.

The total CO_2 and CH_4 emissions for source category 1.B (Fugitive Emissions from Fuels) were calculated as sum of the estimates for the source categories 1.B.1, 1.B.2.a, 1.B.2.b and 1.B.2.c (see above).

For all N_2O emissions from source category 1.B (Fugitive Emissions from Fuels) the emissions data from the last inventory submissions were used.

4.1.4.2 Results for 2007

Table 21 and Table 22 show the results for the proxy inventory in 2007 for 1B1 Fugitive emissions from solid fuels compared to the inventory time series for the EU and all Member States for CO_2-, and CH_4-emissions respectively.

Table 21 CO_2 emissions from 1B1 Fugitive emissions from solid fuels

Source Category	1B1	1. Solid Fuels						
Gas	CO2							
Member State	Inventory data							Proxy
	BY	1990	1995	2000	2004	2005	2006	2007
	Gg							
AT	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO
BE	NA	NA	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO
BG	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE
CY	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO
CZ	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE
DE	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO
DK	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO
EE	NA,NO	NA,NO	NA,NO	NA,NO	NO	NO	NO	NO
ES	18	18	13	15	73	90	125	125
FI	NO	NO	NO	NO	NO	NO	NO	NO
FR	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO
GB	856	856	226	102	168	110	140	140
GR	NE,NO	NE,NO	NE,NO	63	107	107	101	101
HU	4	7	2	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO	IE,NA,NO
IE	NE,NO	NE,NO	NE,NO	NO	NO	NO	NO	NO
IT	NA	NA	NA	NA	NA	NA	NA	NA
LT	NO	NO	NO	NO	NO	NO	NO	NO
LU	NO	NO	NO	NO	NO	NO	NO	NO
LV	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO
MT	NA	NA	NA	NA	NA	NA	NA	NA
NL	403	403	517	422	509	457	449	449
PL	2	2	1	1	1	1	1	1
PT	9	9	IE,NO	IE,NO	IE,NO	IE,NO	IE,NO	IE,NO
RO	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE
SE	789	789	1,110	861	838	577	579	579
SI	120	98	116	116	159	164	178	178
SK	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO
EU-15	2,074	2,074	1,866	1,463	1,694	1,341	1,394	1,394
EU-25	2,200	2,181	1,986	1,580	1,855	1,505	1,573	1,573
EU-27	2,200	2,181	1,986	1,580	1,855	1,505	1,573	1,573
EU-10	126	107	120	117	160	165	179	179
EU-2	0	0	0	0	0	0	0	0

Table 22 CH_4 emissions from 1B1 Fugitive emissions from solid fuels

Source Category	1B1	1. Solid Fuels						
Gas	CH4							
Member State	**Inventory data**							**Proxy**
	BY	**1990**	**1995**	**2000**	**2004**	**2005**	**2006**	**2007**
	Gg							
AT	0.5	0.5	0.3	0.3	0.1	0.0	0.0	0.0
BE	15.9	15.9	1.0	0.7	0.6	0.6	0.6	0.6
BG	94.8	75.8	69.2	57.1	58.7	52.7	56.5	62.9
CY	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO
CZ	361.9	361.9	276.6	239.0	222.0	221.4	236.2	227.5
DE	963.8	963.8	706.3	590.5	310.6	274.0	234.6	238.7
DK	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO
EE	19.4	19.4	12.1	11.2	11.3	12.3	12.5	14.4
ES	86.5	86.5	70.0	59.4	47.2	44.7	44.3	42.1
FI	NO	NO	NO	NO	NO	NO	NO	NO
FR	206.3	206.3	211.0	121.9	6.1	1.7	1.7	1.7
GB	870.9	870.9	599.6	333.4	234.9	194.7	180.4	168.5
GR	52.2	52.2	58.0	64.2	70.4	69.7	64.8	65.8
HU	44.0	31.4	16.3	14.8	5.6	1.0	1.1	1.1
IE	NE,NO	NE,NO	NE,NO	NO	NO	NO	NO	NO
IT	5.8	5.8	3.1	3.5	3.0	3.3	2.6	2.6
LT	NO	NO	NO	NO	NO	NO	NO	NO
LU	NO	NO	NO	NO	NO	NO	NO	NO
LV	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO
MT	NA	NA	NA	NA	NA	NA	NA	NA
NL	1.4	1.4	1.4	1.1	1.1	1.1	1.1	1.1
PL	884.9	706.0	630.6	545.3	474.8	458.6	441.5	408.8
PT	3.1	3.1	IE,NO	IE,NO	IE,NO	IE,NO	IE,NO	IE,NO
RO	303.9	174.3	187.2	127.1	122.9	118.7	123.7	115.9
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SI	17.1	14.4	13.0	12.0	12.9	12.2	12.1	12.2
SK	27.2	27.2	29.7	28.8	19.8	16.2	14.7	14.1
EU-15	2,206.5	2,206.5	1,650.8	1,175.0	674.0	589.9	530.0	521.0
EU-25	3,561.0	3,366.8	2,629.1	2,026.2	1,420.3	1,311.6	1,248.1	1,199.1
EU-27	3,959.8	3,617.0	2,885.5	2,210.3	1,601.9	1,483.0	1,428.4	1,377.8
EU-10	1,354.5	1,160.3	978.3	851.2	746.3	721.7	718.1	678.1
EU-2	398.8	250.1	256.4	184.2	181.6	171.4	180.3	178.7

Table 23 and Table 24 show the results for the proxy inventory in 2007 for 1B1 Fugitive emissions from solid fuels compared to the inventory time series for the EU and all Member States for CO_2-, and CH_4-emissions respectively.

Table 23 CO_2 emissions from 1B2 Fugitive emissions from Oil and Gas

Source Category	1B2	2. Oil and Natural Gas						
Gas	CO2							
Member State	**Inventory data**							**Proxy**
	BY	**1990**	**1995**	**2000**	**2004**	**2005**	**2006**	**2007**
	Gg							
AT	102	102	127	165	210	205	232	232
BE	85	85	84	167	104	106	132	132
BG	NA,NE,NO	NA,NE,NO	NA,NE,NO	NA,NE,NO	NA,NE,NO	NA,NE,NO	NA,NE,NO	0
CY	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	0
CZ	IE,NE,NO	IE,NE,NO	IE,NE,NO	IE,NE,NO	IE,NE,NO	IE,NE,NO	IE,NE,NO	0
DE	0	0	0	0	0	0	0	0
DK	263	263	363	593	606	435	415	415
EE	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	0
ES	1,744	1,744	1,904	2,203	2,181	2,152	2,268	2,268
FI	226	226	176	132	116	129	113	71
FR	4,508	4,508	4,088	4,172	4,039	3,947	4,156	4,156
GB	5,760	5,760	8,413	5,571	5,100	5,748	4,809	4,449
GR	70	70	39	24	11	10	9	9
HU	196	173	157	105	95	85	80	80
IE	139	139	167	71	71	60	60	60
IT	3,341	3,341	3,174	2,585	2,152	2,112	2,189	2,179
LT	2	2	11	26	25	18	15	15
LU	NA,NE,NO	NA,NE,NO	NA,NE,NO	NA,NE,NO	NA,NE,NO	NA,NE,NO	NA,NE,NO	0
LV	IE,NE,NO	IE,NE,NO	IE,NE,NO	IE,NE,NO	IE,NE,NO	IE,NE,NO	IE,NE,NO	0
MT	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	0
NL	775	775	441	267	998	1,074	1,068	1,067
PL	46	45	80	178	240	230	250	249
PT	115	115	533	489	667	742	748	700
RO	IE,NE,NO	IE,NE,NO	IE,NE,NO	IE,NE,NO	NA,NE,NO	NA,NE,NO	NA,NE,NO	0
SE	93	93	74	129	79	92	166	166
SI	NE,NO	NE,NO	NE,NO	NE,NO	NA,NE,NO	NA,NE,NO	NA,NE,NO	0
SK	0	0	0	0	0	0	0	0
EU-15	17,222	17,222	19,582	16,566	16,335	16,811	16,366	15,905
EU-25	17,465	17,441	19,830	16,875	16,695	17,144	16,711	16,249
EU-27	17,465	17,441	19,830	16,875	16,695	17,144	16,711	16,249
EU-10	243	220	248	310	360	333	345	345
EU-2	0	0	0	0	0	0	0	0

Table 24 CH_4 emissions from 1B2 Fugitive emissions from Oil and Gas

Source Category	1B2	2. Oil and Natural Gas						
Gas	CH4							
Member State	Inventory data							Proxy
	BY	1990	1995	2000	2004	2005	2006	2007
	Gg							
AT	17.8	17.8	22.2	26.7	31.0	32.0	33.3	33.3
BE	25.0	25.0	24.7	21.3	18.7	18.9	19.4	18.2
BG	60.9	29.4	31.1	28.3	26.8	29.9	28.9	28.9
CY	0.0	0.0	0.0	0.0	0.0	NA	NA	0.0
CZ	42.7	42.7	31.8	33.0	26.9	32.2	32.9	32.9
DE	333.7	333.7	359.1	350.5	339.9	332.2	325.8	316.7
DK	1.9	1.9	2.9	3.8	4.8	4.8	4.6	4.6
EE	37.8	37.8	17.9	20.3	23.9	24.6	24.9	24.9
ES	30.0	30.0	38.9	37.3	39.5	43.1	29.7	30.1
FI	0.5	0.5	3.8	2.6	2.6	3.1	2.6	2.6
FR	132.7	132.7	107.1	96.4	93.9	91.1	89.8	89.8
GB	490.7	490.7	462.2	379.0	286.1	267.5	250.6	250.5
GR	4.4	4.4	2.6	6.5	6.9	6.6	6.9	6.8
HU	76.3	73.4	93.2	95.3	97.4	97.5	97.6	75.6
IE	6.2	6.2	5.4	4.1	3.1	2.7	4.9	4.9
IT	347.5	347.5	324.6	302.4	268.0	261.6	246.6	250.9
LT	17.0	17.0	7.6	8.6	9.7	9.9	9.8	1.0
LU	1.3	1.3	1.8	2.1	2.9	2.8	2.8	2.8
LV	13.1	13.1	10.4	7.9	6.2	6.9	5.0	4.6
MT	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	0.0
NL	78.0	78.0	77.7	38.3	33.8	35.9	32.6	31.9
PL	196.7	147.4	151.8	168.4	200.5	205.6	207.5	206.8
PT	1.7	1.7	2.1	8.9	19.8	40.6	35.4	35.4
RO	1,038.6	924.2	611.0	438.4	442.9	420.6	417.6	369.9
SE	0.2	0.2	0.3	0.2	0.3	0.2	0.3	0.3
SI	2.7	2.8	2.6	2.1	1.6	1.6	1.5	1.4
SK	24.5	24.5	29.1	34.1	34.3	32.0	32.1	32.1
EU-15	1,472	1,472	1,435	1,280	1,151	1,143	1,085	1,079
EU-25	1,882	1,830	1,780	1,650	1,552	1,553	1,497	1,458
EU-27	2,982	2,784	2,422	2,117	2,022	2,004	1,943	1,857
EU-10	411	359	344	370	401	410	411	379
EU-2	1,100	954	642	467	470	451	446	399

4.1.4.3 Results for past trends

No quality check of the methodological approach chosen was possible for a longer historic time series at the level of source category 1.B because the Eurostat monthly production data are not available as consistent time series before the year 2005.

Table 25 indicates the deviation of the trend in CH_4 emissions between the approximated method and CRF data for 4 historic years. The results are very close (less than ± 1% deviation in most years for Czech Republic, Poland, Greece and Slovenia. Results for the trend deviate by less than ± 5% for UK, Bulgaria, Romania and Slovenia. Few results show a discrepancy of more than ± 10%.

Table 25 Comparison of deviation in CH_4 emission trend for source category 1B1 Fugitive emissions from solid fuels between CRF data and Eurostat data as used for the approximated methodology

MS	emission trends for CH4 from 1B1 Fugitive emissions from solid fuels			
	2003/2002	2004/2003	2005/2004	2006/2005
CZ	100%	100%	100%	106%
DE	81%	79%	92%	101%
ES	104%	91%	109%	98%
GB	92%	102%	102%	103%
PL	#DIV/0!	101%	99%	99%
BU	93%	105%	96%	104%
EE	87%	109%	101%	104%
GR	100%	100%	103%	100%
HU	#DIV/0!	52%	22%	101%
RO	92%	100%	98%	92%
SI	100%	100%	100%	100%
SK	#DIV/0!	98%	96%	104%

Notes: dark green: deviation ≤ 1%, light green: deviation ≤ 5%, orange: deviation > 5%

Table 26 shows the same comparison of the trend for fugitive CH_4 emissions from oil between Eurostat data and CRF data for 4 past years for those Member States for which Eurostat data was used in the approximated methodology and deviations are mostly below ± 5%.

Table 26 Comparison of deviation in CH_4 emission trend for source category 1B2a Fugitive emissions from oil between CRF data and Eurostat data as used for the approximated methodology

MS	emission trends for CH4 from 1B2a Fugitive emissions from oil			
	2003/2002	2004/2003	2005/2004	2006/2005
AT	97%	131%	108%	104%
DE	96%	101%	100%	103%
HU	24%	100%	105%	98%
IT	94%	81%	98%	95%
PL	25%	102%	99%	109%
RO	23%	116%	114%	100%

Notes: dark green: deviation ≤ 1%, light green: deviation ≤ 5%, white: deviation > 5% and < 10%, orange: deviation > 10%

The same trend comparison between Eurostat and CRF data for category 1B2b Fugitive emissions from gas is reflected in Table 27 (CO_2 emissions) and Table 28 (CH_4 emissions). For CO_2 emissions the deviations are below 5%, except for Italy where the trend deviates by up to 14%. For CH_4 emissions the trend from both data sources for the most recent year 2006/2005 matches extremely with only up to ± 2% deviation.

Table 27 Comparison of deviation in CO_2 emission trend for source category 1B2b Fugitive emissions from gas between CRF data and Eurostat data as used for the approximated methodology

MS	emission trends for CO2 from 1B2b Fugitive emissions from gas			
	2003/2002	2004/2003	2005/2004	2006/2005
BE	102%	102%	100%	96%
DE	97%	93%	98%	102%
IT	86%	89%	86%	94%
NL	96%	101%	101%	103%
PL	28%	105%	97%	96%

Notes: dark green: deviation ≤ 1%, light green: deviation ≤ 5%, white: deviation > 5% and < 10%, orange: deviation > 10%

Table 28 Comparison of deviation in CH_4 emission trend for source category 1B2b Fugitive emissions from gas between CRF data and Eurostat data as used for the approximated methodology

MS	emission trends for CH4 from 1B2b Fugitive emissions from gas			
	2003/2002	2004/2003	2005/2004	2006/2005
BE	95%	102%	100%	100%
DE	93%	97%	96%	100%
ES	95%	93%	80%	102%
GB	71%	102%	98%	101%
IT	89%	93%	90%	98%
NL	95%	100%	104%	99%
PL	32%	100%	100%	100%
RO	27%	94%	92%	100%
SI	25%	84%	94%	99%

Notes: dark green: deviation ≤ 1%, light green: deviation ≤ 5%, white: deviation > 5% and < 10%, orange: deviation > 10%

Table 29 (CO_2 emissions) and Table 30 (CH_4 emissions) show the trend comparison of both data sources (Eurostat and CRF) for source category 1B2c Fugitive emissions from venting and flaring. For this category the data matches less well and most deviations are in the range of ± 5% and ± 10%.

Table 29 Comparison of deviation in CO_2 emission trend for source category 1B2c Fugitive emissions from venting and flaring between CRF data and Eurostat data as used for the approximated methodology

MS	emission trends for CO2 from 1B2c Venting and Flaring			
	2003/2002	2004/2003	2005/2004	2006/2005
GB	88%	109%	123%	93%
HU	27%	96%	93%	88%
IT	113%	110%	107%	108%
NL	86%	75%	109%	108%

Notes: dark green: deviation ≤ 1%, light green: deviation ≤ 5%, white: deviation > 5% and < 10%, orange: deviation > 10%

Table 30 Comparison of deviation in CH_4 emission trend for source category 1B2c Fugitive emissions from venting and flaring between CRF data and Eurostat data as used for the approximated methodology

MS	emission trends for CO2 from 1B2c Venting and Flaring			
	2003/2002	2004/2003	2005/2004	2006/2005
GB	98%	120%	83%	99%
IT	113%	110%	107%	108%
NL	103%	75%	117%	86%
RO	25%	90%	93%	103%

Notes: dark green: deviation ≤ 1%, light green: deviation ≤ 5%, white: deviation > 5% and < 10%, orange: deviation > 10%

4.1.5 1.A.3 Transport

4.1.5.1 Methods and data sources used

The main source for the estimation of CO_2 emissions from source category 1.A.3 (Transport) are the following Eurostat data, extracted from Eurostat's database:

- Yearly data for the final energy consumption of motor spirit, automotive diesel oil and kerosene/jet fuels
- Monthly data for the internal market deliveries of motor spirit, automotive diesel oil and kerosene/jet fuels

Based on these data sources the CO_2 emissions were calculated as following:

$$E^{Y}_{1A3,CO2} = \left(\frac{E^{Y}_{MS,CO2} + E^{Y}_{AD,CO2}}{E^{Y-1}_{MS,CO2} + E^{Y-1}_{AD,CO2}}\right) \cdot E^{Y-1}_{1A3b,c,d,e,CO2} + \frac{E^{Y}_{K,CO2}}{E^{Y-1}_{K,CO2}} \cdot E^{Y-1}_{1A3a,CO2}$$

with

$E^{Y}_{1A3,CO2}$ $CO2\ emissions\ for\ source\ category\ 1A3$

$E^{Y}_{MS,CO2}$ $CO2\ emissions\ motor\ spirit\ (monthly\ total\ of\ internalmarket\ deliveries)\ x\ CO2\ factor$

$E^{Y}_{AD,CO2}$ $CO2\ emissions\ automotive\ diesel\ (monthly\ total\ of\ internalmarket\ deliveries)\ x\ CO2\ factor$

$E^{Y-1}_{MS,CO2}$ $CO2\ emissions\ motor\ spirit\ (monthly\ total\ of\ internalmarket\ deliveries)\ x\ CO2\ factor$

$E^{Y-1}_{AD,CO2}$ $CO2\ emissions\ automotive\ diesel\ (monthly\ total\ of\ internalmarket\ deliveries)\ x\ CO2\ factor$

$E^{Y-1}_{1A3b,c,d,e,CO2}$ $CO2\ emissions\ for\ source\ category\ 1A3b,c,d,e\ from\ previous\ year$

$E^{Y}_{K,CO2}$ $CO2\ emissions\ kerosene\ (monthly\ total\ of\ internal\ market\ deliveries)\ x\ CO2\ factor$

$E^{Y-1}_{K,CO2}$ $CO2\ emissions\ kerosene\ (monthly\ total\ of\ internal\ market\ deliveries)\ x\ CO2\ factor$

$E^{Y-1}_{1A3a,CO2}$ $CO2\ emissions\ for\ source\ category\ 1A3a\ from\ previous\ year\ (civial\ aviation)$

The estimation for CH_4 emissions from source category 1.A.3 (Transport) is similar to CO_2 and based on the following equation:

$$E^{Y}_{1A3,CH4} = \left(\frac{E^{Y}_{MS,CO2} + E^{Y}_{AD,CO2}}{E^{Y-1}_{MS,CO2} + E^{Y-1}_{AD,CO2}}\right) \cdot E^{Y-1}_{1A3b,c,d,e,CH4} + \frac{E^{Y}_{K,CO2}}{E^{Y-1}_{K,CO2}} \cdot E^{Y-1}_{1A3a,CH4}$$

with

$E^{Y}_{1A3,CH4}$ $CH4\ emissions\ for\ source\ category\ 1A3$

$E^{Y}_{MS,CO2}$ $CO2\ emissions\ motor\ spirit\ (monthly\ total\ of\ internalmarket\ deliveries)\ x\ CO2\ factor$

$E^{Y}_{AD,CO2}$ $CO2\ emissions\ automotive\ diesel\ (monthly\ total\ of\ internalmarket\ deliveries)\ x\ CO2\ factor$

$E^{Y-1}_{MS,CO2}$ $CO2\ emissions\ motor\ spirit\ (monthly\ total\ of\ internalmarket\ deliveries)\ x\ CO2\ factor$

$E^{Y-1}_{AD,CO2}$ $CO2\ emissions\ automotive\ diesel\ (monthly\ total\ of\ internalmarket\ deliveries)\ x\ CO2\ factor$

$E^{Y-1}_{1A3b,c,d,e,CH4}$ $CH4\ emissions\ for\ source\ category\ 1A3b,c,d,e\ from\ previous\ year$

$E^{Y}_{K,CO2}$ $CO2\ emissions\ kerosene\ (monthly\ total\ of\ internal\ market\ deliveries)\ x\ CO2\ factor$

$E^{Y-1}_{K,CO2}$ $CO2\ emissions\ kerosene\ (monthly\ total\ of\ internal\ market\ deliveries)\ x\ CO2\ factor$

$E^{Y-1}_{1A3a,CH4}$ $CH4\ emissions\ for\ source\ category\ 1A3a\ from\ previous\ year\ (civial\ aviation)$

The estimation for N_2O emissions from source category 1.A3 (Transport) is similar to CO_2 and based on the following equation:

$$E^{Y}_{1A3,N2O} = \left(\frac{E^{Y}_{MS,CO2} + E^{Y}_{AD,CO2}}{E^{Y-1}_{MS,CO2} + E^{Y-1}_{AD,CO2}}\right) \cdot E^{Y-1}_{1A3b,c,d,e,N2O} + \frac{E^{Y}_{K,CO2}}{E^{Y-1}_{K,CO2}} \cdot E^{Y-1}_{1A3a,N2O}$$

with

$E^{Y}_{1A3,N2O}$ $N2O\ emissions\ for\ source\ category\ 1A3$

$E^{Y}_{MS,CO2}$ $CO2\ emissions\ motor\ spirit\ (monthly\ total\ of\ \text{int}ernal market\ deliveries)\ x\,CO2\ factor$

$E^{Y}_{AD,CO2}$ $CO2\ emissions\ automotive\ diesel\ (monthly\ total\ of\ \text{int}ernal market\ deliveries)\ x\,CO2\ factor$

$E^{Y-1}_{MS,CO2}$ $CO2\ emissions\ motor\ spirit\ (monthly\ total\ of\ \text{int}ernal market\ deliveries)\ x\,CO2\ factor$

$E^{Y-1}_{AD,CO2}$ $CO2\ emissions\ automotive\ diesel\ (monthly\ total\ of\ \text{int}ernal market\ deliveries)\ x\,CO2\ factor$

$E^{Y-1}_{1A3b,c,d,e,N2O}$ $N2O\ emissions\ for\ source\ category\ 1A3b,c,d,e\ from\ previous\ year$

$E^{Y}_{K,CO2}$ $CO2\ emissions\ \text{ker}osene\ (monthly\ total\ of\ \text{int}ernal\ market\ deliveries)\ x\,CO2\ factor$

$E^{Y-1}_{K,CO2}$ $CO2\ emissions\ \text{ker}osene\ (monthly\ total\ of\ \text{int}ernal\ market\ deliveries)\ x\,CO2\ factor$

$E^{Y-1}_{1A3a,N2O}$ $N2O\ emissions\ for\ source\ category\ 1A3a\ from\ previous\ year\ (civial\ aviation)$

4.1.5.2 Results for 2007

Table 31, Table 32 and Table 33 show the results for the proxy inventory in 2007 for 1A3 Transport compared to the inventory time series for the EU and all Member States for CO_2-, CH_4- and N_2O-emissions respectively.

Table 31 CO_2 emissions for source category 1A3

Source Category	1A3	3 Transport					
Gas	CO2						
Member State	Inventory data						Proxy
	BY	1990	1995	2000	2005	2006	2007
	Gg CO2e						
AT	12,426	12,426	14,484	17,745	24,014	22,808	23,264
BE	20,092	20,092	21,969	24,075	25,668	25,222	25,422
BG	13,814	10,864	6,845	5,889	8,115	8,622	11,293
CY	957	957	1,206	1,731	2,043	2,120	2,197
CZ	7,342	7,342	9,454	12,067	17,164	17,515	18,076
DE	162,458	162,458	176,591	182,379	164,083	160,642	164,436
DK	10,528	10,528	11,852	12,050	13,056	13,417	13,974
EE	3,352	3,352	1,619	1,643	2,216	2,413	2,627
ES	56,506	56,506	65,590	84,788	102,661	105,592	108,953
FI	12,551	12,551	11,824	12,634	13,491	13,680	14,175
FR	117,953	117,953	127,876	136,068	138,634	137,763	139,496
GB	116,967	116,967	117,966	123,478	129,280	130,989	128,262
GR	14,375	14,375	16,530	19,069	22,287	23,352	24,405
HU	7,621	8,019	6,817	8,537	11,788	12,266	12,728
IE	5,039	5,039	6,109	10,517	12,797	13,483	14,688
IT	101,461	101,461	112,005	120,447	126,959	128,531	129,953
LT	5,652	5,652	3,031	3,107	4,124	4,418	5,406
LU	2,720	2,720	3,446	4,936	7,181	6,997	6,873
LV	2,857	2,857	2,031	2,152	3,031	3,342	3,734
MT	342	342	440	496	613	631	650
NL	26,009	26,009	29,176	32,409	34,675	35,644	36,664
PL	21,847	24,914	28,432	32,055	35,357	37,381	40,607
PT	9,828	9,828	13,058	18,773	19,229	19,254	18,999
RO	5,785	7,646	8,254	9,344	11,819	12,282	13,551
SE	18,174	18,174	18,539	18,733	20,043	19,969	21,027
SI	1,983	2,679	3,653	3,681	4,387	4,606	4,800
SK	4,892	4,892	4,258	4,182	6,214	5,801	6,213
EU-15	687,086	687,086	747,014	818,101	854,057	857,343	870,591
EU-25	743,932	748,093	807,957	887,753	940,994	947,838	967,629
EU-27	763,530	766,602	823,055	902,986	960,928	968,741	992,474
EU-10	56,845	61,006	60,942	69,652	86,938	90,494	97,038
EU-2	19,599	18,510	15,098	15,233	19,934	20,903	24,844

Table 32 CH_4 emissions for source category 1A3

Source Category	1A3	3 Transport					
Gas	CH4						
Member State	Inventory data						Proxy
	BY	1990	1995	2000	2005	2006	2007
	Gg						
AT	3.1	3.1	3.0	1.9	1.3	1.1	1.1
BE	5.6	5.6	5.6	4.2	2.8	2.7	2.7
BG	3.0	2.9	2.0	1.4	1.4	1.5	2.0
CY	0.3	0.3	0.4	0.4	0.6	0.6	0.6
CZ	1.3	1.3	1.6	1.2	1.6	1.6	1.6
DE	61.2	61.2	30.8	16.1	8.7	7.7	7.8
DK	2.7	2.7	2.4	1.9	1.4	1.3	1.4
EE	0.6	0.6	0.3	0.3	0.3	0.4	0.4
ES	11.5	11.5	11.4	10.4	8.6	8.4	8.7
FI	4.7	4.7	3.9	3.2	2.4	2.2	2.3
FR	17.4	17.4	14.2	9.9	6.3	5.7	5.8
GB	29.6	29.6	23.0	14.9	8.3	7.6	7.4
GR	5.4	5.4	6.8	7.6	7.5	9.0	9.4
HU	2.2	1.5	1.3	1.3	1.3	1.3	1.4
IE	2.2	2.2	2.3	2.1	1.4	1.3	1.4
IT	36.9	36.9	45.2	40.0	28.8	26.7	27.0
LT	3.2	3.2	2.0	1.4	1.4	1.5	1.8
LU	0.9	0.9	1.2	1.3	1.0	1.0	1.0
LV	0.5	0.5	0.4	0.4	0.6	0.6	0.7
MT	0.0	0.0	0.1	0.1	0.1	0.1	0.1
NL	7.5	7.5	4.7	3.1	2.4	2.4	2.4
PL	6.4	6.2	7.6	5.5	5.3	5.5	6.0
PT	3.5	3.5	4.6	3.6	2.7	2.6	2.6
RO	0.7	1.2	1.6	1.5	1.9	1.8	2.0
SE	5.0	5.0	4.1	2.7	1.8	1.6	1.7
SI	0.9	1.1	1.7	1.4	1.0	1.0	1.0
SK	1.0	1.0	1.1	1.1	1.3	1.1	1.2
EU-15	197.2	197.2	163.1	122.9	85.5	81.5	82.9
EU-25	213.5	212.9	179.5	136.0	99.0	95.1	97.7
EU-27	217.2	217.0	183.2	138.9	102.3	98.5	101.7
EU-10	16.3	15.7	16.4	13.1	13.5	13.6	14.8
EU-2	3.7	4.1	3.6	2.9	3.3	3.4	4.0

Table 33 N2O emissions for source category 1A3

Source Category	1A3	3 Transport					
Gas	N2O						
Member State	Inventory data						Proxy
	BY	1990	1995	2000	2005	2006	2007
	Gg						
AT	0.6	0.6	0.8	0.9	1.0	0.9	0.9
BE	1.2	1.2	1.8	2.4	2.7	2.7	2.7
BG	0.3	0.3	0.1	0.1	0.2	0.2	0.3
CY	0.0	0.0	0.1	0.1	0.1	0.1	0.1
CZ	0.3	0.3	0.8	1.7	2.1	2.1	2.2
DE	2.2	2.2	4.8	5.1	4.1	3.9	3.7
DK	0.4	0.4	0.5	0.5	0.4	0.4	0.5
EE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ES	2.5	2.5	3.8	6.4	8.8	9.2	9.5
FI	0.6	0.6	0.9	1.4	2.0	2.0	2.1
FR	1.6	1.6	1.8	2.2	2.3	2.3	2.4
GB	4.2	4.2	8.1	14.1	17.6	18.0	17.6
GR	0.5	0.5	0.7	1.1	1.9	1.9	2.0
HU	0.4	1.3	1.1	1.2	1.4	1.3	1.3
IE	0.3	0.3	0.4	0.6	0.7	0.7	0.7
IT	5.5	5.5	7.0	10.3	12.9	13.2	13.4
LT	0.2	0.2	0.1	0.1	0.2	0.2	0.2
LU	0.1	0.1	0.3	0.5	0.9	0.9	0.9
LV	0.3	0.3	0.2	0.2	0.3	0.3	0.4
MT	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NL	0.9	0.9	1.6	1.5	1.4	1.5	1.5
PL	0.9	1.1	1.3	3.4	3.4	3.6	3.9
PT	0.5	0.5	1.0	1.7	1.9	1.9	1.9
RO	0.0	0.1	0.1	0.1	0.1	0.1	0.1
SE	0.5	0.5	0.7	0.7	0.6	0.6	0.6
SI	0.1	0.1	0.3	0.4	0.5	0.6	0.6
SK	0.4	0.4	0.3	0.4	0.6	0.6	0.6
EU-15	21.6	21.6	34.1	49.6	59.2	60.1	60.3
EU-25	24.2	25.4	38.3	57.1	67.8	68.8	69.7
EU-27	24.6	25.7	38.5	57.3	68.1	69.2	70.0
EU-10	2.6	3.8	4.2	7.6	8.6	8.8	9.4
EU-2	0.4	0.3	0.2	0.2	0.3	0.3	0.4

4.1.5.3 Results for past trends

No quality check of the methodological approach chosen was made for the historic time series because such analysis would be very time consuming due to the large number of datasets involved and which also would have significant budget implications if performed for all Member States.

4.1.6 1.A.4 Other sectors and 1.A.5 Other Fuel Combustion

No near-term data were identified which could be used to develop a real-time projection for the source categories 1A4 Other sectors and 1A5 Other Fuel Combustion based on activity or emission data.

The only option therefore was to calculate approximated emissions for the total of source category 1A4 (which represents a significant share in total emissions) and 1A5 (which represents only a minor share in total emissions) by a subtraction approach. Based on the real-time projection for the source categories 1A, 1A1, 1A2 and 1A3, the emissions for the total of source categories 1A4 and 1A5 were calculated based on the following formula:

$$E^{Y}_{1A4+5} = E^{Y}_{1A} - E^{Y}_{1A1} - E^{Y}_{1A2} - E^{Y}_{1A3}$$

with

E^{Y}_{1A3} *Emissions for source category 1A4 and 1A5*

E^{Y}_{i} *Emissions for source category i*

Thus, the approximated emissions from these source categories cannot be further disaggregated and are not based on real data for 2007. Therefore the emissions from 1A4 and 1A5 have higher uncertainties than the other source categories in the energy sector.

4.2 Industrial processes

4.2.1 2.A Mineral products

4.2.1.1 Methods and data sources used

Two different methodologies are available for estimating CO_2 emissions from mineral products.

The first methodology is based on activity data for cement and lime production using data from Eurostat's Prodcom data or from Cembureau data. For this purpose, the following datasets were collected:

- Cement production from Eurostat's Prodcom database. This corresponds to the sum of the following Prodcom subcategories: 26511210 (White Portland cement), 26511230 (Grey Portland cement), 26511250 (Alumina cement), and 26511290 (Other hydraulic cement).
- Cement production data from Cembureau.
- Cement clinker production from to Eurostat's Prodcom database. This corresponds to the subcategory 26511100 (Cement clinker).
- Lime production from Eurostat's Prodcom database. This corresponds to the sum of the subcategories 14121050 (Limestone flux), 14121053 (Limestone for

cement), 14121055 (Limestone powder), 26521035 (Slaked lime), and 26521050 (Hydraulic lime).

Based on activity data of previous inventory year, the activity data from Prodcom and/or Cembureau had to be scaled in order to match the inventory data of the previous year. The scaled activity rate was calculated for each product (cement, clinker, lime) and data source (Prodcom, Cembureau) as follows:

$$AR^{Y}_{\mathrm{Pr}oduct,\,Source,\,scaled} = AR^{Y}_{\mathrm{Pr}oduct,\,Source} \cdot \frac{AR^{Y-1}_{\mathrm{Pr}oduct,\,CRF}}{AR^{Y-1}_{\mathrm{Pr}oduct,\,Source}}$$

with

$AR^{Y}_{\mathrm{Pr}oduct,\,Source,\,scaled}$ *Scaled activity rate for each product and data source*

$AR^{Y}_{\mathrm{Pr}oduct,\,Source}$ *Activity rate for each product and data source*

$AR^{Y-1}_{\mathrm{Pr}oduct,\,CRF}$ *Activity rate for each product in the CRF (previous year)*

$AR^{Y-1}_{\mathrm{Pr}oduct,\,Source}$ *Activity rate for each product and data source (previous year)*

The approximated CO_2 emissions from mineral products were then calculated by multiplying the scaled activity data for cement/clinker and lime, respectively with the implied emission factor for cement/clinker and lime, respectively, of the previous year. Then the sum of emissions for cement and lime production was scaled up to receive overall emissions from the category “Mineral products”.

$$E^{Y}_{2A} = \frac{AR^{Y}_{cem,\,scaled} \cdot \frac{E^{Y-1}_{2A1}}{AR^{Y-1}_{cem,\,CRF}} + AR^{Y}_{\mathrm{lim},\,scaled} \cdot \frac{E^{Y-1}_{l2A2}}{AR^{Y-1}_{\mathrm{lim},\,CRF}}}{\frac{E^{Y-1}_{2A1} + E^{Y-1}_{2A2}}{E^{Y-1}_{2A}}}$$

with

E^{Y}_{2A} *Emissions for source category* $2A$

E^{Y-1}_{2A} *Emissions for source category* $2A$ *from previous year*

E^{Y-1}_{2A1} *Emissions for source category* $2A1$ *from previous year*

E^{Y-1}_{2A2} *Emissions for source category* $2A2$ *from previous year*

$AR^{Y}_{cem,\,scaled}$ *Scaled activity rate for cement clinker (or cement)*

$AR^{Y-1}_{cem,\,CRF}$ *Activity rate for cement clinker (or cement) from the CRF (previous year)*

$AR^{Y}_{\mathrm{lim},\,scaled}$ *Scaled activity rate for limestone*

$AR^{Y-1}_{\mathrm{lim},\,CRF}$ *Activity rate for limestone from the CRF (previous year)*

The second approach is based on CO_2 emission data from the CITL data which were used as an index of the evolution of the emissions from the production of cement clinker or lime. In this approach CO_2 emissions from mineral products were calculated as follows.

$$E_{2A}^{Y} = \frac{E_{CITL}^{Y}}{E_{CITL}^{Y-1}} \cdot E_{2A}^{Y-1}$$

with

E_{2A}^{Y} *Emissions for source category* $2A$

E_{2A}^{Y-1} *Emissions for source category* $2A$ *from previous year*

E_{CITL}^{Y} *CITL emissions for the production of cement clin*ker *or* lim*e*

E_{CITL}^{Y-1} *CITL emissions for the production of cement clin*ker *or* lim*e from previous year*

Whether the first or the second approach is chosen for a country depended on the data availability. For some countries relevant activity data and/or emission data were not available for the year 2007 or for previous years. In some cases data availability was restricted due to confidentiality reasons. When data for both approaches were available for a country, it was evaluated how stable the relation of activity data used for the proxy estimation (i.e. Prodcom, Cembureau) was in comparison to the activity data reported in the CRF tables for several past years. Similarly, it was assessed how stable the relation of CITL emissions to inventory emissions was for two years. The more robust approach was then chosen to determine the approximated emissions for the year 2007. If both approaches were not or only partly feasible, a trend extrapolation of emission data was used as preferred method. In the event that the past trend was not stable, the value of the previous year was chosen. Robustness was evaluated by assessing the variation coefficient or the coefficient of determination (R^2) for the available time series.

After the assessment of the robustness for most countries, the estimation approach based on CITL data was used (Austria, Belgium, Cyprus, Germany, Denmark, Spain, Finland France UK, Greece, Hungary, Ireland, Italy, Luxembourg, Latvia, the Netherlands, Poland, Portugal, Sweden and Slovenia). For the Czech Republic, Estonia, Romania, and Slovakia Prodcom data were used for the estimation. For Lithuania Cembureau data for cement and constant CRF data for lime production were used for the estimation of the approximated 2007 emissions. For Bulgaria, proxy emissions for 2007 were based on past CRF values (constant values, trend extrapolation). Once CITL data become available, a more precise estimation of proxy emissions will be possible fpr Bulgaria.

4.2.1.2 Results for 2007

GHG emissions from industrial processes increase by 70,400 Gg CO_2eq in 2007 compared to 2006. Table 34 indicates the sub-sector contribution to this growth in emissions. Whereas GHG emissions from mineral products increase, emissions from Chemical Production and Metal Production decline.

Table 34 Change in GHG emissions between 2006/2007 for industrial processes emissions

Sector	Change 2006/07			
	EU-15		EU-27	
	Mt CO_2eq	%	Mt CO_2eq	%
2. Industrial Processes	7.7	2.3%	12.1	2.9%
A. Mineral Products	5.7	4.8%	10.6	7.1%
B. Chemical Industry	-1.7	-2.5%	-3.2	-3.5%
C. Metal Production	-3.3	-4.4%	-3.8	-3.7%

Figure 8 Change in GHG emissions between 2006/2007 for industrial processes emissions

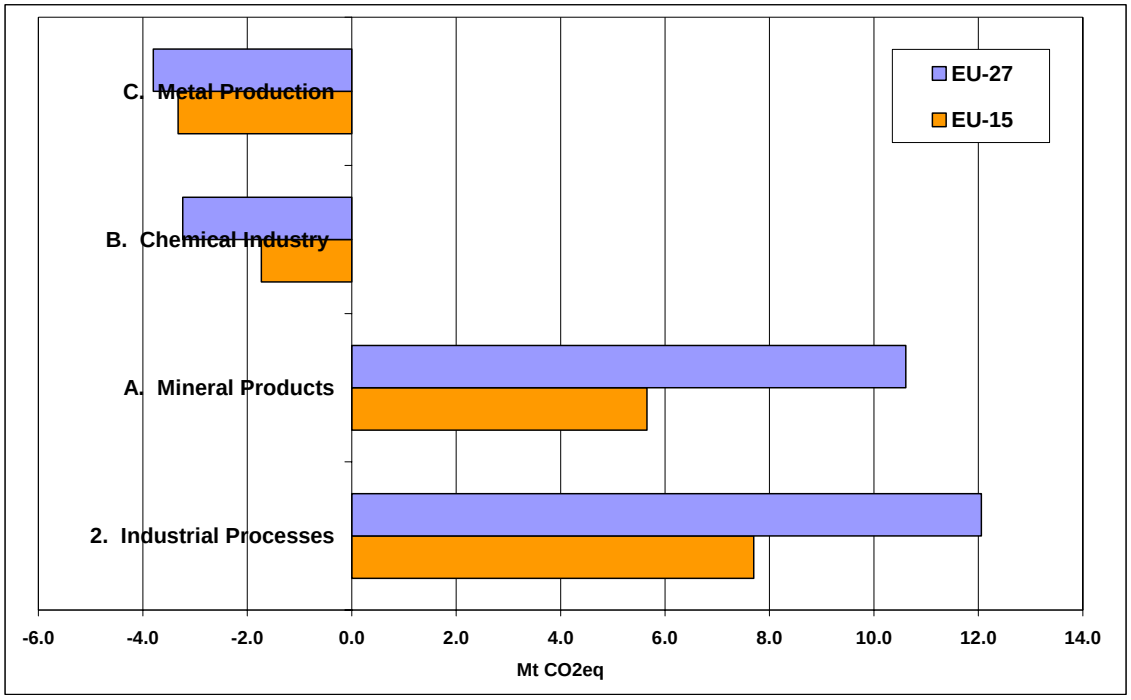


Table 35 CO_2 emissions from 2A Mineral Products

Source Category	2A	A. Mineral Products						
Gas	CO2							
Member State	Inventory data							Proxy
	BY	1990	1995	2000	2004	2005	2006	2007
	Gg CO2e							
AT	3,269	3,269	2,857	2,958	3,163	3,120	3,294	3,563
BE	5,342	5,342	5,711	5,825	5,534	5,441	5,748	5,608
BG	3,842	4,020	3,124	2,302	2,843	3,078	3,151	3,210
CY	572	572	516	710	946	893	901	893
CZ	4,362	4,362	3,316	3,876	3,625	3,589	3,710	4,054
DE	22,567	22,567	23,204	22,395	20,633	19,589	20,028	21,278
DK	1,073	1,073	1,407	1,641	1,728	1,641	1,609	1,651
EE	628	628	361	394	396	402	445	585
ES	15,669	15,669	16,131	19,405	21,620	22,241	22,705	22,870
FI	1,308	1,308	926	1,124	1,226	1,160	1,254	1,232
FR	15,066	15,066	12,626	12,449	12,908	12,764	13,076	13,242
GB	10,119	10,119	9,156	9,208	8,479	8,346	8,423	11,762
GR	6,454	6,454	7,009	7,304	7,197	7,342	7,200	7,112
HU	3,301	3,153	2,292	2,261	2,283	2,262	2,356	2,448
IE	1,103	1,103	1,072	1,898	2,507	2,552	2,539	2,540
IT	21,100	21,100	20,768	21,266	23,832	23,923	24,048	24,620
LT	2,201	2,201	454	377	439	447	513	529
LU	611	611	510	569	505	497	493	480
LV	498	498	140	130	174	191	195	197
MT			1	0	0	0	0	
NL		967	1,468	1,194	1,186	1,173	1,173	1,279
PL	10,803	8,519	9,078	8,354	7,176	8,040	9,147	10,655
PT	3,384	3,384	3,842	4,359	4,365	4,350	4,362	4,518
RO	11,344	8,904	6,443	5,302	6,211	6,156	6,653	9,421
SE	1,919	1,919	1,968	1,987	1,998	2,120	2,275	2,133
SI	766	700	542	599	587	632	671	703
SK	2,942	2,942	2,342	2,522	2,983	2,967	3,014	3,014
EU-15	108,986	109,952	108,652	113,582	116,880	116,258	118,227	123,889
EU-25	135,059	133,528	127,694	132,807	135,490	135,680	139,178	146,968
EU-27	150,244	146,453	137,261	140,411	144,544	144,914	148,982	159,598
EU-10	26,073	23,576	19,042	19,225	18,610	19,422	20,951	23,078
EU-2	15,185	12,924	9,567	7,604	9,054	9,234	9,804	12,631

4.2.1.3 Results for past trends

For CO_2 emissions from 2A Mineral Products, results of the approximated GHG inventory were compared with real inventory data for either the last year (if CITL data were used) or the historic time series (if Prodcom or Cembureau data were used) (see Table 36). Deviations between both approaches were

- below ± 1% for Belgium, Germany, France, Greece, Ireland Italy and Sweden;
- below ± 3% for Austria, Cyprus, the Czech Republic, Estonia, Spain, Finland, Hungary., Portugal, Romania, Slovenia and Slovakia;
- below ± 5% for Bulgaria, United Kingdom, Luxembourg and Poland;
- below ± 10% for Denmark, Lithuania and the Netherlands.

For those countries were CITL data were used Denmark (deviation of 7.1%), Latvia (23.4%) and the Netherlands (-9.3%) showed higher deviations due to the fact that the

relationship of CITL data to inventory data is less constant than for other countries. However, it can be expected that this deviation decreases over time when a longer time series of data from the European ETS become will be available for a better trend comparison.

Table 36 Deviation of results for past time series applying the proxy methodology in comparison to the reported inventory emissions for CO_2 emission from mineral products (CRF 2A)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
AT																	2,2%
BE																	-0,4%
BU		55,2%	23,9%	-14,1%	-34,4%	-26,6%	-1,6%	11,6%	102,9%	-19,2%	-7,5%	-9,7%	5,0%	0,8%	0,6%	10,4%	4,4%
CY																	-1,5%
CZ							-8,3%	-3,2%	-4,0%	-3,7%	-4,9%	-4,6%	-0,1%	2,5%	1,7%	1,5%	1,5%
DE																	0,5%
DK																	7,1%
EE							-3,8%	-8,7%	-4,1%	6,4%	1,1%	-1,5%	-2,6%	10,5%	0,0%	10,4%	-2,3%
ES																	-1,8%
FI																	-2,1%
FR																	0,5%
GB																	-4,3%
GR																	0,0%
HU																	-2,1%
IE																	-0,2%
IT																	0,6%
LT										5,0%	-1,0%	-5,2%	16,2%	-2,2%	4,1%	8,9%	9,0%
LU																	-4,1%
LV																	23,4%
MT																	
NL																	-9,3%
PL																	3,3%
PT																	-2,0%
RO							1,6%	0,6%	5,3%	6,5%	1,2%	6,8%	1,4%	4,4%	-4,2%	5,5%	2,7%
SE																	1,0%
SI																	1,7%
SK							4,1%	-3,5%	-23,1%	1,9%	20,0%	-2,6%	-0,5%	13,0%	-22,8%	0,5%	-1,6%

For the Czech Republic, Estonia, Romania, and Slovakia Prodcom data were used for the estimation. The deviation was significant for some years of the time series (see Table 36); however for the last reporting year (2006), deviations were less than 3% for all countries.

For Lithuania Cembureau data for cement and constant CRF data for lime production were used for the estimation of the approximated 2007 emissions. The deviation of this approach to past inventory data is ranging from -1.0% (2000) to 16.2% (2002).

For Bulgaria, proxy emissions for 2007 were based on past CRF values (constant values, trend extrapolation). Since Bulgaria is an economy in transition, this methodology shows with quite high deviations in some years. Once CITL data become available, a more precise estimation of proxy emissions will be possible.

4.2.2 2C Metal production

4.2.2.1 Methods and data sources used

The estimates for CO_2 emissions for source category 2.C (Metal Production) are based on separate estimates for source category 2.C.1 (Iron and Steel Production) and the remaining sub-categories of source category 2.C.

The estimates for CO_2 emissions for source category 2.C.1 (Iron and Steel Production) are based on the monthly production data for crude steel production of the International Iron and Steel Institute (IISI) which are available at the internet[9]:

$$E^{Y}_{2C1,CO2} = \frac{AR^{Y}_{steel}}{AR^{Y-1}_{steel}} \cdot E^{Y-1}_{2C1,CO2}$$

with

$E^{Y}_{2C1,CO2}$ *CO2 emissions for source category 2C1*

$E^{Y-1}_{2C1,CO2}$ *CO2 Emissions for source category 2C1 from previous year*

AR^{Y}_{steel} *Crude steel production*

AR^{Y-1}_{steel} *Crude steel production for previous year*

This equation and the IISI monthly production data were used for all 27 EU Member States.

The total CO_2 emissions for source category 2.C. (Metal Production) were calculated from the estimates for source category 2.C.1 (Iron and Steel Production) and the CO_2 emission data from all other sub-categories of source category 2.C from the last inventory submissions.

4.2.2.2 Results for 2007

Table 37 shows the CO_2 emissions for the proxy inventory in 2007 for 2C Metal Production compared to the inventory time series for the EU and all Member States.

[9] http://www.worldsteel.org/?action=lateststeellist. IISI delivers complete data sets for all countries. If data gaps exist these gaps are closed by IISI by estimates. However, the end-of-year data are rather complete six month after the end of the respective year.

Table 37 CO_2 emissions from 2C Metal Production

Source Category	2C	C. Metal Production						
Gas	CO2							
Member State	Inventory data							Proxy
	BY	1990	1995	2000	2004	2005	2006	2007
	Gg CO2e							
AT	3,725	3,725	3,942	4,221	4,463	5,014	5,106	5,427
BE	1,946	1,946	1,992	1,728	1,655	1,535	1,620	1,488
BG	2,473	1,836	2,316	1,478	1,522	1,398	1,592	1,538
CY	NA	NA	NA	NA	NA	NA	NA	NA
CZ	12,533	12,533	8,659	7,086	8,491	7,318	8,425	8,667
DE	49,767	49,767	44,913	46,435	45,213	43,460	45,568	46,827
DK	28	28	39	41	NA,NO	16	NA,NO	NA,NO
EE	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO
ES	3,511	3,511	2,456	3,353	3,481	3,917	3,949	4,021
FI	1,862	1,862	1,976	2,332	2,541	2,396	2,464	2,160
FR	3,685	3,685	4,716	3,432	4,640	4,294	3,805	3,712
GB	2,309	2,309	1,938	1,983	2,052	2,449	2,134	2,184
GR	482	482	468	567	807	549	531	543
HU	642	550	296	303	314	311	270	287
IE	NO	NO	NO	NO	NO	NO	NO	NO
IT	3,983	3,983	3,483	1,831	1,620	1,966	2,110	2,129
LT	NO	NO	NO	NO	NO	NO	NO	NO
LU	985	985	465	146	152	119	170	174
LV	13	13	4	8	13	12	13	13
MT	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO
NL	2,909	2,909	2,184	1,765	1,791	1,692	1,824	2,044
PL	11,640	8,313	5,885	5,300	4,855	3,474	4,472	4,727
PT	16	16	20	29	18	15	15	15
RO	16,568	10,784	9,277	5,839	6,941	7,365	8,609	8,708
SE	2,413	2,413	2,479	2,168	2,401	2,501	2,088	2,148
SI	187	285	211	186	295	287	274	274
SK	542	542	437	580	775	737	760	759
EU-15	77,621	77,621	71,071	70,029	70,835	69,923	71,383	72,874
EU-25	103,177	99,855	86,564	83,493	85,578	82,062	85,597	87,601
EU-27	122,218	112,476	98,156	90,810	94,041	90,825	95,797	97,848
EU-10	25,556	22,234	15,492	13,464	14,743	12,139	14,213	14,728
EU-2	19,041	12,621	11,593	7,317	8,464	8,763	10,201	10,247

4.2.2.3 Results for past trends

Table 38 shows the percentage deviation in results if the proxy methodology is applied to the past time series and compared to reported inventory data. This shows that for about 10 Member States results match within a range of ±5%, however for some Member States considerable differences of ±20-25% occur (France, UK, the Netherlands). For a number of Member States differences between the two approaches fluctuate rather strongly over the time series.

Table 38 Deviation of results for past time series applying the proxy methodology in comparison to the reported inventory emissions for CO_2 emission from 2.C:1 Iron and Steel Production at Member State level

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
	Proxy vs. Inventory data										
Austria	-5.7%	5.3%	7.2%	2.2%	-1.8%	3.9%	-4.8%	3.0%	6.1%	-4.2%	-0.5%
Belgium	12.6%	-3.5%	-1.5%	-9.4%	19.2%	0.5%	-17.1%	16.6%	8.1%	-4.0%	5.8%
Bulgaria	0.0%	0.0%	0.2%	-7.2%	22.5%	2.2%	0.6%	-0.9%	-0.9%	2.2%	-4.1%
Cyprus	-	-	-	-	-	-	-	-	-	-	-
Czech Republic	-2.1%	-2.8%	9.0%	8.9%	-6.4%	8.9%	-0.9%	-5.4%	-7.5%	2.1%	-3.7%
Germany	2.4%	1.1%	1.1%	2.3%	-0.3%	0.9%	0.2%	0.9%	0.9%	-0.1%	0.7%
Denmark	-	-	-	-	-	-	-	-	-	-	-
Estonia	-	-	-	-	-	-	-	-	-	-	-
Spain	-14.5%	-5.0%	1.7%	-2.4%	-4.9%	3.3%	-5.9%	15.0%	1.3%	-14.1%	0.7%
Finland	-9.0%	3.7%	8.9%	-0.7%	7.0%	-6.0%	6.7%	10.5%	-2.3%	4.0%	3.7%
France	36.8%	-0.9%	8.1%	6.5%	13.2%	-1.6%	-15.4%	-9.4%	-9.2%	2.6%	19.8%
United Kingdom	-13.5%	20.8%	6.5%	-22.0%	2.9%	34.9%	34.7%	-44.7%	-8.6%	-23.3%	25.6%
Greece	10.1%	-5.2%	-5.0%	-0.8%	-1.4%	-7.7%	4.5%	2.7%	-3.0%	147.6%	6.4%
Hungary	0.0%	-0.7%	0.1%	0.2%	-0.3%	0.4%	-0.3%	0.0%	0.2%	-0.3%	0.3%
Ireland	-	-	-	-	-	-	-	-	-	-	-
Italy	7.4%	17.0%	9.5%	27.5%	29.4%	-1.5%	2.5%	8.7%	0.8%	-20.5%	-1.6%
Lithuania	-	-	-	-	-	-	-	-	-	-	-
Luxembourg	7.0%	46.1%	100.7%	0.0%	0.0%	0.0%	-0.6%	0.6%	0.0%	4.6%	-10.8%
Latvia	33.6%	-30.8%	-4.5%	12.6%	-5.4%	8.4%	6.8%	-37.5%	-5.8%	10.5%	-1.7%
Malta	-	-	-	-	-	-	-	-	-	-	-
Netherlands	2.3%	-10.1%	17.3%	4.2%	10.9%	7.8%	-5.6%	-2.9%	23.7%	9.8%	-21.1%
Poland	3.0%	0.8%	13.9%	-4.3%	-13.5%	3.4%	-7.5%	-1.9%	21.0%	13.3%	-15.1%
Portugal	8.7%	-21.3%	7.1%	2.6%	-5.0%	-23.9%	184.9%	-0.7%	2.2%	23.9%	-3.0%
Romania	-1.1%	2.5%	-4.0%	11.9%	6.3%	14.1%	-17.0%	16.4%	1.7%	-4.0%	-16.5%
Sweden	-0.6%	5.3%	3.3%	8.5%	6.0%	-9.0%	12.2%	-12.1%	10.8%	-10.6%	19.2%
Slovenia	-1.5%	2.5%	6.5%	-1.9%	11.5%	-10.5%	-1.4%	2.8%	-11.8%	0.8%	14.3%
Slovakia	-0.5%	1.2%	-11.4%	-5.6%	1.6%	0.3%	-2.0%	-2.9%	-3.8%	7.4%	1.9%

4.2.3 Other industrial processes source categories

For all other industrial processes source categories 2007 activity data from alternative data sources are missing. These categories were extrapolated from 2006 GHG inventories, either by trend extrapolation or by taking the constant values of the year 2006. Constant values were used when past trends were inconsistent and strongly fluctuating and trend extrapolation were used when historic time series showed good correlations with a linear trend.

Annex 1 provides a detailed overview of methods and data sources used for each source category and Member State.

4.3 Agriculture

4.3.1 4.A Enteric fermentation

4.3.1.1 Methods and data sources used

Emissions from the source category 4A have been calculated by using activity rates and (implied) emission factors. Activity rates were obtained from the Eurostat annual statistics on agriculture and fisheries with data on animal production as well as from the annual inventory data in CRF format and the National Inventory Reports (NIR) submitted to the EU and to the UNFCCC. Annual animal population data provided by Eurostat were used for the following animal categories: dairy cattle, non-dairy cattle, swine, sheep and goats. Livestock surveys do not include poultry, as Eurostat only provides livestock surveys for laying hens without broilers and hens. Buffalo, horses, mules and asses are also not covered by Eurostat animal production data. Therefore emissions of

these other animal categories were updated from previous years via trend extrapolation of UNFCCC inventory data submitted in 2008. The proxy CH_4 emissions for source category 4A were calculated based on the following equation:

$$E_{4A}^{Y} = \sum_{i} AF_i^{Y-1} \cdot IEF_i^{Y-1} \cdot AR_i^{Y} + E_{other}^{Y-1}$$

with

E_{4A}^{Y} *Emissions for source category* $4A$

AF_i^{Y-1} *Adjustment factor for animal category i from previous year*(s)

IEF_i^{Y-1} Im *plied emission factor for animal category i from previous year*(s)

AR_i^{Y} *Activity rate* $(livestock)$ *for animal category i*

E_{other}^{Y-1} *Emissions for other animals for source category* $4A$ *from previous year*(s)

Activity rates provided by Eurostat encompass two animal livestock surveys in May/June and in December for the year Y-1. For each Member State it was analysed how good the respective livestock surveys correspond with the data used in national GHG inventories. The results of best fits differed for each MS and also for animal categories. For the estimation of approximated 2007 emissions, those animal population surveys were chosen that correspond best with the livestock data reported in GHG inventories for the past. For some Member States and animal categories Eurostat livestock population showed a rather constant deviation over the time series compared to the animal population reported in GHG inventories. In such cases a scaling factor was applied to achieve a 2007 data set comparable to animal population reported in GHG inventories (see Table 39). The scaling factor was derived on the basis of the most recent inventory data and the best fitting Eurostat dataset.

Table 39 Data from animal livestock surveyed by Eurostat in May/June (June) and December (Dec) used for proxy methodology and application of a scaling factor if necessary (+AF).

	Dairy cattle	Non-dairy cattle	Swine	Sheep	Goats
AT	Dec	Dec	Dec	Dec	Dec
BE	June	June	Dec	Dec	June
BG	Dec	Dec + AF	Dec	Dec + AF	Dec + AF
CY					
CZ	Dec + AF	Dec + AF	Dec	Dec + AF	Dec + AF
DE	Dec	June	Dec + AF	Dec + AF	Dec
DK	June	June	Dec + AF	Dec + AF	
EE	Dec	Dec	Dec	Dec	Dec
ES	Dec	June	Dec + AF	Dec	Dec
FI	June	June	Dec + AF	Dec + AF	Dec + AF
FR	Dec + AF	June	Dec + AF	Dec + AF	Dec + AF
GB	Dec	June	Dec	Dec + AF	June
GR	Dec + AF	Dec + AF	Dec + AF	Dec + AF	Dec + AF
HU	June + AF	June	Dec	Dec + AF	Dec + AF
IE	Dec	Dec	Dec	Dec + AF	June
IT	Dec	June + AF	Dec	Dec + AF	Dec
LT	Dec	Dec	Dec	Dec	Dec
LU	June	June	June	Dec + AF	Dec + AF
LV	June	Dec	Dec	Dec	Dec
MT					
NL	Dec	Dec + AF	Dec	Dec + AF	Dec + AF
PL	June + AF	June	Dec	Dec + AF	June
PT	Dec + AF	Dec	Dec	Dec + AF	Dec + AF
RO	Dec + AF	Dec + AF	Dec	Dec	Dec
SE	June	June	June	Dec	Dec
SI	Dec	Dec	Dec	Dec	Dec
SK	Dec + AF	Dec + AF	Dec	Dec	Dec

Implied emission factors for each animal category were derived from the national inventory data, which Member States submit to EC and UNFCCC for the year Y-2 (Table 40).

Table 40 Implied emissions factors from national UNFCCC inventories in 2006 used for the calculation of CH_4 emissions from enteric fermentation (4A, left) and manure management (4B, right) for 2007.

4A	Dairy cattle	Non-dairy cattle	Swine	Sheep	Goats	4B	Dairy cattle	Non-dairy cattle	Swine	Sheep	Goats
	IEF [kg CH_4/head/year]						IEF [kg CH_4/head/year]				
AT	115.0	56.0	1.5	8.0	5.0	AT	20.4	7.4	6.0	0.2	0.1
BE	116.9	44.5	1.5	8.2	8.7	BE	22.7	10.3	8.6	0.6	0.6
BG	81.0	56.0	1.5	8.0	5.0	BG	18.3	12.2	9.9	0.3	0.2
CY	100.0	48.0	1.5	8.0	5.0	CY	44.0	20.0	10.0	0.3	0.2
CZ	114.9	49.2	1.5	8.0	5.0	CZ	14.0	6.0	3.0	0.2	0.1
DE	113.3	37.2	1.3	8.0	5.0	DE	18.9	8.0	3.0	0.2	0.1
DK	126.2	35.1	1.1	17.2	13.2	DK	18.6	1.7	2.7	0.3	0.3
EE	124.9	48.1	0.8	8.0	5.0	EE	16.9	5.5	2.3	0.2	0.1
ES	97.1	54.3	1.5	8.6	5.0	ES	15.2	1.2	15.7	0.2	0.2
FI	118.2	46.2	1.5	8.4	5.0	FI	13.7	2.6	3.6	0.2	0.1
FR	104.3	51.7	1.5	8.0	5.0	FR	18.4	19.7	20.9	0.3	0.2
GB	102.8	43.3	1.5	4.9	5.0	GB	25.2	4.3	3.0	0.1	0.1
GR	81.0	56.0	1.5	7.4	5.0	GR	19.0	13.0	7.0	0.3	0.2
HU	100.0	48.0	1.5	8.0	5.0	HU	6.0	4.0	3.0	0.2	0.1
IE	110.1	54.2	0.5	5.8	5.0	IE	20.7	11.1	12.6	0.1	0.1
IT	113.2	44.7	1.5	8.0	5.0	IT	13.8	7.0	7.3	0.2	0.1
LT	98.3	44.4	1.5	8.0	5.0	LT	5.3	2.0	4.5	0.2	0.1
LU	127.5	42.2	1.5	8.0	5.0	LU	48.8	9.5	19.5	0.2	0.1
LV	81.0	56.0	1.5	8.0	5.0	LV	6.0	4.0	4.0	0.2	0.1
MT	100.0	48.0	1.5	8.0	5.0	MT	44.0	20.0	10.0	0.3	0.2
NL	129.0	73.0	1.5	8.0	5.0	NL	38.3	3.5	3.9	0.2	0.3
PL	94.3	47.9	1.5	7.8	5.0	PL	9.4	6.0	6.5	0.2	0.1
PT	119.2	56.3	1.4	9.8	8.4	PT	4.8	1.6	21.4	0.3	0.3
RO	81.0	56.0	1.0	5.0	5.0	RO	19.0	13.0	7.0	0.2	0.2
SE	131.3	54.1	1.5	8.0	5.0	SE	18.7	6.3	3.4	0.2	0.1
SI	96.8	52.3	1.6	8.0	5.0	SI	47.0	20.9	15.3	0.2	0.1
SK	106.7	56.1	1.5	8.0	5.0	SK	4.0	3.8	4.0	0.2	0.1

4.3.1.2 Results for 2007

GHG emissions from agriculture remain fairly constant in 2007 compared to 2006. Table 41 and Figure 9 indicate the sub-sector contribution. Whereas GHG emissions from enteric fermentation and Manure Management decrease, this drop is compensated by higher emissions from agricultural soils.

Table 41 Change in GHG emissions from 2006 to 2007 in the agriculture sector

Sector	Change 2006/07			
	EU-15		EU-27	
	Gg CO_2eq	%	Gg CO_2eq	%
4. Agriculture	67	0.0%	-4,412	-0.9%
A. Enteric Fermentation	-2,671	-2.2%	-2,991	-2.1%
B. Manure Management	-184	-0.3%	-1,630	-1.9%
D. Agricultural Soils(3)	2,919	1.5%	219	0.1%

Figure 9 Change in GHG emissions from 2006 to 2007 in the agriculture sector

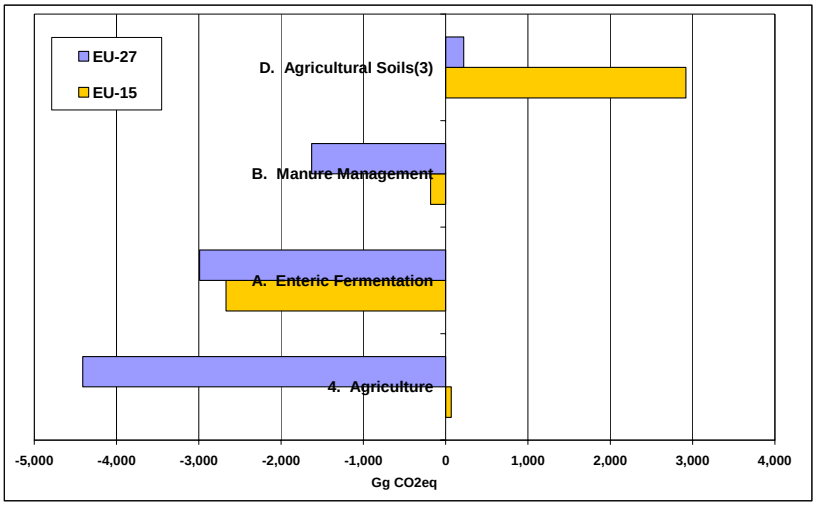


Table 42 presents the CH_4 emissions for the proxy inventory in 2007 for 4A Enteric Fermentation compared to the inventory time series for the EU and all Member States.

Table 42 CH_4 emissions from 4A Enteric Fermentation

Source Category	4A	4.A Enteric Fermentation						
Gas	CH4							
Member State	**Inventory data**							**Proxy**
	BY	**1990**	**1995**	**2000**	**2004**	**2005**	**2006**	**2007**
	Gg CO2e							
AT		179	171	162	155	153	153	153
BE		194	194	185	172	170	168	167
BG		180	85	79	71	67	67	63
CY		8	8	8	8	8	8	6
CZ		232	144	123	114	113	111	111
DE		1,147	988	929	876	873	873	849
DK		155	148	136	129	127	124	123
EE		53	27	21	21	21	21	21
ES		561	574	636	652	642	637	638
FI		91	80	79	76	75	74	68
FR		1,470	1,411	1,393	1,329	1,329	1,330	1,323
GB		877	864	829	776	758	770	757
GR		136	135	138	137	135	135	134
HU		138	84	80	71	70	67	66
IE		452	459	453	441	438	436	415
IT		580	584	579	516	516	506	506
LT		149	71	56	60	60	62	60
LU		13	13	12	11	11	11	12
LV		98	39	27	27	28	27	28
MT		2	3	2	2	2	2	1
NL		358	348	305	302	302	300	235
PL		743	513	463	417	426	437	437
PT		125	133	143	143	145	145	146
RO		507	320	265	259	264	269	260
SE		146	147	137	134	133	133	132
SI		35	33	33	31	31	31	33
SK		95	67	50	44	45	44	43
EU-15		6,485	6,249	6,117	5,850	5,808	5,796	5,658
EU-25		8,036	7,239	6,979	6,645	6,612	6,605	6,465
EU-27		8,723	7,644	7,323	6,975	6,943	6,941	6,789
EU-10		1,551	991	863	796	804	809	807
EU-2		687	405	344	330	332	336	323

4.3.1.3 Results for past trends

The use of Eurostat data results in small deviations of emissions for the actual inventory year 2006. Table 43 shows the percentage differences between emissions from proxy inventory calculations and the emissions derived from UNFCCC inventory submissions. For several countries the proxy methodology results in slightly higher (positive deviation) or lower values (negative deviation) than the reported emissions. Most of the Member States exhibit only slight discrepancies in underlying animal numbers thus resulting in similar levels of emissions. The deviations between both approaches are higher for early years of the time series from 1990-2006 (in particular for new Member States), but increasing consistency between both data sources could be observed for nearly all countries in the most recent years.

Table 43 Difference between emissions data obtained from inventory submissions to UNFCCC in 2006 and own calculation with Eurostat data for enteric fermentation in percent, 1990-2006.

	1990	1991	1992	1993	1994	1995	1996	1997	1998 [%]	1999	2000	2001	2002	2003	2004	2005	2006
AT	#	-40.5	-40.2	9.0	11.0	6.6	6.1	6.4	6.7	5.6	3.4	2.8	2.3	1.8	1.1	0.3	0.0
BE	12.1	10.9	10.3	7.7	7.4	7.0	6.5	5.3	5.0	4.1	3.6	2.6	2.3	1.8	1.1	0.1	0.4
BG	-1.4	-5.1	-12.2	-9.6	-4.6	1.6	-2.9	2.3	3.9	0.0	-12.3	8.0	4.1	1.1	-1.1	-2.8	1.0
CY																	
CZ	#	#	#	#	#	21.0	13.9	11.6	16.1	7.4	10.3	4.2	1.5	1.5	0.3	1.2	2.8
DE	-33.5	15.4	10.6	8.1	7.3	7.3	6.9	7.7	5.6	3.1	2.6	0.4	1.1	0.3	1.0	-0.9	-2.9
DK	4.5	3.9	3.0	2.3	2.7	3.5	3.7	3.8	3.6	3.8	4.6	3.0	1.7	0.7	0.0	-2.5	1.5
EE	14.2	13.5	18.4	22.7	22.2	20.3	18.0	14.8	12.5	15.6	10.8	7.3	6.4	6.1	3.8	3.0	1.4
ES	6.2	6.9	5.4	3.1	2.9	3.5	2.2	4.3	4.8	1.7	0.3	1.2	1.1	0.9	-0.1	-0.8	0.3
FI	#	#	7.2	6.4	6.6	7.0	5.8	4.2	4.5	3.0	0.6	-0.2	-2.0	-3.3	-4.5	-4.7	-5.4
FR	7.0	7.3	6.0	5.9	7.3	6.6	7.4	6.0	5.6	4.9	2.2	3.3	3.1	2.9	2.3	1.2	0.1
GB	8.1	6.9	6.3	6.6	6.2	5.0	3.1	4.5	4.9	2.8	2.0	1.3	1.7	1.4	-0.2	2.7	0.2
GR	13.7	9.7	11.4	11.1	0.1	4.1	2.5	4.7	-2.6	-2.4	-2.6	-3.4	-3.4	-1.0	-1.7	-2.6	0.0
HU	#	#	1.5	-1.6	-0.9	0.4	#	0.9	-0.7	-0.5	-6.4	-1.4	-1.6	1.2	0.0	0.0	-0.4
IE	1.5	1.0	1.2	0.8	1.7	2.4	2.2	2.8	1.9	-0.8	0.5	1.9	1.5	1.2	0.4	-0.1	-3.0
IT	10.1	4.2	3.0	1.5	0.3	-2.8	-1.4	-2.7	-0.6	-1.9	-6.8	1.4	0.4	-0.4	-0.5	-2.0	-0.2
LT	3.2	5.6	13.1	15.4	16.4	15.5	14.1	13.1	10.6	11.3	7.1	5.0	4.1	3.4	2.6	2.4	0.0
LU	10.9	9.7	7.9	6.4	6.3	5.3	4.3	3.6	4.5	4.0	2.5	2.0	1.1	0.9	0.8	1.1	0.0
LV	#	#	7.2	14.2	8.1	4.5	3.0	3.3	2.9	3.1	0.0	-0.1	0.0	0.0	0.0	0.0	0.1
MT																	
NL	-16.8	-19.1	-19.8	-21.8	-20.6	-20.2	-21.5	-21.0	-20.6	-22.3	-20.6	-22.9	-18.3	-19.9	-21.7	-22.6	-24.3
PL	#	#	#	#	#	#	#	#	2.8	3.4	2.7	2.4	1.9	2.1	1.8	1.4	0.5
PT	15.3	15.3	13.7	18.5	16.3	12.3	9.5	12.8	10.7	6.7	4.5	2.8	2.6	2.9	3.6	2.2	-0.3
RO	#	#	#	#	#	#	#	#	#	#	#	-2.5	-2.3	#	-1.9	-1.7	-1.8
SE	#	#	3.4	1.6	0.6	-0.1	0.6	-0.1	2.4	2.2	2.2	#	1.4	1.3	0.8	1.5	-0.1
SI	#	#	#	#	#	#	#	3.5	5.0	4.6	2.4	1.6	1.2	0.7	2.2	0.5	0.0
SK	#	#	#	#	#	#	#	#	15.2	14.1	12.8	5.1	6.9	7.4	6.5	2.8	0.0

Notes: #: No data for dairy cattle is provided by Eurostat, therefore values are not comparable.

For the past 5 years deviations between both approaches were

- below ± 3% for Austria, Belgium, the Czech Republic, Germany, Denmark, Spain, France, UK, Hungary, Italy, Luxembourg, Latvia, Poland, Romania, Sweden and Slovenia;
- below ± 5% for Bulgaria, Greece, Ireland, Lithuania and Portugal;
- below ± 10% for Estonia, Finland and Slovakia.

Only for the Netherlands rather high deviations of around 20% occurred during most years of the historic time series 1990-2006. This is due to different classification of the category non-dairy cattle for UNFCCC inventories and Eurostat surveys. With the data

available only an approximate calculation was possible resulting in a rather constant discrepancy of approximately 20 %. For future years it would be possible to adopt a different estimation approach for the Netherlands that adjusts for this discrepancy, however for this report such approach was not chosen as it would have resulted in an increased variation of methodological approaches used across Member States.

Detailed information about underlying causes for deviations is given in Table 44.

Table 44 Causes for high deviations and outliers in data between Eurostat and UNFCCC inventories for enteric fermentation.

AT	1990 - 1992: Eurostat does not provide AD for non-dairy cattle.
BE	1990 - 1992: AD for sheep differ by more than 20% between UNFCCC and Eurostat
BG	
CY	
CZ	1995 - 2000: AD for dairy cattle differ by more than 20% between UNFCCC and Eurostat.
DE	1991: AD for non-dairy cattle differ by more than 10% between UNFCCC and Eurostat. 1990: Eurostat does not provide AD for non-dairy cattle.
DK	
EE	1990 - 2000: Different allocation of animals to non-dairy cattle. Partitioning into mature non-dairy cattle and young cattle (different IEFs) has not been done for Eurostat data.
ES	
FI	
FR	
GB	
GR	1990: AD for dairy cattle differ by 20% between UNFCCC and Eurostat.
HU	
IE	
IT	
LT	1992 - 1998: Deviations due to calculation method (use of 2006 IEF for the whole time series). No differences exist between AD from UNFCCC and Eurostat.
LU	1990 - 1994: AD for sheep differ by 10% between UNFCCC and Eurostat .
LV	1993: AD for dairy cattle differ by 20% between UNFCCC and Eurostat .
MT	
NL	1990 - 2004: Different animal numbers especially for non-dairy cattle and sheep. Attribution to category 'Non-dairy cattle' seems to be different for UNFCCC (Option B; Adult Non-dairy) and Eurostat (calculation considering 'total population', 'dairy cows', 'other cows', 'bovine animals younger than 2 years' as no explicit data for 'non-dairy cows' are provided)
PL	
PT	1990 - 1998: AD for sheep differ by more than 10% between UNFCCC and Eurostat.
RO	
SE	
SI	
SK	1998-2000: AD for dairy cattle differ by more than 10% between UNFCCC and Eurostat .

4.3.2 4.B Manure management

4.3.2.1 Methods and data sources used

For the estimation of CH_4 emissions from manure management the same Eurostat data were used as for the calculation of CH_4 emissions from enteric fermentation. Data from livestock surveys provided by Eurostat were used according to Table 39. The emission

estimation follows a similar equation than the one for 4.A because of the same proxy methodology:

$$E_{4B}^{Y} = \sum_{i} AF_{i}^{Y-1} \cdot IEF_{i}^{Y-1} \cdot AR_{i}^{Y} + E_{other}^{Y-1}$$

with

E_{4B}^{Y} *Emissions for source category 4B*

AF_{i}^{Y-1} *Adjustment factor for animal category i from previous year(s)*

IEF_{i}^{Y-1} *Implied emission factor for animal category i from previous year(s)*

AR_{i}^{Y} *Activity rate (livestock) for animal category i*

E_{other}^{Y-1} *Emissions for other animals for source category 4B from previous year(s)*

Implied emission factors for each animal category for category 4.B were derived from the national inventory data submitted to EC and UNFCCC for the year Y-2, see Table 40.

4.3.2.2 Results for 2007

Table 45 presents the CH_4 emissions for the proxy inventory in 2007 for 4B Enteric Fermentation compared to the inventory time series for the EU and all Member States.

Table 45 CH_4 emissions from 4B Manure Management

Source Category	4B	4.B Manure Management						
Gas	CH4							
Member State	**Inventory data**							**Proxy**
	BY	**1990**	**1995**	**2000**	**2004**	**2005**	**2006**	**2007**
	Gg CO2e							
AT		50	48	44	42	42	42	42
BE		104	107	104	94	93	92	91
BG		71	35	27	24	23	23	21
CY		5	6	6	7	7	7	6
CZ		48	32	28	25	24	23	23
DE		280	258	254	235	236	236	233
DK		36	41	45	49	49	50	48
EE		9	4	3	4	4	3	3
ES		297	338	399	425	421	464	462
FI		11	12	12	13	13	13	13
FR		658	651	664	658	659	659	657
GB		139	136	130	123	119	121	118
GR		24	23	23	23	23	23	23
HU		40	24	24	21	20	19	19
IE		111	112	110	108	107	106	102
IT		165	156	156	150	150	144	144
LT		20	10	7	9	9	9	8
LU		4	5	5	5	5	5	5
LV		13	5	4	4	4	4	4
MT		1	2	2	2	2	2	1
NL		141	145	127	117	117	117	105
PL		161	170	159	163	171	178	170
PT		56	57	56	55	55	56	57
RO		181	115	85	95	97	100	95
SE		17	20	19	22	23	22	22
SI		24	22	22	21	21	22	22
SK		18	13	10	8	8	7	7
EU-15		2,092	2,110	2,150	2,119	2,113	2,149	2,123
EU-25		2,431	2,400	2,413	2,380	2,380	2,423	2,387
EU-27		2,683	2,549	2,525	2,500	2,500	2,546	2,503
EU-10		339	289	264	261	267	274	264
EU-2		252	149	112	120	120	123	116

4.3.2.3 Results for past trends

The calculation with Eurostat data shows good estimates of emissions for the present inventory year 2006. Table 46 gives an overview of the percentage differences between calculated emissions from manure management based on the proxy methodology and the emissions from the same category reported in the 2008 national GHG inventory submission.

As for category 4.A the proxy methodology shows slightly higher (positive deviation) or lower values (negative deviation) than the reported emissions. Although the same activity data were used for both categories 4.A and 4.B the deviances between the data obtained from own calculation and from UNFCCC differ due to the different implied emission factors (IEF) used for categories 4.A and 4.B. The share of emissions from swine in category 4.B for example is larger than in category 4.A due to the higher IEF, ranging in the same order of magnitude as for non-dairy cattle. Therefore lacking activity data for swine which result in deviances of emissions is more relevant for this category. This is the case for Portugal and Austria (1990-1993) or Germany in 1990.

Small discrepancies in underlying animal numbers result in only slight differences in emissions for most of the Member States thus similar levels of emissions could be found for recent years. Going backwards in the time series however results in an increasing difference due to different animal numbers provided by UNFCCC inventories and Eurostat for most Member States.

Table 46 Difference between emissions data obtained from inventory submissions to UNFCCC in 2006 and own calculation with Eurostat data for manure management in percent, 1990-2006.

	1990	1991	1992	1993	1994	1995	1996	1997	1998 [%]	1999	2000	2001	2002	2003	2004	2005	2006
AT	#	-61.6	-62.5	-40.7	5.1	2.8	3.1	3.2	3.6	3.1	2.1	1.7	2.0	0.0	0.6	0.2	0.0
BE	-0.6	2.1	3.3	0.2	1.0	1.2	0.4	1.2	1.6	-1.0	1.4	-0.8	-1.1	-1.5	-0.2	-0.6	0.2
BG	-2.1	-10.0	-9.4	-11.3	-3.7	2.5	-11.1	0.8	5.8	-3.2	-21.3	8.0	6.0	1.4	-3.0	-1.9	1.7
CY																	
CZ	#	#	#	#	#	7.8	3.7	0.8	4.7	-0.4	3.8	0.3	0.9	0.2	-2.4	-1.0	0.4
DE	-53.2	16.8	13.9	11.8	1.9	1.4	0.9	1.0	-0.4	-2.3	-2.2	-3.4	-2.8	0.0	0.9	-0.4	-1.9
DK	16.9	14.0	8.9	5.5	8.4	7.7	8.3	7.8	6.3	5.9	6.4	4.4	1.6	0.9	-0.5	-3.5	0.3
EE	12.1	15.9	30.9	34.3	26.8	21.4	32.5	28.3	22.3	45.8	39.6	35.2	32.2	4.8	4.3	3.0	0.8
ES	2.1	8.9	5.7	3.0	2.3	-0.5	3.1	1.7	4.8	7.4	0.2	6.0	4.2	4.7	4.6	5.1	-0.1
FI	#	#	-8.0	-10.3	26.3	20.3	18.5	14.3	17.3	15.8	14.0	13.2	6.0	1.2	0.4	-2.0	-5.0
FR	1.6	3.8	5.1	6.9	8.1	7.5	8.7	8.7	8.8	8.2	4.5	4.6	4.2	3.6	1.7	0.8	0.1
GB	9.1	8.4	8.2	9.0	8.0	6.4	4.5	4.8	4.3	3.5	2.4	1.6	1.0	1.0	-1.6	0.8	-1.1
GR	7.6	-0.2	3.7	5.0	-8.1	-6.2	-5.3	-3.7	-7.7	-4.6	-7.2	-9.5	-3.7	-2.8	-3.0	-3.4	0.0
HU	#	#	-7.3	-8.4	-7.1	-0.6	#	0.1	1.6	-2.9	-3.6	-0.2	-0.5	-1.6	-4.6	-2.6	0.6
IE	-7.6	-7.2	-5.8	-5.8	-4.5	-3.4	-2.8	-2.7	-2.6	-3.3	-1.1	0.3	-0.6	0.0	0.7	-0.3	-2.3
IT	-4.8	-7.5	-7.2	-8.0	-7.1	-9.5	-8.8	-7.7	-7.0	-7.9	-9.1	-6.6	-4.2	-4.5	-4.0	-3.5	-0.1
LT	1.4	2.4	5.9	6.8	6.4	5.8	5.7	5.1	4.1	4.7	2.9	1.9	1.5	1.3	1.0	0.8	0.0
LU	8.8	-2.3	-9.1	-12.8	-14.0	-16.9	-17.6	-21.9	5.0	-2.5	-2.4	-1.2	-0.8	1.7	3.6	0.0	0.0
LV	#	#	4.4	8.9	4.7	2.5	1.7	1.9	1.6	1.7	0.0	-0.1	0.0	0.0	0.0	0.0	0.0
MT																	
NL	-0.9	-2.6	-2.2	-2.7	-0.7	-8.8	-10.0	-16.7	-8.5	-8.4	-8.9	-11.3	-10.1	-8.6	-10.6	-11.2	-11.9
PL	#	#	#	#	#	#	#	#	18.7	9.7	9.6	11.3	1.5	-0.2	2.1	2.7	-0.1
PT	-89.8	-90.1	-90.2	-90.1	-0.1	0.8	2.4	3.8	3.5	1.6	1.1	2.5	0.7	-1.9	2.1	1.7	-1.2
RO	#	#	#	#	#	#	#	#	#	#	#	-1.9	-1.7	#	-1.2	-1.2	-1.1
SE	#	#	14.0	0.6	-0.2	-5.8	-7.5	-6.4	32.9	30.0	29.5	#	13.3	7.6	7.1	1.4	-0.1
SI	#	#	#	#	#	#	#	5.6	3.1	12.7	6.1	5.5	2.6	2.1	3.3	1.4	0.0
SK	#	#	#	#	#	#	#	#	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0

Notes: Indicator # indicates that no data for dairy cattle is provided by Eurostat, therefore values are not comparable.

Inconsistencies in time series are caused by lack of data or update of IEFs. Especially for the new Member States Eurostat animal surveys lacks data for dairy cattle in the early 1990s (Czech Republic, Poland, Romania, Slovenia, Slovak Republic)

The reported IEFs for the relevant animal category in UNFCCC time series changed over the time series, whereas the proxy methodology uses constant recent IEFs for all years., e.g. for Denmark, Netherlands. This is another important recent for larger differences in the past. Country-specific information about underlying causes for deviances is given in Table 47.

Table 47 Causes for high deviances and outliers in data provided by Eurostat and UNFCCC inventories for manure management.

AT	1990-1993: Eurostat does not provide AD for swine.
BE	
BG	2000: AD for dairy cattle differ by more than 10% between UNFCCC and Eurostat . 1993; 1996; 2000: AD for swine differ by more than 10% between UNFCCC and Eurostat .
CY	
CZ	
DE	1990: Eurostat does not provide AD for non-dairy cattle and swine. 1990-1993: Activity data for non-dairy cattle provided by UNFCCC and Eurostat differ by more than 5%.
DK	1990-1991: AD for sheep differ by more than 30% between UNFCCC and Eurostat .
EE	1991-2002: Deviations due to calculation method (use of 2006 IEF for the whole time series, whereas IEF for swine changed significantly between 1998 and 1999). Different allocation of animals for non-dairy cattle. Partitioning into mature non-dairy cattle and young cattle (different IEFs) has not been done for Eurostat data.
ES	
FI	1990-1993: Eurostat does not provide AD for swine. 1994-2001: Different animal numbers especially for non-dairy cattle. Attribution this category seems to be different between UNFCCC (Option A; included in 'Other') and Eurostat.
FR	
GB	
GR	
HU	
IE	
IT	
LT	
LU	1990-1997: Eurostat does not provide AD for swine.
LV	
MT	
NL	2001-2006: Deviations due to calculation method (use of 2006 IEF for the whole time series, whereas IEF for mature dairy cattle changed significantly during the time series).
PL	1997; 2001: AD for swine differ by more than 10% between UNFCCC and Eurostat . 1998-2001: Deviations due to calculation method (use of 2006 IEF for the whole time series, whereas IEF for non-dairy cattle changed significantly between 1998 and 2001
PT	1990-1993: Eurostat does not provide AD for swine.
RO	
SE	1992; 1998-2000; 2001: Deviations due to calculation method (use of 2006 IEF for the whole time series, whereas IEF for swine, dairy cattle and non-dairy cattle changed during the time series and significantly between 1998 and 1999).
SI	
SK	

4.3.3 Other source categories in the agriculture sector

No near-term data were identified which could be used to develop a real-time projection for the other source categories in the agriculture sector, or at least not for all parts necessary for the emission estimation. Therefore, simple approaches were chosen for all remaining agriculture source categories. Either a linear trend extrapolation was used if the past data showed a rather consistent linear trend. If the past trend was fluctuating, the emissions from the latest year were kept constant. The detailed methodologies used are documented in the tables in Annex I.

4.4 Waste

4.4.1 6.A Solid Waste Disposal

The most important source category in the waste sector are CH_4 emissions from source category 6.A. Solid Waste Disposal. For this source category most Member States use higher tier methods, this means a first order decay approach that uses a number of activity data on certain types of waste deposited on landfills and a number of country-specific parameters. This approach is challenging for the proxy estimation, because an estimation method would not only need to use updated activity data, but would need to mirror the chosen model approach for CH_4 emissions from landfills in each MS. The original idea in the feasibility study was the development of approximate first order decay models for each Member State based on submitted inventory data since 1990.[10] Such model with specific results for each Member State was already developed by the European Topic Centre on Resource and Waste Management, however results of this work became available only late in 2008 which did not allow a detailed analysis of the correspondence with Member States estimates for past years. Additional analysis in this respect can be undertaken in 2009.

In the absence of a detailed approach reflecting the first order decay assumptions, a simple approach was used to estimate CH_4 emissions from solid waste disposal on land. A linear extrapolation of the trend of previous years was used if the past data showed a rather consistent linear trend. If the past trend was fluctuating, the emissions from the latest year were kept constant. The detailed approach for each Member State is provided in Table 90.

4.4.2 Other categories in the waste sector

The other source categories in the waste sector are not very relevant for total GHG emissions in the EU. Total emissions from 6.B. Wastewater Handling were 0.5% of EU-

[10] Matthes, F. C., Herold, A., Ziesing, H.J. 2007: A 'Proxy-Inventory' for GHG Emissions from the EU-27 Member States – Feasibility study. ETC/ACC Technical Paper No 2007/3

15 total emissions in 2006 and total emissions from 6.C Waste Incineration contributed to 0.1% to total EU-15 emissions.

Therefore, simple approaches were chosen for these source categories. Either a linear trend extrapolation was used if the past data showed a rather consistent linear trend. If the past trend was fluctuating, the emissions from the latest year were kept constant. This approach was used for CO_2 emissions from 6.A. Solid Waste Disposal on Land, for N_2O and CH_4 emissions from 6.B. Wastewater Handling and for CO_2, CH_4 and N_2O emissions from 6.C Waste Incineration as well as for emissions from 6.D Other.

4.5 Other source categories

For all other source categories no 2007 activity data was available that could be combined with IEFs from GHG inventories and these categories were extrapolated from 2006 GHG inventories, either by trend extrapolation or by taking the constant values of the year 2006. Constant values were used when past trends were inconsistent and strongly fluctuating and trend extrapolation were used when historic time series showed good correlations with a linear trend.

For some source categories updated data was only partly available, but the inventory estimation methodology was too complex to be replicated in an approximated way, e.g. for N_2O emissions from soils.

Annex 1 provides a detailed overview of methods and data sources used for each source category and Member State.

5 Annex 1 – Detailed overview of methods and data sources used

Table 48 Methods and data used for CO_2 emissions from 1A Fuel combustion

Source Category	1A	Energy
Gas	CO2	
Member State	**Projection Approach**	**Data Sources**
AT	Emissions calculation based on activity data	BP Statistical Review of World Energy, consumption of oil, gas and coal, June 2008, IEFs from 2008 inventory submission
BE	Emissions calculation based on activity data	BP Statistical Review of World Energy, consumption of oil, gas and coal, June 2008, IEFs from 2008 inventory submission
BG	Emissions calculation based on activity data	BP Statistical Review of World Energy, consumption of oil, gas and coal, June 2008, IEFs from 2008 inventory submission
CY	Emissions calculation based on activity data	expert estimation, IEFs from 2008 inventory submission
CZ	Emissions calculation based on activity data	BP Statistical Review of World Energy, consumption of oil, gas and coal, June 2008, IEFs from 2008 inventory submission
DE	Emissions calculation based on activity data	BP Statistical Review of World Energy, consumption of oil, gas and coal, June 2008, IEFs from 2008 inventory submission
DK	Emissions calculation based on activity data	BP Statistical Review of World Energy, consumption of oil, gas and coal, June 2008, IEFs from 2008 inventory submission
EE	Emissions calculation based on activity data	expert estimation, IEFs from 2008 inventory submission
ES	Emissions calculation based on activity data	BP Statistical Review of World Energy, consumption of oil, gas and coal, June 2008, IEFs from 2008 inventory submission
FI	Emissions calculation based on activity data	BP Statistical Review of World Energy, consumption of oil, gas and coal, June 2008, IEFs from 2008 inventory submission
FR	Emissions calculation based on activity data	BP Statistical Review of World Energy, consumption of oil, gas and coal, June 2008, IEFs from 2008 inventory submission
GB	Emissions calculation based on activity data	BP Statistical Review of World Energy, consumption of oil, gas and coal, June 2008, IEFs from 2008 inventory submission
GR	Emissions calculation based on activity data	BP Statistical Review of World Energy, consumption of oil, gas and coal, June 2008, IEFs from 2008 inventory submission
HU	Emissions calculation based on activity data	BP Statistical Review of World Energy, consumption of oil, gas and coal, June 2008, IEFs from 2008 inventory submission
IE	Emissions calculation based on activity data	expert estimation, IEFs from 2008 inventory submission
IT	Emissions calculation based on activity data	BP Statistical Review of World Energy, consumption of oil, gas and coal, June 2008, IEFs from 2008 inventory submission
LT	Emissions calculation based on activity data	BP Statistical Review of World Energy, consumption of oil, gas and coal, June 2008, IEFs from 2008 inventory submission
LU	Emissions calculation based on activity data	BP Statistical Review of World Energy, consumption of oil, gas and coal, June 2008, IEFs from 2008 inventory submission
LV	Emissions calculation based on activity data	expert estimation, IEFs from 2008 inventory submission
MT	Emissions calculation based on activity data	expert estimation, IEFs from 2008 inventory submission
NL	Emissions calculation based on activity data	BP Statistical Review of World Energy, consumption of oil, gas and coal, June 2008, IEFs from 2008 inventory submission
PL	Emissions calculation based on activity data	BP Statistical Review of World Energy, consumption of oil, gas and coal, June 2008, IEFs from 2008 inventory submission
PT	Emissions calculation based on activity data	BP Statistical Review of World Energy, consumption of oil, gas and coal, June 2008, IEFs from 2008 inventory submission
RO	Emissions calculation based on activity data	BP Statistical Review of World Energy, consumption of oil, gas and coal, June 2008, IEFs from 2008 inventory submission
SE	Emissions calculation based on activity data	BP Statistical Review of World Energy, consumption of oil, gas and coal, June 2008, IEFs from 2008 inventory submission
SI	Emissions calculation based on activity data	expert estimation, IEFs from 2008 inventory submission
SK	Emissions calculation based on activity data	BP Statistical Review of World Energy, consumption of oil, gas and coal, June 2008, IEFs from 2008 inventory submission

Table 49 Methods and data used for CO_2 -, CH_4 and N_2O emissions for 1A1 Energy industries

Source Category	1A1	1. Energy Industries
Gas	CO2	
Member State	**Projection Approach**	**Data Sources**
AT	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
BE	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
BG	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
CY	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
CZ	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
DE	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
DK	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
EE	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
ES	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
FI	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
FR	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
GB	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
GR	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
HU	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
IE	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
IT	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
LT	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
LU	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
LV	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
MT	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
NL	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
PL	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
PT	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
RO	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
SE	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
SI	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c
SK	Total from other source categories	Proxy-inventory source categories 1A1a, 1A1b and 1A1c

Table 50 Methods and data used for CO_2 emissions from 1A1a Public Electricity and Heat Production

Source Category	1A1a	a. Public Electricity and Heat Production	
Gas	CO2		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	identification of power sector by Öko-Institut's analysis
BE	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	identification of power sector by Öko-Institut's analysis
BG	Data from previous years	2008 inventory submission	
CY	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	identification of power sector by Öko-Institut's analysis
CZ	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	identification of power sector by Öko-Institut's analysis
DE	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	identification of power sector by Öko-Institut's analysis
DK	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	identification of power sector by Öko-Institut's analysis
EE	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	identification of power sector by Öko-Institut's analysis
ES	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	identification of power sector by Öko-Institut's analysis
FI	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	identification of power sector by Öko-Institut's analysis
FR	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	identification of power sector by Öko-Institut's analysis
GB	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	identification of power sector by Öko-Institut's analysis
GR	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	identification of power sector by Öko-Institut's analysis
HU	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	identification of power sector by Öko-Institut's analysis
IE	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	identification of power sector by Öko-Institut's analysis
IT	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	identification of power sector by Öko-Institut's analysis
LT	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	identification of power sector by Öko-Institut's analysis
LU	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	identification of power sector by Öko-Institut's analysis
LV	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	identification of power sector by Öko-Institut's analysis
MT	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	identification of power sector by Öko-Institut's analysis
NL	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	identification of power sector by Öko-Institut's analysis
PL	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	identification of power sector by Öko-Institut's analysis
PT	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	identification of power sector by Öko-Institut's analysis
RO	Data from previous years	2008 inventory submission	
SE	Data from previous years	2008 inventory submission	
SI	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	identification of power sector by Öko-Institut's analysis
SK	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	identification of power sector by Öko-Institut's analysis

Table 51 Methods and data used for CH_4 emissions from 1A1a Public Electricity and Heat Production

Source Category	1A1a	a. Public Electricity and Heat Production	
Gas	CH4		
Member State	**Projection Approach**		**Data Sources**
AT	Data from previous years		2008 inventory submission
BE	Data from previous years		2008 inventory submission
BG	Emission trends (dynamics) from other sources		Proxy-inventory source categories 1A1a for CO2
CY	Emission trends (dynamics) from other sources		Proxy-inventory source categories 1A1a for CO2
CZ	Data from previous years		2008 inventory submission
DE	Emission trends (dynamics) from other sources		Proxy-inventory source categories 1A1a for CO2
DK	Data from previous years		2008 inventory submission
EE	Data from previous years		2008 inventory submission
ES	Data from previous years		2008 inventory submission
FI	Data from previous years		2008 inventory submission
FR	Data from previous years		2008 inventory submission
GB	Emission trends (dynamics) from other sources		Proxy-inventory source categories 1A1a for CO2
GR	Emission trends (dynamics) from other sources		Proxy-inventory source categories 1A1a for CO2
HU	Data from previous years		2008 inventory submission
IE	Data from previous years		2008 inventory submission
IT	Emission trends (dynamics) from other sources		Proxy-inventory source categories 1A1a for CO2
LT	Data from previous years		2008 inventory submission
LU	Emission trends (dynamics) from other sources		Proxy-inventory source categories 1A1a for CO2
LV	Data from previous years		2008 inventory submission
MT	Data from previous years		2008 inventory submission
NL	Emission trends (dynamics) from other sources		Proxy-inventory source categories 1A1a for CO2
PL	Emission trends (dynamics) from other sources		Proxy-inventory source categories 1A1a for CO2
PT	Emission trends (dynamics) from other sources		Proxy-inventory source categories 1A1a for CO2
RO	Emission trends (dynamics) from other sources		Proxy-inventory source categories 1A1a for CO2
SE	Emission trends (dynamics) from other sources		Proxy-inventory source categories 1A1a for CO2
SI	Emission trends (dynamics) from other sources		Proxy-inventory source categories 1A1a for CO2
SK	Emission trends (dynamics) from other sources		Proxy-inventory source categories 1A1a for CO2

Table 52 Methods and data used for N_2O emissions from 1A1a Public Electricity and Heat Production

Source Category	1A1a	a. Public Electricity and Heat Production
Gas	N2O	
Member State	**Projection Approach**	**Data Sources**
AT	Data from previous years	2008 inventory submission
BE	Data from previous years	2008 inventory submission
BG	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1a for CO2
CY	Data from previous years	2008 inventory submission
CZ	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1a for CO2
DE	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1a for CO2
DK	Data from previous years	2008 inventory submission
EE	Data from previous years	2008 inventory submission
ES	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1a for CO2
FI	Data from previous years	2008 inventory submission
FR	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1a for CO2
GB	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1a for CO2
GR	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1a for CO2
HU	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1a for CO2
IE	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1a for CO2
IT	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1a for CO2
LT	Data from previous years	2008 inventory submission
LU	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1a for CO2
LV	Data from previous years	2008 inventory submission
MT	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1a for CO2
NL	Data from previous years	2008 inventory submission
PL	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1a for CO2
PT	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1a for CO2
RO	Data from previous years	2008 inventory submission
SE	Data from previous years	2008 inventory submission
SI	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1a for CO2
SK	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1a for CO2

Table 53 Methods and data used for CO_2 missions from 1A1b Petroleum refining

Source Category	1A1b	b. Petroleum Refining	
Gas	CO2		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT	Activity trends (dynamics) from other sources	Eurostat Crude oil Input to Refineries (montly data)	Indicator code 101008, product code 3100
BE	Activity trends (dynamics) from other sources	Eurostat Crude oil Input to Refineries (montly data)	Indicator code 101008, product code 3100
BG	Activity trends (dynamics) from other sources	Eurostat Crude oil Input to Refineries (montly data)	Indicator code 101008, product code 3100
CY	Data from previous years	2008 inventory submission	
CZ	Data from previous years	2008 inventory submission	
DE	Activity trends (dynamics) from other sources	Eurostat Crude oil Input to Refineries (montly data)	Indicator code 101008, product code 3100
DK	Activity trends (dynamics) from other sources	Eurostat Crude oil Input to Refineries (montly data)	Indicator code 101008, product code 3100
EE	Data from previous years	2008 inventory submission	
ES	Activity trends (dynamics) from other sources	Eurostat Crude oil Input to Refineries (montly data)	Indicator code 101008, product code 3100
FI	Activity trends (dynamics) from other sources	Eurostat Crude oil Input to Refineries (montly data)	Indicator code 101008, product code 3100
FR	Activity trends (dynamics) from other sources	Eurostat Crude oil Input to Refineries (montly data)	Indicator code 101008, product code 3100
GB	Activity trends (dynamics) from other sources	Eurostat Crude oil Input to Refineries (montly data)	Indicator code 101008, product code 3100
GR	Activity trends (dynamics) from other sources	Eurostat Crude oil Input to Refineries (montly data)	Indicator code 101008, product code 3100
HU	Activity trends (dynamics) from other sources	Eurostat Crude oil Input to Refineries (montly data)	Indicator code 101008, product code 3100
IE	Activity trends (dynamics) from other sources	Eurostat Crude oil Input to Refineries (montly data)	Indicator code 101008, product code 3100
IT	Activity trends (dynamics) from other sources	Eurostat Crude oil Input to Refineries (montly data)	Indicator code 101008, product code 3100
LT	Activity trends (dynamics) from other sources	Eurostat Crude oil Input to Refineries (montly data)	Indicator code 101008, product code 3100
LU	Data from previous years	2008 inventory submission	
LV	Data from previous years	2008 inventory submission	
MT	Data from previous years	2008 inventory submission	
NL	Activity trends (dynamics) from other sources	Eurostat Crude oil Input to Refineries (montly data)	Indicator code 101008, product code 3100
PL	Activity trends (dynamics) from other sources	Eurostat Crude oil Input to Refineries (montly data)	Indicator code 101008, product code 3100
PT	Activity trends (dynamics) from other sources	Eurostat Crude oil Input to Refineries (montly data)	Indicator code 101008, product code 3100
RO	Activity trends (dynamics) from other sources	Eurostat Crude oil Input to Refineries (montly data)	Indicator code 101008, product code 3100
SE	Activity trends (dynamics) from other sources	Eurostat Crude oil Input to Refineries (montly data)	Indicator code 101008, product code 3100
SI	Activity trends (dynamics) from other sources	Eurostat Crude oil Input to Refineries (montly data)	Indicator code 101008, product code 3100
SK	Activity trends (dynamics) from other sources	Eurostat Crude oil Input to Refineries (montly data)	Indicator code 101008, product code 3100

Table 54 Methods and data used for CH_4 missions from 1A1b Petroleum refining

Source Category	1A1b	b. Petroleum Refining
Gas	CH4	
Member State	**Projection Approach**	**Data Sources**
AT	Data from previous years	2008 inventory submission
BE	Data from previous years	2008 inventory submission
BG	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1b for CO2
CY	Data from previous years	2008 inventory submission
CZ	Data from previous years	2008 inventory submission
DE	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1b for CO2
DK	Data from previous years	2008 inventory submission
EE	Data from previous years	2008 inventory submission
ES	Data from previous years	2008 inventory submission
FI	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1b for CO2
FR	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1b for CO2
GB	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1b for CO2
GR	Data from previous years	2008 inventory submission
HU	Data from previous years	2008 inventory submission
IE	Data from previous years	2008 inventory submission
IT	Data from previous years	2008 inventory submission
LT	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1b for CO2
LU	Data from previous years	2008 inventory submission
LV	Data from previous years	2008 inventory submission
MT	Data from previous years	2008 inventory submission
NL	Data from previous years	2008 inventory submission
PL	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1b for CO2
PT	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1b for CO2
RO	Data from previous years	2008 inventory submission
SE	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1b for CO2
SI	Data from previous years	2008 inventory submission
SK	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1b for CO2

Table 55 Methods and data used for N_2O missions from 1A1b Petroleum refining

Source Category	1A1b	b. Petroleum Refining
Gas	N2O	

Member State	**Projection Approach**	**Data Sources**
AT	Data from previous years	2008 inventory submission
BE	Data from previous years	2008 inventory submission
BG	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1b for CO2
CY	Data from previous years	2008 inventory submission
CZ	Data from previous years	2008 inventory submission
DE	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1b for CO2
DK	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1b for CO2
EE	Data from previous years	2008 inventory submission
ES	Data from previous years	2008 inventory submission
FI	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1b for CO2
FR	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1b for CO2
GB	Data from previous years	2008 inventory submission
GR	Data from previous years	2008 inventory submission
HU	Data from previous years	2008 inventory submission
IE	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1b for CO2
IT	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1b for CO2
LT	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1b for CO2
LU	Data from previous years	2008 inventory submission
LV	Data from previous years	2008 inventory submission
MT	Data from previous years	2008 inventory submission
NL	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1b for CO2
PL	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1b for CO2
PT	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1b for CO2
RO	Data from previous years	2008 inventory submission
SE	Emission trends (dynamics) from other sources	Proxy-inventory source categories 1A1b for CO2
SI	Data from previous years	2008 inventory submission
SK	Data from previous years	2008 inventory submission

Table 56 Methods and data sources used for CO_2-, CH_4- and N_2O-Emissions from 1A1c Manufacture of Solid Fuels and Other Energy Industries

Source Category	1A1c	c. Manufacture of Solid Fuels and Other Energy Industries	
Gas	CO2	CH4 N2O	
Member State	**Projection Approach**		**Data Sources**
AT	Data from previous years		2008 inventory submission
BE	Data from previous years		2008 inventory submission
BG	Data from previous years		2008 inventory submission
CY	Data from previous years		2008 inventory submission
CZ	Data from previous years		2008 inventory submission
DE	Data from previous years		2008 inventory submission
DK	Data from previous years		2008 inventory submission
EE	Data from previous years		2008 inventory submission
ES	Data from previous years		2008 inventory submission
FI	Data from previous years		2008 inventory submission
FR	Data from previous years		2008 inventory submission
GB	Data from previous years		2008 inventory submission
GR	Data from previous years		2008 inventory submission
HU	Data from previous years		2008 inventory submission
IE	Data from previous years		2008 inventory submission
IT	Data from previous years		2008 inventory submission
LT	Data from previous years		2008 inventory submission
LU	Data from previous years		2008 inventory submission
LV	Data from previous years		2008 inventory submission
MT	Data from previous years		2008 inventory submission
NL	Data from previous years		2008 inventory submission
PL	Data from previous years		2008 inventory submission
PT	Data from previous years		2008 inventory submission
RO	Data from previous years		2008 inventory submission
SE	Data from previous years		2008 inventory submission
SI	Data from previous years		2008 inventory submission
SK	Data from previous years		2008 inventory submission

Table 57 Methods and data used for CO_2 emissions from 1A2 Manufacturing Industries and Construction

Source Category	1A2	2. Manufacturing Industries and Construction	
Gas	CO2		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	Main activity codes 1 (w/o power), 4, 7, 8, 9, and 99
BE	Data from previous years	2008 inventory submission	
BG	Data from previous years	2008 inventory submission	
CY	Data from previous years	2008 inventory submission	
CZ	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	Main activity codes 1 (w/o power), 4, 7, 8, 9, and 99
DE	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	Main activity codes 1 (w/o power), 4, 7, 8, 9, and 99
DK	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	Main activity codes 1 (w/o power), 4, 7, 8, 9, and 99
EE	Data from previous years	2008 inventory submission	
ES	Data from previous years	2008 inventory submission	
FI	Data from previous years	2008 inventory submission	
FR	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	Main activity codes 1 (w/o power), 4, 7, 8, 9, and 99
GB	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	Main activity codes 1 (w/o power), 4, 7, 8, 9, and 99
GR	Data from previous years	2008 inventory submission	
HU	Data from previous years	2008 inventory submission	
IE	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	Main activity codes 1 (w/o power), 4, 7, 8, 9, and 99
IT	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	Main activity codes 1 (w/o power), 4, 7, 8, 9, and 99
LT	Data from previous years	2008 inventory submission	
LU	Data from previous years	2008 inventory submission	
LV	Data from previous years	2008 inventory submission	
MT	Data from previous years	2008 inventory submission	
NL	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	Main activity codes 1 (w/o power), 4, 7, 8, 9, and 99
PL	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	Main activity codes 1 (w/o power), 4, 7, 8, 9, and 99
PT	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	Main activity codes 1 (w/o power), 4, 7, 8, 9, and 99
RO	Data from previous years	2008 inventory submission	
SE	Data from previous years	2008 inventory submission	
SI	Emission trends (dynamics) from other sources	CITL data (operator holding accounts) 2005-2007	Main activity codes 1 (w/o power), 4, 7, 8, 9, and 99
SK	Data from previous years	2008 inventory submission	

Table 58 Methods and data used for CH_4- and N_2O emissions from 1A2 Manufacturing Industries and Construction

Source Category	1A2	2. Manufacturing Industries and Construction	
Gas	CH4	N2O	
Member State	**Projection Approach**		**Data Sources**
AT	Data from previous years		2008 inventory submission
BE	Data from previous years		2008 inventory submission
BG	Data from previous years		2008 inventory submission
CY	Data from previous years		2008 inventory submission
CZ	Data from previous years		2008 inventory submission
DE	Data from previous years		2008 inventory submission
DK	Data from previous years		2008 inventory submission
EE	Data from previous years		2008 inventory submission
ES	Data from previous years		2008 inventory submission
FI	Data from previous years		2008 inventory submission
FR	Data from previous years		2008 inventory submission
GB	Data from previous years		2008 inventory submission
GR	Data from previous years		2008 inventory submission
HU	Data from previous years		2008 inventory submission
IE	Data from previous years		2008 inventory submission
IT	Data from previous years		2008 inventory submission
LT	Data from previous years		2008 inventory submission
LU	Data from previous years		2008 inventory submission
LV	Data from previous years		2008 inventory submission
MT	Data from previous years		2008 inventory submission
NL	Data from previous years		2008 inventory submission
PL	Data from previous years		2008 inventory submission
PT	Data from previous years		2008 inventory submission
RO	Data from previous years		2008 inventory submission
SE	Data from previous years		2008 inventory submission
SI	Data from previous years		2008 inventory submission
SK	Data from previous years		2008 inventory submission

Table 59 Methods and data used for CH_4 emissions from 1B1 Fugitive emissions from Solid Fuels

Source Category	1B1	1. Solid Fuels	
Gas	CH4		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT	Data from previous years	2008 inventory submission	
BE	Data from previous years	2008 inventory submission	
BG	Activity trends (dynamics) from other sources	Eurostat Primary Lignite Production (monthly data)	Indicator code 100100, product code 2210
CY	Data from previous years	2008 inventory submission	
CZ	Activity trends (dynamics) from other sources	Eurostat Primary Hard Coal Production (monthly data)	Indicator code 100100, product code 2111
DE	Activity trends (dynamics) from other sources	Eurostat Primary Hard Coal Production (monthly data)	Indicator code 100100, product code 2111
DK	Data from previous years	2008 inventory submission	
EE	Activity trends (dynamics) from other sources	Eurostat Primary Lignite Production (monthly data)	Indicator code 100100, product code 2210
ES	Activity trends (dynamics) from other sources	Eurostat Primary Hard Coal Production (monthly data)	Indicator code 100100, product code 2111
FI	Data from previous years	2008 inventory submission	
FR	Data from previous years	2008 inventory submission	
GB	Activity trends (dynamics) from other sources	Eurostat Primary Hard Coal Production (monthly data)	Indicator code 100100, product code 2111
GR	Activity trends (dynamics) from other sources	Eurostat Primary Lignite Production (monthly data)	Indicator code 100100, product code 2210
HU	Activity trends (dynamics) from other sources	Eurostat Primary Lignite Production (monthly data)	Indicator code 100100, product code 2210
IE	Data from previous years	2008 inventory submission	
IT	Data from previous years	2008 inventory submission	
LT	Data from previous years	2008 inventory submission	
LU	Data from previous years	2008 inventory submission	
LV	Data from previous years	2008 inventory submission	
MT	Data from previous years	2008 inventory submission	
NL	Data from previous years	2008 inventory submission	
PL	Activity trends (dynamics) from other sources	Eurostat Primary Hard Coal Production (monthly data)	Indicator code 100100, product code 2111
PT	Data from previous years	2008 inventory submission	
RO	Extrapolation of emission intensity trends	Eurostat Primary Lignite Production (monthly data)	Indicator code 100100, product code 2210
SE	Data from previous years	2008 inventory submission	
SI	Activity trends (dynamics) from other sources	Eurostat Primary Lignite Production (monthly data)	Indicator code 100100, product code 2210
SK	Activity trends (dynamics) from other sources	Eurostat Primary Lignite Production (monthly data)	Indicator code 100100, product code 2210

Table 60 Methods and data used for CO_2 and N_2O emissions from 1B1 Fugitive emissions from Solid Fuels

Source Category	1B1	1. Solid Fuels	
Gas	CO2	N2O	
Member State	**Projection Approach**		**Data Sources**
AT	Data from previous years		2008 inventory submission
BE	Data from previous years		2008 inventory submission
BG	Data from previous years		2008 inventory submission
CY	Data from previous years		2008 inventory submission
CZ	Data from previous years		2008 inventory submission
DE	Data from previous years		2008 inventory submission
DK	Data from previous years		2008 inventory submission
EE	Data from previous years		2008 inventory submission
ES	Data from previous years		2008 inventory submission
FI	Data from previous years		2008 inventory submission
FR	Data from previous years		2008 inventory submission
GB	Data from previous years		2008 inventory submission
GR	Data from previous years		2008 inventory submission
HU	Data from previous years		2008 inventory submission
IE	Data from previous years		2008 inventory submission
IT	Data from previous years		2008 inventory submission
LT	Data from previous years		2008 inventory submission
LU	Data from previous years		2008 inventory submission
LV	Data from previous years		2008 inventory submission
MT	Data from previous years		2008 inventory submission
NL	Data from previous years		2008 inventory submission
PL	Data from previous years		2008 inventory submission
PT	Data from previous years		2008 inventory submission
RO	Data from previous years		2008 inventory submission
SE	Data from previous years		2008 inventory submission
SI	Data from previous years		2008 inventory submission
SK	Data from previous years		2008 inventory submission

Table 61 Methods and data used for CO_2 and CH_4 emissions from 1B2 Fugitive emissions from Oil and Gas

Source Category	1B2	2. Oil and Natural Gas
Gas	CO2	CH4

Member State	**Projection Approach**	**Data Sources**
AT	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
BE	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
BG	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
CY	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
CZ	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
DE	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
DK	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
EE	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
ES	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
FI	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
FR	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
GB	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
GR	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
HU	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
IE	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
IT	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
LT	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
LU	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
LV	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
MT	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
NL	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
PL	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
PT	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
RO	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
SE	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
SI	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c
SK	Total from other source categories	Proxy-inventory source categories 1B2a, 1B2b and 1B2c

Table 62 Methods and data used for CO_2 emissions from 1B2a Fugitive emissions from Oil

Source Category	1B2a	a. Oil
Gas	CO2	

Member State	**Projection Approach**	**Data Sources**
AT	Data from previous years	2008 inventory submission
BE	Data from previous years	2008 inventory submission
BG	Data from previous years	2008 inventory submission
CY	Data from previous years	2008 inventory submission
CZ	Data from previous years	2008 inventory submission
DE	Data from previous years	2008 inventory submission
DK	Data from previous years	2008 inventory submission
EE	Data from previous years	2008 inventory submission
ES	Data from previous years	2008 inventory submission
FI	Data from previous years	2008 inventory submission
FR	Data from previous years	2008 inventory submission
GB	Data from previous years	2008 inventory submission
GR	Data from previous years	2008 inventory submission
HU	Data from previous years	2008 inventory submission
IE	Data from previous years	2008 inventory submission
IT	Data from previous years	2008 inventory submission
LT	Data from previous years	2008 inventory submission
LU	Data from previous years	2008 inventory submission
LV	Data from previous years	2008 inventory submission
MT	Data from previous years	2008 inventory submission
NL	Data from previous years	2008 inventory submission
PL	Data from previous years	2008 inventory submission
PT	Data from previous years	2008 inventory submission
RO	Data from previous years	2008 inventory submission
SE	Data from previous years	2008 inventory submission
SI	Data from previous years	2008 inventory submission
SK	Data from previous years	2008 inventory submission

Table 63 Methods and data used for CH_4 emissions from 1B2a Fugitive emissions from Oil

Source Category	1B2a	a. Oil	
Gas	CH4		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT	Activity trends (dynamics) from other sources	Eurostat Primary Crude Oil Production (monthly data)	Indicator code 100100, product code 3100
BE	Data from previous years	2008 inventory submission	
BG	Data from previous years	2008 inventory submission	
CY	Data from previous years	2008 inventory submission	
CZ	Data from previous years	2008 inventory submission	
DE	Activity trends (dynamics) from other sources	Eurostat Primary Crude Oil Production (monthly data)	Indicator code 100100, product code 3100
DK	Data from previous years	2008 inventory submission	
EE	Data from previous years	2008 inventory submission	
ES	Data from previous years	2008 inventory submission	
FI	Data from previous years	2008 inventory submission	
FR	Data from previous years	2008 inventory submission	
GB	Data from previous years	2008 inventory submission	
GR	Data from previous years	2008 inventory submission	
HU	Activity trends (dynamics) from other sources	Eurostat Primary Crude Oil Production (monthly data)	Indicator code 100100, product code 3100
IE	Data from previous years	2008 inventory submission	
IT	Extrapolation of emission intensity trends	Eurostat Primary Crude Oil Production (monthly data)	Indicator code 100100, product code 3100
LT	Data from previous years	2008 inventory submission	
LU	Data from previous years	2008 inventory submission	
LV	Data from previous years	2008 inventory submission	
MT	Data from previous years	2008 inventory submission	
NL	Data from previous years	2008 inventory submission	
PL	Activity trends (dynamics) from other sources	Eurostat Primary Crude Oil Production (monthly data)	Indicator code 100100, product code 3100
PT	Data from previous years	2008 inventory submission	
RO	Activity trends (dynamics) from other sources	Eurostat Primary Crude Oil Production (monthly data)	Indicator code 100100, product code 3100
SE	Data from previous years	2008 inventory submission	
SI	Data from previous years	2008 inventory submission	
SK	Data from previous years	2008 inventory submission	

Table 64 Methods and data used for CO_2 emissions from 1B2b Fugitive emissions from Gas

Source Category	1B2b	b. Natural Gas	
Gas	CO2		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT	Data from previous years	2008 inventory submission	
BE	Activity trends (dynamics) from other sources	Eurostat Total Natural Gas Consumption (monthly data)	Indicator code 100900, product code 4100
BG	Data from previous years	2008 inventory submission	
CY	Data from previous years	2008 inventory submission	
CZ	Data from previous years	2008 inventory submission	
DE	Extrapolation of emission intensity trends	Eurostat Total Natural Gas Consumption (monthly data)	Indicator code 100900, product code 4100
DK	Data from previous years	2008 inventory submission	
EE	Data from previous years	2008 inventory submission	
ES	Data from previous years	2008 inventory submission	
FI	Data from previous years	2008 inventory submission	
FR	Data from previous years	2008 inventory submission	
GB	Data from previous years	2008 inventory submission	
GR	Data from previous years	2008 inventory submission	
HU	Data from previous years	2008 inventory submission	
IE	Data from previous years	2008 inventory submission	
IT	Extrapolation of emission intensity trends	Eurostat Total Natural Gas Consumption (monthly data)	Indicator code 100900, product code 4100
LT	Data from previous years	2008 inventory submission	
LU	Data from previous years	2008 inventory submission	
LV	Data from previous years	2008 inventory submission	
MT	Data from previous years	2008 inventory submission	
NL	Activity trends (dynamics) from other sources	Eurostat Total Natural Gas Consumption (monthly data)	Indicator code 100900, product code 4100
PL	Extrapolation of emission intensity trends	Eurostat Total Natural Gas Consumption (monthly data)	Indicator code 100900, product code 4100
PT	Data from previous years	2008 inventory submission	
RO	Data from previous years	2008 inventory submission	
SE	Data from previous years	2008 inventory submission	
SI	Data from previous years	2008 inventory submission	
SK	Data from previous years	2008 inventory submission	

Table 65 Methods and data used for CH_4 emissions from 1B2b Fugitive emissions from Gas

Source Category	1B2b	b. Natural Gas		
Gas	CH4			
Member State	**Projection Approach**		**Data Sources**	**Notes**
AT	Data from previous years		2008 inventory submission	
BE	Activity trends (dynamics) from other sources		Eurostat Total Natural Gas Consumption (monthly data)	Indicator code 100900, product code 4100
BG	Data from previous years		2008 inventory submission	
CY	Data from previous years		2008 inventory submission	
CZ	Data from previous years		2008 inventory submission	
DE	Activity trends (dynamics) from other sources		Eurostat Total Natural Gas Consumption (monthly data)	Indicator code 100900, product code 4100
DK	Data from previous years		2008 inventory submission	
EE	Data from previous years		2008 inventory submission	
ES	Activity trends (dynamics) from other sources		Eurostat Total Natural Gas Consumption (monthly data)	Indicator code 100900, product code 4100
FI	Data from previous years		2008 inventory submission	
FR	Data from previous years		2008 inventory submission	
GB	Activity trends (dynamics) from other sources		Eurostat Total Natural Gas Consumption (monthly data)	Indicator code 100900, product code 4100
GR	Data from previous years		2008 inventory submission	
HU	Data from previous years		2008 inventory submission	
IE	Data from previous years		2008 inventory submission	
IT	Activity trends (dynamics) from other sources		Eurostat Total Natural Gas Consumption (monthly data)	Indicator code 100900, product code 4100
LT	Data from previous years		2008 inventory submission	
LU	Data from previous years		2008 inventory submission	
LV	Data from previous years		2008 inventory submission	
MT	Data from previous years		2008 inventory submission	
NL	Activity trends (dynamics) from other sources		Eurostat Total Natural Gas Consumption (monthly data)	Indicator code 100900, product code 4100
PL	Activity trends (dynamics) from other sources		Eurostat Total Natural Gas Consumption (monthly data)	Indicator code 100900, product code 4100
PT	Data from previous years		2008 inventory submission	
RO	Activity trends (dynamics) from other sources		Eurostat Total Natural Gas Consumption (monthly data)	Indicator code 100900, product code 4100
SE	Data from previous years		2008 inventory submission	
SI	Activity trends (dynamics) from other sources		Eurostat Total Natural Gas Consumption (monthly data)	Indicator code 100900, product code 4100
SK	Data from previous years		2008 inventory submission	

Table 66 Methods and data used for CO_2 emissions from 1B2c Venting and Flaring

Source Category	1B2c	c. Venting and Flaring		
Gas	CO2			
Member State	**Projection Approach**		**Data Sources**	**Notes**
AT	Data from previous years		2008 inventory submission	
BE	Data from previous years		2008 inventory submission	
BG	Data from previous years		2008 inventory submission	
CY	Data from previous years		2008 inventory submission	
CZ	Data from previous years		2008 inventory submission	
DE	Data from previous years		2008 inventory submission	
DK	Data from previous years		2008 inventory submission	
EE	Data from previous years		2008 inventory submission	
ES	Data from previous years		2008 inventory submission	
FI	Data from previous years		2008 inventory submission	
FR	Data from previous years		2008 inventory submission	
GB	Activity trends (dynamics) from other sources		Eurostat Total Natural Gas Production (monthly data)	Indicator code 100100, product code 4100
GR	Data from previous years		2008 inventory submission	
HU	Extrapolation of emission intensity trends		2008 inventory submission	
IE	Data from previous years		2008 inventory submission	
IT	Extrapolation of emission intensity trends		Eurostat Total Natural Gas Production (monthly data)	Indicator code 100100, product code 4100
LT	Data from previous years		2008 inventory submission	
LU	Data from previous years		2008 inventory submission	
LV	Data from previous years		2008 inventory submission	
MT	Data from previous years		2008 inventory submission	
NL	Activity trends (dynamics) from other sources		Eurostat Total Natural Gas Production (monthly data)	Indicator code 100100, product code 4100
PL	Data from previous years		2008 inventory submission	
PT	Data from previous years		2008 inventory submission	
RO	Data from previous years		2008 inventory submission	
SE	Data from previous years		2008 inventory submission	
SI	Data from previous years		2008 inventory submission	
SK	Data from previous years		2008 inventory submission	

Table 67 Methods and data used for CH_4 emissions from 1B2c Venting and Flaring

Source Category	1B2c	c. Venting and Flaring	
Gas	CH4		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT	Data from previous years	2008 inventory submission	
BE	Data from previous years	2008 inventory submission	
BG	Data from previous years	2008 inventory submission	
CY	Data from previous years	2008 inventory submission	
CZ	Data from previous years	2008 inventory submission	
DE	Data from previous years	2008 inventory submission	
DK	Data from previous years	2008 inventory submission	
EE	Data from previous years	2008 inventory submission	
ES	Data from previous years	2008 inventory submission	
FI	Data from previous years	2008 inventory submission	
FR	Data from previous years	2008 inventory submission	
GB	Activity trends (dynamics) from other sources	Eurostat Total Natural Gas Production (monthly data)	Indicator code 100100, product code 4100
GR	Data from previous years	2008 inventory submission	
HU	Data from previous years	2008 inventory submission	
IE	Data from previous years	2008 inventory submission	
IT	Extrapolation of emission intensity trends	Eurostat Total Natural Gas Production (monthly data)	Indicator code 100100, product code 4100
LT	Data from previous years	2008 inventory submission	
LU	Data from previous years	2008 inventory submission	
LV	Data from previous years	2008 inventory submission	
MT	Data from previous years	2008 inventory submission	
NL	Activity trends (dynamics) from other sources	Eurostat Total Natural Gas Production (monthly data)	Indicator code 100100, product code 4100
PL	Data from previous years	2008 inventory submission	
PT	Data from previous years	2008 inventory submission	
RO	Activity trends (dynamics) from other sources	Eurostat Total Natural Gas Production (monthly data)	Indicator code 100100, product code 4100
SE	Data from previous years	2008 inventory submission	
SI	Data from previous years	2008 inventory submission	
SK	Data from previous years	2008 inventory submission	

Table 68 Methods and data used for CO_2 emissions from 2.A Mineral Products

Source Category	2A	A. Mineral Products	
Gas	CO2		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT	Emission trends (dynamics) from other sources	CITL data	
BE	Emission trends (dynamics) from other sources	CITL data	
BG	Data / extrapolation from previous years	2008 inventory submission	
CY	Emission trends (dynamics) from other sources	CITL data	
CZ	Emission calculation based on activity data / data from previous years	Prodcom, 2008 inventory submission	Scaling necessary
DE	Emission trends (dynamics) from other sources	CITL data	
DK	Emission trends (dynamics) from other sources	CITL data	
EE	Emission calculation based on activity data / data from previous years	Prodcom, 2008 inventory submission	Scaling necessary
ES	Emission trends (dynamics) from other sources	CITL data	
FI	Emission trends (dynamics) from other sources	CITL data	
FR	Emission trends (dynamics) from other sources	CITL data	
GB	Emission trends (dynamics) from other sources	CITL data	
GR	Emission trends (dynamics) from other sources	CITL data	
HU	Emission trends (dynamics) from other sources	CITL data	
IE	Emission trends (dynamics) from other sources	CITL data	
IT	Emission trends (dynamics) from other sources	CITL data	
LT	Emission calculation based on activity data / data from previous years	Cembureau, 2008 inventory submission	Scaling necessary
LU	Emission trends (dynamics) from other sources	CITL data	
LV	Emission trends (dynamics) from other sources	CITL data	
MT	Data from previous years	2008 inventory submission	Activity not occurring
NL	Emission trends (dynamics) from other sources	CITL data	
PL	Emission trends (dynamics) from other sources	CITL data	
PT	Emission trends (dynamics) from other sources	CITL data	
RO	Emission calculation based on activity data / data from previous years	Prodcom, 2008 inventory submission	Scaling necessary
SE	Emission trends (dynamics) from other sources	CITL data	
SI	Emission trends (dynamics) from other sources	CITL data	
SK	Data from previous years	2008 inventory submission	

Table 69 Methods and data used for CH_4 emissions from 2.A Mineral Products

Source Category	2A	2.A Mineral Products		
Gas	CH4			
Member State	**Projection Approach**		**Data Sources**	**Notes**
AT				
BE				
BG				
CY				
CZ	Extrapolation from previous years		2008 inventory submission	linear trend projection via minimum square deviation
DE				
DK				
EE				
ES				
FI				
FR				
GB	Extrapolation from previous years		2008 inventory submission	linear trend projection via minimum square deviation
GR				
HU				
IE				
IT				
LT				
LU				
LV				
MT				
NL				
PL				
PT	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
RO				
SE				
SI				
SK				

Table 70 CO_2 emissions from 2B Chemical Industry

Source Category	2B	2.B Chemical Industry		
Gas	CO2			
Member State	**Projection Approach**		**Data Sources**	**Notes**
AT	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
BE	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
BG	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
CY				
CZ	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
DE	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
DK	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
EE	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
ES	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
FI	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
FR	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
GB	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
GR				
HU	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
IE				
IT	Data from previous years		UNFCCC 2008 submission	Value of 2006
LT	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
LU				
LV				
MT	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
NL	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
PL	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
PT	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
RO	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
SE	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
SI	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
SK	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de

Table 71 CH_4 emissions from 2B Chemical Industry

Source Category	2B	2.B Chemical Industry		
Gas	CH4			
Member State	**Projection Approach**		**Data Sources**	**Notes**
AT	Extrapolation from previous years		2008 inventory submission	linear trend projection via minimum square deviation
BE	Extrapolation from previous years		2008 inventory submission	linear trend projection via minimum square deviation
BG	Extrapolation from previous years		2008 inventory submission	linear trend projection via minimum square deviation
CY				
CZ	Extrapolation from previous years		2008 inventory submission	linear trend projection via minimum square deviation
DE	Extrapolation from previous years		2008 inventory submission	linear trend projection via minimum square deviation
DK				
EE				
ES	Extrapolation from previous years		2008 inventory submission	linear trend projection via minimum square deviation
FI	Extrapolation from previous years		2008 inventory submission	linear trend projection via minimum square deviation
FR	Extrapolation from previous years		2008 inventory submission	linear trend projection via minimum square deviation
GB	Data from previous years		2008 inventory submission	Value of 2006
GR	Data from previous years		2008 inventory submission	Value of 2006
HU	Extrapolation from previous years		2008 inventory submission	linear trend projection via minimum square deviation
IE				
IT	Data from previous years		2008 inventory submission	Value of 2006
LT	Extrapolation from previous years		2008 inventory submission	linear trend projection via minimum square deviation
LU				
LV				
MT				
NL	Extrapolation from previous years		2008 inventory submission	linear trend projection via minimum square deviation
PL	Extrapolation from previous years		2008 inventory submission	linear trend projection via minimum square deviation
PT	Extrapolation from previous years		2008 inventory submission	linear trend projection via minimum square deviation
RO	Extrapolation from previous years		2008 inventory submission	linear trend projection via minimum square deviation
SE	Extrapolation from previous years		2008 inventory submission	linear trend projection via minimum square deviation
SI	Extrapolation from previous years		2008 inventory submission	linear trend projection via minimum square deviation
SK	Extrapolation from previous years		2008 inventory submission	linear trend projection via minimum square deviation

Table 72 N_2O emissions from 2B Chemical Industry

Source Category	2B	2.B Chemical Industry		
Gas	N2O			
Member State	**Projection Approach**		**Data Sources**	**Notes**
AT	Data from previous years		UNFCCC 2008 submission	Value of 2006
BE	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
BG	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
CY				
CZ	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
DE	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
DK				
EE				
ES	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
FI	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
FR	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
GB	Data from previous years		UNFCCC 2008 submission	Value of 2006
GR	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
HU	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
IE				
IT	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
LT	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
LU				
LV				
MT				
NL	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
PL	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
PT	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
RO	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de
SE	Data from previous years		UNFCCC 2008 submission	Value of 2006
SI				
SK	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square de

Table 73 CH_4 emissions from 2.C Metal Production

Source Category	2C	2.C Metal Production	
Gas	CH4		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square de
BE	Data from previous years	UNFCCC 2008 submission	Value of 2006
BG	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square de
CY			
CZ	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square de
DE	Data from previous years	UNFCCC 2008 submission	Value of 2006
DK			
EE			
ES	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square de
FI	Data from previous years	UNFCCC 2008 submission	Value of 2006
FR	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square de
GB	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square de
GR			
HU			
IE			
IT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square de
LT			
LU			
LV	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square de
MT			
NL			
PL	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square de
PT			
RO			
SE	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square de
SI			
SK			

Table 74 Methods and data used for CO_2 emissions from 2.C Metal Production

Source Category	2C	C. Metal Production	
Gas	CO2		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT	Complex calculation	CRF 2C and CRF 2C1 proxy	CRF 2C1 proxy + (CRF 2C - CRF 2C1)previous year
BE	Complex calculation	CRF 2C and CRF 2C1 proxy	CRF 2C1 proxy + (CRF 2C - CRF 2C1)previous year
BG	Complex calculation	CRF 2C and CRF 2C1 proxy	CRF 2C1 proxy + (CRF 2C - CRF 2C1)previous year
CY	Data from previous years	CRF 2C and CRF 2C1 proxy	CRF 2C1 proxy + (CRF 2C - CRF 2C1)previous year
CZ	Complex calculation	CRF 2C and CRF 2C1 proxy	CRF 2C1 proxy + (CRF 2C - CRF 2C1)previous year
DE	Complex calculation	CRF 2C and CRF 2C1 proxy	CRF 2C1 proxy + (CRF 2C - CRF 2C1)previous year
DK	Data from previous years	CRF 2C	
EE	Data from previous years	CRF 2C	
ES	Complex calculation	CRF 2C and CRF 2C1 proxy	CRF 2C1 proxy + (CRF 2C - CRF 2C1)previous year
FI	Complex calculation	CRF 2C and CRF 2C1 proxy	CRF 2C1 proxy + (CRF 2C - CRF 2C1)previous year
FR	Complex calculation	CRF 2C and CRF 2C1 proxy	CRF 2C1 proxy + (CRF 2C - CRF 2C1)previous year
GB	Complex calculation	CRF 2C and CRF 2C1 proxy	CRF 2C1 proxy + (CRF 2C - CRF 2C1)previous year
GR	Complex calculation	CRF 2C and CRF 2C1 proxy	CRF 2C1 proxy + (CRF 2C - CRF 2C1)previous year
HU	Complex calculation	CRF 2C and CRF 2C1 proxy	CRF 2C1 proxy + (CRF 2C - CRF 2C1)previous year
IE	Data from previous years	CRF 2C	
IT	Complex calculation	CRF 2C and CRF 2C1 proxy	CRF 2C1 proxy + (CRF 2C - CRF 2C1)previous year
LT	Data from previous years	CRF 2C	
LU	Complex calculation	CRF 2C and CRF 2C1 proxy	CRF 2C1 proxy + (CRF 2C - CRF 2C1)previous year
LV	Complex calculation	CRF 2C and CRF 2C1 proxy	CRF 2C1 proxy + (CRF 2C - CRF 2C1)previous year
MT	Data from previous years	CRF 2C	
NL	Complex calculation	CRF 2C and CRF 2C1 proxy	CRF 2C1 proxy + (CRF 2C - CRF 2C1)previous year
PL	Complex calculation	CRF 2C and CRF 2C1 proxy	CRF 2C1 proxy + (CRF 2C - CRF 2C1)previous year
PT	Complex calculation	CRF 2C and CRF 2C1 proxy	CRF 2C1 proxy + (CRF 2C - CRF 2C1)previous year
RO	Complex calculation	CRF 2C and CRF 2C1 proxy	CRF 2C1 proxy + (CRF 2C - CRF 2C1)previous year
SE	Complex calculation	CRF 2C and CRF 2C1 proxy	CRF 2C1 proxy + (CRF 2C - CRF 2C1)previous year
SI	Complex calculation	CRF 2C and CRF 2C1 proxy	CRF 2C1 proxy + (CRF 2C - CRF 2C1)previous year
SK	Complex calculation	CRF 2C and CRF 2C1 proxy	CRF 2C1 proxy + (CRF 2C - CRF 2C1)previous year

Table 75 N_2O emissions from 2.C Metal Production

Source Category	2C	2.C Metal Production		
Gas	N2O			
Member State	**Projection Approach**		**Data Sources**	**Notes**
AT				
BE				
BG				
CY				
CZ				
DE				
DK				
EE				
ES	Extrapolation from previous years		2008 inventory submission	linear trend projection via minimum square deviation
FI				
FR				
GB	Extrapolation from previous years		2008 inventory submission	linear trend projection via minimum square deviation
GR				
HU				
IE				
IT				
LT				
LU				
LV				
MT				
NL				
PL				
PT				
RO				
SE				
SI				
SK				

Table 76 Methods and data used for CO_2 emissions from 2.C.1 Iron and Steel Production

Source Category	2C1	1. Iron and Steel Production		
Gas	CO2			
Member State	**Projection Approach**		**Data Sources**	**Notes**
AT	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
BE	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
BG	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
CY	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
CZ	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
DE	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
DK	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
EE	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
ES	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
FI	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
FR	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
GB	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
GR	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
HU	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
IE	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
IT	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
LT	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
LU	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
LV	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
MT	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
NL	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
PL	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
PT	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
RO	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
SE	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
SI	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data
SK	Activity trends (dynamics) from other sources		IISI crude steel production (monthly data)	December 2007 data

Table 77 Methods and data used for CO_2 emissions from 2.D Other Production

Source Category	2D	2.D Other Production		
Gas	CO2			
Member State	**Projection Approach**		**Data Sources**	**Notes**
AT				
BE				
BG				
CY				
CZ				
DE				
DK				
EE				
ES				
FI				
FR	Data from previous years		UNFCCC 2008 submission	Value of 2006
GB				
GR				
HU				
IE				
IT				
LT				
LU				
LV				
MT				
NL	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
PL	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
PT	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
RO				
SE				
SI				
SK				

Table 78 Methods and data used for CH_4 emissions from 2.D Other Production

Source Category	2D	2.D Other Production		
Gas	CH4			
Member State	**Projection Approach**		**Data Sources**	**Notes**
AT				
BE				
BG				
CY				
CZ				
DE				
DK				
EE				
ES				
FI				
FR				
GB				
GR				
HU				
IE				
IT				
LT				
LU				
LV				
MT				
NL				
PL				
PT				
RO				
SE	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
SI				
SK				

Table 79 Methods and data used for N_2O emissions from 2.D Other Production

Source Category	2D	2.D Other Production	
Gas	N2O		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT			
BE			
BG			
CY			
CZ			
DE			
DK			
EE			
ES			
FI			
FR			
GB			
GR			
HU			
IE			
IT			
LT			
LU			
LV			
MT			
NL			
PL			
PT			
RO			
SE	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
SI			
SK			

Table 80 Methods and data used for SF_6 emissions

Source Category	2	2 Industrial Processes	
Gas	SF6		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
BE	Data from previous years	2008 inventory submission	Value of 2006
BG	Data from previous years	2008 inventory submission	Value of 2006
CY			
CZ	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
DE	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
DK	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
EE	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
ES	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
FI	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
FR	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
GB	Data from previous years	2008 inventory submission	Value of 2006
GR	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
HU	Data from previous years	2008 inventory submission	Value of 2006
IE	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
IT	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
LT	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
LU	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
LV	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
MT			
NL	Data from previous years	2008 inventory submission	Value of 2006
PL	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
PT	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
RO	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
SE	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
SI	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
SK	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation

Table 81 Methods and data used for HFC emissions

Source Category	2	2 Industrial Processes	
Gas	HFC		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT	Data from previous years	2008 inventory submission	Value of 2006
BE	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
BG			
CY	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
CZ	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
DE	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
DK	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
EE	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
ES	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
FI	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
FR	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
GB	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
GR	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
HU	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
IE	Data from previous years	2008 inventory submission	Value of 2006
IT	Data from previous years	2008 inventory submission	Value of 2006
LT	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
LU	Data from previous years	2008 inventory submission	Value of 2006
LV	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
MT			
NL	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
PL	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
PT	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
RO	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
SE	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation
SI	Data from previous years	2008 inventory submission	Value of 2006
SK	Extrapolation from previous years	2008 inventory submission	linear trend projection via minimum square deviation

Table 82 Methods and data used for PFC emissions

Source Category	2	2 Industrial Processes	
Gas	PFC		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT	Data from previous years	UNFCCC 2008 submission	Value of 2006
BE	Data from previous years	UNFCCC 2008 submission	Value of 2006
BG			
CY			
CZ	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
DE	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
DK	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
EE			
ES	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
FI	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
FR	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
GB	Data from previous years	UNFCCC 2008 submission	Value of 2006
GR	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
HU	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
IE	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
IT	Data from previous years	UNFCCC 2008 submission	Value of 2006
LT			
LU			
LV			
MT			
NL	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
PL	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
PT			
RO	Data from previous years	UNFCCC 2008 submission	Value of 2006
SE	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
SI	Data from previous years	UNFCCC 2008 submission	Value of 2006
SK	Data from previous years	UNFCCC 2008 submission	Value of 2006

Table 83 Methods and data used for CO_2 emissions from 2:G Other

Source Category	2G	2.G Other	
Gas	CO2		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT			
BE			
BG			
CY			
CZ			
DE			
DK			
EE			
ES			
FI			
FR			
GB			
GR			
HU			
IE			
IT			
LT			
LU			
LV			
MT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
NL	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
PL	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
PT			
RO			
SE			
SI			
SK			

Table 84 Methods and data used for CH_4 emissions from 2:G Other

Source Category	2.G	2.G Other	
Gas	CH4		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT			
BE			
BG			
CY			
CZ			
DE			
DK			
EE			
ES			
FI			
FR			
GB			
GR			
HU			
IE			
IT			
LT			
LU			
LV			
MT			
NL	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
PL			
PT			
RO			
SE			
SI			
SK			

Table 85 Methods and data used for N_2O emissions from 2:G Other

Source Category	2.G	2.G Other	
Gas	N2O		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT			
BE			
BG			
CY			
CZ			
DE			
DK			
EE			
ES			
FI			
FR			
GB			
GR			
HU			
IE			
IT			
LT			
LU			
LV			
MT			
NL	Data from previous years	UNFCCC 2008 submission	Value of 2006
PL			
PT			
RO			
SE			
SI			
SK			

Table 86 Methods and data used for CO_2 emissions from 3 Solvent and Other Product Use

Source Category	3 3 Solvent and Other Product Use		
Gas	CO2		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
BE			
BG	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
CY	Data from previous years	UNFCCC 2008 submission	Value of 2006
CZ	Data from previous years	UNFCCC 2008 submission	Value of 2006
DE			
DK	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
EE			
ES	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
FI	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
FR	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
GB			
GR	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
HU	Data from previous years	UNFCCC 2008 submission	Value of 2006
IE	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
IT	Data from previous years	UNFCCC 2008 submission	Value of 2006
LT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
LU	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
LV	Data from previous years	UNFCCC 2008 submission	Value of 2006
MT			
NL	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
PL	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
PT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
RO	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
SE	Data from previous years	UNFCCC 2008 submission	Value of 2006
SI			
SK			

Table 87 Methods and data used for N_2O emissions from 3 Solvent and Other Product Use

Source Category	3 3 Solvent and Other Product Use		
Gas	N2O		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
BE	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
BG	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
CY			
CZ	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
DE	Data from previous years	UNFCCC 2008 submission	Value of 2006
DK	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
EE			
ES	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
FI	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
FR	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
GB			
GR			
HU	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
IE			
IT	Data from previous years	UNFCCC 2008 submission	Value of 2006
LT			
LU	Data from previous years	UNFCCC 2008 submission	Value of 2006
LV	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
MT			
NL	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
PL	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
PT			
RO			
SE	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
SI	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
SK	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation

Table 88 Methods and data used for CH_4 emissions from 4.A. Enteric Fermentation

Source Category	4A	4.A Enteric Fermentation	
Gas	CH4		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats: EUROSTAT december survey
BE	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle, Sheep: EUROSTAT june survey; Swine, Goats: EUROSTAT december survey
BG	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Swine: EUROSTAT december survey; Non-dairy cattle, Sheep, Goats: EUROSTAT december survey plus adjustment factor
CY	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle, Swine, Sheep: EUROSTAT december survey; Goats: EUROSTAT december survey plus adjustment factor
CZ	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Swine: EUROSTAT december survey; Dairy cattle, Non-dairy cattle, Sheep, Goats: EUROSTAT december survey plus adjustment factor
DE	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Goats: EUROSTAT december survey; Non-dairy cattle: EUROSTAT june survey, Swine, Sheep: EUROSTAT december survey plus factor
DK	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle: EUROSTAT june survey; Swine, Sheep: EUROSTAT december survey pls adjustment factor
EE	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats: EUROSTAT december survey
ES	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Sheep, Goats: EUROSTAT december survey; Non-dairy cattle: EUROSTAT june survey; Swine: EUROSTAT december survey plus adjustment factor
FI	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle: EUROSTAT june survey; Swine, Sheep, Goats: EUROSTAT december survey plus adjustment factor
FR	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Swine, Sheep, Goats: EUROSTAT december survey plus adjustment factor; Non-dairy cattle: EUROSTAT june survey
GB	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Swine: EUROSTAT december survey; Non-dairy cattle, Goats: EUROSTAT june survey; Sheep: EUROSTAT december survey plus adjustment factor
GR	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats: EUROSTAT december survey plus adjustment factor
HU	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle: EUROSTAT june survey plus adjustment factor; Non-dairy cattle: EUROSTAT june survey; Swine: EUROSTAT december survey; Sheep, Goats: EUROSTAT december survey plus adjustment factor
IE	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle, Swine: EUROSTAT december survey; Sheep: EUROSTAT december survey plus adjustment factor; Goats: EUROSTAT june survey
IT	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Swine, Goats: EUROSTAT december survey; Non-dairy cattle: EUROSTAT june survey plus adjustment factor; Sheep: EUROSTAT december survey plus adjustment factor
LT	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats: EUROSTAT december survey
LU	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle, Swine: EUROSTAT june survey; Sheep, Goats: EUROSTAT december survey plus adjustment factor
LV	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle: EUROSTAT june survey; Non-dairy cattle, Swine, Sheep, Goats: EUROSTAT december survey
MT	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats: EUROSTAT december survey
NL	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Swine: EUROSTAT december survey; Non-dairy cattle, Sheep, Goats: EUROSTAT december survey plus adjustment factor
PL	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle: EUROSTAT june survey plus adjustment factor; Swine: EUROSTAT december survey; Sheep: EUROSTAT december survey plus adjustment factor; Non-dairy cattle, Goats: EUROSTAT june survey
PT	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Sheep, Goats: EUROSTAT december survey plus adjustment factor; Non-dairy cattle, Swine: EUROSTAT december survey
RO	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle: EUROSTAT december survey plus adjustment factor; Swine, Sheep, Goats: EUROSTAT december survey
SE	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle, Swine: EUROSTAT june survey; Sheep, Goats: EUROSTAT december survey
SI	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats: EUROSTAT december survey
SK	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle: EUROSTAT december survey plus adjustment factor; Swine, Sheep, Goats: EUROSTAT december survey

Table 89 Methods and data used for CH_4 emissions from 4.B Manure Management

Source Category	4B	4.B Manure Management	
Gas	CH4		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats: EUROSTAT december survey
BE	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle, Sheep: EUROSTAT june survey; Swine, Goats: EUROSTAT december survey
BG	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Swine: EUROSTAT december survey; Non-dairy cattle, Sheep, Goats: EUROSTAT december survey plus adjustment factor
CY	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle, Swine, Sheep: EUROSTAT december survey; Goats: EUROSTAT december survey plus adjustment factor
CZ	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Swine: EUROSTAT december survey; Dairy cattle, Non-dairy cattle, Sheep, Goats: EUROSTAT december survey plus adjustment factor
DE	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Goats: EUROSTAT december survey; Non-dairy cattle: EUROSTAT june survey, Swine, Sheep: EUROSTAT december survey plus factor
DK	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle: EUROSTAT june survey; Swine, Sheep: EUROSTAT december survey pls adjustment factor
EE	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats: EUROSTAT december survey
ES	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Sheep, Goats: EUROSTAT december survey; Non-dairy cattle: EUROSTAT june survey; Swine: EUROSTAT december survey plus adjustment factor
FI	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle: EUROSTAT june survey; Swine, Sheep, Goats: EUROSTAT december survey plus adjustment factor
FR	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Swine, Sheep, Goats: EUROSTAT december survey plus adjustment factor; Non-dairy cattle: EUROSTAT june survey
GB	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Swine: EUROSTAT december survey; Non-dairy cattle, Goats: EUROSTAT june survey; Sheep: EUROSTAT december survey plus adjustment factor
GR	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats: EUROSTAT december survey plus adjustment factor
HU	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle: EUROSTAT june survey plus adjustment factor; Non-dairy cattle: EUROSTAT june survey; Swine: EUROSTAT december survey; Sheep, Goats: EUROSTAT december survey plus adjustment factor
IE	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle, Swine: EUROSTAT december survey; Sheep: EUROSTAT december survey plus adjustment factor; Goats: EUROSTAT june survey
IT	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Swine, Goats: EUROSTAT december survey; Non-dairy cattle: EUROSTAT june survey plus adjustment factor; Sheep: EUROSTAT december survey plus adjustment factor
LT	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats: EUROSTAT december survey
LU	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle, Swine: EUROSTAT june survey; Sheep, Goats: EUROSTAT december survey plus adjustment factor
LV	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle: EUROSTAT june survey; Non-dairy cattle, Swine, Sheep, Goats: EUROSTAT december survey
MT	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats: EUROSTAT december survey
NL	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Swine: EUROSTAT december survey; Non-dairy cattle, Sheep, Goats: EUROSTAT december survey plus adjustment factor
PL	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle: EUROSTAT june survey plus adjustment factor; Swine: EUROSTAT december survey; Sheep: EUROSTAT december survey plus adjustment factor; Non-dairy cattle, Goats: EUROSTAT june survey
PT	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Sheep, Goats: EUROSTAT december survey plus adjustment factor; Non-dairy cattle, Swine: EUROSTAT december survey
RO	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle: EUROSTAT december survey plus adjustment factor; Swine, Sheep, Goats: EUROSTAT december survey
SE	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle, Swine: EUROSTAT june survey; Sheep, Goats: EUROSTAT december survey
SI	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats: EUROSTAT december survey
SK	Emissions calculation based on activity data	Livestock activity data (Dairy cattle, Non-dairy cattle, Swine, Sheep, Goats) from EUROSTAT, IEF from UNFCCC 2006 inventories	Dairy cattle, Non-dairy cattle: EUROSTAT december survey plus adjustment factor; Swine, Sheep, Goats: EUROSTAT december survey

Table 90 Methods and data used for N_2O emissions from Manure Management

Source Category	4B	4.B Manure Management	
Gas	N2O		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
BE	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
BG	Data from previous years	UNFCCC 2008 submission	Value of 2006
CY	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
CZ	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
DE	Data from previous years	UNFCCC 2008 submission	Value of 2006
DK	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
EE	Data from previous years	UNFCCC 2008 submission	Value of 2006
ES	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
FI	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
FR	Data from previous years	UNFCCC 2008 submission	Value of 2006
GB	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
GR	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
HU	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
IE	Data from previous years	UNFCCC 2008 submission	Value of 2006
IT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
LT	Data from previous years	UNFCCC 2008 submission	Value of 2006
LU	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
LV	Data from previous years	UNFCCC 2008 submission	Value of 2006
MT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
NL	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
PL	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
PT	Data from previous years	UNFCCC 2008 submission	Value of 2006
RO	Data from previous years	UNFCCC 2008 submission	Value of 2006
SE	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
SI	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
SK	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation

Table 91 Methods and data used for CH_4 emissions form 4.C Rice Cultivation

Source Category	4C	4.C Rice Cultivation	
Gas	CH4		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT			
BE			
BG	Data from previous years	UNFCCC 2008 submission	Value of 2006
CY			
CZ			
DE			
DK			
EE			
ES	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
FI			
FR	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
GB			
GR	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
HU	Data from previous years	UNFCCC 2008 submission	Value of 2006
IE			
IT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
LT			
LU			
LV			
MT			
NL			
PL			
PT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
RO	Data from previous years	UNFCCC 2008 submission	Value of 2006
SE			
SI			
SK			

Table 92 Methods and data used for CH_4 emissions from 4.D Agricultural Soils

Source Category	4D	4.D Agricultural Soils	
Gas	CH4		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
BE	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
BG			
CY			
CZ			
DE	Data from previous years	UNFCCC 2008 submission	Value of 2006
DK			
EE			
ES			
FI			
FR			
GB			
GR			
HU			
IE			
IT			
LT			
LU			
LV			
MT			
NL			
PL			
PT			
RO			
SE			
SI			
SK			

Table 93 Methods and data used for N_2O emissions from 4.D Agricultural Soils

Source Category	4D	4.D Agricultural Soils	
Gas	N2O		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
BE	Data from previous years	UNFCCC 2008 submission	Value of 2006
BG	Data from previous years	UNFCCC 2008 submission	Value of 2006
CY	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
CZ	Data from previous years	UNFCCC 2008 submission	Value of 2006
DE	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
DK	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
EE	Data from previous years	UNFCCC 2008 submission	Value of 2006
ES	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
FI	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
FR	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
GB	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
GR	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
HU	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
IE	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
IT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
LT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
LU	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
LV	Data from previous years	UNFCCC 2008 submission	Value of 2006
MT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
NL	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
PL	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
PT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
RO	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
SE	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
SI	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
SK	Data from previous years	UNFCCC 2008 submission	Value of 2006

Table 94 Methods and data used for CH_4 emissions from 4.F Field Burning of Agricultural Residues

Source Category	4F	4.F Field Burning of Agricultural Residues		
Gas	CH4			
Member State	**Projection Approach**		**Data Sources**	**Notes**
AT	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
BE				
BG	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
CY	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
CZ				
DE				
DK				
EE				
ES	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
FI				
FR				
GB				
GR	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
HU				
IE				
IT	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
LT				
LU				
LV				
MT				
NL				
PL	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
PT	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
RO	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
SE				
SI				
SK				

Table 95 Methods and data used for N_2O emissions from 4.F Field Burning of Agricultural Residues

Source Category	4F	4.F Field Burning of Agricultural Residues		
Gas	N2O			
Member State	**Projection Approach**		**Data Sources**	**Notes**
AT	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
BE				
BG	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
CY	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
CZ				
DE				
DK				
EE				
ES	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
FI				
FR				
GB				
GR	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
HU				
IE				
IT	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
LT				
LU				
LV				
MT				
NL				
PL	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
PT	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
RO	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
SE				
SI				
SK				

Table 96 Methods and data used for CO_2 emissions from 6.A Solid Waste Disposal on Land

Source Category	6A	6.A Solid Waste Disposal on Land	
Gas	CO2		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT			
BE			
BG			
CY			
CZ			
DE			
DK			
EE			
ES	Data from previous years	UNFCCC 2008 submission	Value of 2006
FI			
FR			
GB			
GR			
HU			
IE			
IT			
LT			
LU			
LV			
MT			
NL			
PL			
PT	Data from previous years	UNFCCC 2008 submission	Value of 2006
RO			
SE			
SI			
SK			

Table 97 Methods and data used for CH_4 emissions from 6.A Solid Waste Disposal on Land

Source Category	6A	6.A Solid Waste Disposal on Land	
Gas	CH4		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
BE	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
BG	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
CY	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
CZ	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
DE	Data from previous years	UNFCCC 2008 submission	Value of 2006
DK	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
EE	Data from previous years	UNFCCC 2008 submission	Value of 2006
ES	Data from previous years	UNFCCC 2008 submission	Value of 2006
FI	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
FR	Data from previous years	UNFCCC 2008 submission	Value of 2006
GB	Data from previous years	UNFCCC 2008 submission	Value of 2006
GR	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
HU	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
IE	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
IT	Data from previous years	UNFCCC 2008 submission	Value of 2006
LT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
LU	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
LV	Data from previous years	UNFCCC 2008 submission	Value of 2006
MT	Data from previous years	UNFCCC 2008 submission	Value of 2006
NL	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
PL	Data from previous years	UNFCCC 2008 submission	Value of 2006
PT	Data from previous years	UNFCCC 2008 submission	Value of 2006
RO	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
SE	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
SI	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
SK	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation

Table 98 Methods and data used for N_2O emissions from 6.A Solid Waste Disposal on Land

Source Category	6A	6.A Solid Waste Disposal on Land	
Gas	N2O		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT BE BG CY CZ DE DK EE ES FI FR GB GR HU IE IT LT LU LV MT NL PL PT RO SE SI SK	Data from previous years	UNFCCC 2008 submission	Value of 2006

Table 99 Methods and data used for CH_4 emissions from 6.B Wastewater Handling

Source Category	6B	6.B Wastewater Handling		
Gas	CH4			
Member State	**Projection Approach**		**Data Sources**	**Notes**
AT	Data from previous years		UNFCCC 2008 submission	Value of 2006
BE	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
BG	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
CY	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
CZ	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
DE	Data from previous years		UNFCCC 2008 submission	Value of 2006
DK	Data from previous years		UNFCCC 2008 submission	Value of 2006
EE	Data from previous years		UNFCCC 2008 submission	Value of 2006
ES	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
FI	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
FR	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
GB	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
GR	Data from previous years		UNFCCC 2008 submission	Value of 2006
HU	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
IE	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
IT	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
LT	Data from previous years		UNFCCC 2008 submission	Value of 2006
LU	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
LV	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
MT	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
NL	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
PL	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
PT	Data from previous years		UNFCCC 2008 submission	Value of 2006
RO	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
SE	Data from previous years		UNFCCC 2008 submission	Value of 2006
SI	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
SK	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation

Table 100 Methods and data used for N_2O emissions from 6.B Wastewater Handling

Source Category	6B	6.B Wastewater Handling	
Gas	N2O		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
BE	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
BG	Data from previous years	UNFCCC 2008 submission	Value of 2006
CY			
CZ	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
DE	Data from previous years	UNFCCC 2008 submission	Value of 2006
DK	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
EE	Data from previous years	UNFCCC 2008 submission	Value of 2006
ES	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
FI	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
FR	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
GB	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
GR	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
HU	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
IE	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
IT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
LT	Data from previous years	UNFCCC 2008 submission	Value of 2006
LU	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
LV	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
MT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
NL	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
PL	Data from previous years	UNFCCC 2008 submission	Value of 2006
PT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
RO	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
SE	Data from previous years	UNFCCC 2008 submission	Value of 2006
SI	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
SK	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation

Table 101 Methods and data used for CO_2 emissions from 6.C Waste Incineration

Source Category	6C	6.C Waste Incineration	
Gas	CO2		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT	Data from previous years	UNFCCC 2008 submission	Value of 2006
BE	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
BG			
CY			
CZ	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
DE			
DK			
EE			
ES	Data from previous years		
FI			
FR	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
GB	Data from previous years	UNFCCC 2008 submission	Value of 2006
GR	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
HU	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
IE			
IT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
LT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
LU			
LV	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
MT	Data from previous years	UNFCCC 2008 submission	Value of 2006
NL			
PL	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
PT	Data from previous years	UNFCCC 2008 submission	Value of 2006
RO	Data from previous years	UNFCCC 2008 submission	Value of 2006
SE			
SI			
SK	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation

Table 102 Methods and data used for CH_4 emissions from 6.C Waste Incineration

Source Category	6C	6.C Waste Incineration	
Gas	CH4		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT	Data from previous years	UNFCCC 2008 submission	Value of 2006
BE	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
BG			
CY			
CZ			
DE			
DK			
EE			
ES	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
FI			
FR	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
GB	Data from previous years	UNFCCC 2008 submission	Value of 2006
GR			
HU			
IE			
IT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
LT			
LU			
LV			
MT	Data from previous years	UNFCCC 2008 submission	Value of 2006
NL			
PL			
PT	Data from previous years	UNFCCC 2008 submission	Value of 2006
RO			
SE			
SI			
SK			

Table 103 Methods and data used for N_2O emissions from 6.C Waste Incineration

Source Category	6C	6.C Waste Incineration	
Gas	N2O		
Member State	**Projection Approach**	**Data Sources**	**Notes**
AT	Data from previous years		
BE	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
BG			
CY			
CZ	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
DE			
DK			
EE	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
ES	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
FI			
FR	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
GB	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
GR			
HU	Data from previous years	UNFCCC 2008 submission	Value of 2006
IE			
IT	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation
LT			
LU			
LV			
MT	Data from previous years	UNFCCC 2008 submission	Value of 2006
NL			
PL	Data from previous years	UNFCCC 2008 submission	Value of 2006
PT	Data from previous years	UNFCCC 2008 submission	Value of 2006
RO			
SE			
SI			
SK	Extrapolation from previous years	UNFCCC 2008 submission	linear trend projection via minimum square deviation

Table 104 Methods and data used for CH_4 emissions from 6.D Other

Source Category	6D	6.D Other		
Gas	CH4			
Member State	**Projection Approach**		**Data Sources**	**Notes**
AT	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
BE	Data from previous years		UNFCCC 2008 submission	Value of 2006
BG				
CY				
CZ				
DE	Data from previous years		UNFCCC 2008 submission	Value of 2006
DK				
EE	Data from previous years		UNFCCC 2008 submission	Value of 2006
ES	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
FI	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
FR	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
GB				
GR				
HU				
IE				
IT	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
LT				
LU	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
LV	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
MT	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
NL	Data from previous years		UNFCCC 2008 submission	Value of 2006
PL				
PT				
RO				
SE				
SI				
SK	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation

Table 105 Methods and data used for N_2O emissions from 6.D Other

Source Category	6D	6.D Other		
Gas	N2O			
Member State	**Projection Approach**		**Data Sources**	**Notes**
AT	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
BE				
BG				
CY				
CZ				
DE	Data from previous years		UNFCCC 2008 submission	Value of 2006
DK				
EE	Data from previous years		UNFCCC 2008 submission	Value of 2006
ES				
FI	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
FR	Data from previous years		UNFCCC 2008 submission	Value of 2006
GB				
GR				
HU				
IE				
IT				
LT				
LU	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
LV	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
MT	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation
NL	Data from previous years		UNFCCC 2008 submission	Value of 2006
PL				
PT				
RO				
SE				
SI				
SK	Extrapolation from previous years		UNFCCC 2008 submission	linear trend projection via minimum square deviation

6 Annex 2 – Detailed results

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
AUSTRIA

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**76 422.64**	**6 858.65**	**5 333.75**	**857.80**	**135.67**	**528.28**	**90 136.79**
1. Energy	**66 668.03**	**986.88**	**808.47**				**68 463.38**
A. Fuel Combustion (Sectoral Approach)	66 435.99	288.15	808.47				67 532.61
1. Energy Industries	14 293.10	6.26	75.51				14 374.87
2. Manufacturing Industries and Construction	16 227.10	13.03	158.32				16 398.45
3. Transport	23 263.56	23.74	293.84				23 581.14
4. Other Sectors							
5. Other	12 652.23	245.12	280.81				13 178.15
B. Fugitive Emissions from Fuels	232.04	698.73	IE,NA				930.76
1. Solid Fuels	IE,NA,NO	0.03	NE				0.03
2. Oil and Natural Gas	232.04	698.70	NE				930.73
2. Industrial Processes	**9 546.73**	**16.04**	**280.12**	**857.80**	**135.67**	**528.28**	**11 364.64**
A. Mineral Products	3 563.47	IE,NA	NE				3 563.47
B. Chemical Industry	556.36	15.96	280.12				852.44
C. Metal Production	5 426.89	0.08	NA				5 426.97
D. Other Production	NA	0.00	0.00				0.00
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	NA	NA	NA				NA,
3. Solvent and Other Product Use	**195.62**		**151.69**				**347.31**
4. Agriculture		**4 120.32**	**3 738.79**				**7 859.12**
A. Enteric Fermentation		3 217.72					3 217.72
B. Manure Management		892.31	866.35				1 758.66
C. Rice Cultivation		NO					NO,
D. Agricultural Soils(3)		8.90	2 872.09				2 880.99
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		1.39	0.36				1.75
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**12.26**	**1 735.40**	**354.68**				**2 102.35**
A. Solid Waste Disposal on Land	0.00	1 658.42	0.00				1 658.42
B. Waste-water Handling		41.44	282.15				323.59
C. Waste Incineration	12.26	0.01	0.03				12.30
D. Other	NE	35.54	72.50				108.04
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	90 136.79
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
BELGIUM

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**118 242.13**	**6 963.89**	**9 996.99**	**1 634.94**	**152.21**	**74.88**	**137 065.03**
1. Energy	**108 054.58**	**690.11**	**1 103.81**				**109 848.50**
A. Fuel Combustion (Sectoral Approach)	107 922.87	295.85	1 103.81				109 322.53
1. Energy Industries	26 922.33	13.12	124.74				27 060.19
2. Manufacturing Industries and Construction	27 523.44	63.80	42.90				27 630.14
3. Transport	25 422.26	56.08	830.14				26 308.48
4. Other Sectors							
5. Other	28 054.84	162.85	106.03				28 323.71
B. Fugitive Emissions from Fuels	131.71	394.26	NA,NO				525.97
1. Solid Fuels	NA,NO	11.97	NE				11.97
2. Oil and Natural Gas	131.71	382.29	NE				514.00
2. Industrial Processes	**10 068.88**	**59.36**	**3 598.52**	**1 634.94**	**152.21**	**74.88**	**15 588.78**
A. Mineral Products	5 607.93	0.00	NE				5 607.93
B. Chemical Industry	2 973.00	2.68	3 598.52				6 574.21
C. Metal Production	1 487.94	56.68	0.00				1 544.62
D. Other Production	0.00	0.00	0.00				0.00
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	NA,NE	NA	NA				NA,NE,
3. Solvent and Other Product Use	**0.00**		**248.77**				**248.77**
4. Agriculture		**5 431.66**	**4 761.59**				**10 193.24**
A. Enteric Fermentation		3 512.62					3 512.62
B. Manure Management		1 915.54	868.77				2 784.31
C. Rice Cultivation		NA,NO					NA,NO,
D. Agricultural Soils(3)		3.49	3 892.82				3 896.31
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		NA,NO	NA,NO				NA,NO,
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**118.66**	**782.77**	**284.30**				**1 185.73**
A. Solid Waste Disposal on Land	0.00	623.84	0.00				623.84
B. Waste-water Handling		120.16	268.86				389.02
C. Waste Incineration	118.66	0.02	15.44				134.12
D. Other	NE	38.76	0.00				38.76
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	137 065.03
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
BULGARIA

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**58 635.96**	**11 127.65**	**4 139.47**	**377.18**	**0.04**	**5.30**	**74 285.60**
1. Energy	**53 574.92**	**2 123.80**	**384.12**				**56 082.85**
A. Fuel Combustion (Sectoral Approach)	53 574.92	197.73	384.12				54 156.78
1. Energy Industries	29 038.06	9.54	250.53				29 298.13
2. Manufacturing Industries and Construction	10 263.89	4.79	18.94				10 287.62
3. Transport	11 293.14	42.60	85.68				11 421.42
4. Other Sectors							
5. Other	2 979.84	140.79	28.97				3 149.60
B. Fugitive Emissions from Fuels	0.00	1 926.07	NA,NE				1 926.07
1. Solid Fuels	NA,NE	1 319.99	NE				1 319.99
2. Oil and Natural Gas	0.00	606.08	NE				606.08
2. Industrial Processes	**5 056.43**	**52.84**	**815.24**	**377.18**	**0.04**	**5.30**	**6 307.03**
A. Mineral Products	3 210.10	NO,NE	NE				3 210.10
B. Chemical Industry	308.24	4.99	815.24				1 128.48
C. Metal Production	1 538.08	47.85	NA				1 585.93
D. Other Production	NO	0.00	0.00				0.00
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	NO	NO	NO				NO,
3. Solvent and Other Product Use	**4.60**		**44.78**				**49.39**
4. Agriculture		**1 826.72**	**2 750.43**				**4 577.15**
A. Enteric Fermentation		1 327.18					1 327.18
B. Manure Management		445.14	366.25				811.39
C. Rice Cultivation		32.41					32.41
D. Agricultural Soils(3)		NA,NO	2 378.63				2 378.63
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		21.98	5.55				27.53
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**0.00**	**7 124.30**	**144.89**				**7 269.18**
A. Solid Waste Disposal on Land	0.00	6 493.37	0.00				6 493.37
B. Waste-water Handling		630.93	144.89				775.81
C. Waste Incineration	NO	NO	NO				NO,
D. Other	NE	NA	NA				NA,NE,
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	74 285.60
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
CYPRUS

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**8 252.31**	**884.70**	**896.41**	**118.01**	**NA,NE,**	**NA,NE,**	**10 151.43**
1. Energy	**7 356.17**	**14.48**	**766.22**				**8 136.87**
A. Fuel Combustion (Sectoral Approach)	7 356.17	14.48	766.22				8 136.87
1. Energy Industries	3 801.67	0.61	663.66				4 465.94
2. Manufacturing Industries and Construction	776.03	0.38	0.13				776.54
3. Transport	2 197.03	12.96	45.34				2 255.33
4. Other Sectors							
5. Other	581.44	0.54	57.09				639.07
B. Fugitive Emissions from Fuels	0.00	0.00	NA,NO				0.00
1. Solid Fuels	NA,NO	NA,NO	NE				NA,NE,NO,
2. Oil and Natural Gas	0.00	0.00	NE				0.00
2. Industrial Processes	**893.47**	**0.00**	**0.00**	**118.01**	**NA**	**NA**	**1 011.48**
A. Mineral Products	893.47	NA	NE				893.47
B. Chemical Industry	NA	NA	NA				NA,
C. Metal Production	NA	NA	NA				NA,
D. Other Production	NA	0.00	0.00				0.00
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	NA	NA	NA				NA,
3. Solvent and Other Product Use	**2.67**		**NA**				**2.67**
4. Agriculture		**266.91**	**130.19**				**397.10**
A. Enteric Fermentation		127.59					127.59
B. Manure Management		135.58	1.32				136.90
C. Rice Cultivation		NA					NA,
D. Agricultural Soils(3)		NA	127.56				127.56
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		3.75	1.31				5.06
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**0.00**	**603.30**	**0.00**				**603.30**
A. Solid Waste Disposal on Land	0.00	557.46	0.00				557.46
B. Waste-water Handling		45.85	NA				45.85
C. Waste Incineration	NA	NA	NA				NA,
D. Other	NE	NA	NA				NA,NE,
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	10 151.43
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
Czech Republic

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**125 082.71**	**11 743.30**	**7 414.00**	**804.04**	**22.80**	**96.29**	**145 163.14**
1. Energy	**111 113.17**	**5 966.31**	**1 122.18**				**118 201.67**
A. Fuel Combustion (Sectoral Approach)	111 113.17	497.96	1 122.18				112 733.32
1. Energy Industries	62 389.70	16.35	277.30				62 683.35
2. Manufacturing Industries and Construction	27 190.05	72.40	129.18				27 391.63
3. Transport	18 075.76	34.11	670.05				18 779.92
4. Other Sectors							
5. Other	3 457.67	375.11	45.65				3 878.42
B. Fugitive Emissions from Fuels	0.00	5 468.34	E,NA,NE,NO				5 468.34
1. Solid Fuels	IE,NA,NE	4 777.38	NE				4 777.38
2. Oil and Natural Gas	0.00	690.96	NE				690.96
2. Industrial Processes	**13 310.54**	**74.65**	**1 088.49**	**804.04**	**22.80**	**96.29**	**15 396.81**
A. Mineral Products	4 053.98	5.24	NE				4 059.22
B. Chemical Industry	589.34	10.37	1 088.49				1 688.19
C. Metal Production	8 667.22	59.05	NA				8 726.26
D. Other Production	NA	0.00	0.00				0.00
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	NA	NA	NA				NA,
3. Solvent and Other Product Use	**298.41**		**214.52**				**512.93**
4. Agriculture		**2 824.31**	**4 778.20**				**7 602.51**
A. Enteric Fermentation		2 341.34					2 341.34
B. Manure Management		482.98	299.62				782.60
C. Rice Cultivation		NO					NO,
D. Agricultural Soils(3)		NA,NE	4 478.57				4 478.57
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		NO	NO				NO,
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**360.59**	**2 878.02**	**210.61**				**3 449.21**
A. Solid Waste Disposal on Land	0.00	2 428.72	0.00				2 428.72
B. Waste-water Handling		449.30	206.17				655.47
C. Waste Incineration	360.59	NE	4.44				365.02
D. Other	NE	NA	NA				NA,NE,
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	145 163.14
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
GERMANY

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**852 914.83**	**45 185.19**	**56 496.07**	**10 006.61**	**286.39**	**4 736.64**	**969 625.74**
1. Energy	**769 233.04**	**12 807.81**	**6 551.24**				**788 592.09**
A. Fuel Combustion (Sectoral Approach)	769 233.04	1 144.66	6 551.24				776 928.94
1. Energy Industries	372 140.09	131.38	3 968.80				376 240.27
2. Manufacturing Industries and Construction	100 322.21	113.22	916.87				101 352.30
3. Transport	164 436.30	164.83	1 155.11				165 756.24
4. Other Sectors							
5. Other	132 334.44	735.22	510.46				133 580.12
B. Fugitive Emissions from Fuels	0.00	11 663.15	E,NA,NE,NO				11 663.15
1. Solid Fuels	NE,NO	5 013.43	NE				5 013.43
2. Oil and Natural Gas	0.00	6 649.72	NE				6 649.72
2. Industrial Processes	**83 681.79**	**2.33**	**5 706.74**	**10 006.61**	**286.39**	**4 736.64**	**104 420.50**
A. Mineral Products	21 278.31	NO	NE				21 278.31
B. Chemical Industry	15 576.01	0.25	5 706.74				21 283.00
C. Metal Production	46 827.47	2.08	NO				46 829.55
D. Other Production	NO	0.00	0.00				0.00
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	NO	NO	NO				NO,
3. Solvent and Other Product Use	**NO,NE**		**1 174.01**				**1 174.01**
4. Agriculture		**22 085.25**	**40 359.35**				**62 444.60**
A. Enteric Fermentation		17 831.96					17 831.96
B. Manure Management		4 887.02	3 035.53				7 922.55
C. Rice Cultivation		NO					NO,
D. Agricultural Soils(3)		-633.73	37 323.82				36 690.09
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		NO	NO				NO,
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**0.00**	**10 289.80**	**2 704.73**				**12 994.53**
A. Solid Waste Disposal on Land	0.00	9 618.00	0.00				9 618.00
B. Waste-water Handling		115.43	2 341.79				2 457.23
C. Waste Incineration	NO	NO	NO				NO,
D. Other	NE	556.37	362.94				919.31
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	969 625.74
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
DENMARK

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**53 489.12**	**5 470.24**	**6 150.39**	**952.34**	**23.43**	**23.25**	**66 108.76**
1. Energy	**51 746.92**	**583.71**	**460.21**				**52 790.85**
A. Fuel Combustion (Sectoral Approach)	51 332.19	486.14	457.95				52 276.28
1. Energy Industries	24 570.87	239.88	168.12				24 978.87
2. Manufacturing Industries and Construction	5 376.85	24.34	57.83				5 459.01
3. Transport	13 974.03	29.22	143.05				14 146.30
4. Other Sectors							
5. Other	7 410.45	192.70	88.95				7 692.10
B. Fugitive Emissions from Fuels	414.74	97.57	2.26				514.57
1. Solid Fuels	NA,NO	NA,NO	NE				NA,NE,NO,
2. Oil and Natural Gas	414.74	97.57	NE				512.31
2. Industrial Processes	**1 652.71**	**0.00**	**0.00**	**952.34**	**23.43**	**23.25**	**2 651.72**
A. Mineral Products	1 650.72	IE,NA	NE				1 650.72
B. Chemical Industry	1.99	NA,NO	NA,NO				1.99
C. Metal Production	NA,NO	NA,NO	NO				NA,NO,
D. Other Production	NE	0.00	0.00				0.00
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	NO	NO	NO				NO,
3. Solvent and Other Product Use	**89.49**		**60.55**				**150.04**
4. Agriculture		**3 597.07**	**5 585.46**				**9 182.52**
A. Enteric Fermentation		2 585.20					2 585.20
B. Manure Management		1 011.87	534.49				1 546.36
C. Rice Cultivation		NO					NO,
D. Agricultural Soils(3)		NO,NE	5 050.97				5 050.97
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		NA,NO	NA,NO				NA,NO,
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**0.00**	**1 289.46**	**44.18**				**1 333.63**
A. Solid Waste Disposal on Land	0.00	1 041.14	0.00				1 041.14
B. Waste-water Handling		248.31	44.18				292.49
C. Waste Incineration	IE	IE	IE				IE,
D. Other	NE	NO	NO				NE,NO,
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	66 108.76
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
ESTONIA

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**16 362.99**	**2 034.25**	**878.06**	**31.77**	**NA,NE,NO,**	**4.92**	**19 311.99**
1. Energy	**15 662.01**	**920.56**	**37.45**				**16 620.02**
A. Fuel Combustion (Sectoral Approach)	15 662.01	95.54	37.45				15 795.00
1. Energy Industries	15 296.05	6.87	13.18				15 316.09
2. Manufacturing Industries and Construction	539.41	0.91	1.37				541.69
3. Transport	2 627.44	8.46	6.94				2 642.84
4. Other Sectors							
5. Other	-2 800.89	79.31	15.96				-2 705.62
B. Fugitive Emissions from Fuels	0.00	825.02	NA,NO				825.02
1. Solid Fuels	NO	301.75	NE				301.75
2. Oil and Natural Gas	0.00	523.27	NE				523.27
2. Industrial Processes	**700.98**	**0.00**	**0.00**	**31.77**	**NA.NO.NE**	**4.92**	**737.67**
A. Mineral Products	585.14	NA	NE				585.14
B. Chemical Industry	115.83	NA.NO	NA.NO				115.83
C. Metal Production	NA,NO	NA.NO	NA				NA,NO,
D. Other Production	NO	0.00	0.00				0.00
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	NA	NA	NA				NA,
3. Solvent and Other Product Use	**NA**		**NA**				**NA,**
4. Agriculture		**505.86**	**693.99**				**1 199.84**
A. Enteric Fermentation		432.98					432.98
B. Manure Management		72.88	46.20				119.08
C. Rice Cultivation		NO					NO,
D. Agricultural Soils(3)		NO.NE	647.78				647.78
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		NO.NE	NO.NE				NE,NO,
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**0.00**	**607.84**	**146.62**				**754.46**
A. Solid Waste Disposal on Land	0.00	551.52	0.00				551.52
B. Waste-water Handling		IE.NA.NO	34.43				34.43
C. Waste Incineration	NA	NA.NE	49.85				49.85
D. Other	NE	56.31	62.35				118.66
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	19 311.99
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
SPAIN

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**369 627.00**	**37 615.04**	**32 238.62**	**6 469.57**	**148.85**	**292.97**	**446 392.05**
1. Energy	**340 720.08**	**2 673.41**	**4 516.89**				**347 910.37**
A. Fuel Combustion (Sectoral Approach)	338 327.28	1 158.43	4 516.82				344 002.53
1. Energy Industries	120 096.34	144.06	736.88				120 977.28
2. Manufacturing Industries and Construction	69 839.70	180.70	622.32				70 642.71
3. Transport	108 952.65	182.80	2 937.36				112 072.82
4. Other Sectors							
5. Other	39 438.58	650.88	220.26				40 309.73
B. Fugitive Emissions from Fuels	2 392.80	1 514.98	0.07				3 907.84
1. Solid Fuels	124.94	883.34	NE				1 008.28
2. Oil and Natural Gas	2 267.86	631.64	NE				2 899.50
2. Industrial Processes	**27 594.27**	**71.28**	**1 743.29**	**6 469.57**	**148.85**	**292.97**	**36 320.23**
A. Mineral Products	22 870.38	IE,NO,NE	NE				22 870.38
B. Chemical Industry	703.11	57.86	1 742.72				2 503.70
C. Metal Production	4 020.77	13.42	0.57				4 034.76
D. Other Production	NA	0.00	0.00				0.00
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	NA	NA	NA				NA,
3. Solvent and Other Product Use	**1 295.48**		**340.14**				**1 635.62**
4. Agriculture		**23 763.23**	**24 430.47**				**48 193.71**
A. Enteric Fermentation		13 402.42					13 402.42
B. Manure Management		9 691.99	3 138.11				12 830.10
C. Rice Cultivation		329.22					329.22
D. Agricultural Soils(3)		NE	21 237.06				21 237.06
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		339.60	55.30				394.90
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**17.18**	**11 107.12**	**1 207.83**				**12 332.12**
A. Solid Waste Disposal on Land	13.29	8 175.50	1.22				8 190.01
B. Waste-water Handling		2 252.10	1 200.19				3 452.30
C. Waste Incineration	3.89	0.53	6.41				10.83
D. Other	NE	678.99	NE				678.99
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	446 392.05
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
FINLAND

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**65 118.93**	**4 326.54**	**6 721.22**	**852.25**	**19.62**	**32.59**	**77 071.15**
1. Energy	**61 526.58**	**340.23**	**1 487.23**				**63 354.04**
A. Fuel Combustion (Sectoral Approach)	61 455.15	284.75	1 486.62				63 226.51
1. Energy Industries	30 530.94	25.49	331.02				30 887.45
2. Manufacturing Industries and Construction	11 547.89	15.39	161.97				11 725.26
3. Transport	14 174.94	48.72	652.97				14 876.64
4. Other Sectors							
5. Other	5 201.37	195.14	340.65				5 737.16
B. Fugitive Emissions from Fuels	71.43	55.48	0.61				127.52
1. Solid Fuels	NO	NO	NE				NE,NO,
2. Oil and Natural Gas	71.43	55.48	NE				126.91
2. Industrial Processes	**3 540.24**	**15.64**	**1 420.49**	**852.25**	**19.62**	**32.59**	**5 880.83**
A. Mineral Products	1 231.88	NO	NE				1 231.88
B. Chemical Industry	148.24	6.51	1 420.49				1 575.24
C. Metal Production	2 160.11	9.13	NO				2 169.25
D. Other Production	NO	0.00	0.00				0.00
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	NA	NA	NA				NA,
3. Solvent and Other Product Use	**52.12**		**40.31**				**92.43**
4. Agriculture		**1 703.90**	**3 612.04**				**5 315.95**
A. Enteric Fermentation		1 436.87					1 436.87
B. Manure Management		267.03	497.63				764.66
C. Rice Cultivation		NO					NO,
D. Agricultural Soils(3)		NE	3 114.42				3 114.42
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		NO,NE	NO,NE				NE,NO,
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**0.00**	**2 266.77**	**161.15**				**2 427.91**
A. Solid Waste Disposal on Land	0.00	2 073.39	0.00				2 073.39
B. Waste-water Handling		127.45	97.04				224.49
C. Waste Incineration	IE	IE	IE				IE,
D. Other	NE	65.92	64.11				130.03
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	77 071.15
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
FRANCE

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**395 912.14**	**56 256.13**	**63 970.24**	**12 901.40**	**1 841.51**	**1 278.26**	**532 159.69**
1. Energy	**374 429.54**	**4 263.12**	**3 878.93**				**382 571.59**
A. Fuel Combustion (Sectoral Approach)	370 273.40	2 341.75	3 829.14				376 444.29
1. Energy Industries	65 634.26	31.51	853.53				66 519.30
2. Manufacturing Industries and Construction	74 904.50	78.56	925.31				75 908.37
3. Transport	139 496.18	121.20	730.82				140 348.20
4. Other Sectors							
5. Other	90 238.47	2 110.48	1 319.48				93 668.42
B. Fugitive Emissions from Fuels	4 156.14	1 921.37	49.79				6 127.30
1. Solid Fuels	IE,NA,NO	35.47	NE				35.47
2. Oil and Natural Gas	4 156.14	1 885.90	NE				6 042.04
2. Industrial Processes	**18 688.31**	**2.44**	**4 174.94**	**12 901.40**	**1 841.51**	**1 278.26**	**38 886.85**
A. Mineral Products	13 242.22	NA	NE				13 242.22
B. Chemical Industry	1 733.71	0.36	4 174.94				5 909.01
C. Metal Production	3 712.28	2.08	NA				3 714.36
D. Other Production	0.10	0.00	0.00				0.10
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	NO	NO	NO				NO,
3. Solvent and Other Product Use	**1 239.84**		**82.21**				**1 322.05**
4. Agriculture		**41 671.76**	**54 437.29**				**96 109.04**
A. Enteric Fermentation		27 788.42					27 788.42
B. Manure Management		13 791.27	6 002.75				19 794.02
C. Rice Cultivation		92.07					92.07
D. Agricultural Soils(3)		NA	48 434.54				48 434.54
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		NO	NO				NO,
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**1 554.45**	**10 318.82**	**1 396.88**				**13 270.14**
A. Solid Waste Disposal on Land	0.00	8 754.95	0.00				8 754.95
B. Waste-water Handling		1 257.52	967.07				2 224.59
C. Waste Incineration	1 554.45	198.99	120.79				1 874.22
D. Other	NE	107.36	309.02				416.38
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	532 160
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
United Kingdom of Great Britain and Northern Ireland

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**541 766.97**	**48 625.29**	**38 623.80**	**9 469.53**	**296.21**	**878.35**	**639 660.17**
1. Energy	**524 269.38**	**9 893.78**	**8 941.14**				**543 104.29**
A. Fuel Combustion (Sectoral Approach)	519 680.66	1 094.38	8 902.45				529 677.49
1. Energy Industries	212 451.45	220.06	1 629.64				214 301.15
2. Manufacturing Industries and Construction	101 102.97	276.10	1 354.00				102 733.08
3. Transport	128 261.66	156.13	5 451.47				133 869.26
4. Other Sectors							
5. Other	77 864.58	442.08	467.34				78 774.00
B. Fugitive Emissions from Fuels	4 588.71	8 799.39	38.69				13 426.80
1. Solid Fuels	139.69	3 538.43	NE				3 678.13
2. Oil and Natural Gas	4 449.02	5 260.96	NE				9 709.98
2. Industrial Processes	**17 056.31**	**62.52**	**2 371.08**	**9 469.53**	**296.21**	**878.35**	**30 134.00**
A. Mineral Products	11 761.63	11.14	NE				11 772.77
B. Chemical Industry	3 110.26	37.97	2 363.72				5 511.95
C. Metal Production	2 184.43	13.40	7.36				2 205.18
D. Other Production	NO	0.00	0.00				0.00
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	NA	NA	NA				NA,
3. Solvent and Other Product Use	**IE.NE**		**IE.NO.NE**				**IE,NE,NO,**
4. Agriculture		**18 381.91**	**25 987.18**				**44 369.09**
A. Enteric Fermentation		15 893.63					15 893.63
B. Manure Management		2 488.28	1 382.93				3 871.21
C. Rice Cultivation		NA.NO					NA,NO,
D. Agricultural Soils(3)		NA.NE	24 604.24				24 604.24
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		NA.NO	NA.NO				NA,NO,
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**441.29**	**20 287.09**	**1 324.42**				**22 052.79**
A. Solid Waste Disposal on Land	0.00	19 456.42	0.00				19 456.42
B. Waste-water Handling		827.72	1 275.40				2 103.12
C. Waste Incineration	441.29	2.95	49.02				493.26
D. Other	NE	NA	NA				NA,NE,
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	639 660.17
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
GREECE

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**109 802.93**	**8 290.05**	**9 983.48**	**5 744.16**	**43.43**	**4.65**	**133 868.69**
1. Energy	**101 994.98**	**1 814.42**	**1 104.81**				**104 914.21**
A. Fuel Combustion (Sectoral Approach)	101 884.88	289.81	1 104.79				103 279.48
1. Energy Industries	57 352.36	18.42	191.92				57 562.70
2. Manufacturing Industries and Construction	9 549.45	10.55	123.85				9 683.85
3. Transport	24 405.03	197.21	613.42				25 215.67
4. Other Sectors							
5. Other	10 578.04	63.62	175.60				10 817.26
B. Fugitive Emissions from Fuels	110.09	1 524.61	0.03				1 634.73
1. Solid Fuels	101.13	1 382.55	NE				1 483.67
2. Oil and Natural Gas	8.97	142.06	NE				151.03
2. Industrial Processes	**7 655.71**	**0.74**	**436.94**	**5 744.16**	**43.43**	**4.65**	**13 885.62**
A. Mineral Products	7 112.49	NA.NO	NE				7 112.49
B. Chemical Industry	E.NA.NO.NE	0.74	436.94				437.67
C. Metal Production	543.22	NO.NE	NA				543.22
D. Other Production	NA	0.00	0.00				0.00
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	NO	NO	NO				NO,
3. Solvent and Other Product Use	**151.22**		**NA.NE**				**151.22**
4. Agriculture		**3 421.77**	**8 061.45**				**11 483.22**
A. Enteric Fermentation		2 805.78					2 805.78
B. Manure Management		483.67	288.19				771.86
C. Rice Cultivation		104.54					104.54
D. Agricultural Soils(3)		NO.NE	7 762.72				7 762.72
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		27.78	10.54				38.32
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**1.02**	**3 053.12**	**380.28**				**3 434.42**
A. Solid Waste Disposal on Land	0.00	2 534.00	0.00				2 534.00
B. Waste-water Handling		519.12	380.28				899.40
C. Waste Incineration	1.02	NO.NE	NO.NE				1.02
D. Other	NE	NO	NO				NE,NO,
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	133 868.69
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
HUNGARY

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**58 625.02**	**7 460.52**	**9 081.15**	**629.48**	**151.09**	**244.45**	**76 191.71**
1. Energy	**54 929.66**	**2 008.68**	**842.09**				**57 780.43**
A. Fuel Combustion (Sectoral Approach)	54 849.36	397.94	842.09				56 089.39
1. Energy Industries	20 421.68	14.59	207.62				20 643.89
2. Manufacturing Industries and Construction	8 649.74	64.42	137.17				8 851.33
3. Transport	12 727.64	29.20	403.78				13 160.63
4. Other Sectors							
5. Other	13 050.30	289.72	93.52				13 433.54
B. Fugitive Emissions from Fuels	80.30	1 610.74	E,NA,NE,NO				1 691.04
1. Solid Fuels	IE,NA,NO	22.67	NE				22.67
2. Oil and Natural Gas	80.30	1 588.08	NE				1 668.38
2. Industrial Processes	**3 393.87**	**12.94**	**1 532.90**	**629.48**	**151.09**	**244.45**	**5 964.72**
A. Mineral Products	2 447.77	IE.NA	NE				2 447.77
B. Chemical Industry	658.66	12.94	1 532.90				2 204.49
C. Metal Production	287.45	IE.NA.NO	NA				287.45
D. Other Production	NO	0.00	0.00				0.00
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	NO	NO	NO				NO,
3. Solvent and Other Product Use	**57.51**		**185.37**				**242.88**
4. Agriculture		**1 796.29**	**6 301.80**				**8 098.09**
A. Enteric Fermentation		1 391.67					1 391.67
B. Manure Management		394.49	943.94				1 338.43
C. Rice Cultivation		10.13					10.13
D. Agricultural Soils(3)		NA.NO	5 357.86				5 357.86
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		NA.NO	NA.NO				NA,NO,
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**243.98**	**3 642.61**	**219.00**				**4 105.59**
A. Solid Waste Disposal on Land	0.00	3 003.63	0.00				3 003.63
B. Waste-water Handling		638.98	195.89				834.87
C. Waste Incineration	243.98	NO	23.11				267.09
D. Other	NE	NA	NA				NA,NE,
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	76 191.71
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
IRELAND

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**44 824.72**	**12 689.46**	**8 797.09**	**506.45**	**264.55**	**94.98**	**67 177.27**
1. Energy	**42 206.97**	**206.37**	**1 217.08**				**43 630.42**
A. Fuel Combustion (Sectoral Approach)	42 146.63	104.35	1 217.08				43 468.06
1. Energy Industries	14 383.48	0.82	502.04				14 886.34
2. Manufacturing Industries and Construction	5 755.40	29.02	171.83				5 956.26
3. Transport	14 688.18	30.41	226.27				14 944.86
4. Other Sectors							
5. Other	7 319.57	44.10	316.93				7 680.61
B. Fugitive Emissions from Fuels	60.34	102.02	NE,NO				162.36
1. Solid Fuels	NO	NO	NE				NE,NO,
2. Oil and Natural Gas	60.34	102.02	NE				162.36
2. Industrial Processes	**2 539.74**	**0.00**	**0.00**	**506.45**	**264.55**	**94.98**	**3 405.73**
A. Mineral Products	2 539.74	NO.NE	NE				2 539.74
B. Chemical Industry	NO	NO	NO				NO,
C. Metal Production	NO	NO	NO				NO,
D. Other Production	NE	0.00	0.00				0.00
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	NO	NO	NO				NO,
3. Solvent and Other Product Use	**78.01**		**NA.NE**				**78.01**
4. Agriculture		**10 844.82**	**7 445.38**				**18 290.21**
A. Enteric Fermentation		8 706.17					8 706.17
B. Manure Management		2 138.66	398.50				2 537.16
C. Rice Cultivation		NO					NO,
D. Agricultural Soils(3)		NO.NE	7 046.88				7 046.88
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		NO	NO				NO,
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**0.00**	**1 638.27**	**134.64**				**1 772.90**
A. Solid Waste Disposal on Land	0.00	1 612.21	0.00				1 612.21
B. Waste-water Handling		26.05	134.64				160.69
C. Waste Incineration	NE	NO.NE	NO.NE				NE,NO,
D. Other	NE	NO	NO				NE,NO,
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	67 177.27
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
ITALY

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**480 817.77**	**38 244.49**	**39 806.82**	**5 932.24**	**282.41**	**590.89**	**565 674.61**
1. Energy	**451 255.68**	**6 718.76**	**7 997.54**				**465 971.98**
A. Fuel Combustion (Sectoral Approach)	449 076.45	1 396.19	7 996.17				458 468.81
1. Energy Industries	153 595.23	131.36	556.02				154 282.62
2. Manufacturing Industries and Construction	90 591.57	130.81	1 564.16				92 286.54
3. Transport	129 953.12	567.68	4 149.68				134 670.48
4. Other Sectors							
5. Other	74 936.53	566.34	1 726.30				77 229.17
B. Fugitive Emissions from Fuels	2 179.23	5 322.57	1.38				7 503.17
1. Solid Fuels	NA	53.79	NE				53.79
2. Oil and Natural Gas	2 179.23	5 268.78	NE				7 448.01
2. Industrial Processes	**28 057.16**	**61.25**	**7 023.02**	**5 932.24**	**282.41**	**590.89**	**41 946.97**
A. Mineral Products	24 619.96	NA	NE				24 619.96
B. Chemical Industry	1 307.98	6.79	7 023.02				8 337.79
C. Metal Production	2 129.23	54.47	NA				2 183.69
D. Other Production	NA	0.00	0.00				0.00
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	NA	NA	NA				NA,
3. Solvent and Other Product Use	**1 355.66**		**792.52**				**2 148.17**
4. Agriculture		**15 096.60**	**21 870.91**				**36 967.51**
A. Enteric Fermentation		10 622.16					10 622.16
B. Manure Management		3 030.58	3 780.03				6 810.61
C. Rice Cultivation		1 431.58					1 431.58
D. Agricultural Soils(3)		NA	18 087.02				18 087.02
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		12.28	3.86				16.13
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**149.27**	**16 367.88**	**2 122.83**				**18 639.98**
A. Solid Waste Disposal on Land	0.00	13 637.88	0.00				13 637.88
B. Waste-water Handling		2 423.20	1 994.65				4 417.86
C. Waste Incineration	149.27	302.34	128.18				579.79
D. Other	NE	4.45	NA				4.45
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	565 674.61
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
LITHUANIA

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**15 763.14**	**3 151.23**	**4 497.65**	**207.05**	**NA,NE,NO,**	**1.63**	**23 620.70**
1. Energy	**13 961.51**	**256.16**	**154.43**				**14 372.10**
A. Fuel Combustion (Sectoral Approach)	13 946.59	234.83	154.38				14 335.80
1. Energy Industries	4 909.89	9.94	41.02				4 960.85
2. Manufacturing Industries and Construction	1 565.15	5.76	16.23				1 587.15
3. Transport	5 406.26	37.96	72.12				5 516.34
4. Other Sectors							
5. Other	2 065.29	181.17	25.00				2 271.46
B. Fugitive Emissions from Fuels	14.92	21.34	0.04				36.30
1. Solid Fuels	NO	NO	NE				NE,NO,
2. Oil and Natural Gas	14.92	21.34	NE				36.25
2. Industrial Processes	**1 706.85**	**0.83**	**2 060.00**	**207.05**	**NA.NO**	**1.63**	**3 976.36**
A. Mineral Products	529.04	NA.NO.NE	NE				529.04
B. Chemical Industry	1 177.81	0.83	2 060.00				3 238.63
C. Metal Production	NO	NO	NO				NO,
D. Other Production	NE	0.00	0.00				0.00
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	NA	NA	NA				NA,
3. Solvent and Other Product Use	**90.85**		**NA.NE**				**90.85**
4. Agriculture		**1 418.66**	**2 208.30**				**3 626.96**
A. Enteric Fermentation		1 252.53					1 252.53
B. Manure Management		166.14	335.10				501.24
C. Rice Cultivation		NO					NO,
D. Agricultural Soils(3)		NA.NE	1 873.20				1 873.20
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		NO	NO				NO,
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**3.93**	**1 475.58**	**74.93**				**1 554.43**
A. Solid Waste Disposal on Land	0.00	949.79	0.00				949.79
B. Waste-water Handling		525.78	74.93				600.71
C. Waste Incineration	3.93	NE	NE				3.93
D. Other	NE	NA	NA				NA,NE,
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	23 620.70
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
LUXEMBOURG

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**11 997.52**	**472.21**	**664.38**	**87.04**	**NA,NE,NO,**	**3.93**	**13 225.08**
1. Energy	**11 334.32**	**90.88**	**286.23**				**11 711.43**
A. Fuel Combustion (Sectoral Approach)	11 334.32	31.45	286.23				11 652.00
1. Energy Industries	1 301.03	1.34	7.62				1 309.99
2. Manufacturing Industries and Construction	1 664.58	1.62	4.04				1 670.25
3. Transport	6 872.88	20.17	265.36				7 158.40
4. Other Sectors							
5. Other	1 495.83	8.32	9.21				1 513.36
B. Fugitive Emissions from Fuels	0.00	59.43	NA,NO				59.43
1. Solid Fuels	NO	NO	NE				NE,NO,
2. Oil and Natural Gas	0.00	59.43	NE				59.43
2. Industrial Processes	**653.85**	**0.00**	**0.00**	**87.04**	**NA.NO**	**3.93**	**744.82**
A. Mineral Products	479.95	NO	NE				479.95
B. Chemical Industry	NO	NO	NO				NO,
C. Metal Production	173.90	NA.NO	NA				173.90
D. Other Production	NO	0.00	0.00				0.00
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	NA	NA	NA				NA,
3. Solvent and Other Product Use	**9.35**		**5.74**				**15.09**
4. Agriculture		**353.44**	**356.47**				**709.91**
A. Enteric Fermentation		246.96					246.96
B. Manure Management		106.48	18.35				124.83
C. Rice Cultivation		NA.NO					NA,NO,
D. Agricultural Soils(3)		NA.NE	338.12				338.12
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		NO	NO				NO,
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**0.00**	**27.89**	**15.94**				**43.83**
A. Solid Waste Disposal on Land	0.00	19.77	0.00				19.77
B. Waste-water Handling		0.00	7.56				7.56
C. Waste Incineration	IE	IE	IE				IE,
D. Other	NE	8.11	8.38				16.49
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	13 225.08
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
LATVIA

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**8 401.87**	**1 734.32**	**1 578.05**	**26.70**	**NA,NE,NO,**	**7.39**	**11 748.33**
1. Energy	**8 139.06**	**376.02**	**170.62**				**8 685.70**
A. Fuel Combustion (Sectoral Approach)	8 139.06	278.77	170.62				8 588.45
1. Energy Industries	1 895.21	4.15	7.93				1 907.29
2. Manufacturing Industries and Construction	1 187.61	5.96	9.74				1 203.32
3. Transport	3 734.24	14.47	110.58				3 859.29
4. Other Sectors							
5. Other	1 321.99	254.19	42.37				1 618.55
B. Fugitive Emissions from Fuels	0.00	97.25	IE,NE,NO				97.25
1. Solid Fuels	NE,NO	NE,NO	NE				NE,NO,
2. Oil and Natural Gas	0.00	97.25	NE				97.25
2. Industrial Processes	**209.91**	**0.06**	**0.00**	**26.70**	**NA.NO**	**7.39**	**244.06**
A. Mineral Products	197.32	E.NA.NO.NE	NE				197.32
B. Chemical Industry	NO	NO	NO				NO,
C. Metal Production	12.58	0.06	NO				12.65
D. Other Production	NE	0.00	0.00				0.00
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	NA	NA	NA				NA,
3. Solvent and Other Product Use	**52.20**		**7.67**				**59.87**
4. Agriculture		**674.79**	**1 350.84**				**2 025.63**
A. Enteric Fermentation		591.01					591.01
B. Manure Management		83.79	157.86				241.64
C. Rice Cultivation		NO					NO,
D. Agricultural Soils(3)		NA	1 192.98				1 192.98
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		NA.NO.NE	NA.NO.NE				NA,NE,NO,
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**0.70**	**683.44**	**48.92**				**733.06**
A. Solid Waste Disposal on Land	0.00	514.00	0.00				514.00
B. Waste-water Handling		168.28	47.63				215.91
C. Waste Incineration	0.70	NO.NE	NO.NE				0.70
D. Other	NE	1.16	1.29				2.45
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	11 748.33
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
MALTA

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**2 656.12**	**437.69**	**20.84**	**NA,NE,NO,**	**NA,NE,NO,**	**NA,NE,NO,**	**3 114.65**
1. Energy	**2 653.53**	**2.73**	**5.42**				**2 661.68**
A. Fuel Combustion (Sectoral Approach)	2 653.53	2.73	5.42				2 661.68
1. Energy Industries	2 017.09	0.63	3.16				2 020.88
2. Manufacturing Industries and Construction	45.10	0.02	0.09				45.21
3. Transport	649.95	2.30	2.05				654.31
4. Other Sectors							
5. Other	-58.61	-0.22	0.11				-58.72
B. Fugitive Emissions from Fuels	0.00	0.00	NA				0.00
1. Solid Fuels	NA	NA	NE				NA,NE,
2. Oil and Natural Gas	0.00	0.00	NE				0.00
2. Industrial Processes	**2.50**	**0.00**	**0.00**	**NA,NE,NO**	**NA,NE,NO**	**NA,NE,NO**	**2.50**
A. Mineral Products		NO	NE				NA,NE,NO,
B. Chemical Industry	0.07	NA,NO	NO				0.07
C. Metal Production	NA,NO	NA,NO	NA				NA,NO,
D. Other Production	NA	0.00	0.00				0.00
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	2.44	NA	NA				2.44
3. Solvent and Other Product Use	**NA**		**NE**				**NA,NE,**
4. Agriculture		**58.92**	**2.50**				**61.42**
A. Enteric Fermentation		30.82					30.82
B. Manure Management		28.10	0.31				28.41
C. Rice Cultivation		NO					NO,
D. Agricultural Soils(3)		NA,NE	2.19				2.19
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		NO	NA,NO,NE				NA,NE,NO,
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**0.09**	**376.04**	**12.92**				**389.05**
A. Solid Waste Disposal on Land	0.00	373.11	0.00				373.11
B. Waste-water Handling		1.48	11.31				12.79
C. Waste Incineration	0.09	0.00	0.00				0.09
D. Other	NE	1.45	1.61				3.06
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	3 114.65
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
NETHERLANDS

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**171 150.34**	**14 149.07**	**16 586.92**	**1 671.35**	**481.39**	**215.08**	**204 254.16**
1. Energy	**163 694.00**	**1 272.42**	**740.25**				**165 706.67**
A. Fuel Combustion (Sectoral Approach)	162 178.14	580.32	740.25				163 498.72
1. Energy Industries	65 875.89	144.24	239.21				66 259.34
2. Manufacturing Industries and Construction	26 614.90	47.01	23.34				26 685.24
3. Transport	36 664.10	51.18	466.47				37 181.75
4. Other Sectors							
5. Other	33 023.25	337.89	11.24				33 372.38
B. Fugitive Emissions from Fuels	1 515.85	692.10	IE,NA,NO				2 207.95
1. Solid Fuels	449.32	22.72	NE				472.04
2. Oil and Natural Gas	1 066.53	669.37	NE				1 735.91
2. Industrial Processes	**7 343.65**	**308.73**	**6 065.61**	**1 671.35**	**481.39**	**215.08**	**16 085.81**
A. Mineral Products	1 278.95	NO	NE				1 278.95
B. Chemical Industry	3 677.81	271.73	6 059.03				10 008.57
C. Metal Production	2 044.22	IE.NA.NO	NO				2 044.22
D. Other Production	30.77	0.00	0.00				30.77
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	311.90	37.00	6.58				355.48
3. Solvent and Other Product Use	**112.70**		**56.47**				**169.18**
4. Agriculture		**7 132.92**	**9 315.41**				**16 448.33**
A. Enteric Fermentation		4 924.59					4 924.59
B. Manure Management		2 208.33	856.76				3 065.08
C. Rice Cultivation		NO					NO,
D. Agricultural Soils(3)		NO.NE	8 458.66				8 458.66
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		NO	NO				NO,
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**0.00**	**5 435.00**	**409.17**				**5 844.17**
A. Solid Waste Disposal on Land	0.00	5 202.46	0.00				5 202.46
B. Waste-water Handling		166.96	370.43				537.39
C. Waste Incineration	IE	IE	IE				IE,
D. Other	NE	65.58	38.74				104.32
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	204 254.16
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
POLAND

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**331 702.80**	**36 232.01**	**27 159.56**	**3 109.22**	**281.22**	**25.44**	**398 510.25**
1. Energy	**309 899.43**	**15 866.54**	**2 704.18**				**328 470.15**
A. Fuel Combustion (Sectoral Approach)	309 648.72	2 938.15	2 704.18				315 291.04
1. Energy Industries	186 054.15	60.59	851.71				186 966.45
2. Manufacturing Industries and Construction	32 453.76	77.73	210.04				32 741.53
3. Transport	40 607.30	125.00	1 221.09				41 953.39
4. Other Sectors							
5. Other	50 533.51	2 674.83	421.34				53 629.68
B. Fugitive Emissions from Fuels	250.71	12 928.39	NA,NE				13 179.10
1. Solid Fuels	1.34	8 584.81	NE				8 586.14
2. Oil and Natural Gas	249.38	4 343.59	NE				4 592.96
2. Industrial Processes	**20 899.18**	**376.36**	**4 552.98**	**3 109.22**	**281.22**	**25.44**	**29 244.41**
A. Mineral Products	10 655.27	NE	NE				10 655.27
B. Chemical Industry	4 182.64	264.90	4 552.98				9 000.52
C. Metal Production	4 727.24	111.46	NE				4 838.70
D. Other Production	0.02	0.00	0.00				0.02
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	1 334.01	NE	NE				1 334.01
3. Solvent and Other Product Use	**561.59**		**124.00**				**685.59**
4. Agriculture		**12 786.56**	**19 022.52**				**31 809.08**
A. Enteric Fermentation		9 183.39					9 183.39
B. Manure Management		3 579.45	5 322.35				8 901.80
C. Rice Cultivation		NA,NO					NA,NO,
D. Agricultural Soils(3)		NA,NE	13 685.91				13 685.91
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		23.72	14.26				37.98
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**342.59**	**7 202.54**	**755.88**				**8 301.02**
A. Solid Waste Disposal on Land	0.00	6 305.08	0.00				6 305.08
B. Waste-water Handling		897.46	726.71				1 624.17
C. Waste Incineration	342.59	NE	29.18				371.77
D. Other	NE	NE	NE				NE,
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	398 510
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
PORTUGAL

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**63 133.41**	**11 908.08**	**6 066.34**	**903.51**	**NA,NE,NO,**	**15.21**	**82 026.55**
1. Energy	**55 988.49**	**1 186.05**	**964.67**				**58 139.21**
A. Fuel Combustion (Sectoral Approach)	55 288.38	442.94	964.67				56 695.99
1. Energy Industries	19 354.53	6.27	98.10				19 458.89
2. Manufacturing Industries and Construction	10 483.89	59.64	95.35				10 638.89
3. Transport	18 999.20	54.72	580.86				19 634.78
4. Other Sectors							
5. Other	6 450.76	322.31	190.36				6 963.44
B. Fugitive Emissions from Fuels	700.11	743.11	NE,NO				1 443.22
1. Solid Fuels	IE,NO	IE,NO	NE				IE,NE,NO,
2. Oil and Natural Gas	700.11	743.11	NE				1 443.22
2. Industrial Processes	**6 665.71**	**13.94**	**626.96**	**903.51**	**NA.NO**	**15.21**	**8 225.34**
A. Mineral Products	4 518.21	1.97	NE				4 520.18
B. Chemical Industry	2 131.73	11.97	626.96				2 770.66
C. Metal Production	15.34	IE.NO	NO				15.34
D. Other Production	0.44	0.00	0.00				0.44
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	NO	NO	NO				NO,
3. Solvent and Other Product Use	**347.16**		**NO.NE**				**347.16**
4. Agriculture		**4 648.57**	**3 841.94**				**8 490.52**
A. Enteric Fermentation		3 069.19					3 069.19
B. Manure Management		1 190.74	590.20				1 780.94
C. Rice Cultivation		369.66					369.66
D. Agricultural Soils(3)		NO.NE	3 235.58				3 235.58
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		18.98	16.16				35.14
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**132.05**	**6 059.52**	**632.77**				**6 824.33**
A. Solid Waste Disposal on Land	0.06	4 222.30	1.50				4 223.86
B. Waste-water Handling		1 836.20	601.66				2 437.85
C. Waste Incineration	131.99	1.02	29.61				162.63
D. Other	NE	NA	NA				NA,NE,
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	82 026.55
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
ROMANIA

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**112 995.79**	**27 871.99**	**13 751.21**	**11.87**	**609.65**	**0.07**	**155 240.58**
1. Energy	**92 558.46**	**11 064.62**	**407.35**				**104 030.42**
A. Fuel Combustion (Sectoral Approach)	92 558.46	863.85	407.35				93 829.65
1. Energy Industries	48 788.11	20.07	163.74				48 971.92
2. Manufacturing Industries and Construction	19 302.97	33.90	48.76				19 385.63
3. Transport	13 551.33	42.30	34.79				13 628.42
4. Other Sectors							
5. Other	10 916.05	767.58	160.05				11 843.68
B. Fugitive Emissions from Fuels	0.00	10 200.77	NA,NE				10 200.77
1. Solid Fuels	NA,NE	2 433.24	NE				2 433.24
2. Oil and Natural Gas	0.00	7 767.53	NE				7 767.53
2. Industrial Processes	**19 912.71**	**22.88**	**2 437.25**	**11.87**	**609.65**	**0.07**	**22 994.42**
A. Mineral Products	9 420.53	NE	NE				9 420.53
B. Chemical Industry	1 783.72	22.88	2 437.25				4 243.85
C. Metal Production	8 708.46	NA,NE	NA				8 708.46
D. Other Production	NE	0.00	0.00				0.00
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	NE	NE	NE				NE,
3. Solvent and Other Product Use	**185.73**		**NE**				**185.73**
4. Agriculture		**7 560.05**	**10 175.82**				**17 735.88**
A. Enteric Fermentation		5 459.71					5 459.71
B. Manure Management		1 999.44	1 772.85				3 772.29
C. Rice Cultivation		23.52					23.52
D. Agricultural Soils(3)		NA,NE	8 372.26				8 372.26
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		77.38	30.72				108.10
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**338.89**	**9 224.43**	**730.80**				**10 294.12**
A. Solid Waste Disposal on Land	0.00	5 944.55	0.00				5 944.55
B. Waste-water Handling		3 279.89	730.80				4 010.68
C. Waste Incineration	338.89	NE	NE				338.89
D. Other	NE	NA	NA				NA,NE,
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	155 241
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
SWEDEN

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**51 747.56**	**5 524.26**	**7 538.93**	**932.62**	**225.75**	**103.93**	**66 073.05**
1. Energy	**47 177.39**	**390.48**	**1 470.90**				**49 038.77**
A. Fuel Combustion (Sectoral Approach)	46 432.06	384.95	1 467.57				48 284.58
1. Energy Industries	10 627.83	74.37	429.44				11 131.65
2. Manufacturing Industries and Construction	10 741.94	49.54	558.40				11 349.88
3. Transport	21 027.22	36.39	196.69				21 260.30
4. Other Sectors							
5. Other	4 035.06	224.65	283.04				4 542.76
B. Fugitive Emissions from Fuels	745.33	5.52	3.33				754.18
1. Solid Fuels	578.88	0.05	NE				578.93
2. Oil and Natural Gas	166.45	5.47	NE				171.92
2. Industrial Processes	**4 327.27**	**7.78**	**555.26**	**932.62**	**225.75**	**103.93**	**6 152.61**
A. Mineral Products	2 133.40	NA	NE				2 133.40
B. Chemical Industry	45.92	0.76	466.08				512.76
C. Metal Production	2 147.96	0.10	NA,NO				2 148.06
D. Other Production	NE	6.92	89.18				96.10
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	NA	NA	NA				NA,
3. Solvent and Other Product Use	**166.79**		**148.59**				**315.38**
4. Agriculture		**3 247.94**	**5 225.71**				**8 473.66**
A. Enteric Fermentation		2 777.24					2 777.24
B. Manure Management		470.70	493.96				964.66
C. Rice Cultivation		NO					NO,
D. Agricultural Soils(3)		NO	4 731.76				4 731.76
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		NO	NO				NO,
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**76.11**	**1 878.06**	**138.46**				**2 092.64**
A. Solid Waste Disposal on Land	0.00	1 878.06	0.00				1 878.06
B. Waste-water Handling		IE,NO,NE	138.46				138.46
C. Waste Incineration	76.11	NE	NE				76.11
D. Other	NE	NA	NA				NA,NE,
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	66 073.05
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
SLOVENIA

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**17 183.47**	**2 229.34**	**1 323.00**	**112.05**	**115.55**	**19.96**	**20 983.36**
1. Energy	**16 163.10**	**407.51**	**281.49**				**16 852.10**
A. Fuel Combustion (Sectoral Approach)	15 985.02	121.47	281.49				16 387.98
1. Energy Industries	6 578.87	1.94	28.07				6 608.88
2. Manufacturing Industries and Construction	2 440.33	6.99	31.38				2 478.71
3. Transport	4 799.69	20.80	178.49				4 998.98
4. Other Sectors							
5. Other	2 166.12	91.74	43.55				2 301.41
B. Fugitive Emissions from Fuels	178.08	286.04	NO				464.13
1. Solid Fuels	178.08	256.90	NE				434.98
2. Oil and Natural Gas	0.00	29.14	NE				29.14
2. Industrial Processes	**1 020.37**	**6.80**	**0.00**	**112.05**	**115.55**	**19.96**	**1 274.72**
A. Mineral Products	702.79	NA	NE				702.79
B. Chemical Industry	43.27	6.80	NA,NO				50.07
C. Metal Production	274.30	NA,NO	NA				274.30
D. Other Production	NA	0.00	0.00				0.00
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	NA	NA	NA				NA,
3. Solvent and Other Product Use	**NO,NE**		**39.91**				**39.91**
4. Agriculture		**1 139.35**	**938.94**				**2 078.29**
A. Enteric Fermentation		685.51					685.51
B. Manure Management		453.85	151.41				605.26
C. Rice Cultivation		NO					NO,
D. Agricultural Soils(3)		NO	787.53				787.53
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		NA,NO	NA,NO				NA,NO,
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**0.00**	**675.68**	**62.65**				**738.33**
A. Solid Waste Disposal on Land	0.00	503.14	0.00				503.14
B. Waste-water Handling		172.53	62.65				235.19
C. Waste Incineration	IE	IE,NO	IE,NO				IE,NO,
D. Other	NE	NA	NA				NA,NE,
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	20 983.36
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
SLOVAKIA

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**40 580.46**	**4 840.01**	**3 697.73**	**193.58**	**35.82**	**20.45**	**49 368.06**
1. Energy	**36 374.97**	**1 077.22**	**265.67**				**37 717.87**
A. Fuel Combustion (Sectoral Approach)	36 374.80	107.60	265.67				36 748.07
1. Energy Industries	10 284.96	4.79	27.08				10 316.83
2. Manufacturing Industries and Construction	13 323.89	29.13	48.44				13 401.47
3. Transport	6 212.77	25.54	189.10				6 427.42
4. Other Sectors							
5. Other	6 553.17	48.13	1.05				6 602.35
B. Fugitive Emissions from Fuels	0.17	969.63	NA,NE,NO				969.80
1. Solid Fuels	NA,NO	295.90	NE				295.90
2. Oil and Natural Gas	0.17	673.72	NE				673.90
2. Industrial Processes	**4 178.68**	**0.92**	**1 358.35**	**193.58**	**35.82**	**20.45**	**5 787.80**
A. Mineral Products	3 013.57	NA	NE				3 013.57
B. Chemical Industry	406.24	0.92	1 358.35				1 765.51
C. Metal Production	758.87	IE.NA.NO	NA				758.87
D. Other Production	NO	0.00	0.00				0.00
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	NA	NA	NA				NA,
3. Solvent and Other Product Use	**NA.NO.NE**		**75.42**				**75.42**
4. Agriculture		**1 056.21**	**1 957.75**				**3 013.96**
A. Enteric Fermentation		911.96					911.96
B. Manure Management		144.25	295.58				439.83
C. Rice Cultivation		NA.NO					NA,NO,
D. Agricultural Soils(3)		NO	1 662.17				1 662.17
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		NA.NO	NA.NO				NA,NO,
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**26.80**	**2 705.66**	**40.54**				**2 773.01**
A. Solid Waste Disposal on Land	0.00	2 065.85	0.00				2 065.85
B. Waste-water Handling		635.97	29.30				665.26
C. Waste Incineration	26.80	NO	6.98				33.78
D. Other	NE	3.85	4.27				8.12
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	49 368.06
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
EU-27

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**4 203 210.65**	**412 325.59**	**385 160.52**	**64 542.78**	**5 417.60**	**9 299.78**	**5 079 956.93**
1. Energy	**3 892 685.96**	**84 003.06**	**48 670.62**				**4 025 359.64**
A. Fuel Combustion (Sectoral Approach)	3 874 863.26	16 075.18	48 574.42				3 939 512.86
1. Energy Industries	1 580 605.16	1 338.66	12 447.60				1 594 391.42
2. Manufacturing Industries and Construction	679 984.34	1 395.73	7 431.97				688 812.04
3. Transport	992 473.88	2 136.21	21 713.53				1 016 323.61
4. Other Sectors							
5. Other	621 799.88	11 204.58	6 981.33				639 985.79
B. Fugitive Emissions from Fuels	17 822.71	67 927.88	96.20				85 846.78
1. Solid Fuels	1 573.38	28 934.43	NE				30 507.81
2. Oil and Natural Gas	16 249.32	38 993.45	NE				55 242.77
2. Industrial Processes	**300 357.81**	**1 170.32**	**47 848.14**	**64 542.78**	**5 417.60**	**9 299.78**	**428 636.44**
A. Mineral Products	159 598.21	18.35	NE				159 616.56
B. Chemical Industry	41 231.95	738.20	47 744.46				89 714.61
C. Metal Production	97 847.98	369.85	7.92				98 225.76
D. Other Production	31.32	6.92	89.18				127.42
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	1 648.35	37.00	6.58				1 691.93
3. Solvent and Other Product Use	**6 347.02**		**3 792.68**				**10 139.70**
4. Agriculture		**197 415.82**	**271 089.06**				**468 504.88**
A. Enteric Fermentation		142 556.60					142 556.60
B. Manure Management		52 560.55	32 445.34				85 005.89
C. Rice Cultivation		2 393.14					2 393.14
D. Agricultural Soils(3)		-621.34	238 505.67				237 884.33
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		526.86	138.05				664.91
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**3 819.87**	**129 736.39**	**13 760.01**				**147 316.26**
A. Solid Waste Disposal on Land	13.35	110 198.55	2.72				110 214.61
B. Waste-water Handling		17 408.12	12 369.07				29 777.19
C. Waste Incineration	3 806.52	505.85	463.02				4 775.39
D. Other	NE	1 623.87	925.20				2 549.06
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**-3 497.01**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	5 079 957
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.

SUMMARY 2 SUMMARY REPORT FOR CO2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Inventory 2007
Submission 2009 (Proxy) v1.0
EU-15

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO2 (1)	CH4	N2O	HFCs (2)	PFCs (2)	SF6 (2)	Total
	CO2 equivalent (Gg)						
Total (Net Emissions) (1)	**3 406 968.02**	**302 578.59**	**308 975.05**	**58 921.82**	**4 201.44**	**8 873.88**	**4 090 518.80**
1. Energy	**3 170 299.96**	**43 918.42**	**41 529.40**				**3 255 747.78**
A. Fuel Combustion (Sectoral Approach)	3 153 001.44	10 324.14	41 433.24				3 204 758.82
1. Energy Industries	1 189 129.73	1 188.60	9 912.58				1 200 230.91
2. Manufacturing Industries and Construction	562 246.40	1 093.33	6 780.49				570 120.22
3. Transport	870 591.32	1 740.49	18 693.51				891 025.32
4. Other Sectors							
5. Other	531 033.99	6 301.71	6 046.67				543 382.37
B. Fugitive Emissions from Fuels	17 298.52	33 594.28	96.16				50 988.95
1. Solid Fuels	1 393.96	10 941.79	NE				12 335.75
2. Oil and Natural Gas	15 904.56	22 652.49	NE				38 557.05
2. Industrial Processes	**229 072.32**	**622.05**	**34 002.95**	**58 921.82**	**4 201.44**	**8 873.88**	**335 694.46**
A. Mineral Products	123 889.22	13.11	NE				123 902.33
B. Chemical Industry	31 966.14	413.58	33 899.27				66 278.98
C. Metal Production	72 873.76	151.44	7.92				73 033.13
D. Other Production	31.30	6.92	89.18				127.40
E. Production of Halocarbons and SF6							
F. Consumption of Halocarbons and SF6 (2)							
G. Other	311.90	37.00	6.58				355.48
3. Solvent and Other Product Use	**5 093.44**		**3 101.01**				**8 194.45**
4. Agriculture		**165 501.18**	**219 029.44**				**384 530.62**
A. Enteric Fermentation		118 820.93					118 820.93
B. Manure Management		44 574.48	22 752.54				67 327.02
C. Rice Cultivation		2 327.08					2 327.08
D. Agricultural Soils(3)		-621.34	196 190.68				195 569.35
E. Prescribed Burning of Savannas		NE	NE				NE
F. Field Burning of Agricultural Residues		400.03	86.21				486.24
G. Other		NE	NE				NE
5. Land Use, Land-Use Change and Forestry(1)	**NE**	**NE**	**NE**				**NE**
A. Forest Land	NE	NE	NE				NE
B. Cropland	NE	NE	NE				NE
C. Grassland	NE	NE	NE				NE
D. Wetlands	NE	NE	NE				NE
E. Settlements	NE	NE	NE				NE
F. Other Land	NE	NE	NE				NE
G. Other	NE	NE	NE				NE
6. Waste	**2 502.30**	**92 536.94**	**11 312.25**				**106 351.49**
A. Solid Waste Disposal on Land	13.35	80 508.33	2.72				80 524.40
B. Waste-water Handling		9 961.68	10 104.37				20 066.05
C. Waste Incineration	2 488.95	505.85	349.48				3 344.28
D. Other	NE	1 561.08	855.68				2 416.77
7. Other (as specified in Summary 1.A)	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**

Memo Items: (4)							
International Bunkers	NE	NE	NE				NE
Aviation	NE	NE	NE				NE
Marine	NE	NE	NE				NE
Multilateral Operations	**NE**	**NE**	**NE**				**NE**
CO2 Emissions from Biomass	**NE**						**NE**

Total CO2 Equivalent Emissions without Land Use, Land-Use Change and Forestry	4 090 518.80
Total CO2 Equivalent Emissions with Land Use, Land-Use Change and Forestry	NE

(1) For CO2 from Land Use, Land-use Change and Forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(2) Actual emissions should be included in the national totals. If no actual emissions were reported, potential emissions should be included.

(3) Parties which previously reported CO2 from soils in the Agriculture sector should note this in the NIR.

(4) See footnote 8 to table Summary 1.A.