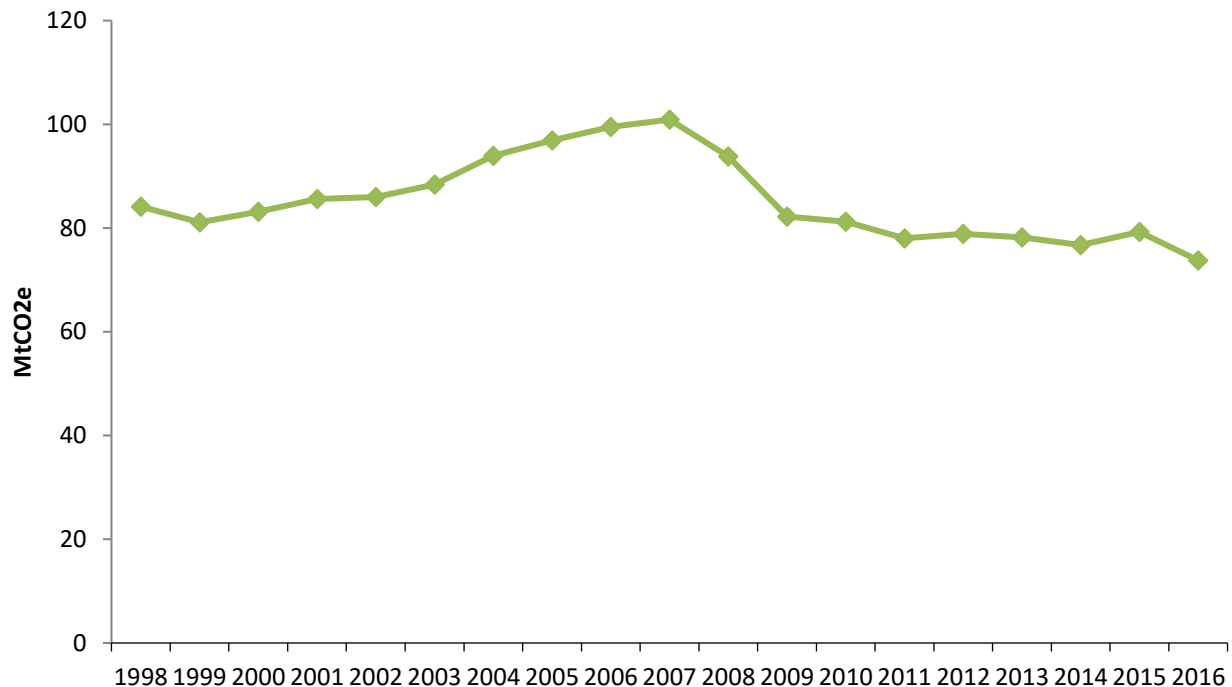


AGRICULTURE, ENVIRONMENT AND MARINE

Scotland's Carbon Footprint 1998 – 2016

Chart 1. Scotland's Carbon Footprint, 1998-2016. Values in MtCO_{2e}



Key points

- Between 2015 and 2016, Scotland's carbon footprint (emissions from all greenhouse gases) decreased by 6.9 per cent to a record low of 73.8 million tonnes of carbon dioxide equivalent (MtCO_{2e}). This is the largest year on year decrease since the recession in 2008.
- Between 1998 and 2016, Scotland's carbon footprint fell by 12.3 per cent, from 84.1 MtCO_{2e} in 1998 to 73.8 MtCO_{2e} in 2016.
- Scotland's carbon footprint rose steadily from 1999 to a peak of 100.9 MtCO_{2e} in 2007 before falling sharply in the following years (coinciding with the recession) and has generally fallen gradually in more recent years. The overall reduction between this 2007 peak, and 2016 is 26.9 per cent.

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Acknowledgements

We would like to thank John Barrett, Anne Owen and Jannik Giesekam of the Sustainability Research Institute (SRI) at Leeds University for their invaluable support in compiling the figures and for continually improving the methodologies and data used in the Scottish Carbon Footprint statistics release.

What is Scotland’s Carbon Footprint?

Scotland’s Carbon Footprint refers to estimates of Scotland’s greenhouse gas emissions on a consumption basis. This refers to greenhouse gas emissions which are associated with the spending of Scottish residents on goods and services, wherever in the world these emissions arise together with emissions directly generated by Scottish households, through private heating and motoring. These greenhouse gas emissions are often referred to as “consumption emissions” to distinguish them from estimates relating to the emissions “produced” within a country’s territory or economic sphere. Scotland’s Carbon Footprint is also sometimes referred to as its Consumption Based Account. Information on the different reporting bases can be found in the section [Comparison of Scotland’s carbon footprint and its territorial emissions](#) within this publication.

To find out what effect Scottish consumption has on greenhouse gas emissions we need to take into account where the goods we buy come from

and their associated supply chains. More information on the methods used can be found in the section [“How has Scotland’s Carbon Footprint been calculated?”](#)

The carbon footprint of Scotland includes the six main greenhouse gases including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O) and fluorinated compounds (hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride). Unless otherwise specified, these emissions are presented in this publication in units of million tonnes of carbon dioxide equivalent (MtCO₂e)¹.

This statistical report meets the requirements under Section 37 of the [Climate Change \(Scotland\) Act 2009](#) and is used to inform the [Scotland Performs National Indicator 47: Reduce Scotland's Carbon Footprint](#)

- Scotland’s greenhouse gas emissions can be broken up into three main categories: emissions embedded in imported goods and services, those embedded in UK produced goods and services and those directly produced by Scottish residents, through activities such as heating and motoring. More information on these categories can be found in the section [“Breakdown of Scotland’s Carbon Footprint 1998-2016”](#).
- Whilst Scotland’s carbon footprint has fallen by 12.3 per cent between 1998 and 2016, equivalent greenhouse gas emissions on a territorial basis have fallen by 44.7 per cent over the same time period².
- Similarly, Scotland’s carbon dioxide footprint is measured on the same basis as the carbon footprint although it relates only to carbon dioxide (CO₂) emissions. Scotland’s carbon dioxide footprint decreased by 2.6 per cent between 1998 and 2016 whilst reaching its peak in 2007.

Since 1990, the UK’s economy has continued to shift from manufacturing to having a greater reliance upon the services sector. One of the consequences of this is that more of the goods we buy and use are now produced outside Scotland and the rest of the UK. The current data in this publication breaks down greenhouse gas emissions into those generated by households and businesses, those produced in the UK and imports either from the rest of the EU, China or the Rest of the World.

Inherently the greenhouse gas emissions relating to the overseas production of imports to Scotland are not as easily measured as emissions generated within Scotland’s borders. There are general conventions on how to do this, using

¹ Carbon dioxide equivalent is a measure used to compare the emissions from various greenhouse gases on the basis of their global warming potential by converting amounts of other gases to the equivalent amount of carbon dioxide based on their global warming potential. Global warming potential describes the relative potency, molecule for molecule, of a greenhouse gas, taking account of how long it remains active in the atmosphere.

² [Scottish Greenhouse Gas Emissions 2017](#)

shares of production based on financial data, but the results cannot be viewed as being as robust as the estimates of greenhouse gas emissions generated domestically. The methodology and data for calculating these emissions resulting from imports have been revised since the last release. More information can be found in the [revisions](#) section of the publication.

Breakdown of Scotland's Carbon Footprint, 1998-2016

Table 1 outlines how the Carbon Footprint has been categorised for this publication.

Table 1. Categorisation of Scotland's Carbon Footprint

Main Category	Activity	Description
Greenhouse Gas Emissions from UK Produced Goods and Services	Scottish consumption of UK production	UK production emissions attributable to Scottish final consumption, including manufacturing and transport, international aviation and shipping provided by Scottish operators.
Greenhouse Gas Emissions Embedded in Imported Goods and Services – By Region of Import <ul style="list-style-type: none"> • EU • China • Rest of the World 	Imports used by UK businesses for Scottish consumption	Greenhouse Gas Emissions associated with the production of imports which are used by UK industry and attributable to Scottish final consumption
	Imports directly used by Scottish consumers	Greenhouse Gas Emissions associated with the production of imports which are used by Scottish final consumers
Greenhouse Gas Emissions Directly Produced By Scottish Residents	Private motoring	Greenhouse Gas Emissions generated directly by households through private motoring.
	Household heating	Greenhouse Gas Emissions arising from households' use of fossil fuels for heating, households use of aerosols, etc.

Chart 2 shows Scotland's carbon footprint, broken down into three main components, from 1998 to 2016.

- Greenhouse gas emissions embedded in imported goods and services from overseas. These accounted for 51.1 per cent of Scotland's carbon footprint in 2016; up from 36.5 per cent in 1998.
- Greenhouse gas emissions embedded in UK produced goods and services. These accounted for 31.7 per cent of Scotland's carbon footprint in 2016; down from 47.5 per cent in 1998.
- Greenhouse gas emissions directly produced by Scottish residents. These account for 17.3 per cent of Scotland's carbon footprint in 2016; down from 16.0 per cent of total consumption-based emissions in 1998.

Chart 2. Scotland's Carbon Footprint, by main component, 1998 to 2016.
Values in MtCO₂e



Additionally, Chart 2 shows that:

- Greenhouse gas emissions associated with imported goods and services increased from 30.7 MtCO₂e in 1998 to 51.7 MtCO₂e in 2007 (an increase of 68.3 per cent over this time period). These emissions accounted for 51.2 per cent of Scotland's carbon footprint in 2007.
- Between 2007 and 2016, greenhouse gas emissions embedded in imported goods and services fell by 27.1 per cent; this compares with a 22.7 per cent increase in emissions embedded in imports over the whole time period from 1998 to 2016.

- Greenhouse gas emissions relating to the consumption of UK produced goods and services by Scottish residents fell from 40.0 MtCO₂e in 1998 to 23.3 MtCO₂e in 2016 – a fall of 41.6 per cent. There was a general fall in greenhouse gas emissions from this category over the time period.
- Greenhouse gas emissions generated directly by Scottish residents have fallen from 13.4 MtCO₂e in 1998 to 12.7 MtCO₂e in 2016 – a fall of 5.1 per cent over this time period.

Chart 3 shows how Scotland's carbon footprint fell by 10.4 MtCO₂e (12.3 per cent) between 1998 and 2016.

Chart 3. Change in Scotland's Carbon Footprint between 1998 and 2016 - in MtCO₂e, and percentage changes

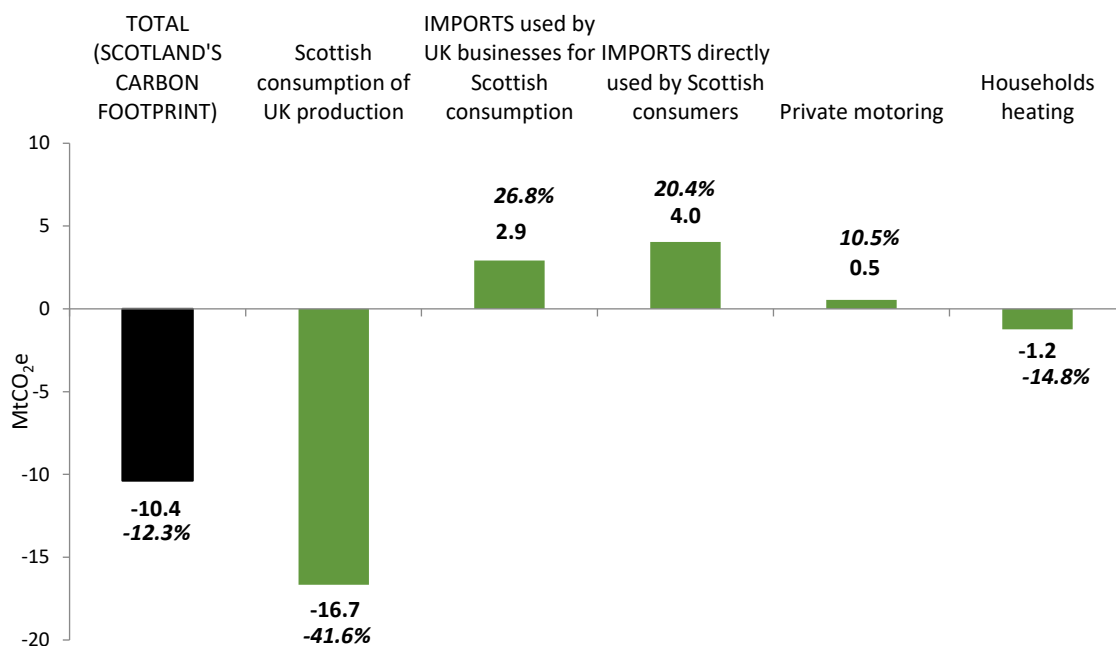


Chart 3 also shows that between 1998 and 2016:

- Greenhouse gas emissions from Scottish consumption of UK production have seen the greatest absolute reduction over this time period (16.7 MtCO₂e; a 41.6 per cent reduction), reflecting the emissions-reduction seen in the Scotland and the rest of the UK over this period.
- Greenhouse gas emissions embedded in imports directly used by Scottish consumers have increased by 4.0 MtCO₂e (a 20.4 per cent increase). Emissions embedded in imports used by UK businesses for Scottish consumption have increased by 2.9 MtCO₂e (a 26.8 per cent increase).
- Greenhouse gas emissions resulting from households heating have decreased by 1.2 MtCO₂e (a 14.8 per cent decrease) whilst private motoring emissions have increased by 0.5 MtCO₂e (an 10.5 per cent increase).

Chart 4 shows how Scotland's carbon footprint has changed from 2007 to 2016. The year 2007 has been chosen as the base year for this chart as it represents the peak value in the series. Scotland's carbon footprint has fallen by 27.2 MtCO_{2e} (26.9 per cent) over this time period.

Chart 4. Change in Scotland's Carbon Footprint between 2007 and 2016 - in MtCO_{2e}, and percentage changes

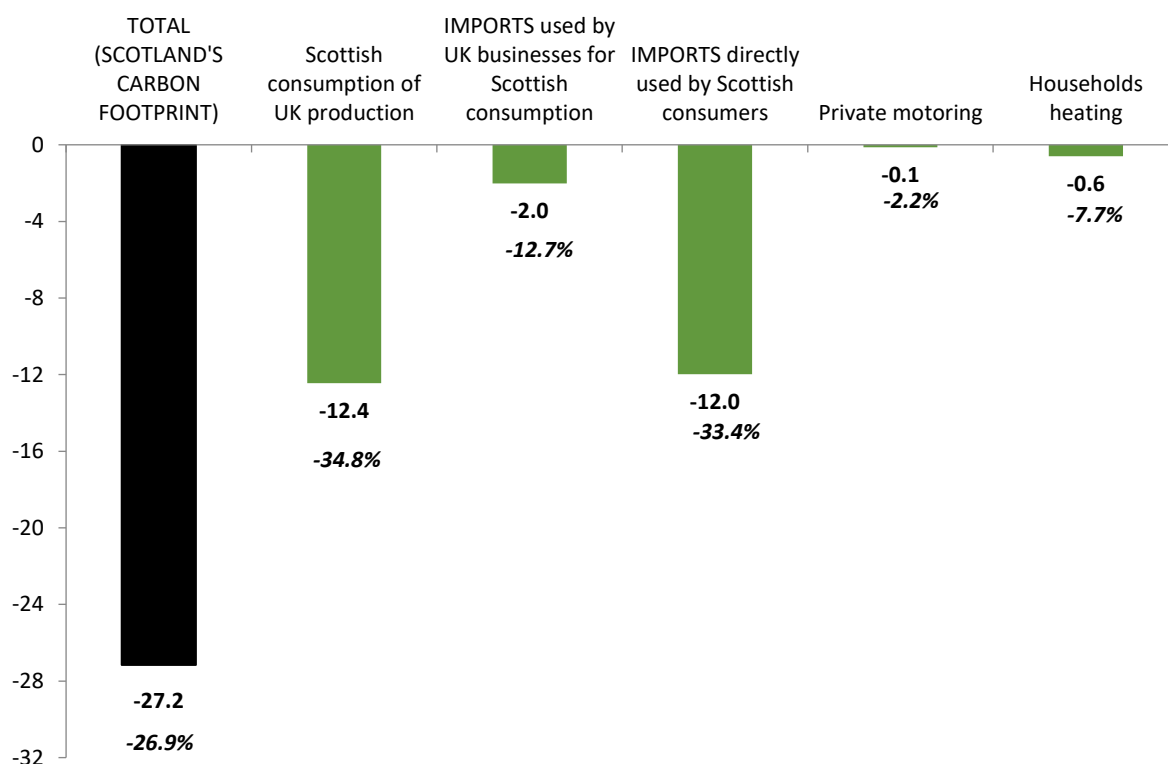


Chart 4 also shows that between 2007 and 2016:

- Greenhouse gas emissions embedded in Scottish consumption of UK production fell by the greatest amount, both in absolute and percentage terms (a reduction of 12.4 MtCO_{2e}; 34.8 per cent).
- There were also considerable falls in greenhouse gas emissions attributed to imports directly used by Scottish consumers (12.0 MtCO_{2e}; 33.4 per cent).
- Emissions embedded in imports used by UK businesses for Scottish consumption decreased by 2.0 MtCO_{2e} (a fall of 12.7 per cent).
- Greenhouse gas emissions attributed to private motoring and household heating have seen smaller absolute falls (0.1 MtCO_{2e} for private motoring; 0.6 MtCO_{2e} for households heating).

Chart 5 shows that Scotland's carbon footprint has fallen considerably in the latest year.

Chart 5. Change in Scotland's Carbon Footprint between 2015 and 2016 - in MtCO_{2e}, and percentage changes

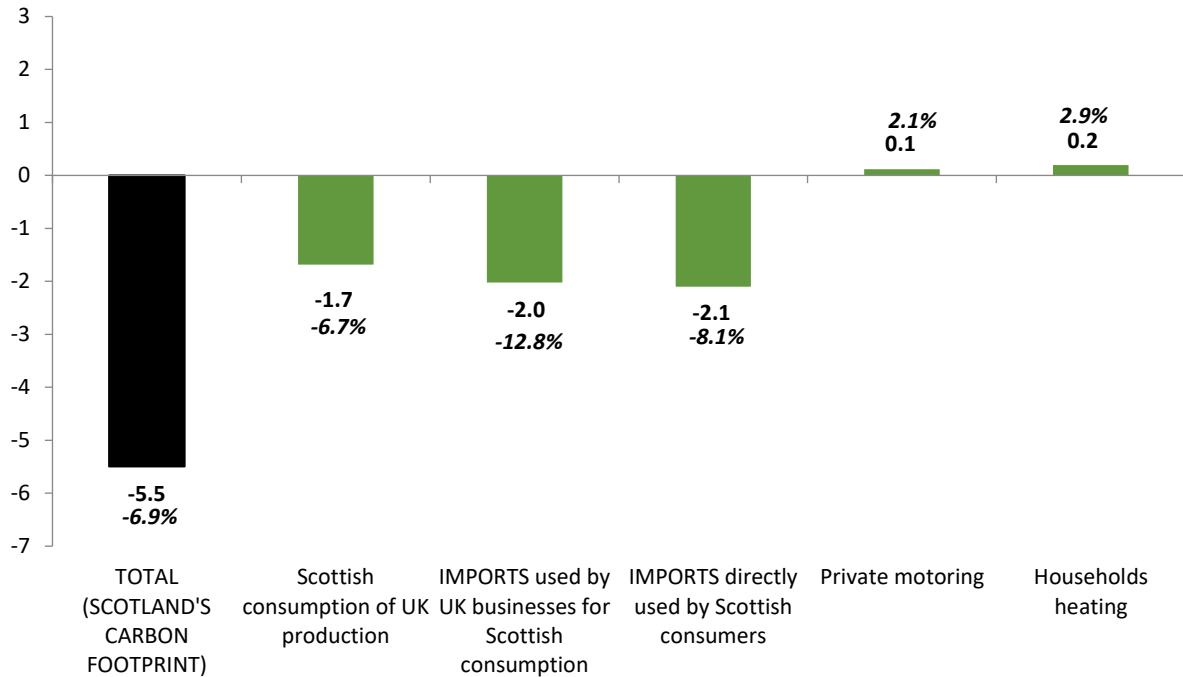
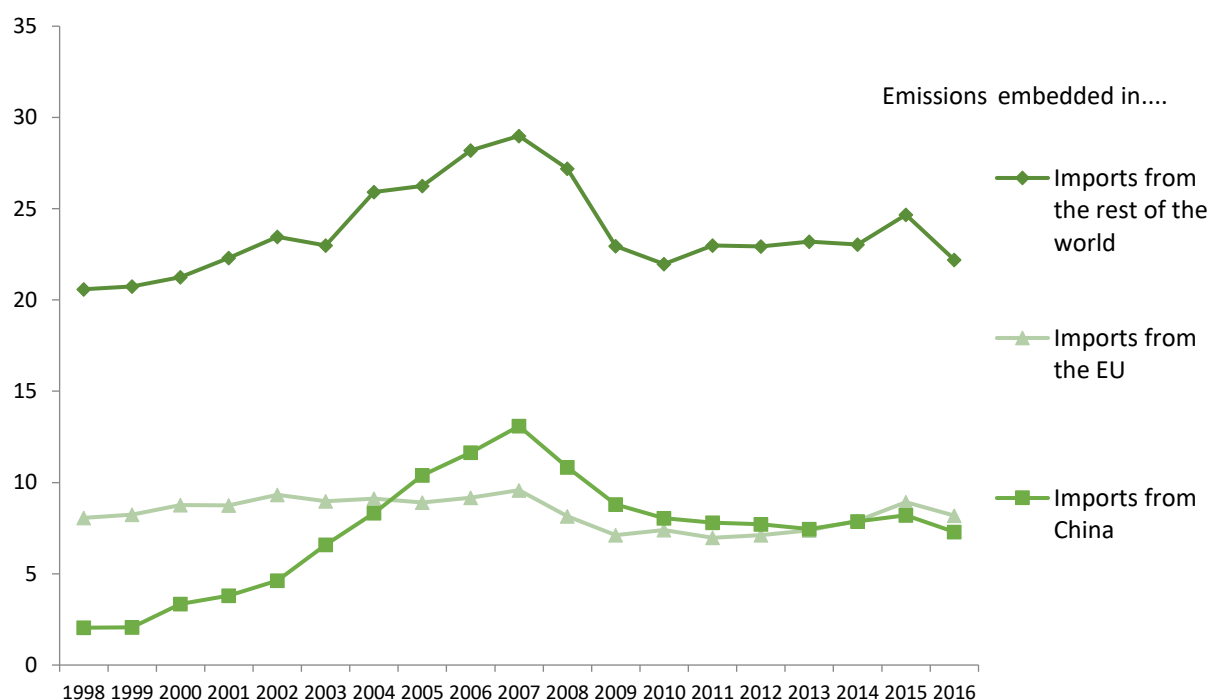


Chart 5 also shows that between 2015 and 2016:

- Emissions embodied in Scottish consumption of UK production fell by 1.7 MtCO_{2e} (6.7 per cent).
- Embedded emissions in imports consumed in Scotland fell by 2.1 MtCO_{2e} (8.1 per cent).
- Emissions embedded in imports used by UK businesses for Scottish consumption decreased by 2.0 MtCO_{2e} (a fall of 12.8 per cent).
- There were relatively minor increases in the level of absolute emissions in private motoring (0.1 MtCO_{2e}), and household heating (0.2 MtCO_{2e}).

Chart 6 presents a breakdown of Scotland's embedded greenhouse gases by region of import.

Chart 6. Breakdown of Scotland's embedded greenhouse gas emissions by region of import, 1998 to 2016. Values in MtCO_{2e}

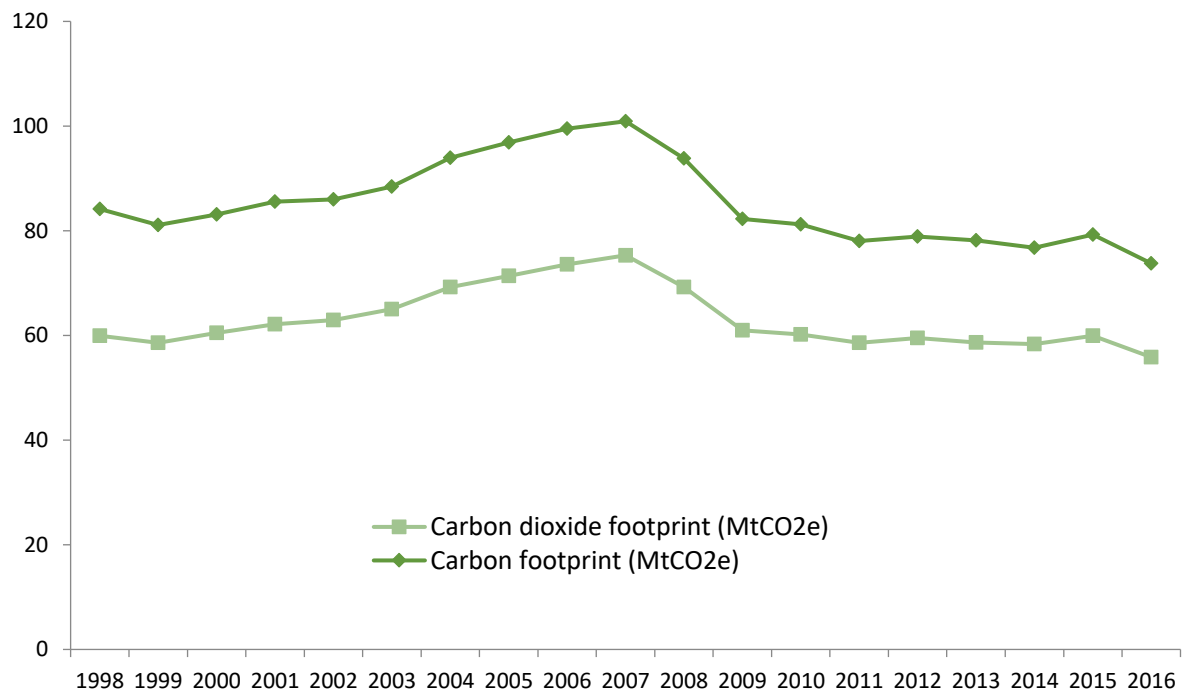


- Consistently over the entire time-series, over half of greenhouse gas emissions embedded in imported goods and services originate from areas other than the EU and China. Greenhouse gas emissions associated with these “rest of world” imports increased from 20.6 MtCO_{2e} in 1998 to 29.0 MtCO_{2e} in 2007 (a 40.8 per cent increase). They then fell sharply to 22.9 MtCO_{2e} in 2009. Following 2009 and 2010, these embodied emissions have been increasing slowly, with a slight increase in 2015 before falling to 22.2 MtCO_{2e} in 2016.
- Greenhouse gas emissions embedded in EU imports increased from 8.1 MtCO_{2e} in 1998 to 9.6 MtCO_{2e} in 2007 before falling to their lowest point of 7.0 MtCO_{2e} in 2011. Over the entire time-series, these embodied emissions show an overall slight increase of 1.4 per cent from 1998 to 2016.
- Greenhouse gas emissions embedded from imports to Scotland from China have increased substantially, from 2.0 MtCO_{2e} in 1998 to 13.1 MtCO_{2e} in 2007 (a six-fold (640 per cent) increase)). Emissions embedded in these imports fell for 6 consecutive years following the 2007 peak and have remained relatively stable since that time. Over the entire time-series, embodied emissions associated with imports from China have increased by 257 per cent (1998-2016).

Contribution of carbon dioxide (CO₂) emissions to Scotland's carbon footprint

CO₂ is the main greenhouse gas in Scotland's carbon footprint. It accounted for 75.7 per cent of Scotland's total carbon footprint in 2016, up from 71.3 per cent in 1998. Between 2015 and 2016, Scotland's carbon dioxide footprint from all sources decreased by 6.9 per cent.

Chart 7. Scottish Carbon Footprint. Comparison of Carbon and CO₂ footprint. Values in MtCO₂e



Data tables

Table 2. Detailed breakdown of Scotland's carbon footprint, 1998 to 2016. Values in MtCO_{2e}

Main Category	Activity	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
TOTAL - SCOTLAND'S CARBON FOOTPRINT		84.1	81.1	83.1	85.6	86.0	88.4	93.9	96.9	99.5	100.9	93.8	82.2	81.2	78.0	78.9	78.2	76.7	79.3	73.8
Greenhouse gas emissions from UK Produced Goods and Services	Scottish consumption of UK production	40.0	36.7	36.5	36.8	35.1	36.4	36.9	37.6	36.8	35.8	34.1	30.1	29.7	27.8	28.0	26.8	25.8	25.0	23.3
Greenhouse gas emissions embedded in Imported Goods and Services	Imports used by UK businesses for Scottish consumption	10.9	10.3	10.7	10.7	11.0	10.9	12.0	12.1	14.3	15.8	15.6	13.1	13.2	14.0	14.0	15.1	14.8	15.8	13.8
	Imports directly used by Scottish consumers	19.8	20.7	22.7	24.2	26.4	27.7	31.3	33.4	34.7	35.8	30.6	25.7	24.2	23.8	23.8	22.9	24.1	26.0	23.8
Greenhouse gas emissions Directly Produced By Scottish Residents	Private motoring	5.1	5.2	5.2	5.3	5.5	5.5	5.7	5.7	5.8	5.8	5.7	5.6	5.5	5.4	5.5	5.5	5.5	5.6	5.7
	Household heating	8.3	8.2	8.1	8.6	7.9	7.9	8.1	8.1	7.9	7.7	7.9	7.7	8.6	7.0	7.7	7.8	6.6	6.9	7.1

Table 3. Breakdown of Scotland's embedded greenhouse gas emissions by region of import, 1998 to 2016. Values in MtCO_{2e}

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
TOTAL IMPORTS	30.7	31.0	33.4	34.9	37.4	38.6	43.4	45.6	49.0	51.7	46.2	38.9	37.4	37.8	37.8	38.0	38.8	41.8	37.7
Imports from the EU	8.1	8.2	8.8	8.7	9.3	9.0	9.1	8.9	9.2	9.6	8.2	7.1	7.4	7.0	7.1	7.4	7.9	8.9	8.2
Imports from China	2.0	2.1	3.4	3.8	4.6	6.6	8.3	10.4	11.6	13.1	10.8	8.8	8.1	7.8	7.7	7.5	7.9	8.2	7.3
Imports from the rest of the world	20.6	20.7	21.2	22.3	23.5	23.0	25.9	26.3	28.2	29.0	27.2	22.9	22.0	23.0	22.9	23.2	23.0	24.7	22.2

Table 4. Comparison of Scotland's carbon footprint and carbon dioxide footprint, 1998-2016

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Carbon footprint (MtCO _{2e})	84.1	81.1	83.1	85.6	86.0	88.4	93.9	96.9	99.5	100.9	93.8	82.2	81.2	78.0	78.9	78.2	76.7	79.3	73.8
Carbon dioxide footprint (MtCO _{2e})	60.0	58.6	60.5	62.1	62.9	65.0	69.2	71.4	73.5	75.3	69.3	61.0	60.2	58.6	59.5	58.7	58.3	60.0	55.8

How has Scotland's Carbon Footprint been calculated?

Step 1. Develop an Input-output (IO) model

Input-output models are used by environmental researchers to make the link between the environmental impacts associated with production techniques and the consumption of products. The Leontief Input-Output model is constructed from economic data and shows the interrelationships between the industries that produce goods (outputs) and those that consume goods (inputs) from other industries in the process of making their own product. Further information on the Input-Output (IO) model and a User Guide can be found on the [Input-Output](#) webpages of the Scottish Government website.

Within the IO model, greenhouse gas emissions are reallocated from the industries that produce them to the final consumption activities that are assumed to ultimately have been their drivers. The emissions of each industry required in the production of a product are reallocated to the demand of this product, rather than the supply. In other words, we can show the greenhouse gas emissions associated with consumption. Adding an exogenous environmental variable to an IO framework produces an Environmentally Extended Input-Output model (EEIOM). The Greenhouse Gas model, also known as a Carbon Footprint, is one such example of a model.

Step 2. Develop a Multi-Regional Input-Output (MRIO) model

The University of Leeds has been contracted by the Scottish Government to provide estimates of Scotland's carbon footprint. The project updates previous work carried out by the Stockholm Environment Institute (SEI) published by the Scottish Government in 2009. A Multi-Regional Input-Output (MRIO) model allows the greenhouse gas emissions embodied to be estimated within traded goods and services. An MRIO model is used to link the flows of goods and services described in monetary terms, with the greenhouse gas emissions generated in the process of production.

Data relating to pre-1998 were assessed as being less reliable and consequently the time series used for this release is limited to 1998-2015. The system assumes a linear relationship between greenhouse gas emissions and changes in final demand, meaning that if all final demand doubled for a particular commodity, emissions would double too.

Step 3. Develop UK Based MRIO Model

In 2012, researchers from the Sustainable Research Institute at the University of Leeds constructed a UK MRIO model for DEFRA. The model uses the Office for National Statistics UK supply and use tables in 106 sectors and data from the Eora MRIO to trace the trade with the EU, China and Rest of the World to complete the MRIO.

Step 4. Develop the Scottish Consumption Based Account (the Scottish Carbon Footprint)

To calculate a consumption based account for Scotland, we use the UK MRIO model and replace the UK final demand with the Scottish final demand taken from the [Scottish Input-Output tables](#).

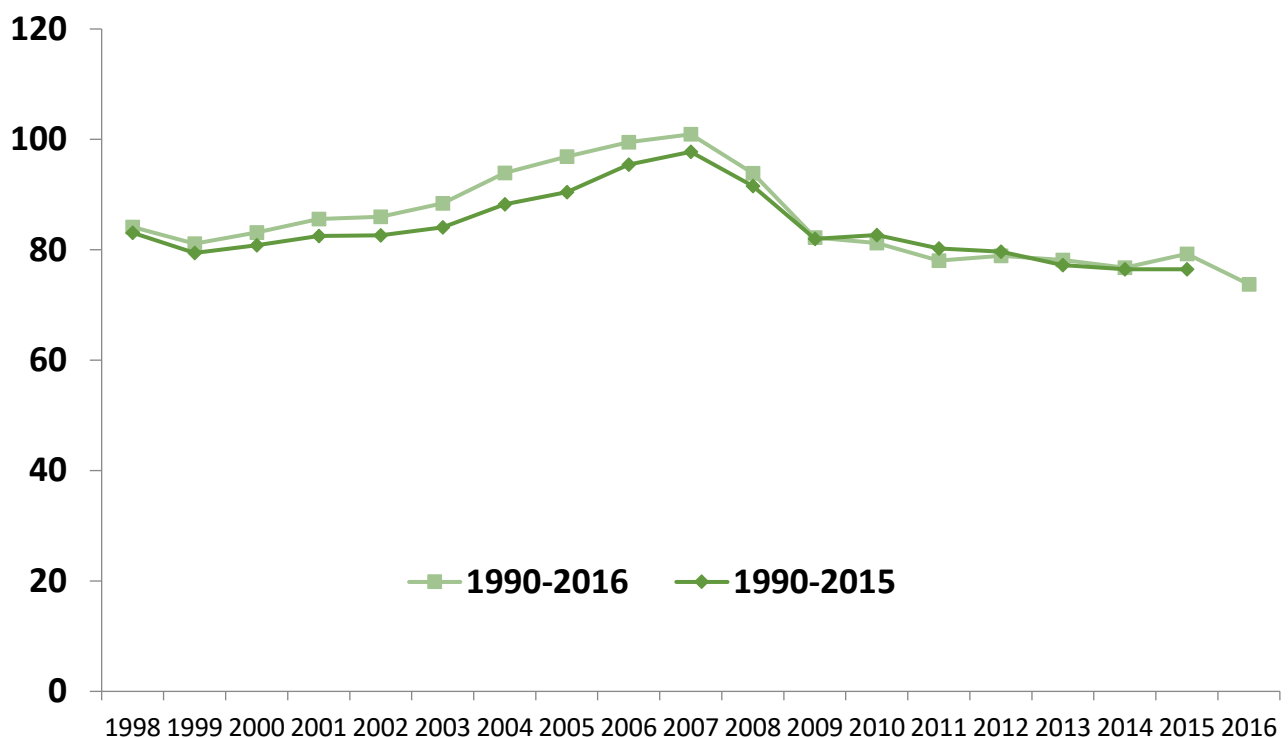
The consumption based account also contains data on direct greenhouse gas emissions from households and is broken down into those from home heating and travel. Data from the [UK Environmental Accounts](#) produced by the Office for National Statistics at a UK level have been used to calculate residential heating and private motoring consumption based emissions. Scotland's share of these UK greenhouse gas emissions are calculated using data from the [National Atmospheric Emissions Inventory](#) website.

Revisions since the previous Carbon Footprint for Scotland

There have been seven releases of the model used to estimate Scotland's Carbon Footprint.

Chart 8 shows the differences between the 2015 and 2016 releases of the carbon footprint. Revisions to previously published estimates in this release are comparatively small and relate to revisions to the global emissions and trade data used to construct the multi-regional input-output model used in this carbon footprint.

Chart 8. Scotland's Carbon Footprint. Comparison of 1990-2015 and 1990-2016 series. Values in MtCO₂e



Revisions between the 1990-2012 and 1990-2016 publications

Since the carbon footprint was first published, successive releases have used different versions of the UK MRIO model. The 2012 release used a 2-region model which only distinguished the UK and the Rest of the World as trade regions. The 2013, 2015 and 2016 releases used a four region model, distinguishing imports from Europe, China and the Rest of World, using trade data from the Eora global MRIO. The 2017, 2018 and 2019 model adopted the same four regions but used

trade data from the EXIOBASE MRIO. From 2020 the UK MRIO model will move to a 14 region configuration – early analysis suggests this will result in a <1% change in total results. The 2019 model presents the most accurate calculation to date.

Comparison of Scotland's carbon footprint and its territorial emissions

In addition to Scotland's carbon footprint, Scotland's carbon emissions are measured on a territorial basis. The different bases should be viewed as complementary ways of accounting for carbon emissions.

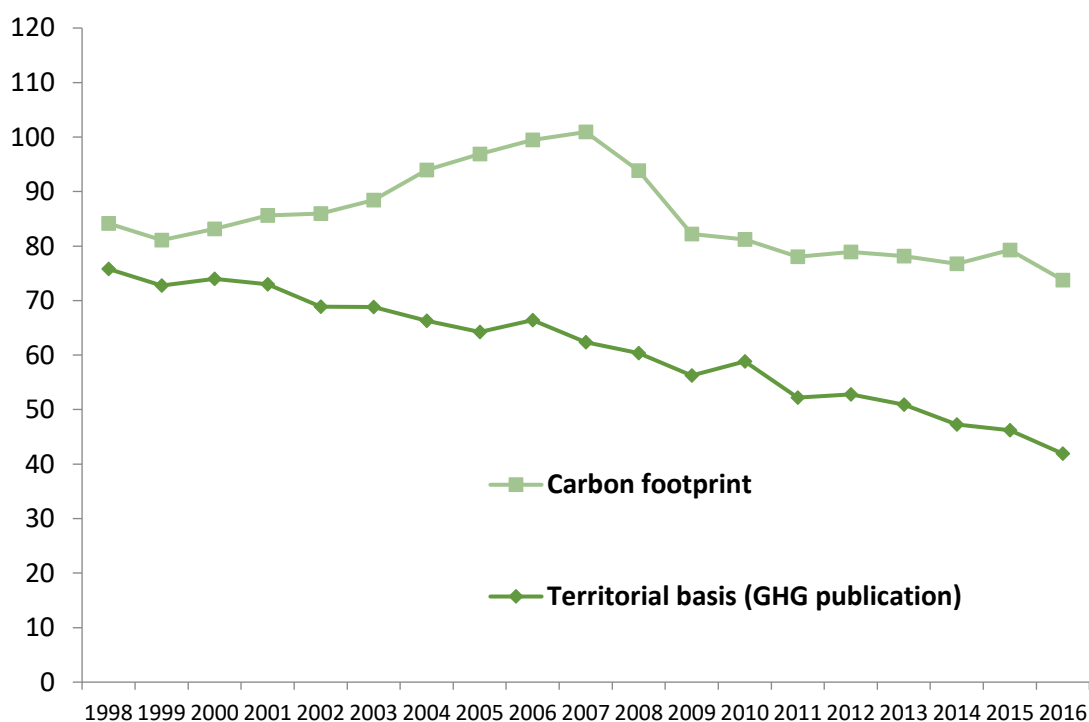
What are Territorial Emissions?

Territorial greenhouse gas emissions are those which occur within a country's or region's borders. The Scottish Government publishes emissions on a territorial basis from the Scottish greenhouse gas inventory as part of the Official Statistics publication [Scottish Greenhouse Gas Emissions 2017](#). The Scottish greenhouse gas inventory measures greenhouse gas emissions on a territorial basis, so only includes emissions within Scottish borders, though it also includes estimates of greenhouse gas emissions from international aviation and shipping based on Scotland's share of fuel sales from aviation and marine bunkers. The inventory also includes emissions and removals resulting from land use, land use change and forestry, which have been removed from the Carbon Footprint. Data from the Scottish Greenhouse Gas Inventory are used for reporting progress against the [Climate Change \(Scotland\) Act 2009](#) and for progress against the [Scottish Government's Sustainability Purpose Target](#).

The Scottish greenhouse gas inventory is a disaggregation of the UK's greenhouse gas inventory, which is used for reporting UK emissions to the EC and United Nations Framework Convention on Climate Change (UNFCCC). The [National Atmospheric Emissions Inventory](#) website contains direct comparisons between the Scottish and UK greenhouse gas inventory.

Chart 9 shows the relationship between the two different measures of greenhouse gas emissions relating to Scotland. The carbon footprint is notably bigger due to the impact of embedded greenhouse gas emissions from imports. Whilst the carbon footprint has fallen by 12.3 per cent between 1998 and 2016, equivalent greenhouse gas emissions on a territorial basis have fallen by 44.7 per cent (territorial emissions figures from the Scottish Greenhouse Gas Emissions 2017 publication, released June 2019) over the same time period.

Chart 9. Comparison of Scotland’s Carbon Footprint with its territorial greenhouse gas emissions: 1998 to 2016. Values in MtCO₂e



Emissions-intensities by product (Experimental Statistics)

All results in this section are designated as experimental statistics. These are defined as new official statistics undergoing development and testing. The methods, data sources and results in this section are open for ongoing consultation with users, and we welcome feedback on all aspects of the statistics. All users should be aware that the results in this section are provisional and will be revised and updated when further developments are made. They should therefore be used with appropriate caution at this time. We welcome any thoughts or views on this analysis. Please contact andrew.mortimer@gov.scot.

Introduction

This section introduces two conceptually similar measures of emissions-intensity, i.e. Kilogrammes of embodied emissions per pound (£ GBP) of final demand expenditure. These are currently called Total Impact Multipliers, and Conversion Factors and each has its own benefits and weaknesses depending on their use.

Conversion Factors

The main benefits of this measure are:

1. The classification system used in the Conversion Factors better aligns to expenditure items that households buy. For example, rather than 'wearing apparel' the COICOP³ system has categories for garments, accessories and haberdashery.
2. Conversion Factors allow users to work with the actual prices of products as bought from shops, including any taxes, duties and retail & wholesale margins. The conversion factors are developed by calculating the emissions by COICOP category and then dividing by the annual spend on products according to the Living Costs and Food Survey 2016 .

The key weakness of the Conversion Factors is that they are not presented by 'country of final assembly'.

Total Impact Multipliers (TIMs)

In contrast to Conversion Factors, Total Impact Multipliers have the key benefit of providing separate emissions-intensities for goods and services produced in each region (UK / EU27 / China / Rest of World). However, the denominator used in TIMs is valued in basic prices. As a result, users will need to adjust these values for retail and wholesale mark-ups and apply any taxes & duties that may apply.

³ Classification of individual consumption by purpose (COICOP)

The TIMs do however allow consideration of instances where buying locally produced goods and services would reduce global emissions. Additionally, TIMs potentially have a role in industrial policy by allowing consideration of the wider impacts of offshoring production (and emissions) currently taking place in the UK.

Results

The following section presents the most polluting goods and services for all greenhouse gases in terms of Kg of CO₂ equivalent in the latest year (2016). Emissions-intensities for all goods and services can be obtained in an accompanying spreadsheet (see “supporting files” section on the web-page for this release).

Chart 10. Conversion Factors: top 20 emissions intensities by product

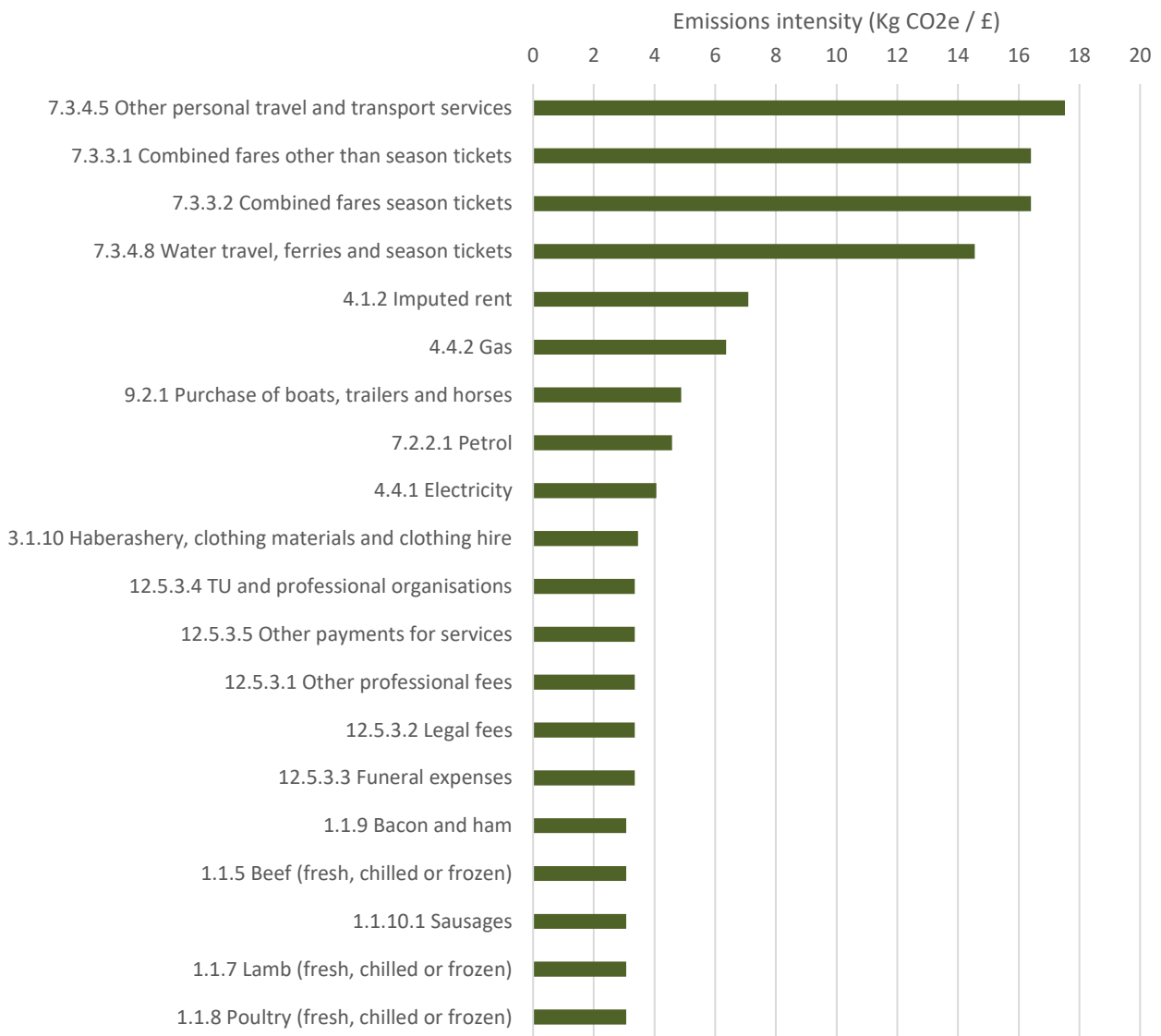


Chart 11. Total Impact Multiplier (UK): top 20 emissions intensities by product

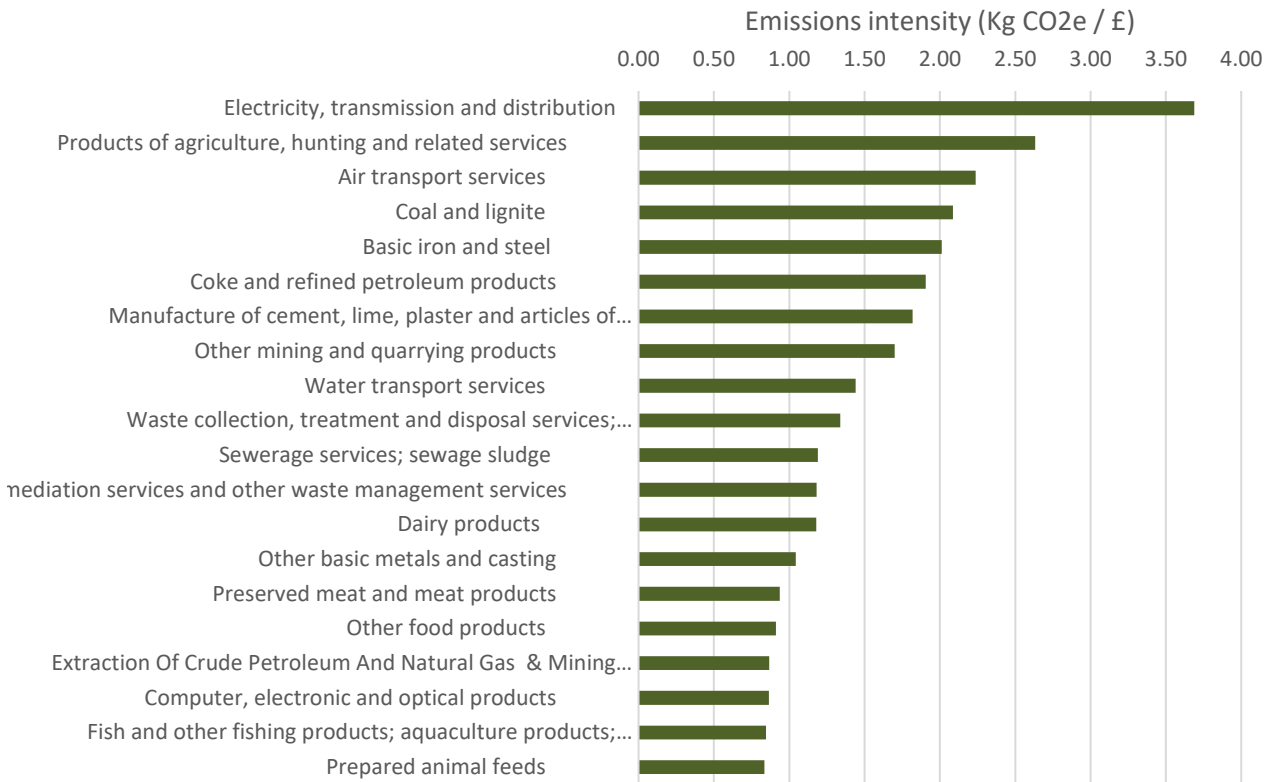


Chart 12. Total Impact Multiplier (EU27): top 20 emissions intensities by product

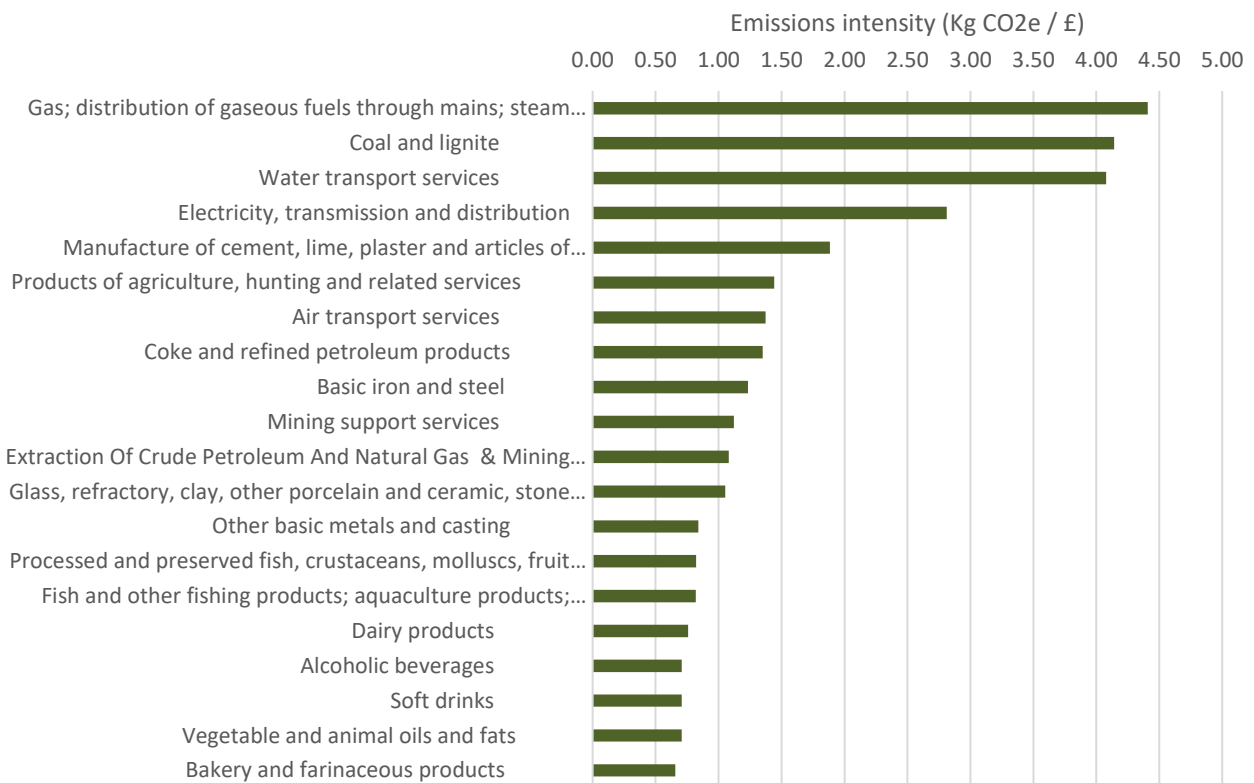


Chart 13. Total Impact Multiplier (China): top 20 emissions intensities by product

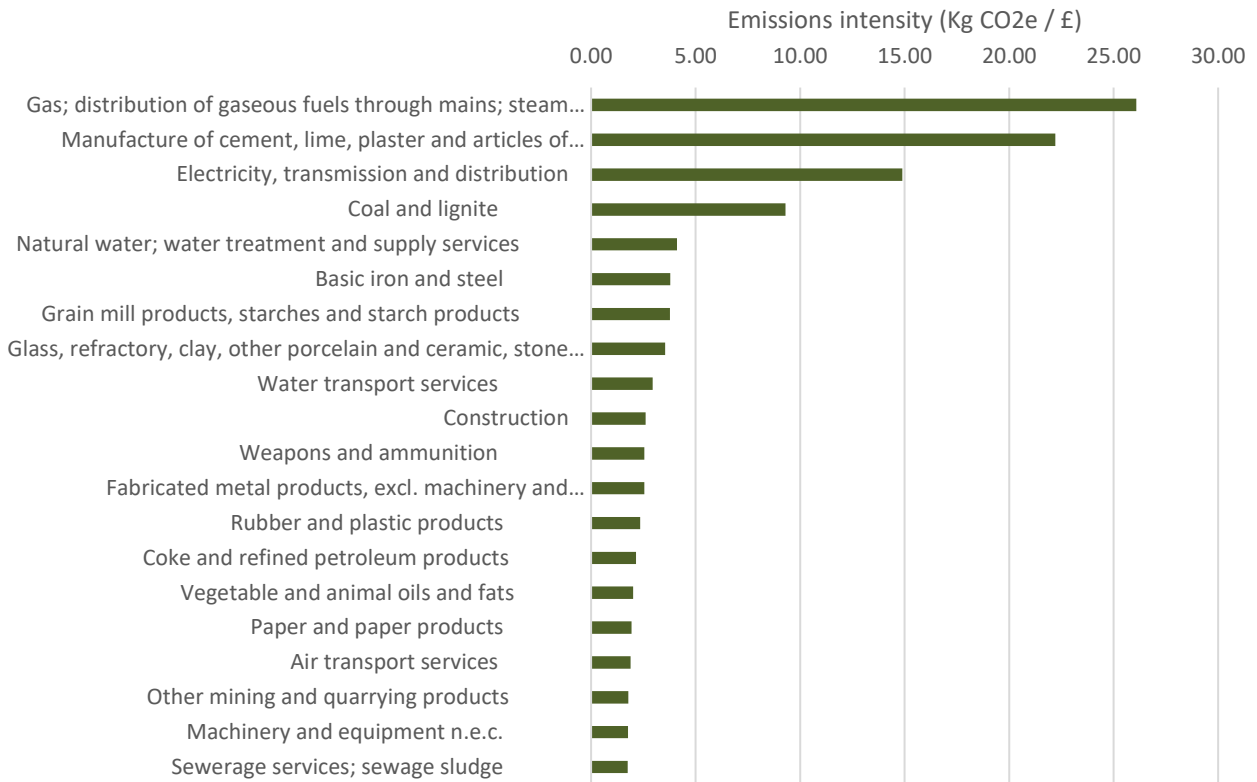
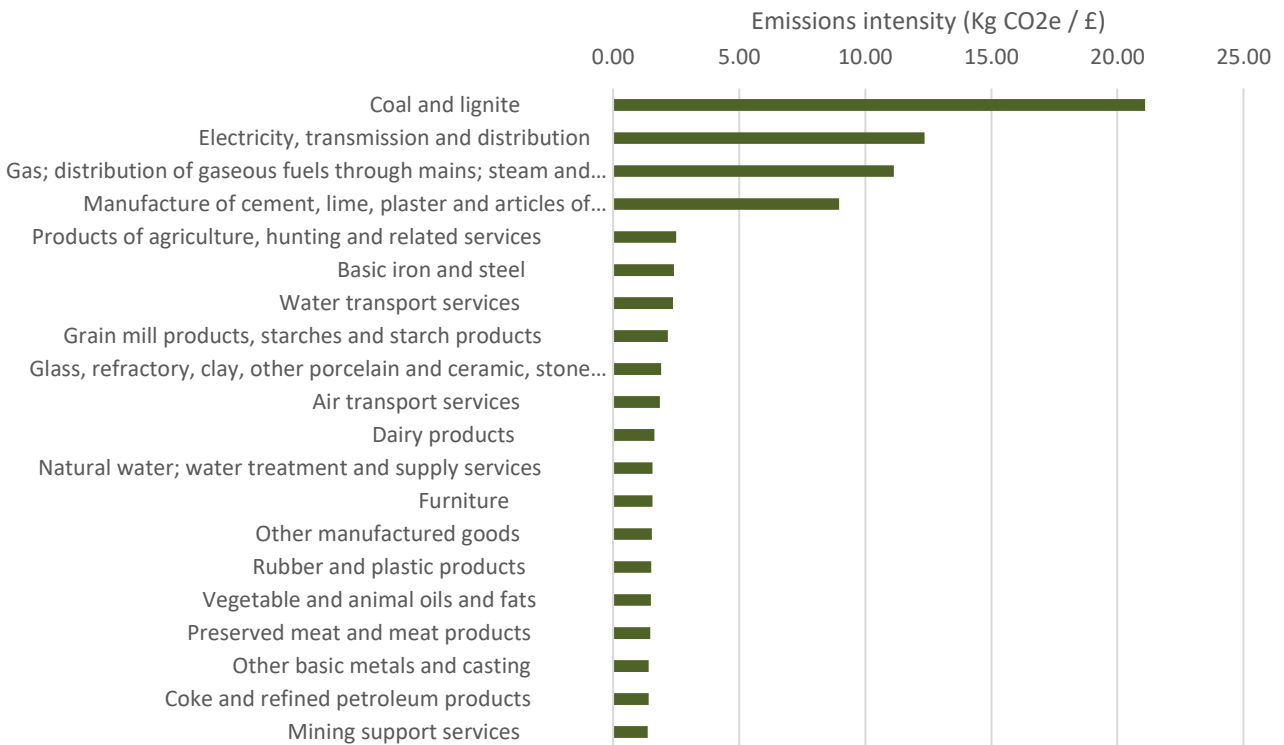


Chart 14. Total Impact Multiplier (Rest of world): top 20 emissions intensities by product



Access to Background Data and Charts

All the data which underpin the charts are available from an Excel workbook accompanying this release. This Excel workbook also contains the underlying outputs from the MRIO model with data for each year from 1998 to 2016 with information on greenhouse gas and carbon dioxide emissions for each economic sector.

An Official Statistics publication for Scotland

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