

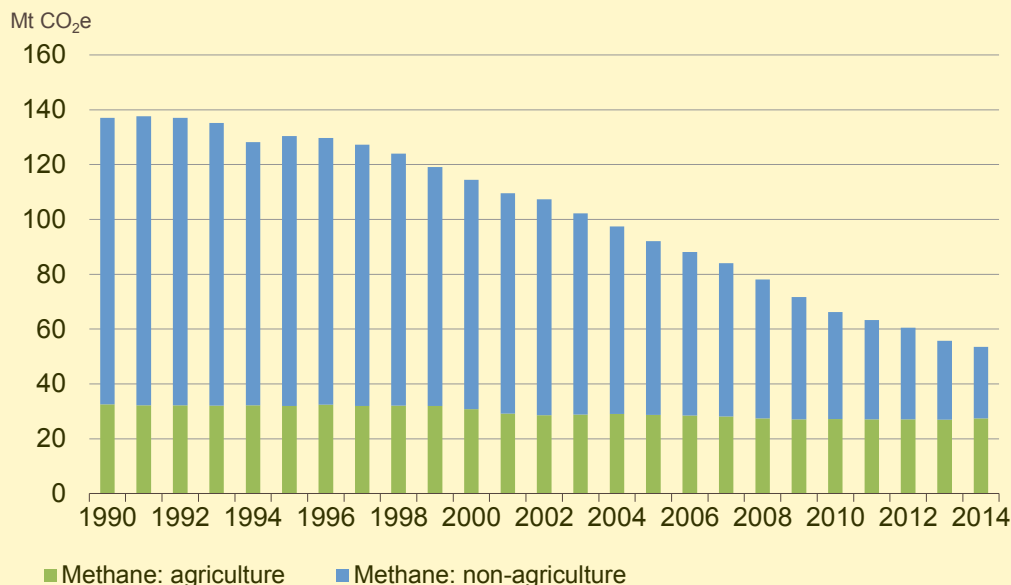
Observatory monitoring framework – indicator data sheet

Environmental impact: Climate change

Indicator DD1: Methane emissions

This indicator shows agriculture's contribution to total UK methane emissions^{(a)(b)}.

DD1 UK Methane emissions



Source: DECC/Ricardo-AEA

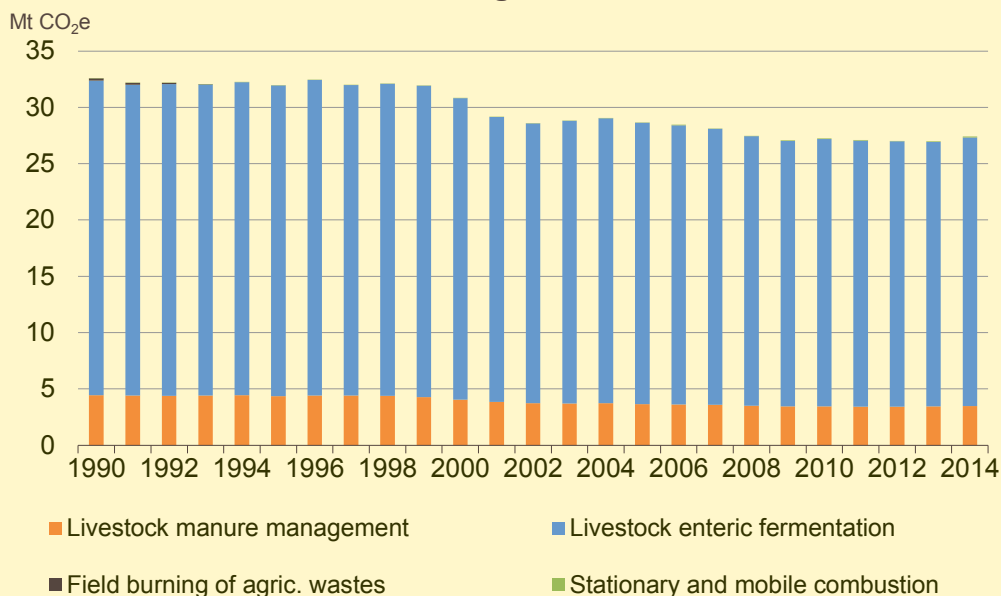
In 2014:

methane emissions, excluding those from natural sources have fallen by 75% compared to 1990 levels;

the main sources of methane were agriculture (51% of the total) and landfill sites (25%).

The major agricultural sources of methane are enteric fermentation (digestive processes) and livestock manure management.

DD1a Methane emissions from agriculture



Source: DECC/Ricardo-AEA

(a) The geographic coverage of these data has changed from UK and Crown Dependencies to UK only from 2014 (published in 2016).

(b) Data are now being presented as carbon dioxide equivalents (CO₂e).

In 2014

- total methane emissions were 4% below 2013 levels;
- methane emissions from agriculture were 16% below 1990 levels;
- around 87% of methane emissions from agriculture came from livestock enteric fermentation.

This indicator was updated in February 2016. It will next be updated in February 2017.

Further information and contact

Background information can be found in the accompanying fact sheet.

For further queries or information on this indicator contact Defra's Observatory team on +44 (0) 1904 455058 or email Observatory@defra.gsi.gov.uk

Observatory monitoring framework – indicator fact sheet

Environmental impact: Climate change

Indicator DD1: Methane emissions

<i>Indicator</i>	Methane emissions from agriculture.
<i>Data</i>	Emissions of methane from agriculture.
<i>Geographic coverage</i>	UK
<i>Years</i>	1990 - 2014
<i>Source</i>	Department of Energy and Climate Change (DECC)
<i>Origin of data</i>	UK greenhouse gas inventory, Ricardo Energy & Environment
<i>Updates</i>	This indicator will be updated annually. The next update is due in February 2017.
<i>Background</i>	<p>Methane (CH₄) is a greenhouse gas which contributes to global warming and climate change. In 2014, methane accounted for about 10% of the UK's greenhouse gas emissions.</p> <p>Nitrous oxide is one of the basket of six greenhouse gases for which emission reduction targets were agreed internationally under the Kyoto Protocol. For the first commitment period (2008-2012) the UK target was to reduce total greenhouse gas emissions by 12.5 percent below base year (1990). This target was met.</p> <p>Under the second commitment period (2013-20) the EU has a collective target to reduce its emissions by 20 percent relative to base year levels over the period. The exact details of the UK's target for the period are still being finalised.</p> <p>The Climate Change Act 2008 sets a legally binding commitment of at least an 80% cut in Greenhouse Gas (GHG) emissions by 2050 measured against a 1990 baseline. To support progress towards achieving this ambition, a carbon budgeting system which caps GHG emissions over five year periods, has been established with the first three carbon budgets running from 2008 - 2012, 2013 - 2017 and 2018 - 2022. Carbon budgets cap GHG emissions from the overall 'carbon' economy but do not set targets for sectors as action to reduce GHG emissions is focused on areas where cost effective savings may be achieved. The level of savings between sectors of the carbon economy will therefore vary to reflect the unique challenges and circumstances each face.</p> <p>In England, the approach for reducing GHG emissions from agriculture includes a range of actions led by industry and government. The Greenhouse Gas Action Plan (GHGAP) is an industry led voluntary initiative being taken forward by an Industry Partnership consisting of 14 organisations. It outlines how GHG emission reductions could be delivered between now and the third carbon budget (2018 – 2022) through wider uptake of more resource efficient practices. Its ambition is to:</p> <ul style="list-style-type: none">• Reduce annual GHG emissions from English agricultural production by 3 MtCO₂e by the third carbon budget period (2018 – 2022), compared to a 2007 baseline.

Statistical & methodological information

The UK Greenhouse Gas Inventory is compiled for the UK governments by Ricardo Energy & Environment. The inventory is reviewed every year, and the whole historical data series is revised where necessary to incorporate methodological improvements and new data.

Changes in geographical coverage

The geographic coverage of the data changed from UK and Crown Dependencies to UK only from 2016 (2014 data). This change has been made to better align with the needs of users of the statistics, and with the geographical coverage of the UK's domestic carbon budget targets.

Changes as a result of updated reporting guidelines from the Intergovernmental Panel on Climate Change (IPCC)

The UK's greenhouse gas inventory is required to comply with reporting guidelines published by the IPCC. These guidelines were revised in 2015.

Agriculture – methodological changes

New research from Defra has produced updated estimates of the average weights of dairy cattle and beef cattle. In addition, new information on the manure management practices of UK farms has been included and the total area of organic soils in the UK has been updated. These changes increase the estimated emissions by around 3 MtCO₂e in both 1990 and 2012 (though overall emissions from the agriculture sector have decreased).

The major agricultural sources of methane are enteric fermentation (digestive processes) and manure management. Estimates for both types of emissions are calculated from animal population data collected in the June Survey, combined with the appropriate emission factors. In 2004, categories used to report emissions of air pollutants to the UNECE changed to become more consistent with reporting categories used to report greenhouse gas emissions to the International Panel on Climate Change (IPCC). The main changes regarding methane concern the emission factors used for enteric fermentation and manure management from dairy cattle. Further information on calculation of estimates is available on the National Atmospheric Emissions Inventory website (see below).

Emissions from animal wastes depend on the method of storage or management. When stored as slurry, much of the decomposition is anaerobic and methane is produced in significant quantities. However, faeces deposited whilst grazing, or stored as farmyard manure decompose aerobically and produce little methane.

An analysis of uncertainty in emission estimates for 1999 and 2000 versions of the NAEI suggests that the level of uncertainty for methane emissions is +/-20%. Although for any given year considerable uncertainties can surround the emission estimates for a given pollutant, trends over time are likely to be more reliable. UK national emission estimates are updated annually and any developments in methodology are applied retrospectively to earlier years. Adjustments in the methodology are made to accommodate new technical information and to improve international comparability.

Further information

Data and information on greenhouse gas emissions can be found at:
<https://www.gov.uk/government/collections/uk-greenhouse-gas-emissions>

Further information about the Kyoto protocol can be found at:
http://unfccc.int/files/national_reports/initial_reports_under_the_kyoto_protocol/appli

[cation/pdf/report_final.pdf](#)

Further information on the 2008 Climate Change Act can be found at:

<https://www.gov.uk/government/policies/reducing-the-uk-s-greenhouse-gas-emissions-by-80-by-2050>

The 2012 review of progress in reducing greenhouse gas emissions from agriculture can be found at:

<https://www.gov.uk/government/publications/2012-review-of-progress-in-reducing-greenhouse-gas-emissions-from-english-agriculture>

The National Atmospheric Emissions Inventory web site can be found at:

<http://www.naei.org.uk/>

The Agricultural statistics and climate change publication can be found at:

<https://www.gov.uk/government/publications/agricultural-statistics-and-climate-change>