

Annex 3.1 Detailed data for estimating CH₄ and N₂O emissions from national and international aviation

The values of fuel consumption, emission factors and CH₄ and N₂O emissions for each cycle type of aircraft flight

National LTO

Source = Eurostat website

Aircraft traffic data by reporting country [avia_tf_acc]Fuel consumption (tonns fuel)

AIRCRAFT/TIME	Fuel consumption		LTO EFs			Fuel consumption (tons fuel)								
	kg fuel/LTO	source	kg CH ₄ /L TO	kg N ₂ O/L TO	source	2003	2004	2005	2006	2007	2008	2009	2010	2011
AIRBUS--A-321 ALL MODELS aircraft	960	2006 IPCC Vol2 Ch3 Table 3.6.9	0.14	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:
BOEING--727 ALL MODELS aircraft	1460	2006 IPCC Vol2 Ch3 Table 3.6.9	0.81	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:
BOEING--MD-87 aircraft	1010	2006 IPCC Vol2 Ch3 Table 3.6.9	0.19	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:

AIRCRAFT/TIME	Fuel consumption		LTO EFs			Fuel consumption (tons fuel)								
	kg fuel/LTO	source	kg CH ₄ /LTO	kg N ₂ O/LTO	source	2003	2004	2005	2006	2007	2008	2009	2010	2011
CANADAIR--CL-600 REGIONAL JET ALL MODELS aircraft	330	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.03	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	2	:	1	29	1	3
CANADAIR--CL-65 REGIONAL JET ALL MODELS aircraft	330	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.03	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:
LOCKHEED--L-1011 TRISTAR aircraft	2310	2006 IPCC Vol2 Ch3 Table 3.6.9	7.4	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:
OTHER AVROLINER aircraft	600	2006 IPCC Vol2 Ch3 Table 3.6.9	0.13	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	26	:	6	:	:	:	:	:
OTHERS aircraft						:	719	290	730	515	606	2,004	1,426	458
AEROSPATIALE--ATR-72 ALL MODELS aircraft	200	2006 IPCC Vol2 Ch3 Table 3.6.9	0.03	0.02	2006 IPCC Vol2 Ch3 Table 3.6.9	:	1	:	:	:	1	1,597	3,176	2,919
AIRBUS--A-340 ALL MODELS aircraft	2020	2006 IPCC Vol2 Ch3 Table 3.6.9	0.39	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:
BOEING--777 ALL MODELS aircraft	2560	2006 IPCC Vol2 Ch3 Table 3.6.9	0.07	0.3	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:

AIRCRAFT/TIME	Fuel consumption		LTO EFs			Fuel consumption (tons fuel)								
	kg fuel/LTO	source	kg CH ₄ /LTO	kg N ₂ O/LTO	source	2003	2004	2005	2006	2007	2008	2009	2010	2011
BOEING--MD-80 aircraft	1010	2006 IPCC Vol2 Ch3 Table 3.6.9	0.19	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	5	37	1	:	:	1
DORNIER--328 aircraft	280	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.03	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	1	:	12	:	:	:
DOUGLAS--DC-10 ALL MODELS aircraft	2310	2006 IPCC Vol2 Ch3 Table 3.6.9	0.24	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:
DOUGLAS--DC-8 ALL MODELS aircraft	1700	2006 IPCC Vol2 Ch3 Table 3.6.9	0.15	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:
OTHER ANTONOV aircraft						:	16	:	:	:	:	:	:	:
OTHER TUPOLEV aircraft	1890	2006 IPCC Vol2 Ch3 Table 3.6.9	1.32	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:
SAAB--340 aircraft	75.1	Emep/EEA GB 2009 Ch1A3a Annex excel file	0	0.02	2006 IPCC Vol2 Ch3 Table 3.6.9	:	3,445	2,004	391	162	:	166	2,832	71
AEROSPATIALE--AS-332 aircraft						:	:	:	:	:	:	:	2	:

AIRCRAFT/TIME	Fuel consumption		LTO EFs			Fuel consumption (tons fuel)								
	kg fuel/LTO	source	kg CH ₄ /LTO	kg N ₂ O/LTO	source	2003	2004	2005	2006	2007	2008	2009	2010	2011
AIRBUS--A-300 ALL MODELS aircraft	1720	2006 IPCC Vol2 Ch3 Table 3.6.9	0.12	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:
BOEING--MD-82 aircraft	1010	2006 IPCC Vol2 Ch3 Table 3.6.9	0.19	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	1	:	:	10	42	:	2	:
BRITTEN-NORMAN--BN-2 aircraft						:	:	:	:	3	8	194	:	:
FOKKER--50 aircraft	760	2006 IPCC Vol2 Ch3 Table 3.6.9	0.14	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:
TUPOLEV--TU-154 aircraft	1890	2006 IPCC Vol2 Ch3 Table 3.6.9	1.32	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:
AIRBUS--A-330 ALL MODELS aircraft	2230	2006 IPCC Vol2 Ch3 Table 3.6.9	0.13	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:
BAE-146 ALL MODELS aircraft	570	2006 IPCC Vol2 Ch3 Table 3.6.9	0.14	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	298	495	569	38	72	18	12	7
BAE-AVROLINER--RJ-100 aircraft	570	2006 IPCC Vol2 Ch3 Table 3.6.9	0.14	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:

AIRCRAFT/TIME	Fuel consumption		LTO EFs			Fuel consumption (tons fuel)								
	kg fuel/LTO	source	kg CH ₄ /LTO	kg N ₂ O/LTO	source	2003	2004	2005	2006	2007	2008	2009	2010	2011
BOEING--717 ALL MODELS aircraft	680	2006 IPCC Vol2 Ch3 Table 3.6.9	0.01	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:
BOEING--737 ALL MODELS aircraft	870	2006 IPCC Vol2 Ch3 Table 3.6.9	0.45	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	601	929	1,520	2,722	2,368	3,412	4,649	2,469
EMBRAER--120 aircraft	310	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.03	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	8
OTHER AEROSPATIALE aircraft	200	2006 IPCC Vol2 Ch3 Table 3.6.9	0.03	0.02	2006 IPCC Vol2 Ch3 Table 3.6.9	:	1,495	659	545	777	26	43	5,924	2,688
OTHER BRITTEN-NORMAN aircraft						:	:	:	:	:	:	:	:	2
OTHER DE HAVILLAND aircraft	200	2006 IPCC Vol2 Ch3 Table 3.6.9	0	0.02	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	3	1	:	:	2	:
OTHER DORNIER aircraft	280	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.03	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	1	:	:	:	:

AIRCRAFT/TIME	Fuel consumption		LTO EFs			Fuel consumption (tons fuel)								
	kg fuel/LTO	source	kg CH ₄ /LTO	kg N ₂ O/LTO	source	2003	2004	2005	2006	2007	2008	2009	2010	2011
OTHER SAAB aircraft	153	Emep/EEA GB 2009 Ch1A3a Annex excel file	0.03	0.02	2006 IPCC Vol2 Ch3 Table 3.6.9	:	163	80	40	:	:	:	202	89
AIRBUS--A-310 ALL MODELS aircraft	1510	2006 IPCC Vol2 Ch3 Table 3.6.9	0.63	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	4	109	61	30	3
BAE-AVROLINER--RJ-85 aircraft	600	2006 IPCC Vol2 Ch3 Table 3.6.9	0.13	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	2	166	:	:	:	:	
BOEING--MD-81 aircraft	1010	2006 IPCC Vol2 Ch3 Table 3.6.9	0.19	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	10	1	:	:	
BOEING--MD-83 aircraft	1010	2006 IPCC Vol2 Ch3 Table 3.6.9	0.19	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	1	5	1	1	
BOEING--MD-88 aircraft	1010	2006 IPCC Vol2 Ch3 Table 3.6.9	0.19	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	
EMBRAER--135 aircraft	310	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.03	2006 IPCC Vol2 Ch3 Table 3.6.9	:	1	:	:	:	3	:	1	

AIRCRAFT/TIME	Fuel consumption		LTO EFs			Fuel consumption (tons fuel)								
	kg fuel/LTO	source	kg CH ₄ /LTO	kg N ₂ O/LTO	source	2003	2004	2005	2006	2007	2008	2009	2010	2011
FOKKER--100 aircraft	760	2006 IPCC Vol2 Ch3 Table 3.6.9	0.14	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	125	174	491	524	160	294
FOKKER--70 aircraft	760	2006 IPCC Vol2 Ch3 Table 3.6.9	0.14	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	2	:	4	101	51	283	521
OTHER FOKKER aircraft	760	2006 IPCC Vol2 Ch3 Table 3.6.9	0.14	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	3	148	197	6	:	:	:
TUPOLEV--TU-134 aircraft	930	2006 IPCC Vol2 Ch3 Table 3.6.9	1.8	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:
AEROSPATIALE--ATR-42 ALL MODELS aircraft	200	2006 IPCC Vol2 Ch3 Table 3.6.9	0.03	0.02	2006 IPCC Vol2 Ch3 Table 3.6.9	:	9,683	12,813	13,034	14,005	14,378	15,594	8,823	9,014
AIRBUS--A-319 ALL MODELS aircraft	730	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	1	:	1	1	7	:	:	:
ANTONOV--AN-32 aircraft	138	Emep/EEA GB 2009 Ch1A3a Annex excel file	0.03	0.02	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:

AIRCRAFT/TIME	Fuel consumption		LTO EFs			Fuel consumption (tons fuel)								
	kg fuel/LTO	source	kg CH ₄ /LTO	kg N ₂ O/LTO	source	2003	2004	2005	2006	2007	2008	2009	2010	2011
BOEING--747 ALL MODELS aircraft	3510	2006 IPCC Vol2 Ch3 Table 3.6.9	0.27	0.4	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:
DE HAVILLAND CANADA DASH 8 ALL MODELS aircraft	200	2006 IPCC Vol2 Ch3 Table 3.6.9	0	0.02	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	1	1	:	1	:
EMBRAER--145 aircraft	310	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.03	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	24	:	:
OTHER AIRBUS aircraft	1333.75	average of Airbus aircrafts listed here	0.20	0.15	average of Airbus aircrafts listed here	:	:	:	:	:	:	:	:	:
SAAB--2000 aircraft	153	Emep/EEA GB 2009 Ch1A3a Annex excel file	0.03	0.02	2006 IPCC Vol2 Ch3 Table 3.6.9	:	3,341	4,126	3,482	5,237	4,793	5,412	4,076	2,712
BOEING--MD-90 aircraft	870	2006 IPCC Vol2 Ch3 Table 3.6.9	0.01	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:
DOUGLAS--DC-9 ALL MODELS aircraft	840	2006 IPCC Vol2 Ch3 Table 3.6.9	0.46	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	1	:	:	:	:

AIRCRAFT/TIME	Fuel consumption		LTO EFs			Fuel consumption (tons fuel)								
	kg fuel/LTO	source	kg CH ₄ /LTO	kg N ₂ O/LTO	source	2003	2004	2005	2006	2007	2008	2009	2010	2011
EMBRAER--170 aircraft	310	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.03	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:
OTHER BAE aircraft	570	2006 IPCC Vol2 Ch3 Table 3.6.9	0.14	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	185	9	206	73	79	32	4	9
OTHER BOEING aircraft	1435.33	average of Boeing aircrafts listed here	0.21	0.15	average of Boeing aircrafts listed here	:	:	2	1	:	2	:	:	:
OTHER CANADAIK aircraft	330	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.03	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	3	14	9	2	5	:
OTHER DOUGLAS aircraft	2310	2006 IPCC Vol2 Ch3 Table 3.6.9	0.24	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:
AIRBUS--A-318 ALL MODELS aircraft	730	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	3	467	2,952	2,679	2,418	1,896
AIRBUS--A-320 ALL MODELS aircraft	770	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	3	94	16	238	31	9	11

AIRCRAFT/TIME	Fuel consumption		LTO EFs			Fuel consumption (tons fuel)								
	kg fuel/LTO	source	kg CH ₄ /LTO	kg N ₂ O/LTO	source	2003	2004	2005	2006	2007	2008	2009	2010	2011
BOEING--757 ALL MODELS aircraft	1460	2006 IPCC Vol2 Ch3 Table 3.6.9	0.01	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	2	1	:	:
BOEING--767 ALL MODELS aircraft	1750	2006 IPCC Vol2 Ch3 Table 3.6.9	0.1	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:
BOEING--MD-11 aircraft	2310	2006 IPCC Vol2 Ch3 Table 3.6.9	0.24	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:
OTHER EMBRAER aircraft	310	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.03	2006 IPCC Vol2 Ch3 Table 3.6.9	:	3	:	:	:	:	:	:	1
OTHER LOCKHEED aircraft	2310	2006 IPCC Vol2 Ch3 Table 3.6.9	7.4	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	1	:	:	:	:	:	:	:
UNKNOWN aircraft						:	76	:	186	229	16	49	48	15
Total aircraft						:	20,056	21,417	21,261	24,700	26,330	31,924	34,085	23,191
Total fuel consumption LTO-national		t fuel					21,102	18,705	16,140	21,210	19,960	26,094	33,322	16,262
Total CH ₄ emissions LTO-national		Gg CH ₄					0.002	0.002	0.003	0.004	0.003	0.004	0.006	0.003
Total N ₂ O emissions LTO-national		Gg N ₂ O					0.002	0.002	0.002	0.002	0.002	0.003	0.003	0.002

AIRCRAFT/TIME	Fuel consumption		LTO EFs			Fuel consumption (tons fuel)								
	kg fuel/LTO	source	kg CH ₄ /LTO	kg N ₂ O/LTO	source	2003	2004	2005	2006	2007	2008	2009	2010	2011
IEF CH ₄ LTO-national		kg CH ₄ /t fuel					0.112	0.128	0.158	0.176	0.167	0.172	0.179	0.194
IEF N ₂ O LTO-national		kg N ₂ O/t fuel					0.096	0.097	0.103	0.103	0.104	0.106	0.104	0.107

The values of fuel consumption, emission factors and CH₄ and N₂O emissions for each cycle type of aircraft flight

International LTO

Source = Eurostat website

Aircraft traffic data by reporting country [avia_tf_acc]

AIRCRAFT/TIME	Fuel consumption		LTO EFs			Fuel consumption (tons fuel)								
	kg fuel/LTO	source	kg CH ₄ /LTO	kg N ₂ O/LTO	source	2003	2004	2005	2006	2007	2008	2009	2010	2011
AIRBUS--A-321 ALL MODELS aircraft	960	2006 IPCC Vol2 Ch3 Table 3.6.9	0.14	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	1,752	700	470	1,082	2,631	2,037	1,616	1,267
BOEING--727 ALL MODELS aircraft	1460	2006 IPCC Vol2 Ch3 Table 3.6.9	0.81	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	4	3	2	2	:	:	:
BOEING--MD-87 aircraft	1010	2006 IPCC Vol2 Ch3 Table 3.6.9	0.19	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	99	:	:	:	104	92	:	4
CANADAIR--CL-600 REGIONAL JET ALL MODELS aircraft	330	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.03	2006 IPCC Vol2 Ch3 Table 3.6.9	:	1,045	3,681	4,249	5,723	6,133	6,849	5,816	5,814
CANADAIR--CL-65 REGIONAL JET ALL MODELS aircraft	330	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.03	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:

AIRCRAFT/TIME	Fuel consumption		LTO EFs			Fuel consumption (tons fuel)								
	kg fuel/LTO	source	kg CH ₄ /LTO	kg N ₂ O/LTO	source	2003	2004	2005	2006	2007	2008	2009	2010	2011
LOCKHEED--L-1011 TRISTAR aircraft	2310	2006 IPCC Vol2 Ch3 Table 3.6.9	7.4	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:
OTHER AVROLINER aircraft	600	2006 IPCC Vol2 Ch3 Table 3.6.9	0.13	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	62	3	101	:	:	1	363	:
OTHERS aircraft						:	5,224	2,040	2,915	3,707	5,067	7,946	7,345	6,452
AEROSPATIALE--ATR-72 ALL MODELS aircraft	200	2006 IPCC Vol2 Ch3 Table 3.6.9	0.03	0.02	2006 IPCC Vol2 Ch3 Table 3.6.9	:	149	336	655	657	977	1,256	2,356	3,148
AIRBUS--A-340 ALL MODELS aircraft	2020	2006 IPCC Vol2 Ch3 Table 3.6.9	0.39	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	8	:	2	:	4	4
BOEING--777 ALL MODELS aircraft	2560	2006 IPCC Vol2 Ch3 Table 3.6.9	0.07	0.3	2006 IPCC Vol2 Ch3 Table 3.6.9	:	58	64	40	23	26	2	3	:
BOEING--MD-80 aircraft	1010	2006 IPCC Vol2 Ch3 Table 3.6.9	0.19	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	3,557	3,353	7,233	7,102	3,366	387	542	502
DORNIER--328 aircraft	280	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.03	2006 IPCC Vol2 Ch3 Table 3.6.9	:	10	:	5	4	31	6	16	11
DOUGLAS--DC-10 ALL MODELS aircraft	2310	2006 IPCC Vol2 Ch3 Table 3.6.9	0.24	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	8	:	9	:	:
DOUGLAS--DC-8 ALL MODELS aircraft	1700	2006 IPCC Vol2 Ch3 Table 3.6.9	0.15	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:

AIRCRAFT/TIME	Fuel consumption		LTO EFs			Fuel consumption (tons fuel)								
	kg fuel/LTO	source	kg CH ₄ /LTO	kg N ₂ O/LTO	source	2003	2004	2005	2006	2007	2008	2009	2010	2011
OTHER ANTONOV aircraft						:	611	536	566	78	:	5	:	36
OTHER TUPOLEV aircraft	1890	2006 IPCC Vol2 Ch3 Table 3.6.9	1.32	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	38	8	:	:	4	:	:	:
SAAB--340 aircraft	75.1	Emep/EEA GB 2009 Ch1A3a Annex excel file	0	0.02	2006 IPCC Vol2 Ch3 Table 3.6.9	:	6,107	4,900	2,481	2,374	8	104	604	513
AEROSPATIALE--AS-332 aircraft						:	:	:	:	2	:	:	7	:
AIRBUS--A-300 ALL MODELS aircraft	1720	2006 IPCC Vol2 Ch3 Table 3.6.9	0.12	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	8	3	2	:	4	:	:	:
BOEING--MD-82 aircraft	1010	2006 IPCC Vol2 Ch3 Table 3.6.9	0.19	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	28	22	7	1,371	566	310	410	2
BRITTEN-NORMAN--BN-2 aircraft						:	3	:	:	3	:	:	:	:
FOKKER--50 aircraft	760	2006 IPCC Vol2 Ch3 Table 3.6.9	0.14	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	2	3	:	:	:	4
TUPOLEV--TU-154 aircraft	1890	2006 IPCC Vol2 Ch3 Table 3.6.9	1.32	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	260	500	124	:	211	:	:	:
AIRBUS--A-330 ALL MODELS aircraft	2230	2006 IPCC Vol2 Ch3 Table 3.6.9	0.13	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	32	:	90	4	:	:	:	:

AIRCRAFT/TIME	Fuel consumption		LTO EFs			Fuel consumption (tons fuel)								
	kg fuel/LTO	source	kg CH ₄ /LTO	kg N ₂ O/LTO	source	2003	2004	2005	2006	2007	2008	2009	2010	2011
BAE-146 ALL MODELS aircraft	570	2006 IPCC Vol2 Ch3 Table 3.6.9	0.14	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	3,163	3,643	1,559	267	1,124	999	958	577
BAE-AVROLINER--RJ-100 aircraft	570	2006 IPCC Vol2 Ch3 Table 3.6.9	0.14	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	62	141	385	2,256	2,750	1,454	285	990
BOEING--717 ALL MODELS aircraft	680	2006 IPCC Vol2 Ch3 Table 3.6.9	0.01	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	232	468	1,028	65	:	:	:	:
BOEING--737 ALL MODELS aircraft	870	2006 IPCC Vol2 Ch3 Table 3.6.9	0.45	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	34,231	39,142	45,336	43,830	43,003	47,384	47,175	37,020
EMBRAER--120 aircraft	310	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.03	2006 IPCC Vol2 Ch3 Table 3.6.9	:	618	1,061	1,627	216	2,000	1,797	1,680	2,109
OTHER AEROSPATIALE aircraft	200	2006 IPCC Vol2 Ch3 Table 3.6.9	0.03	0.02	2006 IPCC Vol2 Ch3 Table 3.6.9	:	1,011	496	466	596	13	9	2,529	1,553
OTHER BRITTEN-NORMAN aircraft						:	:	:	:	:	:	:	:	:
OTHER DE HAVILLAND aircraft	200	2006 IPCC Vol2 Ch3 Table 3.6.9	0	0.02	2006 IPCC Vol2 Ch3 Table 3.6.9	:	10	:	12	21	4	862	476	56
OTHER DORNIER aircraft	280	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.03	2006 IPCC Vol2 Ch3 Table 3.6.9	:	5	:	4	3	18	65	4	3

AIRCRAFT/TIME	Fuel consumption		LTO EFs			Fuel consumption (tons fuel)								
	kg fuel/LTO	source	kg CH ₄ /LTO	kg N ₂ O/LTO	source	2003	2004	2005	2006	2007	2008	2009	2010	2011
OTHER SAAB aircraft	153	Emep/EEA GB 2009 Ch1A3a Annex excel file	0.03	0.02	2006 IPCC Vol2 Ch3 Table 3.6.9	:	2	:	:	:	:	:	352	146
AIRBUS--A-310 ALL MODELS aircraft	1510	2006 IPCC Vol2 Ch3 Table 3.6.9	0.63	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	17	:	20	1,180	2,802	95	794	751
BAE-AVROLINER--RJ-85 aircraft	600	2006 IPCC Vol2 Ch3 Table 3.6.9	0.13	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	13	521	834	38	60	78	25	30
BOEING--MD-81 aircraft	1010	2006 IPCC Vol2 Ch3 Table 3.6.9	0.19	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	1,334	1,394	26	1,667	31	52	:	8
BOEING--MD-83 aircraft	1010	2006 IPCC Vol2 Ch3 Table 3.6.9	0.19	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	78	4	15	67	190	296	470	159
BOEING--MD-88 aircraft	1010	2006 IPCC Vol2 Ch3 Table 3.6.9	0.19	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:
EMBRAER--135 aircraft	310	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.03	2006 IPCC Vol2 Ch3 Table 3.6.9	:	7	:	2	2	26	16	14	11
FOKKER--100 aircraft	760	2006 IPCC Vol2 Ch3 Table 3.6.9	0.14	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	124	1,647	3,368	4,075	3,708	4,060	2,196	2,205
FOKKER--70 aircraft	760	2006 IPCC Vol2 Ch3 Table 3.6.9	0.14	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	2,365	1,796	2,485	2,116	2,723	1,973	1,692	2,452

AIRCRAFT/TIME	Fuel consumption		LTO EFs			Fuel consumption (tons fuel)								
	kg fuel/LTO	source	kg CH ₄ /LTO	kg N ₂ O/LTO	source	2003	2004	2005	2006	2007	2008	2009	2010	2011
OTHER FOKKER aircraft	760	2006 IPCC Vol2 Ch3 Table 3.6.9	0.14	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	71	215	183	26	8	117	3
TUPOLEV--TU-134 aircraft	930	2006 IPCC Vol2 Ch3 Table 3.6.9	1.8	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	:	:
AEROSPATIALE--ATR-42 ALL MODELS aircraft	200	2006 IPCC Vol2 Ch3 Table 3.6.9	0.03	0.02	2006 IPCC Vol2 Ch3 Table 3.6.9	:	5,783	7,379	8,329	5,701	5,220	5,622	3,514	3,393
AIRBUS--A-319 ALL MODELS aircraft	730	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	2,411	5,487	7,475	7,251	9,459	9,756	13,080	8,116
ANTONOV--AN-32 aircraft	138	Emep/EEA GB 2009 Ch1A3a Annex excel file	0.03	0.02	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	:	:	:	2	:
BOEING--747 ALL MODELS aircraft	3510	2006 IPCC Vol2 Ch3 Table 3.6.9	0.27	0.4	2006 IPCC Vol2 Ch3 Table 3.6.9	:	39	12	1	4	4	7	4	2
DE HAVILLAND CANADA DASH 8 ALL MODELS aircraft	200	2006 IPCC Vol2 Ch3 Table 3.6.9	0	0.02	2006 IPCC Vol2 Ch3 Table 3.6.9	:	639	1,084	1,766	1,763	1,575	1,520	2,269	2,962
EMBRAER--145 aircraft	310	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.03	2006 IPCC Vol2 Ch3 Table 3.6.9	:	552	1,838	6,172	4,638	367	785	944	84

AIRCRAFT/TIME	Fuel consumption		LTO EFs			Fuel consumption (tons fuel)								
	kg fuel/LTO	source	kg CH ₄ /LTO	kg N ₂ O/LTO	source	2003	2004	2005	2006	2007	2008	2009	2010	2011
OTHER AIRBUS aircraft	1333.75	average of Airbus aircrafts listed here	0.20	0.15	average of Airbus aircrafts listed here	:	124	152	90	164	180	112	44	10
SAAB--2000 aircraft	153	Emep/EEA GB 2009 Ch1A3a Annex excel file	0.03	0.02	2006 IPCC Vol2 Ch3 Table 3.6.9	:	4,454	6,241	10,424	10,824	12,151	10,405	9,007	5,445
BOEING--MD-90 aircraft	870	2006 IPCC Vol2 Ch3 Table 3.6.9	0.01	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	18	:	:	:	2	:	:	:
DOUGLAS--DC-9 ALL MODELS aircraft	840	2006 IPCC Vol2 Ch3 Table 3.6.9	0.46	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	2	:	4	29	:	:	22	:
EMBRAER--170 aircraft	310	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.03	2006 IPCC Vol2 Ch3 Table 3.6.9	:	148	460	870	715	767	422	1,284	843
OTHER BAE aircraft	570	2006 IPCC Vol2 Ch3 Table 3.6.9	0.14	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	240	3	823	1,108	894	758	108	154
OTHER BOEING aircraft	1435.33	average of Boeing aircrafts listed here	0.21	0.15	average of Boeing aircrafts listed here	:	7	34	32	37	46	37	18	:
OTHER CANADAIR aircraft	330	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.03	2006 IPCC Vol2 Ch3 Table 3.6.9	:	593	547	927	784	565	391	108	57

AIRCRAFT/TIME	Fuel consumption		LTO EFs			Fuel consumption (tons fuel)								
	kg fuel/LTO	source	kg CH ₄ /LTO	kg N ₂ O/LTO	source	2003	2004	2005	2006	2007	2008	2009	2010	2011
OTHER DOUGLAS aircraft	2310	2006 IPCC Vol2 Ch3 Table 3.6.9	0.24	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	1	:	:	:	:	:	:	:
AIRBUS--A-318 ALL MODELS aircraft	730	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	617	1,642	8,205	12,125	11,126	12,077	8,520
AIRBUS--A-320 ALL MODELS aircraft	770	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	7,676	4,742	6,105	12,724	22,094	26,508	27,128	28,618
BOEING--757 ALL MODELS aircraft	1460	2006 IPCC Vol2 Ch3 Table 3.6.9	0.01	0.1	2006 IPCC Vol2 Ch3 Table 3.6.9	:	445	385	417	493	703	673	614	926
BOEING--767 ALL MODELS aircraft	1750	2006 IPCC Vol2 Ch3 Table 3.6.9	0.1	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	230	352	361	1,080	1,481	721	700	467
BOEING--MD-11 aircraft	2310	2006 IPCC Vol2 Ch3 Table 3.6.9	0.24	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	:	:	:	4	:	:	:	:
OTHER EMBRAER aircraft	310	2006 IPCC Vol2 Ch3 Table 3.6.9	0.06	0.03	2006 IPCC Vol2 Ch3 Table 3.6.9	:	625	874	409	616	88	357	1,240	1,772
OTHER LOCKHEED aircraft	2310	2006 IPCC Vol2 Ch3 Table 3.6.9	7.4	0.2	2006 IPCC Vol2 Ch3 Table 3.6.9	:	4	3	:	1	:	:	:	:
UNKNOWN aircraft						:	2,894	3,294	4,267	5,424	4,811	4,290	2,015	2,241
Total aircraft						:	89,200	100,038	126,421	140,290	150,142	151,642	152,027	129,440
Total fuel consumption LTO-international		t fuel					149,085	175,438	201,982	201,615	203,952	220,469	224,197	177,197

AIRCRAFT/TIME	Fuel consumption		LTO EFs			Fuel consumption (tons fuel)								
	kg fuel/LTO	source	kg CH ₄ /LTO	kg N ₂ O/LTO	source	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total CH ₄ emissions LTO-international		Gg CH ₄					0.031	0.059	0.076	0.075	0.092	0.096	0.120	0.080
Total N ₂ O emissions LTO-international		Gg N ₂ O					0.017	0.019	0.022	0.022	0.022	0.024	0.025	0.020
IEF CH ₄ LTO-national		kg CH ₄ /t fuel					0.211	0.335	0.374	0.374	0.450	0.435	0.534	0.453
IEF N ₂ O LTO-national		kg N ₂ O/t fuel					0.111	0.111	0.111	0.111	0.110	0.111	0.110	0.110