

# **Appendix 4**

## **Traded and Non-Traded DA GHG Emission Inventory Estimates**

**Table A4.1** England GHGI Traded and Non-Traded Emissions, 2008: *Emissions in kt CO<sub>2</sub> equivalent by amended IPCC sector*

NC Sector	"IPCC"	"IPCC" Sector / Source Name	GHGI	GHGI	Traded Sector	Non-Traded	Non-Traded	Non-Traded	Non-Traded
			All GHGs	CO <sub>2</sub> only	CO <sub>2</sub> only	All GHGs	CO <sub>2</sub> only	% CO <sub>2</sub>	% GHGs
Energy Supply	1A1a	Power stations	139,943	139,031	137,634	2,309	1,397	1%	2%
Energy Supply	1A1b	Refineries - combustion	10,251	10,163	11,560	88	0	0%	1%
Energy Supply	1A1c	Other Energy Industries: collieries, nuclear, SSF and town gas	123	122	0	123	122	100%	100%
Energy Supply	1A1c_Gas	Gas production	496	496	545	1	0	0%	0%
Energy Supply	1A1c_Oil & Gas	Oil & Gas sector, including 1B2c flaring & venting	1,490	1,376	1,172	317	204	15%	21%
Business	1A2a	Iron & Steel, includes 1A1c (coke), 2A3 (BOS, sinter) and 2C1	15,263	15,057	13,338	1,924	1,718	11%	13%
Business	1A2f	Other Industry Combustion	45,274	44,308	18,372	26,902	25,936	59%	59%
Business	1A2f_Cement	Cement industry, including combustion and process (2A1)	6,306	6,272	6,246	34	0	0%	1%
Business	1A2f_Lime	Lime industry, including combustion and process (2A2)	1,267	1,259	2,085	8	0	0%	1%
Transport	1A3	Transport: Aviation, road, rail, shipping, aviation support	104,721	103,433	0	104,721	103,433	100%	100%
Business	1A4a	Commercial sector combustion	10,110	10,072	187	9,922	9,885	98%	98%
Public	1A4a_public	Public sector combustion	8,621	8,592	1,145	7,476	7,448	87%	87%
Residential	1A4b	Residential combustion	64,004	63,613	0	64,004	63,613	100%	100%
Agriculture	1A4c	Agricultural combustion	2,777	2,479	147	2,630	2,332	94%	95%
Transport	1A5b	Military aviation and shipping	2,549	2,525	0	2,549	2,525	100%	100%
Energy Supply	1B	Coal mining, coke and SSF, oil & gas processes, gas leakage	6,440	220	0	6,440	220		100%
Industrial Process	2A3	Glass sector	377	377	361	15	15	4%	4%
Energy Supply	2A3_FGD	Power station FGD	386	386	391	0	0	0%	0%
Industrial Process	2A7	Brick manufacture	248	232	322	127	110	48%	51%
Industrial Process	2B	Chemical industry: ammonia, nitric acid, adipic acid, other	3,571	1,108	0	3,571	1,108	100%	100%
Agriculture	2B5_agric	Agrochemical use	33	33	0	33	33	100%	100%
Residential	2B5_residential	Household products	1,290	1,290	0	1,290	1,290	100%	100%
Business	2B5_business	Business sector process emissions	251	251	0	251	251	100%	100%
Industrial Process	2C3	Primary aluminium production	355	291	0	355	291	100%	100%
Industrial Process	2C4	Magnesium cover gas	107	0	0	107	0		100%
Industrial Process	2E	Halocarbon production	138	0	0	138	0		100%
Business	2F	Business F-gas uses	7,361	0	0	7,361	0		100%
Residential	2F4	Residential F-gas uses	2,526	0	0	2,526	0		100%
Industrial Process	3	Solvent	0	0	0	0	0		
Agriculture	4	Livestock enteric fermentation & wastes, soils and field burning	27,489	0	0	27,489	0		100%
Land Use Change	5	Land use change and forestry	2,990	2,972	0	2,990	2,972	100%	100%
Waste Management	6	Landfill waste, waste water, waste incineration	17,750	364	0	17,750	364		100%
<b>TOTAL</b>			<b>484,505</b>	<b>416,325</b>	<b>193,505</b>	<b>293,450</b>	<b>225,269</b>	<b>54.1%</b>	<b>60.6%</b>

**Table A4.2** Scotland GHGI Traded and Non-Traded Emissions, 2008: *Emissions in kt CO<sub>2</sub> equivalent by amended IPCC sector*

NC Sector	"IPCC"	"IPCC" Sector / Source Name	GHGI	GHGI	Traded Sector	Non-Traded	Non-Traded	Non-Traded	Non-Traded
			All GHGs	CO <sub>2</sub> only	CO <sub>2</sub> only	All GHGs	CO <sub>2</sub> only	% CO <sub>2</sub>	% GHGs
Energy Supply	1A1a	Power stations	14,384	14,283	14,199	185	85	1%	1%
Energy Supply	1A1b	Refineries - combustion	2,111	2,092	2,374	18	0	0%	1%
Energy Supply	1A1c	Other Energy Industries: collieries, nuclear, SSF and town gas	0	0	0	0	0		
Energy Supply	1A1c_Gas	Gas production	282	281	511	0	0	0%	0%
Energy Supply	1A1c_Oil & Gas	Oil & Gas sector, including 1B2c flaring & venting	1,990	1,924	1,973	67	0	0%	3%
Business	1A2a	Iron & Steel, includes 1A1c (coke), 2A3 (BOS, sinter) and 2C1	73	73	0	73	73	100%	100%
Business	1A2f	Other Industry Combustion	5,247	5,152	3,874	1,373	1,278	25%	26%
Business	1A2f_Cement	Cement industry, including combustion and process (2A1)	636	633	630	3	0	0%	1%
Business	1A2f_Lime	Lime industry, including combustion and process (2A2)	0	0	0	0	0		
Transport	1A3	Transport: Aviation, road, rail, shipping, aviation support	11,829	11,684	0	11,829	11,684	100%	100%
Business	1A4a	Commercial sector combustion	862	860	0	862	860	100%	100%
Public	1A4a_public	Public sector combustion	986	983	157	829	826	84%	84%
Residential	1A4b	Residential combustion	7,184	7,093	0	7,184	7,093	100%	100%
Agriculture	1A4c	Agricultural combustion	812	725	0	812	725	100%	100%
Transport	1A5b	Military aviation and shipping	245	242	0	245	242	100%	100%
Energy Supply	1B	Coal mining, coke and SSF, oil & gas processes, gas leakage	665	233	0	665	233		100%
Industrial Process	2A3	Glass sector	53	53	55	0	0	0%	0%
Energy Supply	2A3_FGD	Power station FGD	0	0	0	0	0		
Industrial Process	2A7	Brick manufacture	0	0	6	0	0		
Industrial Process	2B	Chemical industry: ammonia, nitric acid, adipic acid, other	16	0	0	16	0		
Agriculture	2B5_agric	Agrochemical use	3	3	0	3	3	100%	100%
Residential	2B5_residential	Household products	130	130	0	130	130	100%	100%
Business	2B5_business	Business sector process emissions	24	24	0	24	24	100%	100%
Industrial Process	2C3	Primary aluminium production	56	54	0	56	54	100%	100%
Industrial Process	2C4	Magnesium cover gas	0	0	0	0	0		
Industrial Process	2E	Halocarbon production	0	0	0	0	0		
Business	2F	Business F-gas uses	770	0	0	770	0		100%
Residential	2F4	Residential F-gas uses	254	0	0	254	0		100%
Industrial Process	3	Solvent	0	0	0	0	0		
Agriculture	4	Livestock enteric fermentation & wastes, soils and field burning	6,817	0	0	6,817	0		100%
Land Use Change	5	Land use change and forestry	-4,474	-4,485	0	-4,474	-4,485	100%	100%
Waste Management	6	Landfill waste, waste water, waste incineration	2,754	18	0	2,754	18		100%
<b>TOTAL</b>			<b>53,707</b>	<b>42,057</b>	<b>23,779</b>	<b>30,494</b>	<b>18,844</b>	<b>44.8%</b>	<b>56.8%</b>

**Table A4.3** Wales GHGI Traded and Non-Traded Emissions, 2008: *Emissions in kt CO<sub>2</sub> equivalent by amended IPCC sector*

NC Sector	"IPCC"	"IPCC" Sector / Source Name	GHGI	GHGI	Traded Sector	Non-Traded	Non-Traded	Non-Traded	Non-Traded
			All GHGs	CO <sub>2</sub> only	CO <sub>2</sub> only	All GHGs	CO <sub>2</sub> only	% CO <sub>2</sub>	% GHGs
Energy Supply	1A1a	Power stations	14,763	14,683	14,596	167	86	1%	1%
Energy Supply	1A1b	Refineries - combustion	2,992	2,966	3,331	26	0	0%	1%
Energy Supply	1A1c	Other Energy Industries: collieries, nuclear, SSF and town gas	2	2	0	2	2	100%	100%
Energy Supply	1A1c_Gas	Gas production	10	10	2	0	0	0%	0%
Energy Supply	1A1c_Oil & Gas	Oil & Gas sector, including 1B2c flaring & venting	49	48	48	2	0	0%	4%
Business	1A2a	Iron & Steel, includes 1A1c (coke), 2A3 (BOS, sinter) and 2C1	7,844	7,751	7,046	797	705	9%	10%
Business	1A2f	Other Industry Combustion	3,172	3,107	780	2,392	2,327	75%	75%
Business	1A2f_Cement	Cement industry, including combustion and process (2A1)	793	789	785	4	0	0%	1%
Business	1A2f_Lime	Lime industry, including combustion and process (2A2)	0	0	0	0	0		
Transport	1A3	Transport: Aviation, road, rail, shipping, aviation support	6,788	6,703	0	6,788	6,703	100%	100%
Business	1A4a	Commercial sector combustion	440	439	0	440	439	100%	100%
Public	1A4a_public	Public sector combustion	469	467	15	454	452	97%	97%
Residential	1A4b	Residential combustion	4,379	4,315	0	4,379	4,315	100%	100%
Agriculture	1A4c	Agricultural combustion	561	503	0	561	503	100%	100%
Transport	1A5b	Military aviation and shipping	108	106	0	108	106	100%	100%
Energy Supply	1B	Coal mining, coke and SSF, oil & gas processes, gas leakage	578	29	0	578	29	100%	100%
Industrial Process	2A3	Glass sector	17	17	9	7	7	45%	45%
Energy Supply	2A3_FGD	Power station FGD	0	0	0	0	0		
Industrial Process	2A7	Brick manufacture	0	0	1	0	0		
Industrial Process	2B	Chemical industry: ammonia, nitric acid, adipic acid, other	1	0	0	1	0		
Agriculture	2B5_agric	Agrochemical use	1	1	0	1	1	100%	100%
Residential	2B5_residential	Household products	75	75	0	75	75	100%	100%
Business	2B5_business	Business sector process emissions	11	11	0	11	11	100%	100%
Industrial Process	2C3	Primary aluminium production	211	158	0	211	158	100%	100%
Industrial Process	2C4	Magnesium cover gas	8	0	0	8	0		100%
Industrial Process	2E	Halocarbon production	0	0	0	0	0		
Business	2F	Business F-gas uses	356	0	0	356	0		100%
Residential	2F4	Residential F-gas uses	147	0	0	147	0		100%
Industrial Process	3	Solvent	0	0	0	0	0		
Agriculture	4	Livestock enteric fermentation & wastes, soils and field burning	4,656	0	0	4,656	0		100%
Land Use Change	5	Land use change and forestry	-193	-196	0	-193	-196	100%	100%
Waste Management	6	Landfill waste, waste water, waste incineration	1,289	13	0	1,289	13		100%
<b>TOTAL</b>			<b>49,526</b>	<b>41,996</b>	<b>26,614</b>	<b>23,267</b>	<b>15,737</b>	<b>37.5%</b>	<b>47.0%</b>

Note: This table presents estimates for non-traded emissions of CO<sub>2</sub>, and an estimate for total greenhouse gases. For power stations (1A1a), the non-traded emission of 167 kt CO<sub>2</sub> equivalent arises from non-CO<sub>2</sub> emissions, any small power stations that are not included under EUETS, and as a result of any remaining discrepancies between the EUETS fuel use total for the sector, and DUKES.

**Table A4.4 Northern Ireland GHGI Traded and Non-Traded Emissions, 2008: Emissions in kt CO<sub>2</sub> equivalent by amended IPCC sector**

NC Sector	"IPCC"	"IPCC" Sector / Source Name	GHGI	GHGI	Traded Sector	Non-Traded	Non-Traded	Non-Traded	Non-Traded
			All GHGs	CO <sub>2</sub> only	CO <sub>2</sub> only	All GHGs	CO <sub>2</sub> only	% CO <sub>2</sub>	% GHGs
Energy Supply	1A1a	Power stations	4,885	4,864	4,831	54	33	1%	1%
Energy Supply	1A1b	Refineries - combustion	0	0	0	0	0		
Energy Supply	1A1c	Other Energy Industries: collieries, nuclear, SSF and town gas	0	0	0	0	0		
Energy Supply	1A1c_Gas	Gas production	0	0	0	0	0		
Energy Supply	1A1c_Oil & Gas	Oil & Gas sector, including 1B2c flaring & venting	0	0	0	0	0		
Business	1A2a	Iron & Steel, includes 1A1c (coke), 2A3 (BOS, sinter) and 2C1	0	0	15	-15	-15		
Business	1A2f	Other Industry Combustion	1,261	1,223	370	891	853	70%	71%
Business	1A2f_Cement	Cement industry, including combustion and process (2A1)	604	601	598	3	0	0%	1%
Business	1A2f_Lime	Lime industry, including combustion and process (2A2)	0	0	0	0	0		
Transport	1A3	Transport: Aviation, road, rail, shipping, aviation support	5,108	5,050	0	5,108	5,050	100%	100%
Business	1A4a	Commercial sector combustion	177	177	0	177	177	100%	100%
Public	1A4a_public	Public sector combustion	153	152	44	108	108	71%	71%
Residential	1A4b	Residential combustion	3,885	3,800	0	3,885	3,800	100%	100%
Agriculture	1A4c	Agricultural combustion	486	433	0	486	433	100%	100%
Transport	1A5b	Military aviation and shipping	68	67	0	68	67	100%	100%
Energy Supply	1B	Coal mining, coke and SSF, oil & gas processes, gas leakage	0	0	0	0	0		
Industrial Process	2A3	Glass sector	13	13	9	4	4	29%	29%
Energy Supply	2A3_FGD	Power station FGD	0	0	0	0	0		
Industrial Process	2A7	Brick manufacture	0	0	0	0	0		
Industrial Process	2B	Chemical industry: ammonia, nitric acid, adipic acid, other	0	0	0	0	0		
Agriculture	2B5_agric	Agrochemical use	1	1	0	1	1	100%	100%
Residential	2B5_residential	Household products	45	45	0	45	45	100%	100%
Business	2B5_business	Business sector process emissions	7	7	0	7	7	100%	100%
Industrial Process	2C3	Primary aluminium production	0	0	0	0	0		
Industrial Process	2C4	Magnesium cover gas	0	0	0	0	0		
Industrial Process	2E	Halocarbon production	0	0	0	0	0		
Business	2F	Business F-gas uses	211	0	0	211	0		100%
Residential	2F4	Residential F-gas uses	87	0	0	87	0		100%
Industrial Process	3	Solvent	0	0	0	0	0		
Agriculture	4	Livestock enteric fermentation & wastes, soils and field burning	4,606	0	0	4,606	0		100%
Land Use Change	5	Land use change and forestry	-265	-266	0	-265	-266	100%	100%
Waste Management	6	Landfill waste, waste water, waste incineration	855	6	0	855	6		100%
<b>TOTAL</b>			<b>22,186</b>	<b>16,171</b>	<b>5,867</b>	<b>16,316</b>	<b>10,302</b>	<b>63.70%</b>	<b>73.5%</b>