

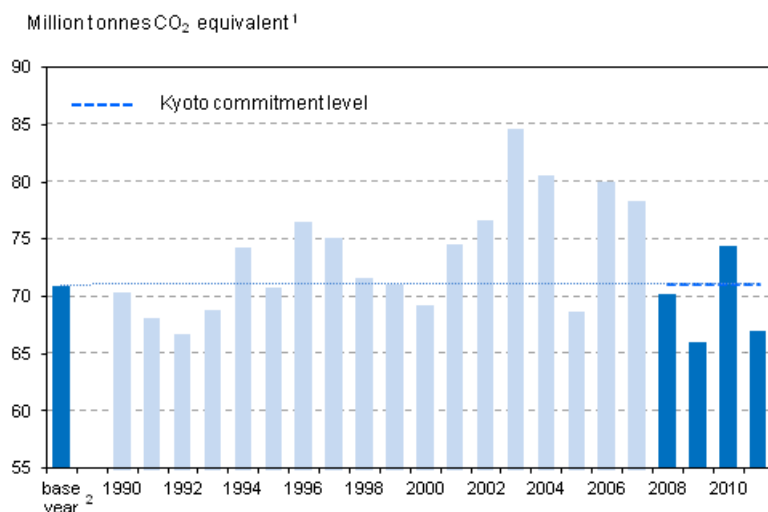
Greenhouse gases

2011

Greenhouse gas emissions in 2011

In 2011, Finland's greenhouse gas emissions amounted to 67.0 million tonnes of carbon dioxide (CO₂ eq.). They declined by a total of 7.5 million carbon dioxide tonnes from the year before, falling below the commitment level of the Kyoto Protocol by around six per cent. The data are based on the report delivered by Statistics Finland to the United Nations Framework Convention on Climate Change (UNFCCC) on 15 April 2013 concerning emissions in 2011. Compared to the preliminary data released in December 2012, the emissions were 0.2 million tonnes of carbon dioxide higher, which was mainly caused by revised figures of peat use in the energy sector.

Commitment level of the Kyoto Protocol and Finland's greenhouse gas emissions in 1990-2011 (million tonnes of CO₂ eq.), excluding LULUCF sector



¹ CO₂ equivalent describes the warming effect of various gases in relation to CO₂, e.g. 1 t of N₂O is equivalent to 310 t of CO₂

² Finland's base year under the Kyoto Protocol is 1990, except for the so-called F-gases (HFC, PFC and SF₆) 1995. Finland's Kyoto commitment for 2008-2012 is estimated and fixed based on the reviewed base year inventory in the initial inventory submission under the Protocol

The emissions decreased in all sectors compared to the previous year; the largest drop was seen in the energy sector 12 per cent (nearly 7.2 million tonnes of carbon dioxide). Fossil fuels in the production of

electricity were replaced with electricity imports due to a good water situation in the Nordic countries. In addition, overall energy consumption decreased due to fallen manufacturing output and the mild weather towards the end of 2011. A majority of the emission decrease materialised in the emissions trading sector.

Net sinks in the Land use, Land-use Change and Forestry sector (LULUCF) remained at previous year's level (24.6 million tonnes of carbon dioxide).

Greenhouse gas emissions in Finland by sector. Emissions as amounts corresponding to million tonnes of carbon dioxide. Negative figures are removals

		1990	1995	2000	2005	2006	2007	2008	2009	2010	2011
Emissions excl. LULUCF sector		70.44	70.88	69.33	68.75	80.08	78.42	70.21	66.05	74.54	67.02
	Energy sector	54.49	56.06	54.46	54.04	65.38	63.29	54.76	52.68	60.55	53.38
	Energy industries	19.19	24.12	22.12	21.92	32.87	30.80	24.09	25.13	30.49	24.63
	Manufacturing industries and construction	13.36	12.14	11.94	11.34	11.61	11.43	10.77	8.39	9.89	9.67
	Transport	12.76	11.99	12.84	13.71	13.90	14.26	13.60	12.92	13.43	13.23
	Other energy ¹⁾	9.19	7.81	7.56	7.07	6.99	6.79	6.30	6.24	6.74	5.86
	Industrial processes	5.13	4.70	5.58	6.37	6.30	6.83	7.17	5.35	5.77	5.59
	Industrial processes (excl. F-gases)	5.02	4.60	5.01	5.44	5.47	5.87	6.11	4.40	4.57	4.52
	Consumption of F-gases	0.12	0.10	0.57	0.94	0.83	0.96	1.06	0.95	1.20	1.06
	Solvents and other products use	0.18	0.14	0.12	0.11	0.10	0.10	0.09	0.07	0.07	0.07
	Agriculture	6.66	6.07	5.89	5.83	5.83	5.83	5.92	5.76	5.95	5.87
	Waste management	3.97	3.91	3.27	2.40	2.47	2.38	2.28	2.19	2.19	2.11
LLULUCF sector		-15.16	-14.14	-20.45	-29.94	-33.93	-25.71	-29.64	-39.27	-24.62	-24.58

1) Other energy includes subcategories heating of buildings, other fuel use in agriculture, forestry and fisheries, other fuel use and fugitive emissions from fuels

The monitoring under the Effort Sharing Decision of the EU's Climate and Energy Package will in future require emissions data to be broken down to emissions within and outside the emissions trading sector. The Effort Sharing Decision sets binding targets for emission reductions from the 2005 levels in the non-emissions trading sector during 2013-2020. The reduction target for Finland is 16 per cent by 2020. Between 2013 and 2020 the emissions must be on the so-called target path or below it. The path is linear and its starting point is the average of emissions from non-emissions trading sector sources in 2008-2010 and its final point is the target for emissions reduction by 2020. Emissions from non-emissions trading sector are calculated as the difference between reviewed total emissions and verified emissions of the emissions trading sector. The data on the verified emissions of the emissions trading sector are published by the Energy Market Authority.

Greenhouse gas emissions and removals broken down between emissions trading scheme sources and non-emissions trading scheme sources in 2005 and 2008-2011 (million tonnes CO2 eq.). LULUCF sector does not come under the scope of the emissions trading scheme or the reduction targets of the effort sharing decision

	2005	2008	2009	2010	2011	Change, 2010 - 2011
Total excl. LULUCF sector	68.7	70.2	66.0	74.5	67.0	-7.5
Emissions trading sector ¹⁾	33.1	36.2	34.4	41.3	35.1	-6.2
Non-emissions trading sector	35.6	34.0	31.7	33.2	31.9	-1.3
LULUCF sector	-29.9	-29.6	-39.3	-24.6	-24.6	0.05

1) Figures from Energy Market Authority

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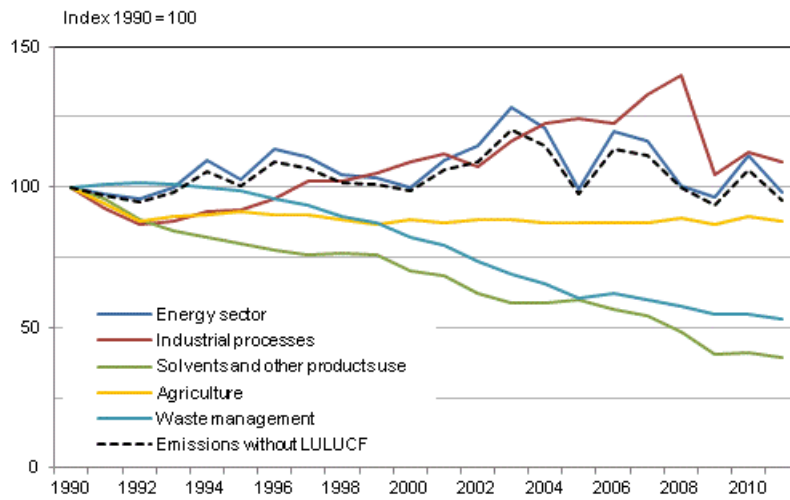
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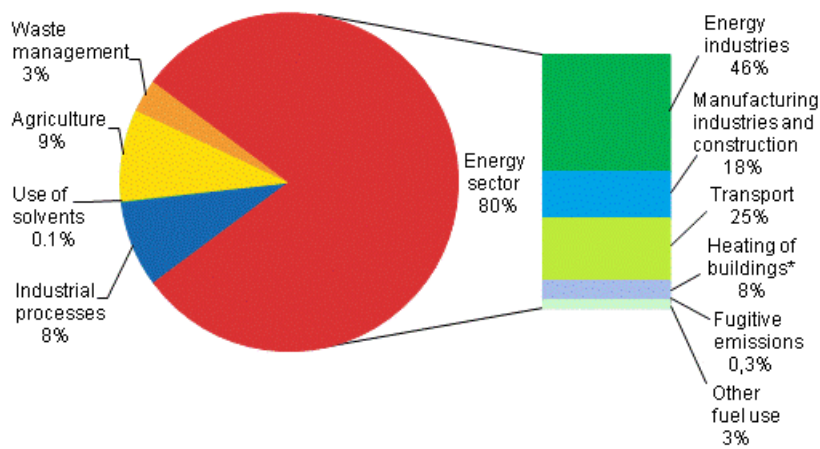
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Appendix figures

Appendix figure 1. Development of greenhouse gas emissions by sector in Finland in 1990-2011



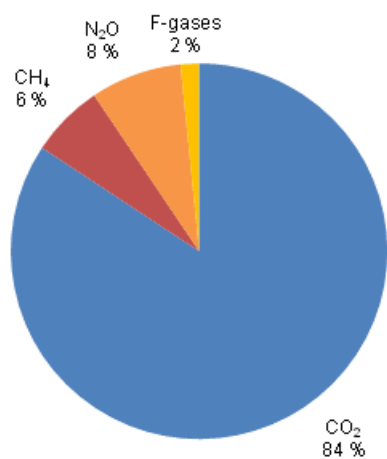
Appendix figure 2. Greenhouse gas emissions in Finland by sector in 2011



* includes also emissions from machines used in agriculture and forestry and from fishing boats

Figure corrected on 15 April, 2013 at 10.30.

Appendix figure 3. Greenhouse gas emissions in Finland by gas in 2011



Revisions in these statistics

Revision of the greenhouse gas emissions in Finland. Emissions as amounts corresponding to million tonnes of carbon dioxide

	Statistical year ⁴⁾	First release			Previous release	Latest release ⁵⁾	Revision ³⁾
		Flash estimate ¹⁾	Preliminary data	Official data ²⁾	13.12.2012	15.4.2013	%
Total emissions	1990			71.1	70.4	70.4	-0.9
	2005		69.3	69.3	68.7	68.7	-0.7
	2008		70.1	70.1	70.2	70.2	0.1
	2009	68.6	66.4	66.3	66.1	66.1	-0.4
	2010	76.0	74.6	74.6	74.5	74.5	0.0
	2011	67.3	66.8	60.7	66.8	67.0	
Non-emissions trading sector	2005			36.2	35.6	35.6	-1.4
	2008			34.0	34.0	34.0	-0.2
	2009			32.0	31.7	31.7	-0.9
	2010			33.3	33.2	33.2	0.0
	2011	32.2	31.7	31.9	31.7	31.9	

1) Flash estimate figures have been calculated using different methods than the preliminary and official figures

2) The official figures are amounts that have been reported under the Climate Convention and the Kyoto Protocol for the years in question

3) The revision compares figures of the latest release with the figures of the first release

4) The revisions to the 1990 amount of emissions have been calculated based on the assigned amount confirmed in the review of the report on the first commitment period under the Kyoto Protocol compiled in 2006, the revisions for all other years have been calculated on the official figures of the year in question

5) The emission figures for greenhouse gas inventory are revised every year in the entire time series, because continuous improvements are made to the inventory, taking into account the international review recommendations of inventories and the development of the scientific basis for emission calculation methods

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Source: Greenhouse gas inventory unit, Statistics Finland