ANNEX 1

Annex 1: Key sources

Methodology
IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories, Chapter 7 Methodological Choice and Recalculation

The Tier 1 method to identify *key source categories* assesses the impacts of various source categories on the level and, if possible, the trend, of the national emissions inventory. When the national inventory estimates are available for several years, it is *good practice* to assess the contribution of each source category to both the level and trend of the national inventory. If only a single year's inventory is available, only a Level Assessment can be performed.
The Tier 1 method to identify *key source categories* can be readily completed using a spreadsheet analysis.

Level Assessment – TIER 1

The contribution of each source category to the total national inventory level is calculated according to

Equation 7.1

Source Category Level Assessment = Source Category Estimate / Total Estimate
Lx,t = Ex,t / Et

Where:

Lx,t is the Level Assessment for source x in year t

Source Category Estimate (Ex,t) is the emission estimate of source category x in year t

Total Estimate (Et) is the total inventory estimate in year t

Trend Assessment - TIER 1

The contribution of each source category's trend to the trend in the total inventory can be assessed if more than one year of inventory data are available, according to

Equation 7.2:

Source Category Trend Assessment = (Source Category Level Assessment)□|
(Source Category Trend – Total Trend) |
*Tx,t = Lx,t *□| {[(Ex,t – EX,0) / Ex,t] – [(Et – E0) / Et]} |*

Where:

Tx,t is the contribution of the source category trend to the overall inventory trend, called the Trend Assessment. The Trend Assessment is always recorded as an

absolute value, i.e. a negative value is always recorded as the equivalent positive value.

Lx,t is the Level Assessment for source x in year t (derived in Equation 7.1)

Ex,t and Ex,0 are the emissions estimates of source category x in years t and 0, respectively
Et and E0 are the total inventory estimates in years t and 0, respectively

The Source Category Trend is the change in the source category emissions over time, computed by subtracting the base year (year 0) estimate for source category x from the current year (year t) estimate and dividing by the current year estimate.
The Total Trend is the change in the total inventory emissions over time, computed by subtracting the base year (year 0) estimate for the total inventory from the current year (year t) estimate and dividing by the current year estimate.

Table 1: GPG Table 7.A1 (Tier 1 approach) – KC analyze with LULUCF

rank	CRF				GHG emissions Gg CO2 eq		contribution to level		contribution	key category	
2012	#	Sector	Category	gas	1986	2012	1986	2012	to trend	2012	1986
1	5	LULUCF/ A. Forest land	1. Forest Land remaining Forest Land	CO2	2786.039	5899.778	0.1075	0.2104	0.1758	L,T	L
2	1A	1. a. Public Electricity and Heat Prod.	Solid Fuels	CO2	6154.518	5589.720	0.2375	0.1994	0.0650	L,T	L
3	1A	3.b. Road Transportation	Diesel Oil	CO2	632.950	4017.937	0.0244	0.1434	0.2032	L,T	L
4	1A	3.b. Road Transportation	Gasoline	CO2	1272.478	1621.673	0.0491	0.0579	0.0150	L,T	L
5	5	LULUCF/ C Grasland	2. Land converted to Grassland	CO2	757.937	958.120	0.0292	0.0342	0.0084	L,T	L
6	5	LULUCF/ A. Forest land	2. Land converted to Forest Land	CO2	837.923	837.923	0.0323	0.0299	0.0042	L,T	L
7	5	LULUCF/ E. Settlements	2. Land converted to Settlements	CO2	637.985	700.594	0.0246	0.0250	0.0006	L	
8	1A	4.b. Residential	Liquid Fuels	CO2	291.812	659.899	0.0113	0.0235	0.0210	L,T	L
9	1A	2f. Other	Gaseous Fuels	CO2	462.917	443.820	0.0179	0.0158	0.0035	L,T	L
10	1A	4.a. Commercial/Institutional	Liquid Fuels	CO2	95.153	381.970	0.0037	0.0136	0.0170	L,T	L
11	4	A. Enteric Fermentation	1. Non-Dairy Cattle	CH4	263.057	367.574	0.0101	0.0131	0.0051	L,T	L
12	4	D. Agricultural Soils	1. Direct Soil Emissions	N2O	435.343	362.898	0.0168	0.0129	0.0066	L,T	L
13	6	A. Solid Waste Disposal on Land	1. Managed Waste Disposal on Land	CH4	298.801	359.001	0.0115	0.0128	0.0022	L	L
14	1A	1. a. Public Electricity and Heat Prod.	Gaseous Fuels	CO2	94.037	332.799	0.0036	0.0119	0.0141	L,T	L
15	2	Industrial Processes	1. Cement Production	CO2	514.615	325.913	0.0199	0.0116	0.0141	L,T	L
16	5	LULUCF/ B. Cropland	2. Land converted to Cropland	CO2	252.906	282.865	0.0098	0.0101	0.0006	L	L
17	4	D. Agricultural Soils	3. Indirect Emissions	N2O	334.663	280.208	0.0129	0.0100	0.0050	L,T	L
18	1A	4.b. Residential	Gaseous Fuels	CO2	14.249	270.011	0.0005	0.0096	0.0155	L,T	
19	1A	2.f. Other	Liquid Fuels	CO2	955.051	246.616	0.0369	0.0088	0.0479	L,T	L
20	4	A. Enteric Fermentation	1. Dairy Cattle	CH4	383.587	241.653	0.0148	0.0086	0.0106	L,T	L
21	1B	Fugitive Emissions (1.Solid Fuels)	a. Coal Mining and Handling	CH4	358.906	240.788	0.0138	0.0086	0.0090	L,T	L
22	2	Industrial Processes	1. Refrigeration and AC Equipment	HFC		211.270	0.0000	0.0075	0.0129	L,T	
23	1A	4.b. Agriculture/Forestry	Liquid Fuels	CO2	428.364	209.119	0.0165	0.0075	0.0155	L,T	L
24	1A	2.d. Pulp, Paper and Print	Gaseous Fuels	CO2	292.430	205.330	0.0113	0.0073	0.0068	L,T	L
25	5	LULUCF/ B. Cropland	1. Cropland remaining Cropland	CO2	224.804	185.112	0.0087	0.0066	0.0035	L,T	L
26	5	LULUCF/ F. Other Land	2. Land converted to Other Land	CO2	151.406	172.276	0.0058	0.0061	0.0005	L	L
27	1A	2.a. Iron and Steel	Gaseous Fuels	CO2	344.280	166.464	0.0133	0.0059	0.0125	L,T	L
28	4	B. Manure Management	1. Non-Dairy Cattle	CH4	66.046	160.231	0.0025	0.0057	0.0054	L,T	
29	2	Industrial Processes	3. Limestone and Dolomite Use	CO2	47.390	160.118	0.0018	0.0057	0.0066	L,T	
30	4	B. Manure Management	1. Dairy Cattle	CH4	152.449	134.672	0.0059	0.0048	0.0018	L	L
31	4	B. Manure Management	13. Solid Storage and Dry Lot	N2O	267.309	126.880	0.0103	0.0045	0.0099	L,T	L

32	1A	4. Other Sectors	b. Residential	CH4	134.558	126.729	0.0052	0.0045	0.0011	L	L
33	1A	2.d. Pulp. Paper and Print	Solid Fuels	CO2	218.579	126.082	0.0084	0.0045	0.0067	L,T	L
34	2	Industrial Processes	3. Aluminium Production	CO2	89.402	121.649	0.0034	0.0043	0.0015	L	L
35	1A	2.f. Other	Solid Fuels	CO2	345.493	89.108	0.0133	0.0032	0.0173	L,T	L
36	4	B. Manure Management	8. Swine	CH4	228.267	87.523	0.0088	0.0031	0.0097	L,T	L
37	1B	Fugitive Emissions (1.Solid Fuels)	a. Coal Mining and Handling	CO2	120.238	78.622	0.0046	0.0028	0.0031	T	L
38	2	Industrial Processes	2. Lime Production	CO2	220.206	74.001	0.0085	0.0026	0.0100	T	L
39	3	Solvent and Other Product Use	D. 1. Use of N2O for Anaesthesia	N2O	81.903	60.760	0.0032	0.0022	0.0017		L
40	6	B. Waste Water Handling	2. Domestic and Commercial WW	N2O	58.858	60.446	0.0023	0.0022	0.0002		
41	1A	2.b. Non-Ferrous Metals	Gaseous Fuels	CO2	109.880	59.939	0.0042	0.0021	0.0036	T	L
42	1A	2.c. Chemicals	Gaseous Fuels	CO2	16.042	56.610	0.0006	0.0020	0.0024		
43	5	LULUCF/ D. Wetlands	2. Land converted to Wetlands	CO2	45.780	56.215	0.0018	0.0020	0.0004		
44	1A	3. Transport	b. Road Transportation	N2O	23.704	55.258	0.0009	0.0020	0.0018		
45	1A	2.e. Food Proc.. Beverages and Tob.	Gaseous Fuels	CO2	12.215	54.577	0.0005	0.0019	0.0025		
46	6	B. Waste Water Handling	2. Domestic and Commercial WW	CH4	117.014	51.144	0.0045	0.0018	0.0046	T	L
47	4	D. Agricultural Soils	2. Pasture. Range and Paddock Man.	N2O	23.871	50.451	0.0009	0.0018	0.0015		
48	2	Industrial Processes	1. Iron and Steel Production	CO2	40.149	46.177	0.0015	0.0016	0.0002		
49	1A	2.f. Other	Other Fuels	CO2	11.373	45.757	0.0004	0.0016	0.0020		
50	1A	3. Transport	c. Railways	CO2	68.182	37.471	0.0026	0.0013	0.0022		
51	1A	2.e. Food Proc.. Beverages and Tob	Liquid Fuels	CO2	220.264	32.827	0.0085	0.0012	0.0125	T	L
52	1A	4.a. Commercial/Institutional	Gaseous Fuels	CO2	19.687	29.268	0.0008	0.0010	0.0005		
53	1A	1. Energy Industries	a. Public Electricity and Heat Prod.	N2O	26.201	26.701	0.0010	0.0010	0.0001		
54	1A	2.b. Non-Ferrous Metals	Liquid Fuels	CO2	142.133	26.601	0.0055	0.0009	0.0077	T	L
55	1A	4. Other Sectors	b. Residential	N2O	20.760	26.116	0.0008	0.0009	0.0002		
56	2	Industrial Processes	3. Aluminium Production	PFC	276.291	25.704	0.0107	0.0009	0.0166	T	L
57	1A	4. Other Sectors	c. Agriculture/Forestry/Fisheries	N2O	49.388	25.018	0.0019	0.0009	0.0017		
58	1A	1. a. Public Electricity and Heat Prod.	Liquid Fuels	CO2	285.199	24.659	0.0110	0.0009	0.0173	T	L
59	1A	3.b. Road Transportation	LPG	CO2		24.188	0.0000	0.0009	0.0015		
60	1A	2.a. Iron and Steel	Solid Fuels	CO2	658.000	23.835	0.0254	0.0009	0.0419	T	L
61	1B	Fugitive Emissions	2.b. Natural Gas	CH4	43.441	21.624	0.0017	0.0008	0.0015		
62	1A	2.c. Chemicals	Liquid Fuels	CO2	60.922	21.404	0.0024	0.0008	0.0027		
63	4	A. Enteric Fermentation	3. Sheep	CH4	4.242	19.178	0.0002	0.0007	0.0009		
64	2	Industrial Processes	8. Electrical Equipment	SF6	10.241	17.062	0.0004	0.0006	0.0004		
65	5	LULUCF	B Cropland	N2O	13.994	13.895	0.0005	0.0005	0.0001		
66	1A	2. Manufacturing Ind. and Const.	f. Other	N2O	35.046	12.895	0.0014	0.0005	0.0015		
67	6	B. Waste Water Handling	1. Industrial Wastewater	CH4	19.916	12.318	0.0008	0.0004	0.0006		
68	2	Industrial Processes	5. Aluminium anode burn-off	CO2		10.331	0.0000	0.0004	0.0006		
69	2	Industrial Processes	7. Other (Glass Production)	CO2	4.528	10.226	0.0002	0.0004	0.0003		

70	4	A. Enteric Fermentation	8. Swine	CH4	18.788	9.327	0.0007	0.0003	0.0007		
71	4	B. Manure Management	12. Liquid Systems	N2O	6.191	8.635	0.0002	0.0003	0.0001		
72	4	A. Enteric Fermentation	6. Horses	CH4	5.498	8.570	0.0002	0.0003	0.0002		
73	1A	1. a. Public Electricity and Heat Prod.	Other Fuels	CO2		8.473	0.0000	0.0003	0.0005		
74	4	B. Manure Management	9. Poultry	CH4	16.446	7.927	0.0006	0.0003	0.0006		
75	5	LULUCF/ C Grasland	1. Grassland remaining Grassland	CO2	13.371	7.407	0.0005	0.0003	0.0004		
76	1A	3. Transport	b. Road Transportation	CH4	18.751	7.395	0.0007	0.0003	0.0008		
77	1A	2.a. Iron and Steel	Liquid Fuels	CO2	139.307	6.883	0.0054	0.0002	0.0088	T	L
78	1A	2.d. Pulp. Paper and Print	Liquid Fuels	CO2	138.548	5.639	0.0053	0.0002	0.0088	T	L
79	6	C. Waste Incineration	a. and b. waste incineration	CO2		5.406	0.0000	0.0002	0.0003		
80	1A	2.b. Non-Ferrous Metals	Solid Fuels	CO2	188.312	4.955	0.0073	0.0002	0.0121	T	L
81	5	LULUCF	A. Forest Land	CH4	0.000	4.908	0.0000	0.0002	0.0003		
82	1A	3. Transport	c. Railways	N2O	8.651	4.754	0.0003	0.0002	0.0003		
83	1A	1.c. Man. of Solid Fuels and Other EI	Gaseous Fuels	CO2	58.720	4.194	0.0023	0.0001	0.0036	T	
84	2	Industrial Processes	4. Aerosols and MDI	HFC		4.217	0.0000	0.0001	0.0003		
85	1A	5. Other	b. Mobile - Military use	CO2	41.093	3.351	0.0016	0.0001	0.0025		
86	4	A. Enteric Fermentation	4. Goats	CH4	1.050	2.767	0.0000	0.0001	0.0001		
87	1A	2. Manufacturing Ind. and Const.	f. Other	CH4	6.291	2.605	0.0002	0.0001	0.0003		
88	2	Industrial Processes	4. Soda Ash Production and Use	CO2	7.827	2.588	0.0003	0.0001	0.0004		
89	1A	1. Energy Industries	a. Public Electricity and Heat Prod.	CH4	1.595	2.436	0.0001	0.0001	0.0000		
90	2	Industrial Processes	2. Foam Blowing	HFC		1.855	0.0000	0.0001	0.0001		
91	1A	4.b. Residential	Solid Fuels	CO2	794.124	1.786	0.0306	0.0001	0.0522	T	L
92	1A	3. Transport	a. Civil Aviation	CO2	0.622	1.747	0.0000	0.0001	0.0001		
93	1A	3.b. Road Transportation	CNG	CO2		1.583	0.0000	0.0001	0.0001		
94	4	B. Manure Management	14. Other AWMS	N2O	2.644	1.535	0.0001	0.0001	0.0001		
95	1A	2. Manufacturing Ind. and Const.	d. Pulp. Paper and Print	N2O	1.383	1.364	0.0001	0.0000	0.0000		
96	2	Industrial Processes	3. Fire Extinguishers	HFC		1.291	0.0000	0.0000	0.0001		
97	2	Industrial Processes	4. Carbide Production	CO2	44.985	1.175	0.0017	0.0000	0.0029		
98	1A	3. Transport	e. Other Transportation	CO2		1.132	0.0000	0.0000	0.0001		
99	1A	1.c. Man. of Solid Fuels and Other EI	Liquid Fuels	CO2	5.392	1.127	0.0002	0.0000	0.0003		
100	1A	4. Other Sectors	a. Commercial/Institutional	CH4	15.279	1.088	0.0006	0.0000	0.0009		
101	1A	2. Manufacturing Ind. and Const.	d. Pulp. Paper and Print	CH4	1.060	0.911	0.0000	0.0000	0.0000		
102	5	LULUCF	A. Forest Land	N2O	0.000	0.885	0.0000	0.0000	0.0001		
103	1A	4. Other Sectors	a. Commercial/Institutional	N2O	5.087	0.877	0.0002	0.0000	0.0003		
104	1A	2. Manufacturing Ind. and Const.	c. Chemicals	N2O	0.248	0.766	0.0000	0.0000	0.0000		
105	4	B. Manure Management	6. Horses	CH4	0.428	0.667	0.0000	0.0000	0.0000		
106	1A	4. Other Sectors	c. Agriculture/Forestry/Fisheries	CH4	1.436	0.528	0.0001	0.0000	0.0001		
107	4	B. Manure Management	3. Sheep	CH4	0.101	0.455	0.0000	0.0000	0.0000		
108	1A	2. Manufacturing Ind. and Const.	c. Chemicals	CH4	0.107	0.410	0.0000	0.0000	0.0000		

109	1A	2. Manufacturing Ind. and Const.	a. Iron and Steel	CH4	2.057	0.370	0.0001	0.0000	0.0001		
110	1A	2. Manufacturing Ind. and Const.	a. Iron and Steel	N2O	3.270	0.285	0.0001	0.0000	0.0002		
111	1A	2. Manufacturing Ind. and Const.	2.e. Food Proc.. Beverages and Tob	N2O	0.615	0.250	0.0000	0.0000	0.0000		
112	1A	2. Manufacturing Ind. and Const.	b. Non-Ferrous Metals	N2O	1.252	0.176	0.0000	0.0000	0.0001		
113	1A	2. Manufacturing Ind. and Const.	b. Non-Ferrous Metals	CH4	0.691	0.143	0.0000	0.0000	0.0000		
114	1A	1. Energy Industries	c. Man. of Solid Fuels and Other EI	N2O	0.226	0.141	0.0000	0.0000	0.0000		
115	1A	2. Manufacturing Ind. and Const..	e. Food Proc.. Beverages and Tob.	CH4	0.178	0.138	0.0000	0.0000	0.0000		
116	4	B. Manure Management	4. Goats	CH4	0.025	0.066	0.0000	0.0000	0.0000		
117	1A	3. Transport	c. Railways	CH4	0.078	0.043	0.0000	0.0000	0.0000		
118	6	C. Waste Incineration	a. and b. waste incineration	N2O		0.031	0.0000	0.0000	0.0000		
119	1A	5. Other	b. Mobile - Military use	N2O	0.356	0.029	0.0000	0.0000	0.0000		
120	1A	3. Transport	a. Civil Aviation	N2O	0.005	0.015	0.0000	0.0000	0.0000		
121	1A	1. Energy Industries	c. Man. of Solid Fuels and Other EI	CH4	0.201	0.009	0.0000	0.0000	0.0000		
122	1B	Fugitive Emissions	2. b. Natural Gas	CO2	0.005	0.002	0.0000	0.0000	0.0000		
123	1A	3. Transport	e. Other Transportation	CH4		0.002	0.0000	0.0000	0.0000		
124	1A	5. Other	b. Mobile - Military use	CH4	0.012	0.001	0.0000	0.0000	0.0000		
125	1A	3. Transport	e. Other Transportation	N2O		0.001	0.0000	0.0000	0.0000		
126	1A	3. Transport	a. Civil Aviation	CH4	0.000	0.001	0.0000	0.0000	0.0000		
	2	Industrial Processes	5. Other (Methanol)	CH4	2.929	0.000	0.0001	0.0000			
	4	B. Manure Management	11. Anaerobic Lagoons	N2O	0.948	0.000	0.0000	0.0000			
	2	Industrial Processes	4. Carbide Production	CH4	0.783	0.000	0.0000	0.0000			
	1B	Fugitive Emissions	2.a. Oil	CH4	0.422	0.000	0.0000	0.0000			
	1A	1. Energy Industries	b. Petroleum Refining	CH4	0.094	0.000	0.0000	0.0000			
	1A	1. Energy Industries	b. Petroleum Refining	N2O	0.069	0.000	0.0000	0.0000			
	1A	4.a. Commercial/Institutional	Solid Fuels	CO2	497.271		0.0192	0.0000			L
	2	Industrial Processes	2. Ferroalloys Production	CO2	57.635		0.0022	0.0000			
	1A	1.b. Petroleum Refining	Gaseous Fuels	CO2	43.781		0.0017	0.0000			
	1A	1.c. Man. of Solid Fuels and Other EI	Solid Fuels	CO2	40.616		0.0016	0.0000			
	1A	2.c. Chemicals	Solid Fuels	CO2	20.545		0.0008	0.0000			
	1A	1.b. Petroleum Refining	Liquid Fuels	CO2	18.444		0.0007	0.0000			
	1A	2.e. Food Proc.. Beverages and Tob.	Solid Fuels	CO2	15.274		0.0006	0.0000			
	1A	2.c. Chemicals	Other Fuels	CO2	0.543		0.0000	0.0000			

Table 2: GPG Table 7.A1 (Tier 1 approach) – KC analyze w/o LULUCF

rank	CRF				GHG emissions Gg CO2 eq		contribution to level		contribution	key category	
2012	#	Sector	Category	gas	1986	2012	1986	2012	to trend	2012	1986
1	1A	1. a. Pub. Electricity and Heat Prod.	Solid Fuels	CO2	6154.518	5589.720	0.3048	0.2956	0.0172	L,T	L
2	1A	3.b. Road Transportation	Diesel Oil	CO2	632.950	4017.937	0.0313	0.2125	0.2993	L,T	L
3	1A	3.b. Road Transportation	Gasoline	CO2	1272.478	1621.673	0.0630	0.0858	0.0372	L,T	L
4	1A	4.b. Residential	Liquid Fuels	CO2	291.812	659.899	0.0144	0.0349	0.0337	L,T	L
5	1A	2.f. Other	Gaseous Fuels	CO2	462.917	443.820	0.0229	0.0235	0.0007	L	L
6	1A	4.a. Commercial/Institutional	Liquid Fuels	CO2	95.153	381.970	0.0047	0.0202	0.0256	L,T	L
7	4	A. Enteric Fermentation	1. Non-Dairy Cattle	CH4	263.057	367.574	0.0130	0.0194	0.0105	L,T	L
8	4	D. Agricultural Soils	1. Direct Soil Emissions	N2O	435.343	362.898	0.0216	0.0192	0.0041	L,T	L
9	6	A. Solid Waste Disposal on Land	1. Managed Waste Disposal on Land	CH4	298.801	359.001	0.0148	0.0190	0.0068	L,T	L
10	1A	1. a. Pub. Electricity and Heat Prod.	Gaseous Fuels	CO2	94.037	332.799	0.0047	0.0176	0.0214	L,T	L
11	2	Industrial Processes	A.1. Cement Production	CO2	514.615	325.913	0.0255	0.0172	0.0138	L,T	L
12	4	D. Agricultural Soils	3. Indirect Emissions	N2O	334.663	280.208	0.0166	0.0148	0.0030	L	L
13	1A	4.b. Residential	Gaseous Fuels	CO2	14.249	270.011	0.0007	0.0143	0.0224	L,T	
14	1A	2.f. Other	Liquid Fuels	CO2	955.051	246.616	0.0473	0.0130	0.0569	L,T	L
15	4	A. Enteric Fermentation	1. Dairy Cattle	CH4	383.587	241.653	0.0190	0.0128	0.0104	L,T	L
16	1B	Fugitive Emissions	a. Coal Mining and Handling	CH4	358.906	240.788	0.0178	0.0127	0.0085	L,T	L
17	2	Industrial Processes	F.1. Refrigeration and AC Equipment	HFC		211.270	0.0000	0.0112	0.0185	L,T	
18	1A	b. Agriculture/Forestry	Liquid Fuels	CO2	428.364	209.119	0.0212	0.0111	0.0169	L,T	L
19	1A	2.d. Pulp. Paper and Print	Gaseous Fuels	CO2	292.430	205.330	0.0145	0.0109	0.0061	L,T	L
20	1A	2.a. Iron and Steel	Gaseous Fuels	CO2	344.280	166.464	0.0170	0.0088	0.0137	L,T	L
21	4	B. Manure Management	1. Non-Dairy Cattle	CH4	66.046	160.231	0.0033	0.0085	0.0086	L,T	L
22	2	Industrial Processes	A.3. Limestone and Dolomite Use	CO2	47.390	160.118	0.0023	0.0085	0.0101	L,T	
23	4	B. Manure Management	1. Dairy Cattle	CH4	152.449	134.672	0.0075	0.0071	0.0008	L	L
24	4	B. Manure Management	13. Solid Storage and Dry Lot	N2O	267.309	126.880	0.0132	0.0067	0.0109	L,T	L
25	1A	4. Other Sectors	4.b. Residential	CH4	134.558	126.729	0.0067	0.0067	0.0000	L	L
26	1A	2.d. Pulp. Paper and Print	Solid Fuels	CO2	218.579	126.082	0.0108	0.0067	0.0069	L,T	L
27	2	Industrial Processes	C.3. Aluminium Production	CO2	89.402	121.649	0.0044	0.0064	0.0033	L,T	L
28	1A	f. Other	Solid Fuels	CO2	345.493	89.108	0.0171	0.0047	0.0206	L,T	L
29	4	B. Manure Management	8. Swine	CH4	228.267	87.523	0.0113	0.0046	0.0111	L,T	L
30	1B	Fugitive Emissions (1.Solid Fuels)	a. Coal Mining and Handling	CO2	120.238	78.622	0.0060	0.0042	0.0030	L	L
31	2	Industrial Processes	2. Lime Production	CO2	220.206	74.001	0.0109	0.0039	0.0116	L,T	L
32	3	Solvent and Other Product Use	D. 1. Use of N2O for Anaesthesia	N2O	81.903	60.760	0.0041	0.0032	0.0014	L	L
33	6	B. Waste Water Handling	2. Domestic and Commercial WW	N2O	58.858	60.446	0.0029	0.0032	0.0004	L	
34	1A	2.b. Non-Ferrous Metals	Gaseous Fuels	CO2	109.880	59.939	0.0054	0.0032	0.0038	L,T	L

35	1A	2.c. Chemicals	Gaseous Fuels	CO2	16.042	56.610	0.0008	0.0030	0.0036	T	
36	1A	3. Transport	b. Road Transportation	N2O	23.704	55.258	0.0012	0.0029	0.0029		
37	1A	2.e. Food Proc.. Beverages and Tob.	Gaseous Fuels	CO2	12.215	54.577	0.0006	0.0029	0.0038	T	
38	6	B. Waste Water Handling	2. Domestic and Commercial WW	CH4	117.014	51.144	0.0058	0.0027	0.0051	T	L
39	4	D. Agricultural Soils	2. Pasture. Range and Paddock Man.	N2O	23.871	50.451	0.0012	0.0027	0.0024		
40	2	Industrial Processes	C.1. Iron and Steel Production	CO2	40.149	46.177	0.0020	0.0024	0.0007		
41	1A	2.f. Other	Other Fuels	CO2	11.373	45.757	0.0006	0.0024	0.0031		
42	1A	3. Transport	c. Railways	CO2	68.182	37.471	0.0034	0.0020	0.0023		L
43	1A	2.e. Food Proc.. Beverages and Tob.	Liquid Fuels	CO2	220.264	32.827	0.0109	0.0017	0.0152	T	L
44	1A	4.a. Commercial/Institutional	Gaseous Fuels	CO2	19.687	29.268	0.0010	0.0015	0.0009		
45	1A	1. Energy Industries	a. Pub. Electricity and Heat Prod.	N2O	26.201	26.701	0.0013	0.0014	0.0002		
46	1A	b. Non-Ferrous Metals	Liquid Fuels	CO2	142.133	26.601	0.0070	0.0014	0.0094	T	L
47	1A	4. Other Sectors	b. Residential	N2O	20.760	26.116	0.0010	0.0014	0.0006		
48	2	Industrial Processes	3. Aluminium Production	PFC	276.291	25.704	0.0137	0.0014	0.0205	T	L
49	1A	4. Other Sectors	c. Agriculture/Forestry/Fisheries	N2O	49.388	25.018	0.0024	0.0013	0.0019		
50	1A	1. a. Pub. Electricity and Heat Prod.	Liquid Fuels	CO2	285.199	24.659	0.0141	0.0013	0.0213	T	L
51	1A	3.b. Road Transportation	LPG	CO2		24.188	0.0000	0.0013	0.0021		
52	1A	2.a. Iron and Steel	Solid Fuels	CO2	658.000	23.835	0.0326	0.0013	0.0520	T	L
53	1B	Fugitive Emissions	b. Natural Gas	CH4	43.441	21.624	0.0022	0.0011	0.0017		
54	1A	2.c. Chemicals	Liquid Fuels	CO2	60.922	21.404	0.0030	0.0011	0.0031		L
55	4	A. Enteric Fermentation	3. Sheep	CH4	4.242	19.178	0.0002	0.0010	0.0013		
56	2	Industrial Processes	F.8. Electrical Equipment	SF6	10.241	17.062	0.0005	0.0009	0.0006		
57	1A	2. Man. Industries and Const.	f. Other	N2O	35.046	12.895	0.0017	0.0007	0.0018		
58	6	B. Waste Water Handling	1. Industrial Wastewater	CH4	19.916	12.318	0.0010	0.0007	0.0006		
59	2	Industrial Processes	C.5. Aluminium anode burn-off	CO2		10.331	0.0000	0.0005	0.0009		
60	2	Industrial Processes	A.7. Other (Glass Production)	CO2	4.528	10.226	0.0002	0.0005	0.0005		
61	4	A. Enteric Fermentation	8. Swine	CH4	18.788	9.327	0.0009	0.0005	0.0007		
62	4	B. Manure Management	12. Liquid Systems	N2O	6.191	8.635	0.0003	0.0005	0.0002		
63	4	A. Enteric Fermentation	6. Horses	CH4	5.498	8.570	0.0003	0.0005	0.0003		
64	1A	1. a. Pub. Electricity and Heat Prod.	Other Fuels	CO2		8.473	0.0000	0.0004	0.0007		
65	4	B. Manure Management	9. Poultry	CH4	16.446	7.927	0.0008	0.0004	0.0007		
66	1A	3. Transport	b. Road Transportation	CH4	18.751	7.395	0.0009	0.0004	0.0009		
67	1A	2.a. Iron and Steel	Liquid Fuels	CO2	139.307	6.883	0.0069	0.0004	0.0109	T	L
68	1A	2.d. Pulp. Paper and Print	Liquid Fuels	CO2	138.548	5.639	0.0069	0.0003	0.0109	T	L
69	6	C. Waste Incineration	a. and b. waste incineration	CO2		5.406	0.0000	0.0003	0.0005		
70	1A	2.b. Non-Ferrous Metals	Solid Fuels	CO2	188.312	4.955	0.0093	0.0003	0.0150	T	L
71	1A	3. Transport	c. Railways	N2O	8.651	4.754	0.0004	0.0003	0.0003		
72	1A	1.c. Man of Solid Fuels and Other EI	Gaseous Fuels	CO2	58.720	4.194	0.0029	0.0002	0.0045	T	

73	2	Industrial Processes	F.4. Aerosols and MDI	HFC		4.217	0.0000	0.0002	0.0004		
74	1A	5. Other	b. Mobile - Military use	CO2	41.093	3.351	0.0020	0.0002	0.0031		
75	4	A. Enteric Fermentation	4. Goats	CH4	1.050	2.767	0.0001	0.0001	0.0002		
76	1A	2. Man. Industries and Const.	f. Other	CH4	6.291	2.605	0.0003	0.0001	0.0003		
77	2	Industrial Processes	4. Soda Ash Production and Use	CO2	7.827	2.588	0.0004	0.0001	0.0004		
78	1A	1. Energy Industries	a. Public Electricity and Heat Prod.	CH4	1.595	2.436	0.0001	0.0001	0.0001		
79	2	Industrial Processes	2. Foam Blowing	HFC		1.855	0.0000	0.0001	0.0002		
80	1A	4.b. Residential	Solid Fuels	CO2	794.124	1.786	0.0393	0.0001	0.0651	T	L
81	1A	3. Transport	a. Civil Aviation	CO2	0.622	1.747	0.0000	0.0001	0.0001		
82	1A	3.b. Road Transportation	CNG	CO2		1.583	0.0000	0.0001	0.0001		
83	4	B. Manure Management	14. Other AWMS	N2O	2.644	1.535	0.0001	0.0001	0.0001		
84	1A	2. Man. Industries and Const.	d. Pulp. Paper and Print	N2O	1.383	1.364	0.0001	0.0001	0.0000		
85	2	Industrial Processes	3. Fire Extinguishers	HFC		1.291	0.0000	0.0001	0.0001		
86	2	Industrial Processes	C.4. Carbide Production	CO2	44.985	1.175	0.0022	0.0001	0.0036	T	
87	1A	3. Transport	e. Other Transportation	CO2		1.132	0.0000	0.0001	0.0001		
88	1A	1.c. Man of Solid Fuels and Other EI	Liquid Fuels	CO2	5.392	1.127	0.0003	0.0001	0.0003		
89	1A	4. Other Sectors	a. Commercial/Institutional	CH4	15.279	1.088	0.0008	0.0001	0.0012		
90	1A	2. Man. Industries and Const.	d. Pulp. Paper and Print	CH4	1.060	0.911	0.0001	0.0000	0.0000		
91	1A	4. Other Sectors	a. Commercial/Institutional	N2O	5.087	0.877	0.0003	0.0000	0.0003		
92	1A	2. Man. Industries and Const.	c. Chemicals	N2O	0.248	0.766	0.0000	0.0000	0.0000		
93	4	B. Manure Management	6. Horses	CH4	0.428	0.667	0.0000	0.0000	0.0000		
94	1A	4. Other Sectors	c. Agriculture/Forestry/Fisheries	CH4	1.436	0.528	0.0001	0.0000	0.0001		
95	4	B. Manure Management	3. Sheep	CH4	0.101	0.455	0.0000	0.0000	0.0000		
96	1A	2. Man. Industries and Const.	c. Chemicals	CH4	0.107	0.410	0.0000	0.0000	0.0000		
97	1A	2. Man. Industries and Const.	a. Iron and Steel	CH4	2.057	0.370	0.0001	0.0000	0.0001		
98	1A	2. Man. Industries and Const.	a. Iron and Steel	N2O	3.270	0.285	0.0002	0.0000	0.0002		
99	1A	2. Man. Industries and Const.	e. Food Proc.. Beverages and Tob.	N2O	0.615	0.250	0.0000	0.0000	0.0000		
100	1A	2. Man. Industries and Const.	b. Non-Ferrous Metals	N2O	1.252	0.176	0.0001	0.0000	0.0001		
101	1A	2. Man. Industries and Const.	b. Non-Ferrous Metals	CH4	0.691	0.143	0.0000	0.0000	0.0000		
102	1A	1. Energy Industries	1.c. Man of Solid Fuels and Other EI	N2O	0.226	0.141	0.0000	0.0000	0.0000		
103	1A	2. Man. Industries and Const.	e. Food Proc.. Beverages and Tob.	CH4	0.178	0.138	0.0000	0.0000	0.0000		
104	4	B. Manure Management	4. Goats	CH4	0.025	0.066	0.0000	0.0000	0.0000		
105	1A	3. Transport	c. Railways	CH4	0.078	0.043	0.0000	0.0000	0.0000		
106	6	C. Waste Incineration	a. and b. waste incineration	N2O		0.031	0.0000	0.0000	0.0000		
107	1A	5. Other	b. Mobile - Military use	N2O	0.356	0.029	0.0000	0.0000	0.0000		
108	1A	3. Transport	a. Civil Aviation	N2O	0.005	0.015	0.0000	0.0000	0.0000		
109	1A	1. Energy Industries	1.c. Man of Solid Fuels and Other EI	CH4	0.201	0.009	0.0000	0.0000	0.0000		
110	1B	Fugitive Emissions	b. Natural Gas	CO2	0.005	0.002	0.0000	0.0000	0.0000		
111	1A	3. Transport	e. Other Transportation	CH4		0.002	0.0000	0.0000	0.0000		

112	1A	5. Other	b. Mobile - Military use	CH4	0.012	0.001	0.0000	0.0000	0.0000		
113	1A	3. Transport	e. Other Transportation	N2O		0.001	0.0000	0.0000	0.0000		
114	1A	3. Transport	a. Civil Aviation	CH4	0.000	0.001	0.0000	0.0000	0.0000		
115	2	Industrial Processes	5. Other (Methanol)	CH4	2.929	0.000	0.0001	0.0000			
116	4	B. Manure Management	11. Anaerobic Lagoons	N2O	0.948	0.000	0.0000	0.0000			
117	2	Industrial Processes	4. Carbide Production	CH4	0.783	0.000	0.0000	0.0000			
118	1B	Fugitive Emissions	a. Oil	CH4	0.422	0.000	0.0000	0.0000			
119	1A	1. Energy Industries	b. Petroleum Refining	CH4	0.094	0.000	0.0000	0.0000			
120	1A	1. Energy Industries	b. Petroleum Refining	N2O	0.069	0.000	0.0000	0.0000			
	1A	4.a. Commercial/Institutional	Solid Fuels	CO2	497.271		0.0246				L
	2	Industrial Processes	C.2. Ferroalloys Production	CO2	57.635		0.0029	0.0000			
	1A	1.b. Petroleum Refining	Gaseous Fuels	CO2	43.781		0.0022	0.0000			
	1A	1.c. Man of Solid Fuels and Other EI	Solid Fuels	CO2	40.616		0.0020	0.0000			