Statistics Finland

Suomen virallinen tilasto
Finlands officiella statistik
Official Statistics of Finland

Environment and Natural Resources 2013

# Greenhouse gases

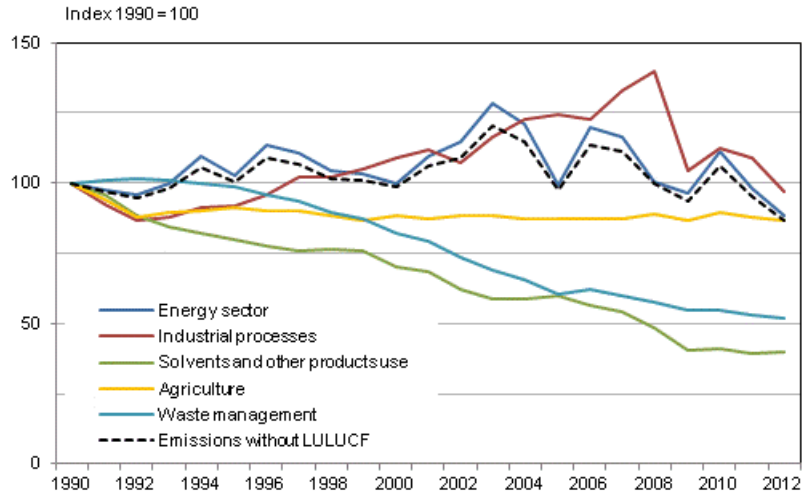
*2012, proxy estimate*

## Greenhouse gas emissions in Finland at the lowest level since 1990

*Preliminary total greenhouse gas emissions in 2012 amounted to 61.4 million tonnes of carbon dioxide equivalent (t CO2 eq.). According to preliminary data, total emissions in 2012 decreased by some eight per cent (six million t CO2 eq.) from 2011. The energy sector's emissions diminished by around nine per cent. This was mainly due to reduced consumption of coal and peat and increased net imports of electricity.*

Statistics Finland releases preliminary data on greenhouse gas emissions by sector broken down between emissions trading scheme sources and non-emissions trading scheme sources. The preliminary data on emissions in 2012 have not been calculated at very detailed level and will become revised in the eventual emission calculations that will be submitted to the Secretariat of the UNFCCC by 15 April 2014. In addition, Statistics Finland has estimated for the years 2010 and 2011 regional data by municipality according to place of origin on the emissions of the sectors not included in the emissions trading scheme.

**Development of greenhouse gas emissions by sector in Finland in 1990-2012. Data concerning 2012 are preliminary**



In 2012, emissions coming under the emissions trading scheme decreased by a total of around 16 per cent from the previous year. In sectors outside the emissions trading scheme (e.g. use of fuel in heating of buildings and transport, and agriculture and waste management), the reduction in emissions only amounted to close on one per cent.

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 to 2020. The target for Finland is 16 per cent by 2020. 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 to 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.)**

| | | 2005 | 2008 | 2009 | 2010 | 2011 | 2012 [3)] | Change, 2011 - 2012 |
|---|---|---|---|---|---|---|---|---|
| **Total excl. LULUCF sector** | | **68.7** | **70.2** | **66.1** | **74.5** | **67.0** | **61.4** | **-5.7** |
| | 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 | 31.7 | 33.2 | 31.9 | 31.9 | -0.1 |
| **LULUCF sector**[2)] | | **-29.9** | **-29.6** | **-39.3** | **-24.6** | **-24.6** | **-24.8** | **-0.2** |

1) Figures from Energy Market Authority

2) LULUCF sector does not come under the scope of the emissions trading scheme or the reduction targets of the effort sharing decision

3) Preliminary data

**Greenhouse gas emissions and removals by sector broken down between emissions trading scheme sources and non-emissions trading scheme sources in 2005 and 2008-2012 (million t CO2 eq.)**

| | 2005 | 2008 | 2009 | 2010 | 2011 | 2012 [4] | Change, 2011 - 2012 |
|---|---|---|---|---|---|---|---|
| **Total excl. LULUCF sector** | **68.7** | **70.2** | **66.1** | **74.5** | **67.0** | **61.4** | **-5.7** |
| **ETS sector**[1] | **33.1** | **36.2** | **34.4** | **41.3** | **35.1** | **29.5** | **-5.6** |
| **Energy** | **29.5** | **31.8** | **30.8** | **37.3** | **31.0** | **26.0** | **-5.0** |
| **Industrial processes** | **3.6** | **4.3** | **3.4** | **4.0** | **4.0** | **3.5** | **-0.5** |
| Mineral products | 1.1 | 1.2 | 0.8 | 1.0 | 1.1 | 0.9 | 0.2 |
| Chemical industry | 0.1 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.0 |
| Metal production | 2.4 | 2.5 | 1.9 | 2.4 | 2.3 | 2.0 | -0.3 |
| Difference between the emissions trading registry and the inventory[2] | 0.0 | 0.1 | 0.2 | 0.0 | 0.1 | | |
| **Non-ETS sector** | **35.6** | **34.0** | **31.7** | **33.2** | **31.9** | **31.9** | **-0.1** |
| **Energy** | **24.5** | **23.0** | **21.9** | **23.3** | **22.4** | **22.5** | **0.1** |
| Energy without transport | 10.8 | 9.4 | 9.0 | 9.8 | 9.2 | 9.5 | 0.3 |
| Transport | 13.7 | 13.6 | 12.9 | 13.4 | 13.2 | 13.0 | -0.3 |
| **Industrial processes** | **2.8** | **2.9** | **2.0** | **1.7** | **1.6** | **1.5** | **-0.1** |
| Mineral products | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | 0.2 | 0.0 |
| Chemical industry | 1.7 | 1.7 | 0.9 | 0.3 | 0.3 | 0.3 | 0.0 |
| Metal production | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 |
| Consumption of F-gases | 0.9 | 1.1 | 0.9 | 1.2 | 1.1 | 1.0 | -0.1 |
| **Solvents and other products use** | **0.1** | **0.1** | **0.1** | **0.1** | **0.1** | **0.1** | **0** |
| **Agriculture** | **5.8** | **5.9** | **5.8** | **6.0** | **5.9** | **5.8** | **-0.1** |
| Enteric fermentation | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 0.0 |
| Manure management | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 |
| Agricultural soils | 3.5 | 3.6 | 3.5 | 3.6 | 3.5 | 3.5 | -0.1 |
| **Waste management** | **2.4** | **2.3** | **2.2** | **2.2** | **2.1** | **2.1** | **0.0** |
| Solid waste disposal on land | 2.0 | 1.9 | 1.8 | 1.8 | 1.8 | 1.7 | 0.0 |
| Wastewater handling | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0 |
| Composting | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| Difference between the emissions trading registry and the inventory[2] | 0.0 | -0.1 | -0.2 | 0.0 | -0.1 | | |
| **LULUCF sector**[3] | **-29.9** | **-29.6** | **-39.3** | **-24.6** | **-24.6** | **-24.8** | **-0.2** |
| Forest land | -40.2 | -40.1 | -50.8 | -35.7 | -36.0 | -36.2 | -0.2 |
| Cropland | 6.3 | 6.2 | 6.1 | 6.4 | 6.8 | 6.8 | 0 |
| Grassland | 0.5 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0 |
| Wetlands | 1.7 | 1.9 | 2.0 | 2.1 | 2.1 | 2.1 | 0 |
| Settlements | 2.1 | 1.9 | 1.6 | 1.7 | 1.5 | 1.5 | 0 |
| Harvested wood products | -0.3 | 0.1 | 1.6 | 0.6 | 0.7 | 0.7 | 0 |

1) Figures from Energy Market Authority

2) The divergence caused by the methodological and definitional differences in total emissions in the emissions trading sector between the data of the Energy

3) The land use, land-use change and forestry (LULUCF) sector does no come under the scope of the emissions trading scheme or the reduction targets of effort sharing

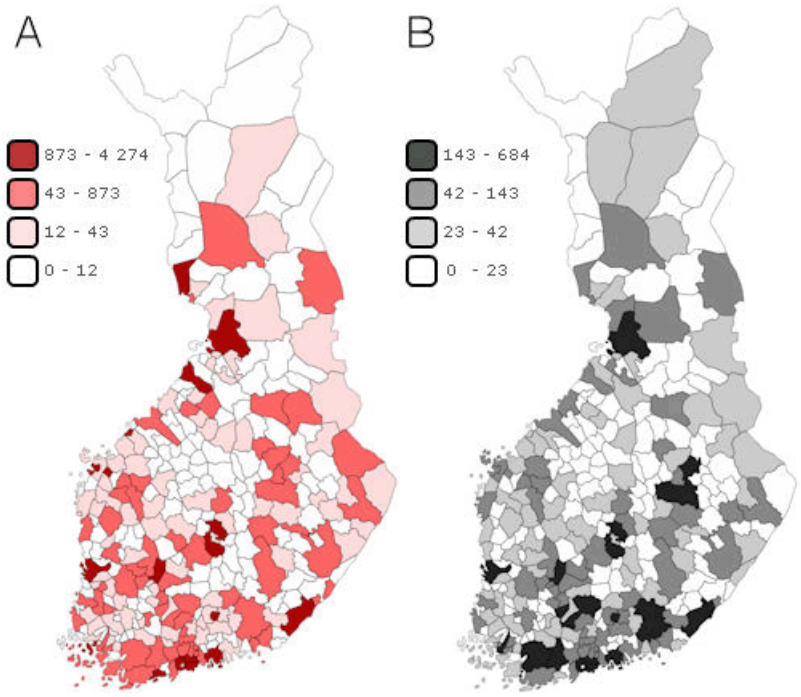
4) Preliminary data. Data concerning 2011 were used for the sub-sectors for which no preliminary data were available for 2012. In these cases, changes in emissions were given as zero (0)
(notation 0.0 means that the value of the quantity is less than 0.05)

Further information in Finnish about preliminary data on emissions and their calculation methods can be found in Statistics Finland's report Suomen kasvihuonekaasupäästöt vuosina 1990-2011.

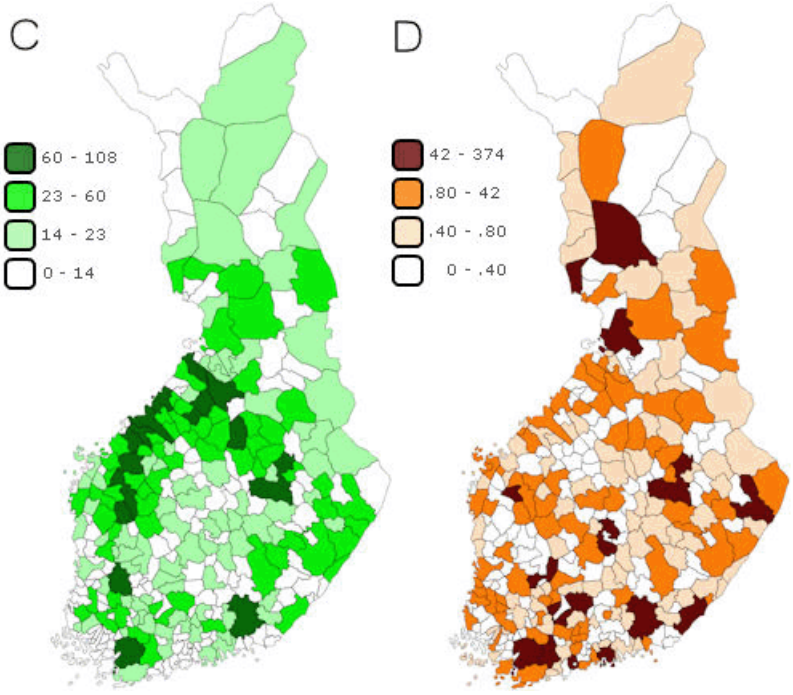
## *Regional data on emissions*

Statistics Finland's calculations have been performed for the years 2010 and 2011 from the so-called region-based perspective, i.e. emissions have been allocated to their areas of origin. The data have been calculated with methods consistent with the greenhouse gas inventory by allocating emissions to regions on the basis of data on activity by municipality. The data have been separately calculated for the sectors of energy, transport, industrial processes (incl. solvent and other product use), agriculture and waste. The calculations exclude the land use, land-use change and forestry sector. Statistics Finland only publishes numeric data by municipality on the non-emissions trading scheme sectors. The emissions data can be found in database tables. Respective data for the emissions trading scheme sector are not released for confidentiality reasons.

**A) Greenhouse gas emissions from the energy sector and industrial processes by municipality in 2011 (1,000 t CO2 eq.),**
**B) Greenhouse gas emissions from transport by municipality in 2011 (1,000 t CO2 eq.)**



**C) Greenhouse gas emissions from agriculture by municipality in 2011 (1,000 t CO2 eq.),**
**D) Greenhouse gas emissions from the waste sector by municipality in 2011 (1,000 t CO2 eq.)**



# Contents

# *Revisions in these statistics*

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

| | | First release | | | Previous release | Latest release[4)] | Revision[5)] |
|---|---|---|---|---|---|---|---|
| | Statistical year[1)] | Proxy estimate[2)] | Preliminary data | Official data[3)] | 15.4.2013 | 16.5.2013 | % |
| 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 | 67.0 | 67.0 | |
| | 2012 | 61.4[6)] | | | | 61.4[6)] | |
| 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 | 31.9 | 31.9 | |
| | 2012 | 31.9[6)] | | | | 31.9[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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