

Industrial Processes

GHG Inventory summary Factsheet

Territorial coverage: UK including Crown Dependencies and Overseas Territories

Total emissions: Quoted with respect to emissions including net LULUCF

Sector Definition: National Communication

Sector summary – historic emissions

- Overall contribution of the industrial processes sector to UK GHG emissions in 2010 was 1.8%.
- Emissions from the industrial processes sector have decreased by 80% since 1990, mostly due to changes in emissions from the chemical production and metal processing industries.
- The decrease in emissions between 1998 and 1999 is mostly due to abatement equipment being fitted at halocarbon production facilities and the UK's adipic acid plant.

Sources of emissions and data sets

- CO₂ is the dominant GHG emitted by the industrial sector.
- Emissions of N₂O across the time series occur mainly from the production of nitric and adipic acid. These emissions have decreased significantly since 1990 due to the installation of abatement equipment, and plant closures (the UK's only adipic acid production closed in 2009).
- Significant sources of emissions are cement production and the iron and steel sector (sinter production and process emissions).
- Data are supplied by a wide range of sources. Key datasets include DECC's Digest of UK Energy Statistics (DUKES), the Environment Agency's Pollution Inventory, the Scottish Environment Protection Agency's Scottish Pollutant Release Inventory, UK Minerals Yearbook (BGS) and data from the Iron & Steel Statistics Bureau, Mineral Products Association, Tata Steel and British Glass.

Methodology

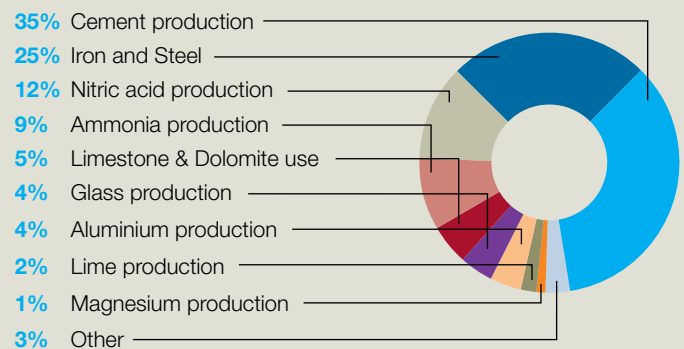
- Different sources require different methodologies for estimating emissions.
- Emission factors and activity data are used to calculate the following sources: use of limestone and dolomite; steel-making; cement; lime and nitric acid/adipic acid (early data).

Industrial Processes Emissions 1990-2010



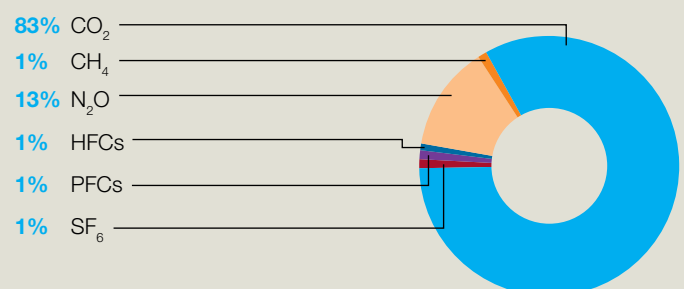
Source: UK GHG Inventory (UNFCCC coverage) (AEA, 2012)

Industrial Processes Emissions by Source (2010)



Source: UK GHG Inventory (UNFCCC coverage) (AEA, 2012)

Industrial Processes Emissions by Gas (2010)



Source: UK GHG Inventory (UNFCCC coverage) (AEA, 2012)

- The use of emissions data reported by process operators is used for the following sources: nitric acid/adipic acid (later data); other chemical processes and fletton brickworks.
- F-gases emissions arising from halocarbon production, aluminium production and their use as magnesium cover gas are estimated based on operator reported data to the Regulators' Inventories (e.g. Pollution Inventory), or data supplied directly from operators.

Uncertainties

- The GHG Inventory quantifies uncertainties on emission factors and activity data, which in turn allow for the production of uncertainty estimates on the: emissions; overall uncertainty by gas; and indicative-only estimates of sector level uncertainties.
- Emissions in this sector are dominated by cement and iron & steel. The uncertainties for both of these sources are low as the processes involved are well understood and data are complete.

Projections

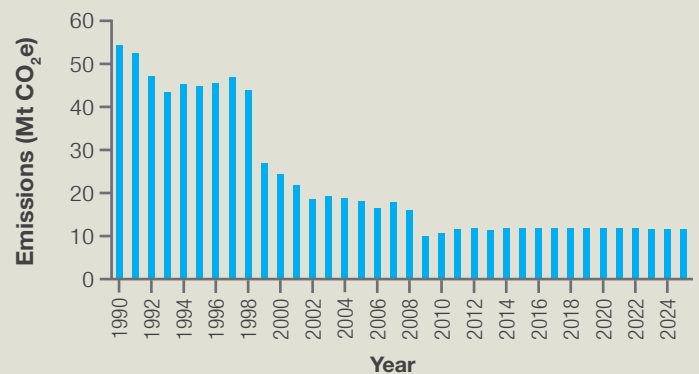
- Emissions from industrial processes are projected to be 9% above 2010 levels, and 78% below 1990 levels by 2025
- Projected emissions continue to be dominated by CO₂
- The projections are taken from DECC's Updated Energy and Emissions Projections: October 2011 although historic emissions presented here are from the 2012 inventory.

- Other sources within this sector have high uncertainties associated with them. This can be the case where estimates are based on operator reported emissions in the Regulators' Inventories, where sometimes emissions are below reporting thresholds and therefore gaps need to be filled, or where it is not possible to obtain a complete data set directly from operators.
- The overall uncertainty for this sector is estimated to be +/-6% in 2010 as a 95% confidence interval.

Improvements

- Emissions from ammonia production have been revised to ensure consistency with international reporting guidelines
- Emissions from limestone and dolomite use for the production of glass have been moved from the "limestone and dolomite use" category to the "glass production" category, in order to harmonise reporting at EU level. This has not affected the sector emissions total.

Historic and Projected Emissions from Industrial Processes



Source: Updated Energy and Emissions Projections: October 2011 (DECC).

Links

- UK GHG Inventory: <http://ghgi.decc.gov.uk/>
- UK GHG National Statistics: <http://www.statistics.gov.uk/hub/agriculture-environment/environment/climate-change/index.html>
- Projections data: http://www.decc.gov.uk/en/content/cms/about/ec_social_res/analytic_projs/en_emis_projs/en_emis_projs.aspx
- The Environment Agency: <http://www.environment-agency.gov.uk/>
- SEPA: <http://www.sepa.org.uk/>
- UK Minerals Yearbook (British Geological Society): <http://www.bgs.ac.uk/mineralsuk/statistics/UKStatistics.html>
- Iron and Steel Statistics Bureau: <http://www.issb.co.uk/>