

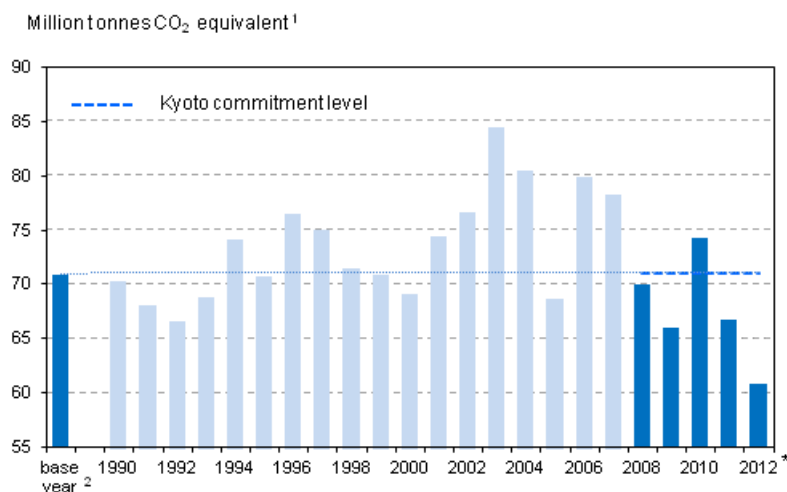
Greenhouse gases

2012, preliminary data

Greenhouse gas emissions in 2012 were record low

In 2012, Finland's greenhouse gas emissions amounted to 60.9 million tonnes of carbon dioxide (CO₂ eq.). They declined by a total of 5.9 million carbon dioxide tonnes from the year before, falling below the annual average commitment level of the first commitment period of the Kyoto Protocol by around 14 per cent. The data are based on the preliminary report to be submitted by Statistics Finland to the European Commission on 15 January 2014 concerning emissions in 2012. Revised emission data are released on 15 April 2014 in connection with the delivery to the United Nations Framework Convention on Climate Change (UNFCCC).

Commitment level of the Kyoto Protocol and Finland's greenhouse gas emissions in 1990-2012 (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

*year 2012 emission data are preliminary

The emissions decreased in all sectors compared to the previous year; the largest drop was seen in the energy sector, 10 per cent (around 5.5 million tonnes of carbon dioxide). Fossil fuels and peat in the

production of electricity were replaced with electricity imports, wood and domestic hydro power. The use of fossil fuels and peat also decreased clearly in manufacturing. A majority of the emission decrease materialised in emissions trading.

The net sink of the land use, land-use change and forestry (LULUCF) sector grew by some seven per cent compared to the previous year and amounted to 25.9 tonnes of carbon dioxide.

Greenhouse gas emissions in Finland by sector. Emissions as amounts corresponding to million tonnes of carbon dioxide. Negative figures indicate removal of greenhouse gases from the atmosphere

		1990	1995	2000	2005	2006	2007	2008	2009	2010	2011	2012 ²⁾
Emissions excl. LULUCF sector		70.3	70.8	69.2	68.7	79.9	78.3	70.1	66.0	74.4	66.8	60.9
	Energy sector	54.5	56.1	54.5	54.0	65.3	63.2	54.7	52.7	60.5	53.3	47.8
	Energy industries	19.2	24.1	22.1	22.0	32.9	30.8	24.2	25.2	30.6	24.7	20.7
	Manufacturing industries and construction	13.4	12.1	11.9	11.3	11.6	11.4	10.8	8.4	9.9	9.7	8.4
	Transport	12.8	12.0	12.8	13.7	13.9	14.2	13.6	12.9	13.4	13.2	12.7
	Other energy ¹⁾	9.2	7.8	7.6	7.0	6.9	6.7	6.2	6.2	6.6	5.7	6.1
	Industrial processes	5.1	4.7	5.6	6.4	6.3	6.8	7.2	5.4	5.8	5.6	5.3
	Industrial processes (excl. F-gases)	5.0	4.6	5.0	5.4	5.5	5.9	6.1	4.4	4.6	4.5	4.3
	Consumption of F-gases	0.1	0.1	0.6	0.9	0.8	1.0	1.1	0.9	1.2	1.1	1.0
	Solvents and other products use	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Agriculture	6.5	6.0	5.8	5.7	5.7	5.8	5.8	5.7	5.9	5.8	5.7
	Waste management	4.0	3.9	3.3	2.4	2.5	2.4	2.3	2.2	2.2	2.1	2.1
LLULUCF sector		-13.7	-12.8	-19.2	-28.6	-32.5	-24.3	-29.0	-38.8	-24.1	-24.1	-25.9

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

2) Emission data are preliminary

The monitoring of the effort sharing decision of the EU's climate change package will in future require emissions data to be broken down to emissions within and outside the emissions trading scheme. The effort sharing decision sets binding targets for emission reductions from the 2005 levels in non-emissions trading scheme sectors during 2013-2020. The target for Finland is 16 per cent by 2020. In the calculation of emission reduction commitments, the coverage of emission trading institutions has been based on the situation in 2005 and the commitment has been revised taking into consideration the expansion in emissions trading since that time. Between 2013 and 2020, the emissions must be on the so-called "path to Kyoto" or below it. The path to Kyoto is linear and its starting point is the average of emissions from non-emissions trading scheme sources in 2008-2010 and its final point is the target for emissions reduction by 2020. Emissions from non-emissions trading scheme sources are calculated as the difference between the reviewed total emissions and verified emissions of the emissions trading scheme sector. The data on the verified emissions of the emissions trading scheme 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 2008-2012 (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. Negative figures indicate removal of greenhouse gases from the atmosphere

	2005	2008	2009	2010	2011	2012	Change, 2011 - 2012
Total excl. LULUCF sector	68.7	70.1	66.0	74.4	66.8	60.9²⁾	-5.9
Emissions trading sector ¹⁾	33.1	36.2	34.4	41.3	35.1	29.5	-5.6
Non-emissions trading sector	35.6	34.0	31.6	33.1	31.8	31.4 ²⁾	-0.3
LULUCF sector	-28.6	-29.0	-38.8	-24.1	-24.1	-25.9²⁾	-1.7

1) Source: Energy Market Authority

2) Emission data are preliminary

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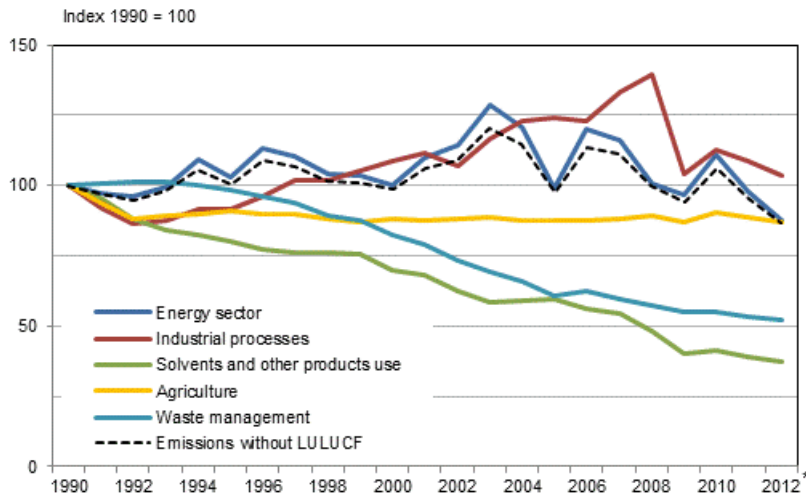
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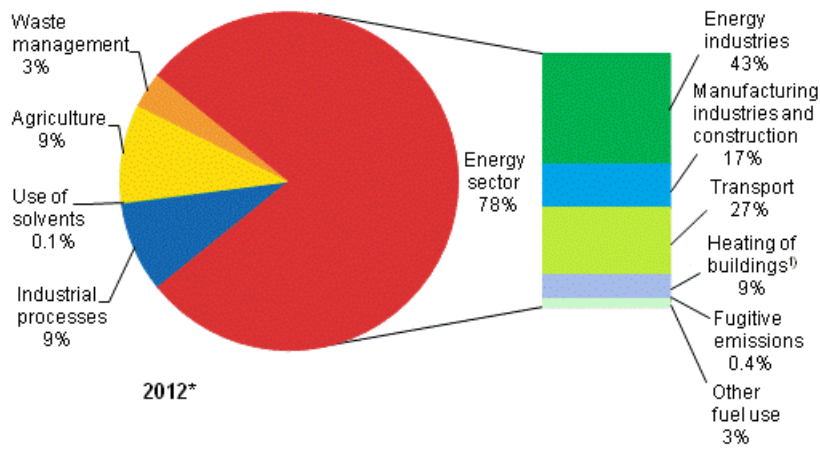
Appendix figures

Appendix figure 1: Development of greenhouse gas emissions by sector in Finland in 1990-2012



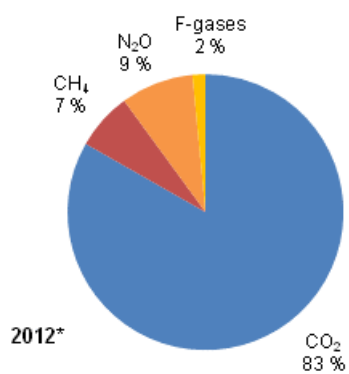
*Preliminary data. Corrected on 10 March 2014.

Appendix figure 2: Greenhouse gas emissions in Finland by sector in 2012



^{b)} includes also emissions from machines used in agriculture and forestry and from fishing boats
 * emission data are preliminary

Appendix figure 3: Greenhouse gas emissions in Finland by gas in 2012



* emission data are preliminary

Revisions in these statistics

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

	Statistical year ¹⁾	First release			Previous release	Latest release ⁴⁾	Revision ⁵⁾
		Proxy estimate ²⁾	Preliminary data	Official data ³⁾	16.5.2013	12.12.2013	%
Total emissions	1990			71.1	70.4	70.3	-1.1
	2005		69.3	69.3	68.7	68.7	-0.9
	2008		70.1	70.1	70.2	70.1	0.0
	2009	68.6	66.4	66.3	66.1	66.0	-0.5
	2010	76.0	74.6	74.6	74.5	74.4	-0.2
	2011	67.3	66.8	67.0	67.0	66.8	-0.3
	2012	61.4	60.9 ⁶⁾		61.4	60.9 ⁶⁾	
Non-emissions trading sector	2005			36.2	35.6	35.6	-1.7
	2008			34.0	34.0	34.0	-0.1
	2009			32.0	31.7	31.6	-1.1
	2010			33.3	33.2	33.1	-0.4
	2011	32.2	31.7	31.9	31.9	31.8	-0.5
	2012	31.9	31.4 ⁶⁾		31.9	31.4 ⁶⁾	

1) 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

2) Proxy estimate figures have been calculated using different methods than the preliminary and official figures

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

4) 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

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

6) Preliminary data

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Source: Greenhouse gas inventory unit, Statistics Finland