NISRA
Northern Ireland Statistics and Research Agency

Northern Ireland Carbon Intensity Indicators 2020

Sustainability *at the heart of a living, working, active landscape valued by everyone.*

Department of
Agriculture, Environment and Rural Affairs
www.daera-ni.gov.uk

INVESTORS IN PEOPLE

Contents

Note

Intensity Indicators are highlighted in blue, and the relevant workbook tabs are also marked in blue.

The remaining indicators are **proxy indicators**, which whilst not intensity indicators as such, are logically linked to emissions and/or emissions intensity levels.

Sector **Indicator**

Key Points

- Gross Value Added (GVA) is used to measure NI's economic output, and over the 20 years shown it has grown substantially, while greenhouse gas emissions have been in decline. The ratio of total greenhouse gas emissions to GVA, in NI, decreased 63% from 1998 to 2018.

- In 2018, greenhouse gas (GHG) emissions intensity for NI was estimated at around 0.46 kilograms of carbon dioxide (CO_2) equivalent per £ of GVA. In 1998 this figure stood at 1.24 kilograms.

- GHG emissions per capita decreased 32% from 15.2 tonnes CO_2 equivalent per person in 1990 to 10.3 tonnes in 2018. The population increased by 18% over this period, while greenhouse gas emissions decreased by 20%.

- GHG emissions per unit of electricity generated decreased 46% from 631 grams CO_2 per kWh in 2004 to 339 grams in 2018. This has been driven by the growth of renewable generation in NI, a shift away from coal use towards gas for electricity generation, and improvements in energy efficiency.

- Residential GHG emissions per household decreased 17% over the past eight years from a peak of 4.21 tonnes of CO_2 equivalent per household in 2010 to 3.48 tonnes in 2018. Fuel switching to natural gas from more carbon-intensive fuels such as coal and oil has reduced emissions, but more households creates greater demand for energy.

- Average CO_2 emissions from licensed cars decreased 9% from 149.8 grams of CO_2 per km in 2014 to 136.6 grams in 2019. This decrease came about due to a higher proportion of cars with lower emission ratings. In 2014, 26% of licensed cars had CO_2 emissions of a maximum of 130 grams per kilometre compared with a rate of 49% in 2019.

- Total emissions (excluding sequestration) related to milk production decreased from a population average of 1,927 grams of CO_2 equivalent per kilogram (Energy Corrected Milk-ECM) in 1990 to 1,279 grams in 2018. Whilst milk production in the dairy sector has expanded by 78% since 1990, the total number of dairy cows over this period has increased by only 12%, meaning this improvement in carbon footprint has been driven by substantial increases in milk yield per cow.

- Waste management emissions per capita have decreased 64% from 1,166 kilograms of CO_2 equivalent per person in 1990 to 417 kilograms in 2018. The population increased by 18% over this period while greenhouse gas emissions from waste management have fallen by 58%, due in a large part to the introduction of methane capture and oxidation systems at landfill sites.

Return to Contents Page

Introduction - Carbon Intensity Indicators for Northern Ireland

In order to complement the emissions data available from the historic GHG Inventory and the NI GHG Projections, and to help Government track the effectiveness of their carbon reduction policies, a set of local Carbon Intensity (CI) indicators has been developed. The indicators were agreed by the Mitigation Sub-Group of the Cross-Departmental Working Group on Climate Change (CDWGCC) and populated by DAERA's Statistics and Analytical Services Branch, taking advice as appropriate, from the CDWGCC Analysts' Sub-Group. Please note that this group is now known as the Future Generations Analysts' Sub-Group.

Rather than measuring absolute emissions levels, emissions intensity is concerned with capturing the amount of CO_2 equivalent generated per unit of output or per capita, e.g., power sector emissions per unit of electricity generated or total NI emissions per head of population.

The value of taking such an approach is that, whilst overall emissions might be seen to be increasing for a particular sector in line with an expanding economy, the carbon intensity might actually be decreasing which could still be viewed as a positive outcome. The CI indicators are therefore another way of measuring the progress being made in NI towards reducing GHG emissions in terms of intensity as opposed to absolute emissions. Estimated absolute emissions for Northern Ireland can be seen in the Northern Ireland greenhouse gas inventory 1990-2018 statistical bulletin:
https://www.daera-ni.gov.uk/publications/northern-ireland-greenhouse-gas-inventory-1990-2018-statistical-bulletin

The CIs themselves are further supplemented by a set of associated proxy indicators which, whilst not intensity indicators as such, are logically linked to emissions and/or emissions intensity levels. Consideration of proxy indicators allows a greater range of indicators to be monitored as the data constraints tend to be less restrictive. It can also be easier to see how they are linked to various policy initiatives. Examples here could be the proportion of travelling being undertaken by sustainable means such as walking or cycling, or the energy efficiency of the building stock.

This report presents a series of indicators, for each of the key emission sectors, with each section generally beginning with an intensity indicator (where available) and supplemented by a set of proxy indicators. For ease of reference the intensity indicators have been highlighted (in blue) in order to distinguish them from the supporting proxy indicators.

Trend data have been presented, in both tabular and graphical format, from as far back as practically available to collect up to the latest year available. For some indicators, data may only recently have become available. In such cases, the current year will be the base year with the trend building from that point onwards. It is intended to update the indicators on an annual basis.

The change in recent and long term trend is also highlighted via the use of colour coded arrows with green signifying movement in a positive direction, red - negative, and amber - no change or unclear (e.g. an increase in total kilometres travelled may not necessarily be viewed as negative from a carbon reduction perspective if a greater proportion of the travel is being undertaken by walking/cycling or public transport rather than by car).

A User Guidance document has been produced to support this report which will develop over time. Users are strongly encouraged to consult this when considering particular indicators in order to properly understand what the indicator is measuring, its relevance from an emissions/intensity perspective and any significant limitations. It is published on the DAERA website along with these indicators:
https://www.daera-ni.gov.uk/publications/northern-ireland-carbon-intensity-indicators-2020

Return to Contents Page

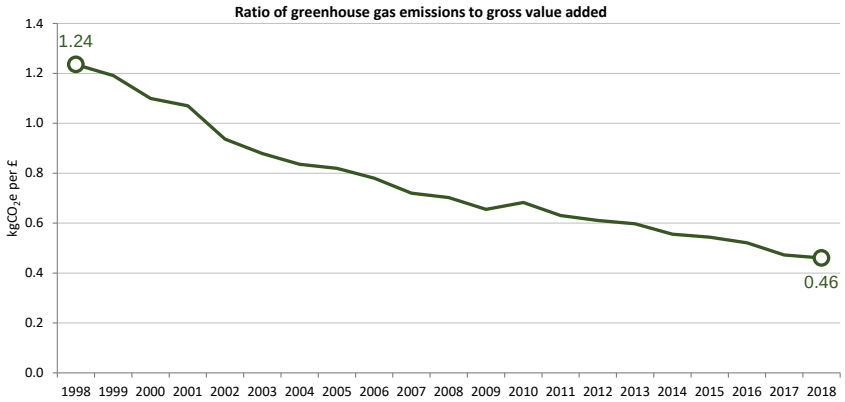
Summary of changes to indicators since previous publication

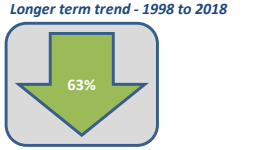
When the report is reviewed, some additional indicators may be added and in some instances indicators may need to be removed. No such changes took place this year. Where future changes occur they will be included here.

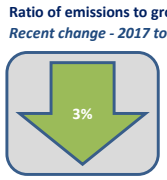
Intensity Indicator

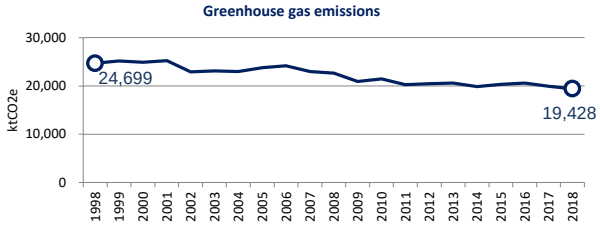
Return to Contents Page

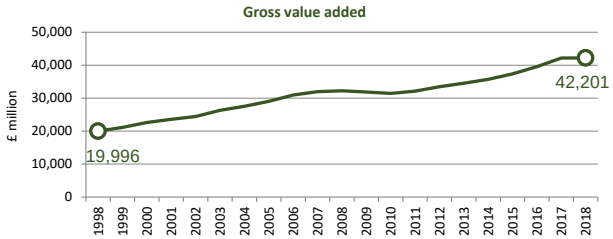
1.1 - Cross-cutting indicator - ratio of emissions to gross value added











Ratio of greenhouse gas emissions to gross value added (GVA)

Northern Ireland, 1998 to 2018

	Units	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Greenhouse gas (GHG) emissions	$ktCO_2e$	24,699	25,207	24,907	25,267	22,908	23,126	23,007	23,798	24,159	23,009	22,635
Gross value added	£ million	19,996	21,157	22,646	23,612	24,462	26,326	27,529	29,027	30,973	31,960	32,226
Ratio of GHG emissions to GVA	**$kgCO_2e$ per £**	**1.24**	**1.19**	**1.10**	**1.07**	**0.94**	**0.88**	**0.84**	**0.82**	**0.78**	**0.72**	**0.70**

continued...

	Units	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Greenhouse gas (GHG) emissions	$ktCO_2e$	20,901	21,483	20,261	20,446	20,626	19,843	20,322	20,627	19,920	19,428
Gross value added	£ million	31,894	31,458	32,129	33,494	34,527	35,723	37,372	39,581	42,170	42,201
Ratio of GHG emissions to GVA	**$kgCO_2e$ per £**	**0.66**	**0.68**	**0.63**	**0.61**	**0.60**	**0.56**	**0.54**	**0.52**	**0.47**	**0.46**

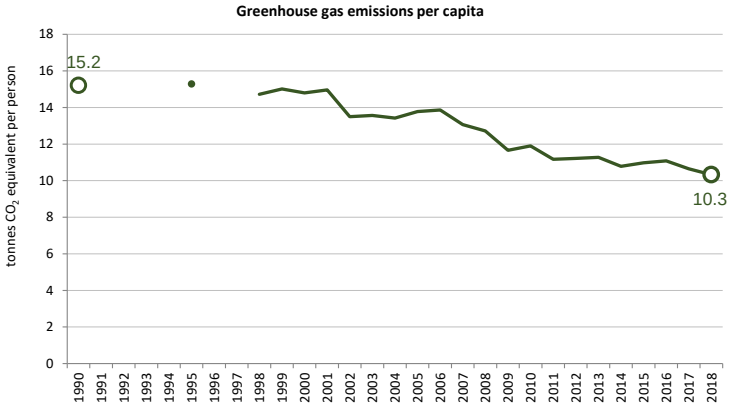
Source:
https://www.ons.gov.uk/economy/grossvalueaddedgva/datasets/nominalregionalgrossvalueaddedbalancedperheadandincomecomponents
Source: Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland: 1990-2018
https://naei.beis.gov.uk/reports/reports?section_id=4

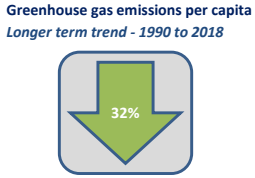
Notes:
GVA (Income Approach) at current basic prices.
Figures for greenhouse gas emissions and gross value added are updated annually due to ongoing improvements to data collection or estimation techniques.

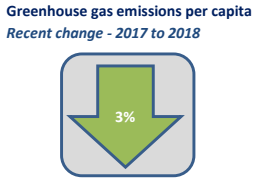
Intensity Indicator

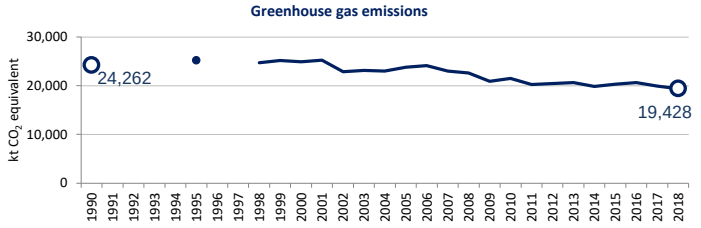
Return to Contents Page

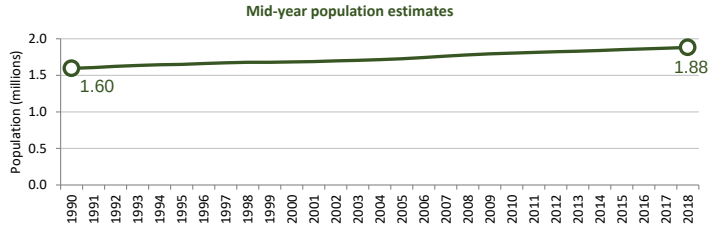
1.2 - Cross-cutting indicator - greenhouse gas emissions per capita











Greenhouse gas emissions per capita

Northern Ireland, 1990 to 2018

	Units	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Greenhouse gas emissions	$ktCO_2e$	24,262					25,207			24,699	25,207	24,907	25,267	22,908	23,126	23,007
Mid-year population estimate	persons	1,595,595	1,607,295	1,623,263	1,635,552	1,643,707	1,649,131	1,661,751	1,671,261	1,677,769	1,679,006	1,682,944	1,688,838	1,697,534	1,704,924	1,714,042
NI GHG emissions per capita	**tCO_2e / person**	**15.2**					**15.3**			**14.7**	**15.0**	**14.8**	**15.0**	**13.5**	**13.6**	**13.4**

continued...

	Units	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Greenhouse gas emissions	$ktCO_2e$	23,798	24,159	23,009	22,635	20,901	21,483	20,261	20,446	20,626	19,843	20,322	20,627	19,920	19,428
Mid-year population estimate	persons	1,727,733	1,743,113	1,761,683	1,779,152	1,793,333	1,804,833	1,814,318	1,823,634	1,829,725	1,840,498	1,851,621	1,862,137	1,870,834	1,881,641
NI GHG emissions per capita	**tCO_2e / person**	**13.8**	**13.9**	**13.1**	**12.7**	**11.7**	**11.9**	**11.2**	**11.2**	**11.3**	**10.8**	**11.0**	**11.1**	**10.6**	**10.3**

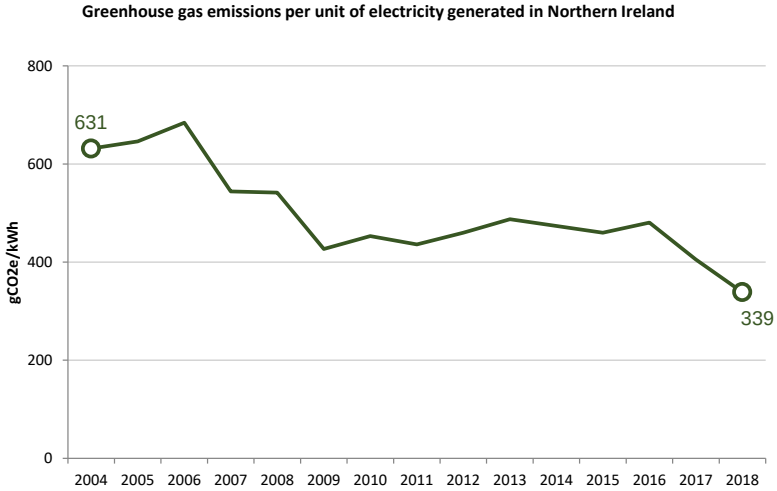
Source: Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland: 1990-2018
https://naei.beis.gov.uk/reports/reports?section_id=4
NISRA mid year population estimates
https://www.nisra.gov.uk/publications/2019-mid-year-population-estimates-northern-ireland

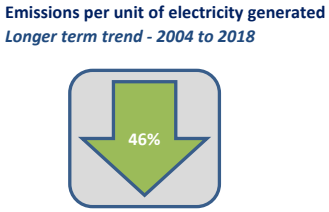
Note: Figures for greenhouse gas emissions are updated annually due to ongoing improvements to data collection or estimation techniques.

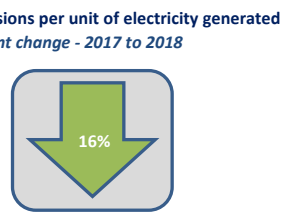
Intensity Indicator

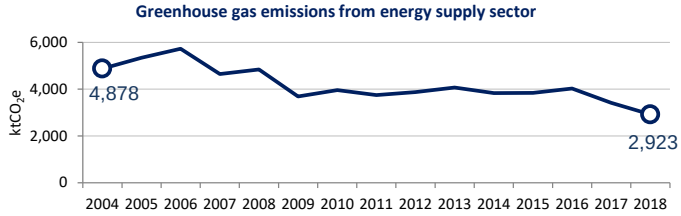
Return to Contents Page

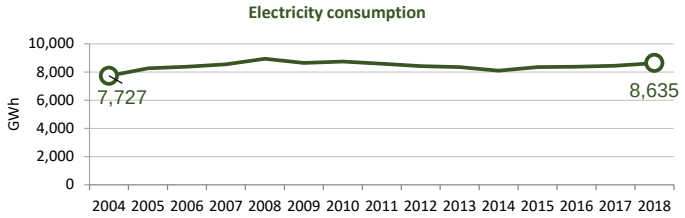
2.1 - Power sector - emissions per unit of electricity generated, gCO_2/kWh











Greenhouse gas emissions per unit of electricity generated

Northern Ireland, 2004 - 2018

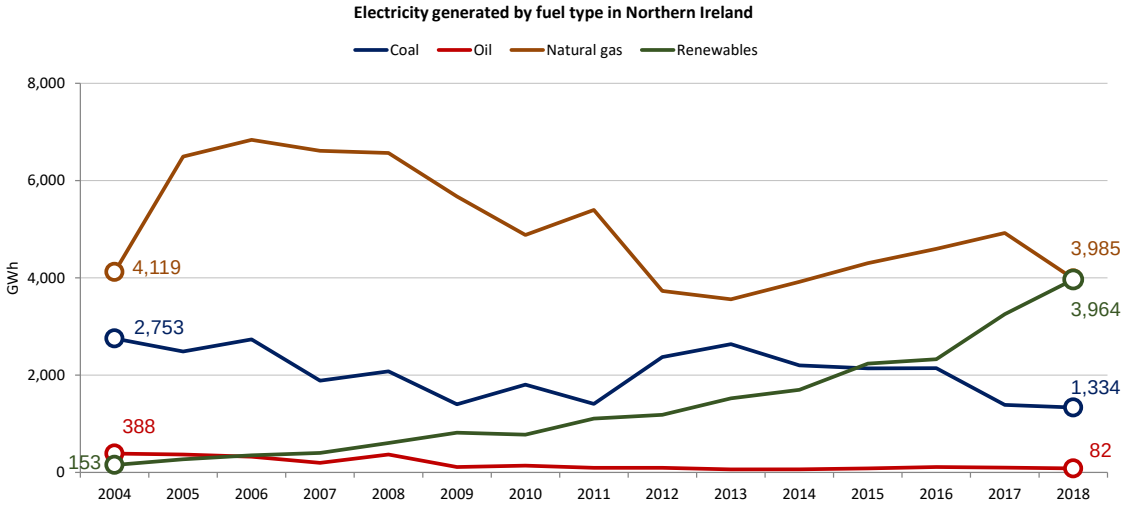
	Units	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Power sector emissions	$ktCO_2e$	4,878	5,339	5,728	4,649	4,841	3,687	3,960	3,746	3,875	4,069	3,835	3,838	4,025	3,420	2,923
Electricity consumption	GWh	7,727	8,265	8,374	8,543	8,938	8,644	8,744	8,592	8,422	8,349	8,097	8,343	8,374	8,440	8,635
Emissions intensity	**gCO_{2e}/kWh**	**631**	**646**	**684**	**544**	**542**	**427**	**453**	**436**	**460**	**487**	**474**	**460**	**481**	**405**	**339**

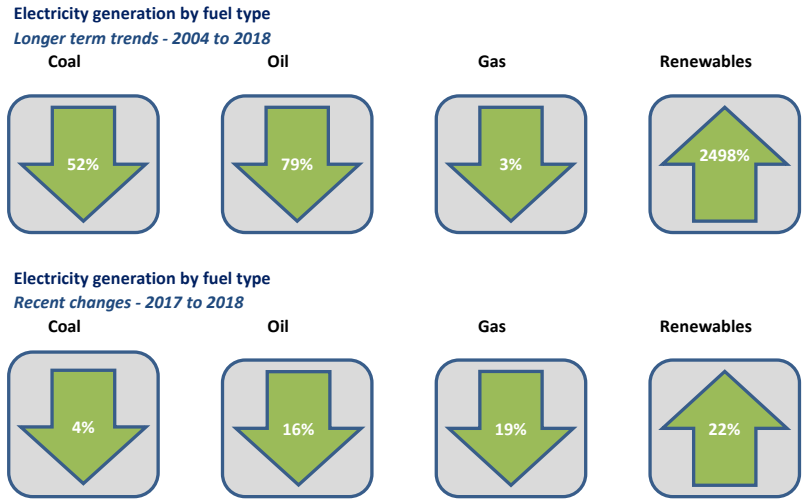
Source: Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland: 1990-2018
https://naei.beis.gov.uk/reports/reports?section_id=4
Source: BEIS Energy Trends Special Feature
https://www.gov.uk/government/publications/energy-trends-december-2019-special-feature-articles

Note: Figures for greenhouse gas emissions are updated annually due to ongoing improvements to data collection or estimation techniques.

Return to Contents Page

2.2 - Power sector - electricity generation[1] by fuel type





Electricity generated by fuel type

Northern Ireland, 2004 to 2018

Fuel type	Units	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Coal	GWh	2,753	2,488	2,737	1,887	2,077	1,402	1,806	1,407	2,370	2,635	2,199	2,140	2,143	1,390	1,334
Oil	GWh	388	367	322	197	370	112	138	96	95	64	63	82	110	98	82
Natural gas	GWh	4,119	6,494	6,837	6,611	6,568	5,674	4,883	5,397	3,733	3,559	3,918	4,302	4,597	4,921	3,985
Renewables	GWh	153	271	352	400	606	818	776	1,105	1,184	1,524	1,699	2,237	2,326	3,254	3,964
Total	**GWh**	**7,412**	**9,620**	**10,248**	**9,095**	**9,621**	**8,006**	**7,604**	**8,006**	**7,381**	**7,782**	**7,880**	**8,761**	**9,175**	**9,662**	**9,366**

Source: BEIS Energy Trends Special Feature
https://www.gov.uk/government/publications/energy-trends-december-2019-special-feature-articles

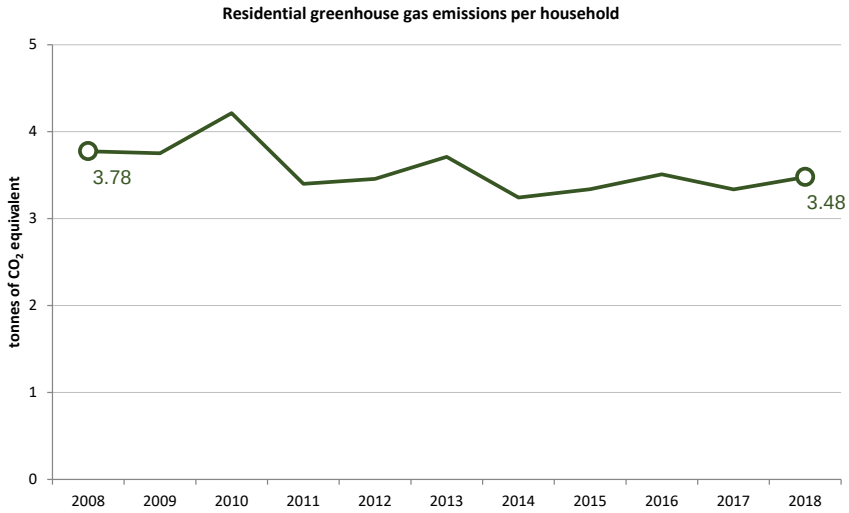
Note: Whether an increase/decrease in gas use is good or bad with respect to greenhouse gas emissions will depend on the electricity source in the absence of the gas.
For example, burning less coal and more natural gas would help reduce emissions because natural gas results in lesser emissions than coal.

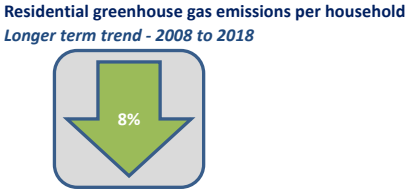
[1] Includes generation from both Major Power Producers (MPP) and other generators.

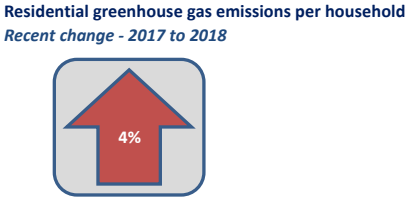
Intensity Indicator

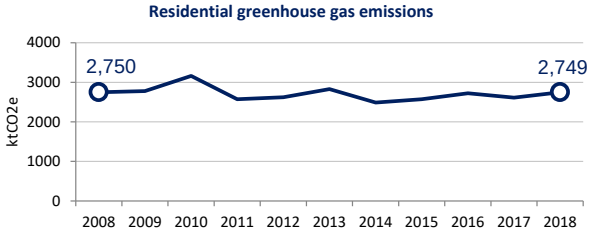
Return to Contents Page

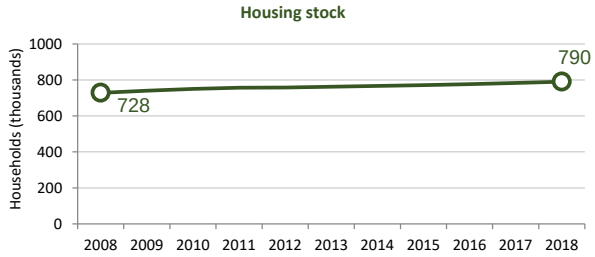
3.1 - Buildings indicator - residential greenhouse gas emissions per household











Residential greenhouse gas emissions per household

Northern Ireland, 2008 - 2018

	Units	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Residential emissions	$ktCO_2e$	2,750	2,776	3,162	2,573	2,623	2,829	2,488	2,574	2,725	2,614	2,749
Housing stock	-	728,341	740,098	750,349	756,647	758,520	762,345	767,378	771,133	776,526	783,272	790,328
Emissions per household	**tCO_2e**	**3.78**	**3.75**	**4.21**	**3.40**	**3.46**	**3.71**	**3.24**	**3.34**	**3.51**	**3.34**	**3.48**

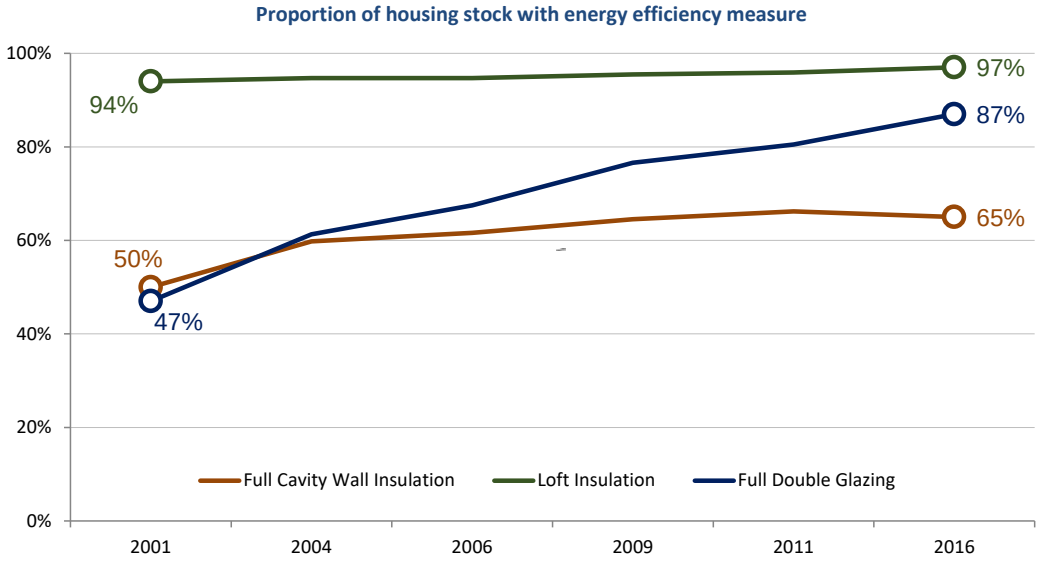
Source: Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland: 1990-2018
https://naei.beis.gov.uk/reports/reports?section_id=4
NI housing stock statistics
https://www.finance-ni.gov.uk/publications/annual-housing-stock-statistics

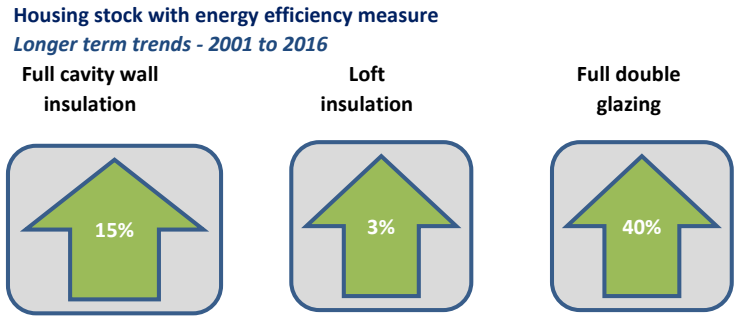
Note: Housing stock figures include vacant properties.
Note: Figures for greenhouse gas emissions are updated annually due to ongoing improvements to data collection or estimation techniques.

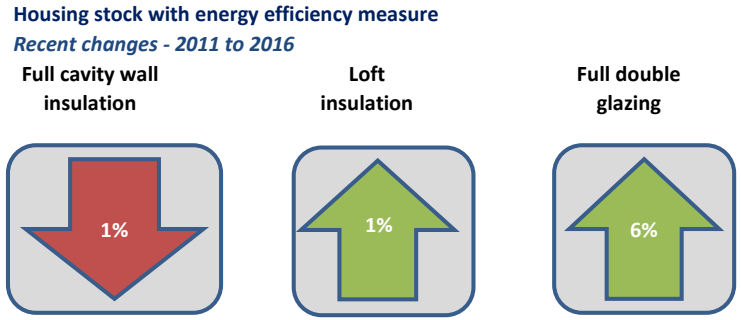
Return to Contents Page

3.2 - Buildings indicator - housing stock with energy efficiency measure

(i.e. cavity wall insulation, loft insulation, double glazing)







Proportion of housing stock with energy efficiency measure

Northern Ireland, 2001 to 2016

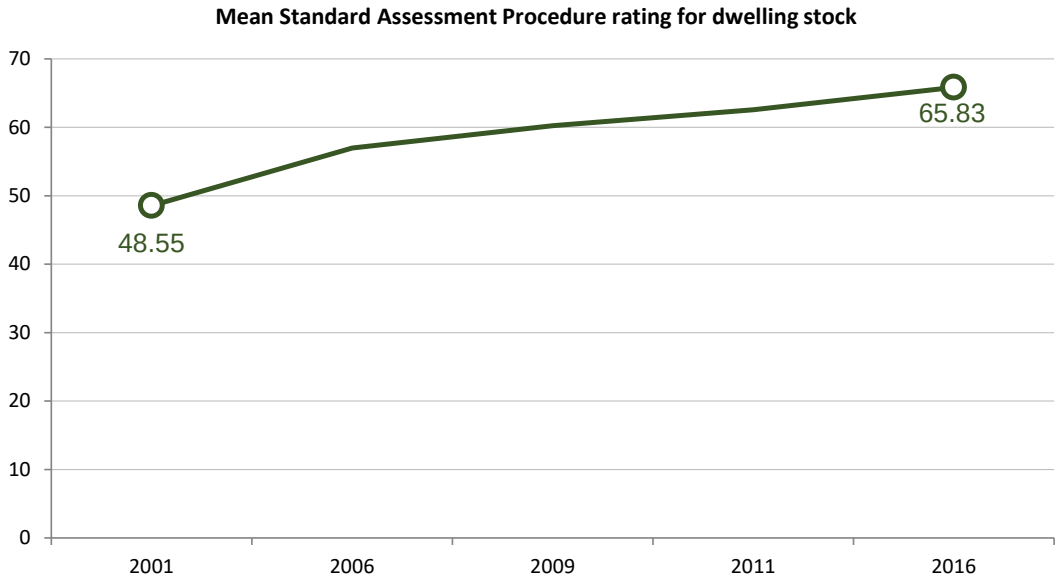
Energy efficiency measure	2001	2004	2006	2009	2011	2016
Full Cavity Wall Insulation	50%	60%	62%	65%	66%	65%
Loft Insulation	94%	95%	95%	96%	96%	97%
Full Double Glazing	47%	61%	68%	77%	81%	87%

Source: House Condition Survey

https://www.nihe.gov.uk/Working-With-Us/Research/House-Condition-Survey

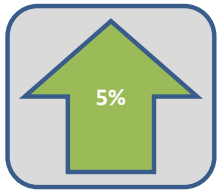
Return to Contents Page

3.3 - Buildings indicator - Mean Standard Assessment Procedure rating for dwelling stock



Mean Standard Assessment Procedure rating for dwelling stock
Longer term trend - 2001 to 2016

Mean Standard Assessment Procedure rating for dwelling stock
Recent change - 2011 to 2016



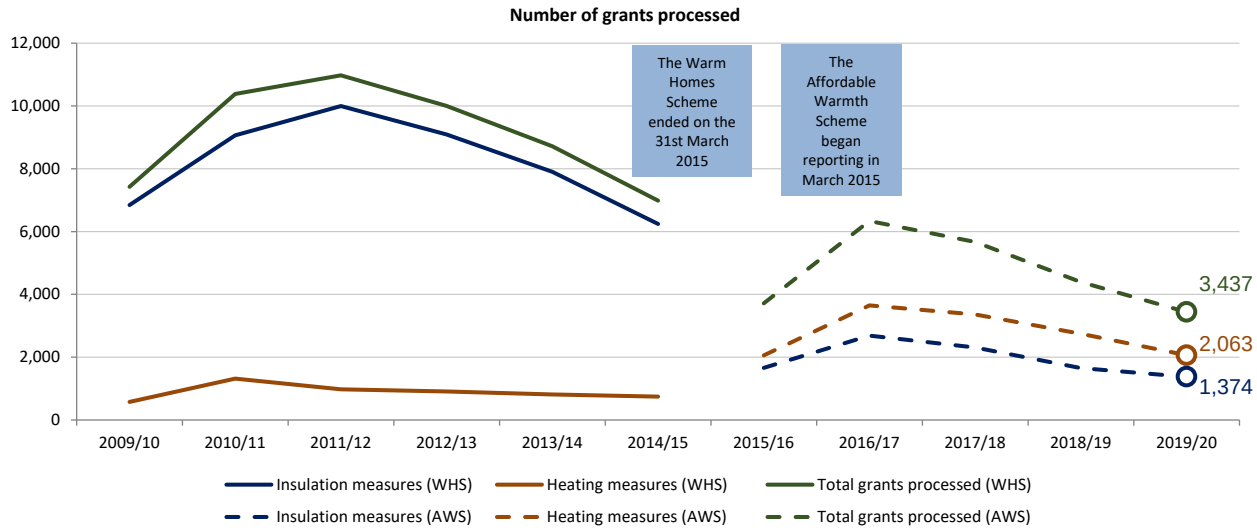
Mean Standard Assessment Procedure rating for dwelling stock
Northern Ireland, 2001 to 2016

	2001	2006	2009	2011	2016
Mean SAP rating	48.55	56.96	60.22	62.55	65.83
Number of dwellings	**701,000**	**705,000**	**740,000**	**760,000**	**780,000**

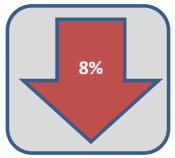
Source: House Condition Survey
https://www.nihe.gov.uk/Working-With-Us/Research/House-Condition-Survey

Return to Contents Page

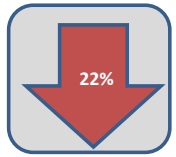
3.4 - Buildings indicator - grants processed for energy efficiency measures



Total grants processed under Affordable Warmth Scheme
Longer term trend - 2015/16 to 2019/20



Total grants processed under Affordable Warmth Scheme
Recent change - 2018/19 to 2019/20



Warm Homes Scheme grants processed

Northern Ireland, 2009/10 to 2014/15

	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Insulation measures (WHS)	6,847	9,063	9,997	9,095	7,904	6,243
Heating measures (WHS)	576	1,318	978	907	814	742
Total grants processed (WHS)	**7,423**	**10,381**	**10,975**	**10,002**	**8,718**	**6,985**

Affordable Warmth Scheme grants processed

Northern Ireland, 2014/15 to 2019/20

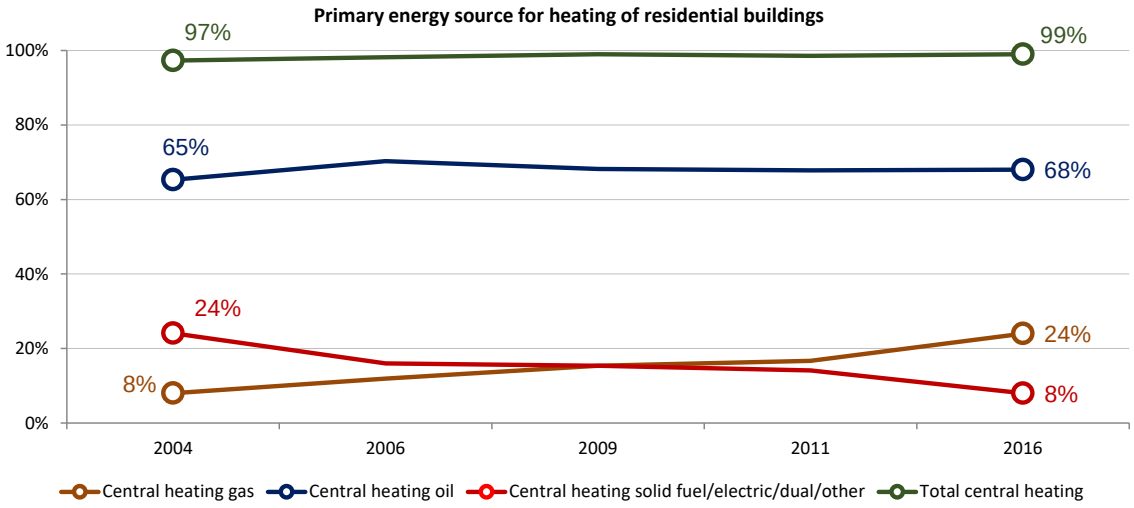
	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Insulation measures (AWS)	*	1,658	2,687	2,310	1,650	1,374
Heating measures (AWS)	*	2,058	3,649	3,359	2,745	2,063
Total grants processed (AWS)	*	**3,716**	**6,336**	**5,669**	**4,395**	**3,437**

Source: DfC Strategic Planning & Resources Branch

Note The Warm Homes Scheme ended on 31 March 2015 and has been replaced by the Affordable Warmth Scheme. The heating options for these schemes are quite different, so they cannot be directly compared.
Note: * The Affordable Warmth Scheme started in September 2014, however the numbers between then and March 2015 are too small to report.

Return to Contents Page

3.5 - Buildings indicator - primary energy source for heating of residential buildings



Proportion of dwellings by primary energy source

Northern Ireland, 2004 to 2016

Heating Type	2004	2006	2009	2011	2016
Central heating oil	65%	70%	68%	68%	68%
Central heating gas	8%	12%	15%	17%	24%
Central heating solid fuel/electric/dual/other	24%	16%	15%	14%	8%
Total central heating	97%	98%	99%	99%	99%
Total non-central heating	3%	2%	1%	1%	1%
Number of dwellings	**680,000**	**705,000**	**740,000**	**760,000**	**780,000**

Source: House Condition Survey

https://www.nihe.gov.uk/Working-With-Us/Research/House-Condition-Survey

Primary energy source for heating of residential buildings

Longer term trends - 2004 to 2016

Central heating oil | **Central heating gas** | **Central heating solid fuel / electric / dual fuel / other**

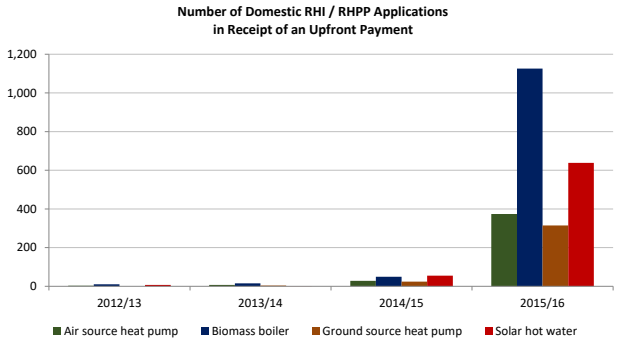
Primary energy source for heating of residential buildings

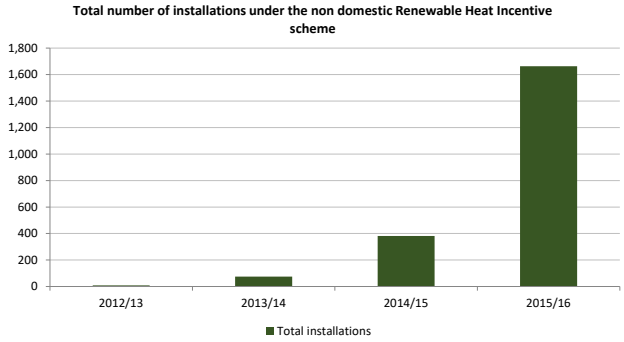
Recent changes - 2011 to 2016

Central heating oil | **Central heating gas** | **Central heating solid fuel / electric / dual fuel / other**

Return to Contents Page

3.6 - Buildings indicator - penetration of renewable heat





Number of domestic RHI scheme applications
2014/15 to 2015/16

Number of non domestic RHI scheme installations
2014/15 to 2015/16

Number of Domestic RHI / RHPP Applications in Receipt of an Upfront Payment
Northern Ireland, 2012/13 to 2015/16

	2012/13	2013/14	2014/15	2015/16
Air source heat pump	3	7	28	374
Biomass boiler	10	15	49	1,126
Ground source heat pump	0	4	24	315
Solar hot water	7	1	55	638
Total	**20**	**27**	**156**	**2,453**

Source: Energy Efficiency Branch, DfE

Number of installations non domestic Renewable Heat Incentive scheme
Northern Ireland, 2012/13 to 2015/16

	2012/13	2013/14	2014/15	2015/16
Biomass boiler	9	75	376	1,642
Ground source heat pump	0	0	4	15
Solar thermal	0	0	1	5
Water source heat pump	0	0	0	1
Total installations	**9**	**75**	**381**	**1,663**

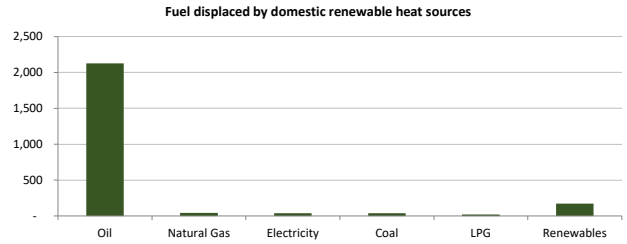
Source: Energy Efficiency Branch, DfE

Fuel displaced by renewable heat sources under domestic RHI scheme
Northern Ireland, 2015/16

	Oil	Natural Gas	Electricity	Coal	LPG	Renewables	Not Obtained	Total
Fuel displaced	2,125	45	37	39	21	175	11	2,453

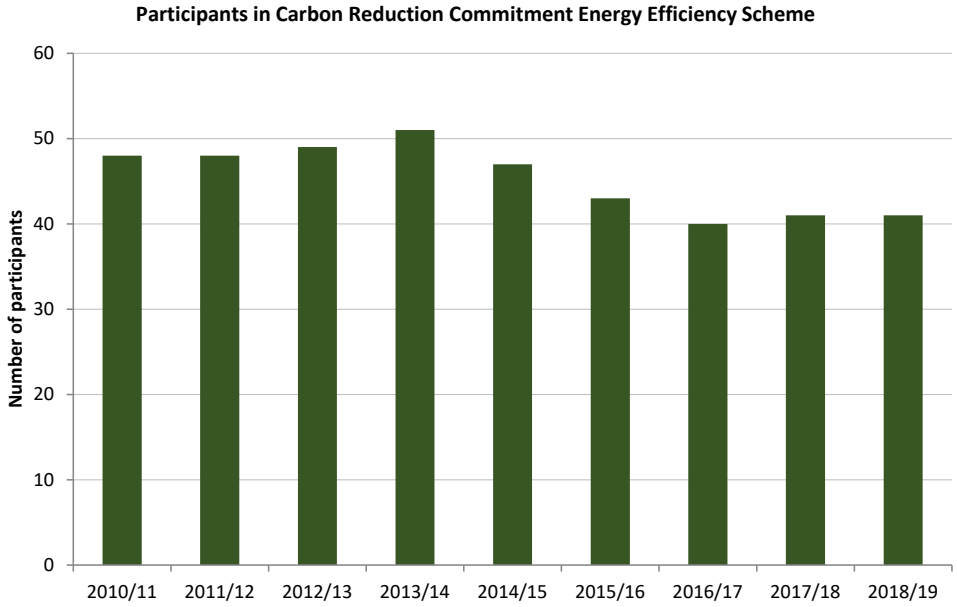
Source: Energy Efficiency Branch, DfE

Notes: Figures for the Domestic RHI / RHPP are reported as applications rather than installations as they were in 2016.
Due to differences in the way each scheme is run, it is deemed most appropriate to report the domestic scheme in applications and the non domestic scheme in installations.

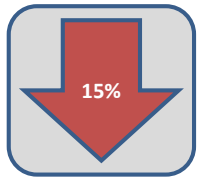


Return to Contents Page

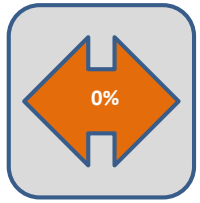
4.1 - Industry indicator - number of participants in the Carbon Reduction Commitment Energy Efficiency Scheme



Number of participants in the Carbon Reduction Commitment Energy Efficiency Scheme
Longer term trend - 2010/11 to 2018/19



Number of participants in the Carbon Reduction Commitment Energy Efficiency Scheme
Recent change - 2017/18 to 2018/19



Number of participants in Carbon Reduction Commitment Energy Efficiency Scheme

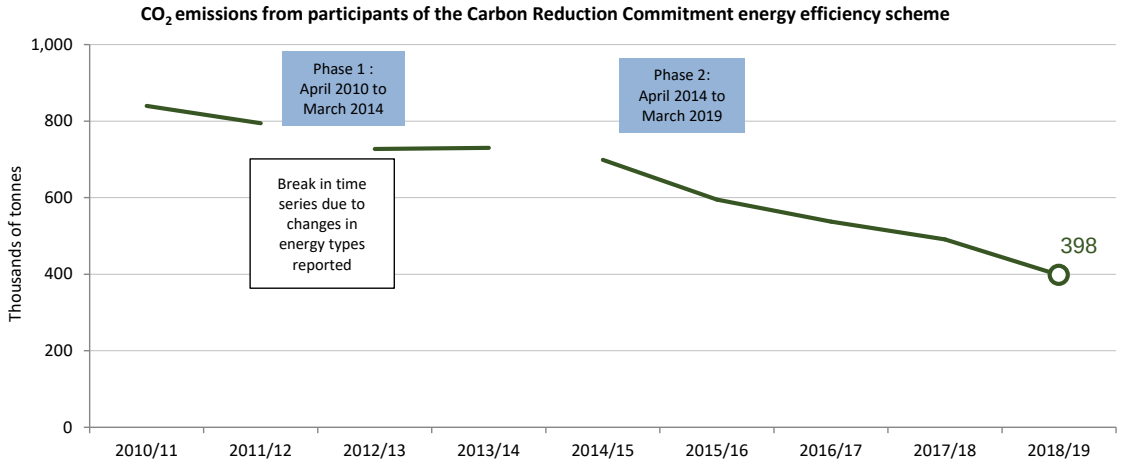
Northern Ireland, 2010/11 to 2018/19

	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Number of participants	48	48	49	51	47	43	40	41	41

Source: UK Environment Agency
https://www.gov.uk/government/publications/crc-annual-report-publications-phases-1-and-2

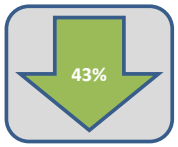
Return to Contents Page

4.2 - Industry indicator - CO_2 emissions from participants in the Carbon Reduction Commitment Energy Efficiency Scheme



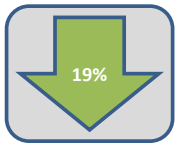
CO_2 emissions from participants in the Carbon Reduction Commitment Energy Efficiency Scheme

Longer term trend - 2014/15 to 2018/19



CO_2 emissions from participants in the Carbon Reduction Commitment Energy Efficiency Scheme

Recent change - 2017/18 to 2018/19



Number of participants in Carbon Reduction Commitment Energy Efficiency Scheme

Northern Ireland, 2010/11 to 2018/19

	Units	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
CO_2 emissions from participants	Tonnes	839,790	794,498	727,255	730,165	698,861	594,965	537,454	490,938	397,976

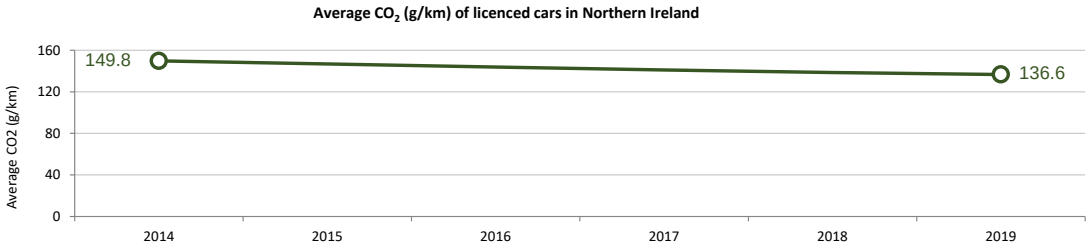
Source: The Environment Agency
https://www.gov.uk/government/publications/crc-annual-report-publications-phases-1-and-2

Note: Due to changes to the Carbon Reduction Commitment energy efficiency scheme, it is not possible to directly compare 2010/11 - 2011/12 with 2012/13 - 2013/14 or 2014/15 - 2018/19.
Reductions in emissions should be treated with caution due to the loss of participants because of mergers, site closures and the economic downturn.
These figures were revised in October 2020 to maintain consistency with the figures published in the annual report. These may be revised as a result of internal review or audit.

Intensity Indicator

Return to Contents Page

5.1 - Transport indicator - Average CO_2 of licenced cars



Average CO_2 emissions from licensed cars (g/km)

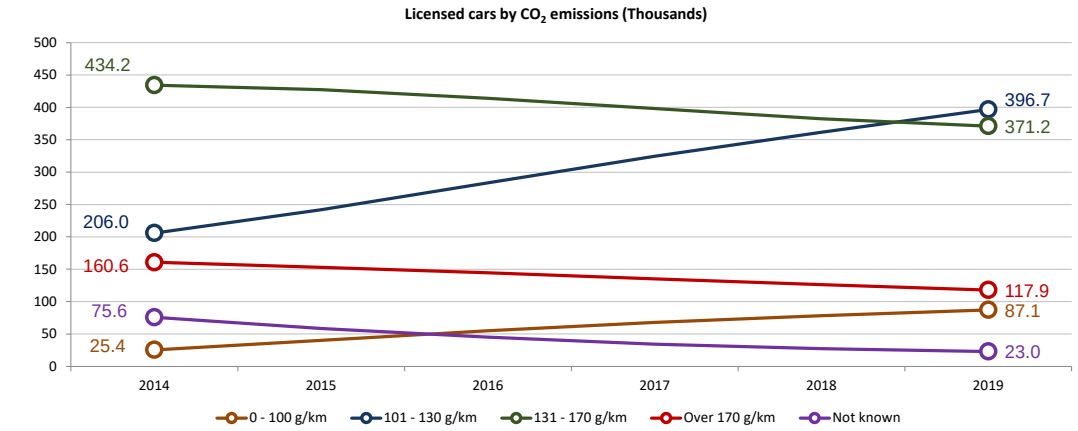
Northern Ireland

	2014	2015	2016	2017	2018	2019
Average emissions	149.8	146.8	143.8	141.0	138.6	136.6

Licensed cars by CO_2 emissions ('000s)

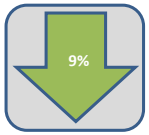
Northern Ireland

	2014	2015	2016	2017	2018	2019
0 - 100 g/km	25.4	40.0	55.0	68.0	78.4	87.1
101 - 130 g/km	206.0	242.0	283.3	324.4	361.5	396.7
131 - 170 g/km	434.2	427.2	414.1	398.1	382.4	371.2
Over 170 g/km	160.6	152.8	144.6	135.2	126.0	117.9
Not known	75.6	58.5	44.8	34.1	27.3	23.0
Total	**901.8**	**920.4**	**941.8**	**959.8**	**975.7**	**995.9**



Average CO_2 (g/km)

Long term trend - 2014 to 2019



Licensed cars by CO_2 emissions

0 - 100 g/km

Long term trend - 2014 to 2019

Licensed cars by CO_2 emissions

Over 170 g/km

Long term trend - 2014 to 2019

Source: Department for Transport

https://www.gov.uk/government/statistical-data-sets/veh02-licensed-cars

Notes:

1. Vehicles registered for the first time before September 2018 have New European Driving Cycle (NEDC) CO2 emission figures; those between September 2018 and December 2018 have a mix of NEDC and NEDC correlated figure; and those from January 2019 onwards have NEDC correlated figures. As a result, caution is advised when comparing 2018 with previous years.

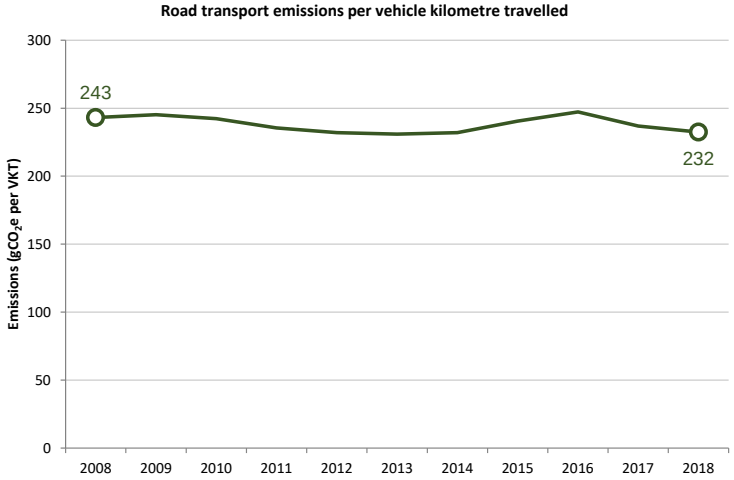
More information on the NEDC measurements is available online:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/917624/vehicle-licensing-statistics-notes-definitions.pdf

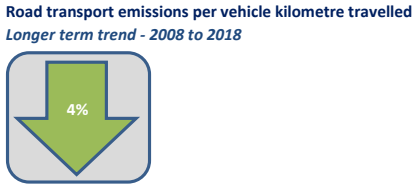
2. Data are presented where over half of licensed cars have available CO2 emissions data.

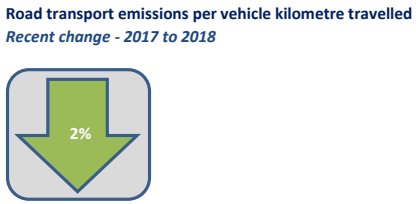
Intensity Indicator

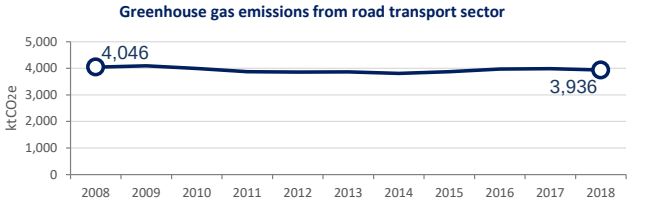
Return to Contents Page

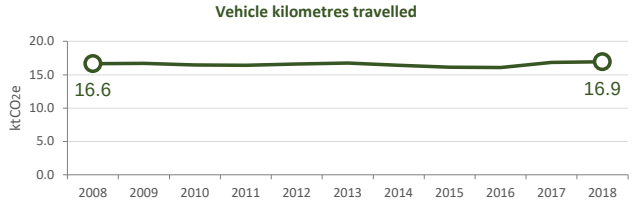
5.2 - Transport indicator - road transport emissions per vehicle kilometre travelled











Emissions per vehicle kilometre travelled (VKT)

Northern Ireland, 2008 to 2018

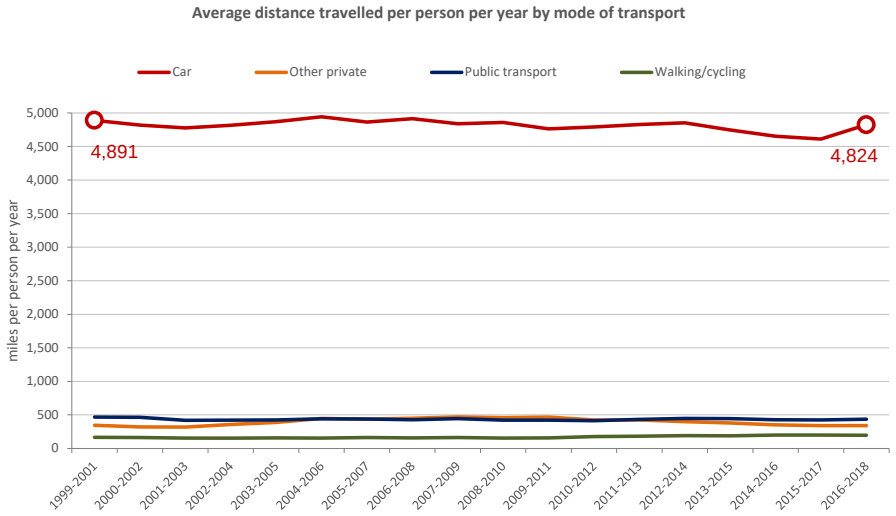
	Unit	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Road transportation emissions	$ktCO_2e$	4,046	4,094	3,992	3,870	3,857	3,866	3,808	3,874	3,972	3,987	3,936
Vehicle kilometres travelled	billion km	16.6	16.7	16.5	16.4	16.6	16.7	16.4	16.1	16.1	16.8	16.9
Emissions per VKT	**gCO_2e per VKT**	**243**	**245**	**242**	**236**	**232**	**231**	**232**	**240**	**247**	**237**	**232**

Source: Northern Ireland Road Safety Strategy to 2020 Annual Statistical Report 2020; Table 5
https://www.infrastructure-ni.gov.uk/articles/northern-ireland-road-safety-strategy-2020-statistics
Source: Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland: 1990-2018
https://naei.beis.gov.uk/reports/reports?section_id=4

Notes: Figures for greenhouse gas emissions are updated annually due to ongoing improvements to data collection or estimation techniques.

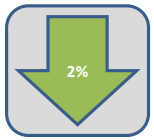
Return to Contents Page

5.3 - Transport indicator - average distance travelled per person per year by mode of transport (including cycling & walking)



Average distance travelled per person per year
Longer term trend: 1999-2001 to 2016-2018

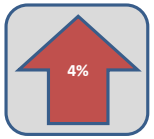
All modes of transport



Walking/cycling

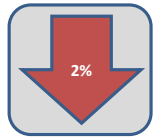
Average distance travelled per person per year
Recent change: 2015-2017 to 2016-2018

All modes of transport



2015-2017 to 2016-2018

Walking/cycling



2015-2017 to 2016-2018

Average distance travelled by travel mode (miles per person per year)
Northern Ireland, 1999 - 2001 to 2016 - 2018

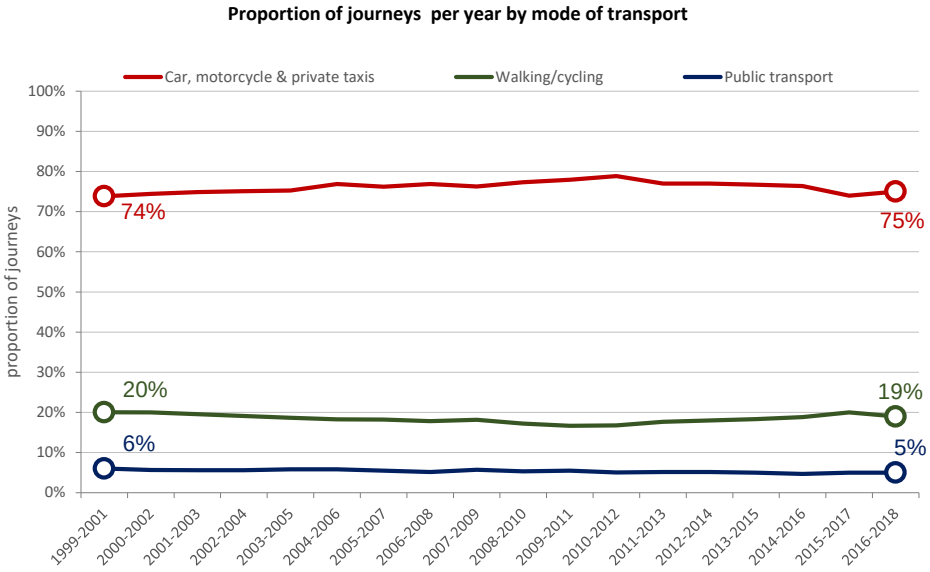
Transport mode	1999-2001	2000-2002	2001-2003	2002-2004	2003-2005	2004-2006	2005-2007	2006-2008	2007-2009	2008-2010	2009-2011	2010-2012	2011-2013	2012-2014	2013-2015	2014-2016	2015-2017	2016-2018
Car	4,891	4,819	4,777	4,816	4,870	4,943	4,864	4,916	4,840	4,859	4,762	4,791	4,829	4,853	4,745	4,652	4,611	4,824
Motorcycle	20	26	25	31	31	30	20	11	14	14	13	8	6	11	14	14	14	11
Other private	345	320	319	358	389	448	437	451	470	460	467	426	426	399	380	353	342	342
Public transport	468	464	419	422	425	442	440	428	445	422	423	414	435	449	446	428	425	437
Black taxis	7	6	7	7	6	4	3	3	3	3	4	3	2	..	..	..	..	..
Private taxis	66	70	71	70	68	69	70	64	65	62	58	52	51	50	50	53	56	52
Walking/cycling	165	162	156	154	159	156	163	159	164	155	159	177	183	192	189	200	200	197
Undefined mode	25	19	12	1	1	2	2	1	1	1	1	1	0	..	..	..	..	..
All modes	**5,987**	**5,886**	**5,786**	**5,859**	**5,949**	**6,094**	**5,999**	**6,033**	**6,002**	**5,976**	**5,887**	**5,872**	**5,932**	**5,958**	**5,827**	**5,704**	**5,653**	**5,868**

Source: Travel Survey for Northern Ireland
https://www.infrastructure-ni.gov.uk/publications/travel-survey-northern-ireland-tsni-headline-report-2016-2018

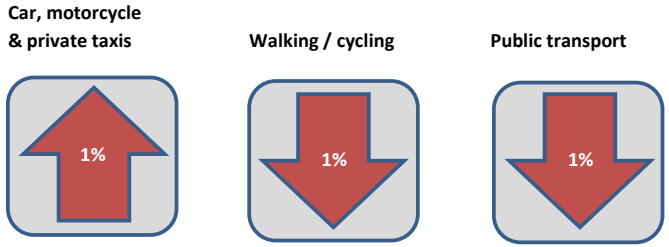
Note: '..' symbol denotes data not available or insufficient number of cases in the sample.

Return to Contents Page

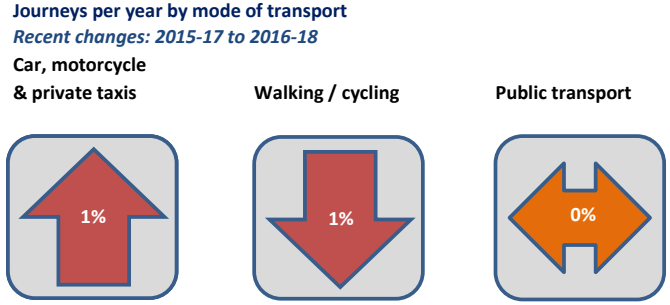
5.4 - Transport indicator - mode of transport



Journeys per year by mode of transport
Longer term trends: 1999-2001 to 2016-2018



Journeys per year by mode of transport
Recent changes: 2015-17 to 2016-18



Proportion of journeys per person by mode of transport
Northern Ireland, 1999-2001 to 2016-2018

	1999-2001	2000-2002	2001-2003	2002-2004	2003-2005	2004-2006	2005-2007	2006-2008	2007-2009
Car, motorcycle & private taxis	74%	74%	75%	75%	75%	77%	76%	77%	76%
Walking/cycling	20%	20%	20%	19%	19%	18%	18%	18%	18%
Public transport	6%	6%	6%	6%	6%	6%	5%	5%	6%

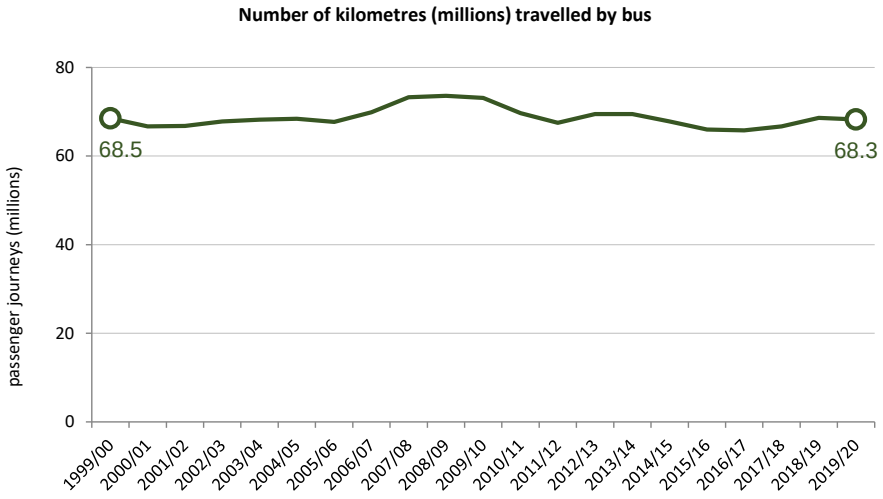
continued...

	2008-2010	2009-2011	2010-2012	2011-2013	2012-2014	2013-2015	2014-2016	2015-2017	2016-2018
Car, motorcycle & private taxis	77%	78%	79%	77%	77%	77%	76%	74%	75%
Walking/cycling	17%	17%	17%	18%	18%	18%	19%	20%	19%
Public transport	5%	5%	5%	5%	5%	5%	5%	5%	5%

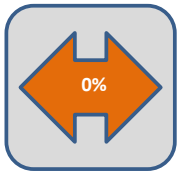
Source: Travel Survey for Northern Ireland
https://www.infrastructure-ni.gov.uk/publications/travel-survey-northern-ireland-tsni-headline-report-2016-2018

Return to Contents Page

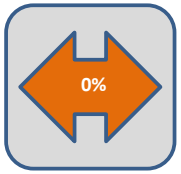
5.5 - Transport indicator - bus passenger journeys



Passenger kilometres travelled by bus
Longer term trend: 1999-00 to 2019-20



Passenger kilometres travelled by bus
Recent change: 2018-19 to 2019-20



Number of bus passenger journeys (Ulsterbus/Citybus/Metro)
Northern Ireland, 1999/00 to 2019/20

	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
Passenger journeys (millions)	69.5	67.1	65.0	65.9	65.4	65.1	66.9	67.5	69.9	70.5	68.2
Passenger kilometres (millions)	68.5	66.7	66.8	67.8	68.2	68.4	67.7	69.9	73.3	73.6	73.1

continued...

	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Passenger journeys (millions)	66.6	66.5	66.9	66.9	66.6	65.2	65.7	66.1	68.7	68.3
Passenger kilometres (millions)	69.7	67.5	69.5	69.5	67.8	66.0	65.8	66.7	68.6	68.3

Source: Northern Ireland Transport Statistics
https://www.infrastructure-ni.gov.uk/publications/northern-ireland-transport-statistics-2019-2020

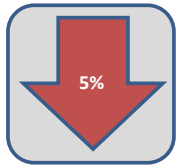
Notes:
2017/18, 2018/19 and 2019/20 figures are provisional.
This data is supplied by Translink and should be viewed as management information rather than Official Statistics.
CityBus became Metro with effect from 2005.
Whether a decrease in passenger journeys by bus is good or bad for greenhouse gas emissions will depend on why the journeys have decreased.
For example, if it is a result of more car journeys then this would mean higher greenhouse gas emissions, whereas cycling would result in lower emissions.

Return to Contents Page

5.6 - Transport indicator - NI Rail service passengers, number of journeys and distance travelled

Passenger kilometres travelled by NI Rail passengers
Longer term trend: 2013-14 to 2019-2020

Passenger kilometres travelled by NI Rail passengers
Recent change: 2018-19 to 2019-20



NI Rail service passenger journeys and kilometres
Northern Ireland, 1999/00 to 2019/20

	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
Passenger journeys (millions)	5.9	5.9	6.2	6.3	6.9	6.9	7.7	8.6	9.5	10.2	10.0
Passenger kilometres (millions)	221.7	227.1	239.7	236.3	233.0	225.2	240.5	261.8	293.0	303.9	277.2

continued...

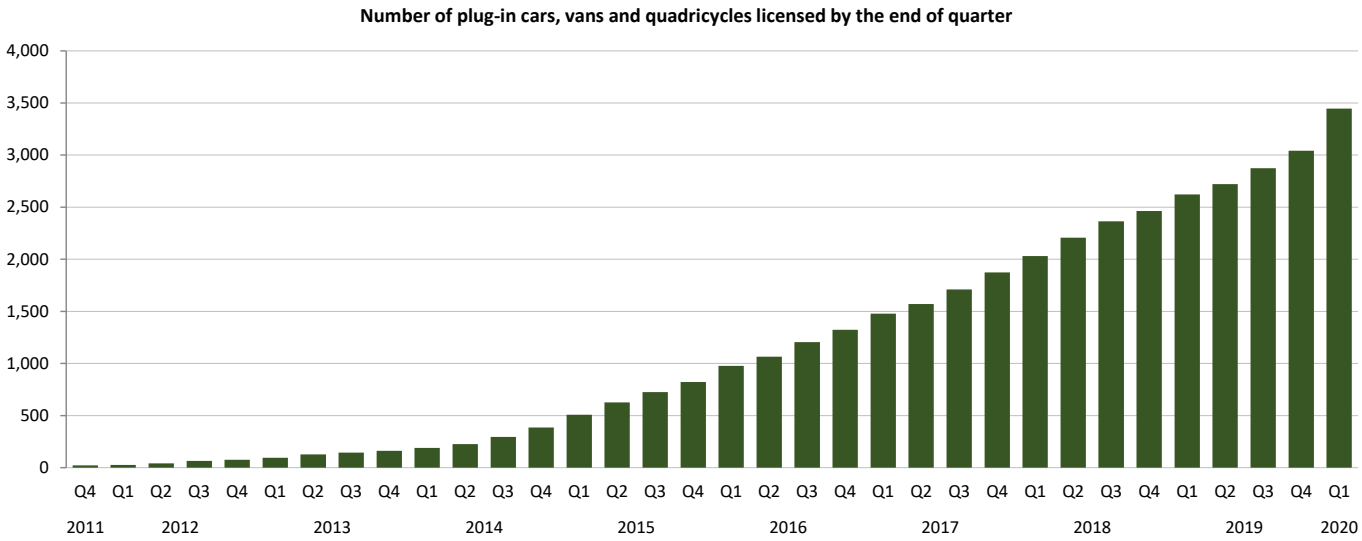
	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Passenger journeys (millions)	10.4	10.7	11.5	12.5	13.4	13.5	14.2	15.0	15.8	15.1
Passenger kilometres (millions)	306.7	326.7	347.8	381.9	416.5	436.6	453.4	482.5	506.6	482.8

Source: Northern Ireland Transport Statistics
https://www.infrastructure-ni.gov.uk/publications/northern-ireland-transport-statistics-2019-2020

Notes:
2017/18, 2018/19 and 2019/20 figures are provisional.
This data is supplied by Translink and should be viewed as management information rather than Official Statistics.
Note: There has been a discontinuity in this series due to a methodological change. Figures for 2013/14 and onwards cannot be compared with earlier years.

Return to Contents Page

5.7 - Transport indicator - plug-in cars, vans and quadricycles licensed



Number of plug-in cars, vans and quadricycles licensed
Longer term trend - 2012 to 2019

Number of plug-in cars, vans and quadricycles licensed
Recent change - Q1 2019 to Q1 2020

Number of plug-in cars, vans and quadricycles licensed
Northern Ireland, Q4 2011 to Q1 2020

	2011	2012				2013				2014				2015			
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Northern Ireland	22	26	42	65	76	94	127	145	162	189	227	296	385	508	627	726	821

continued...

	2016				2017				2018				2019				2020
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Northern Ireland	977	1,065	1,205	1,323	1,477	1,571	1,710	1,874	2,030	2,207	2,364	2,463	2,623	2,722	2,873	3,042	3,446

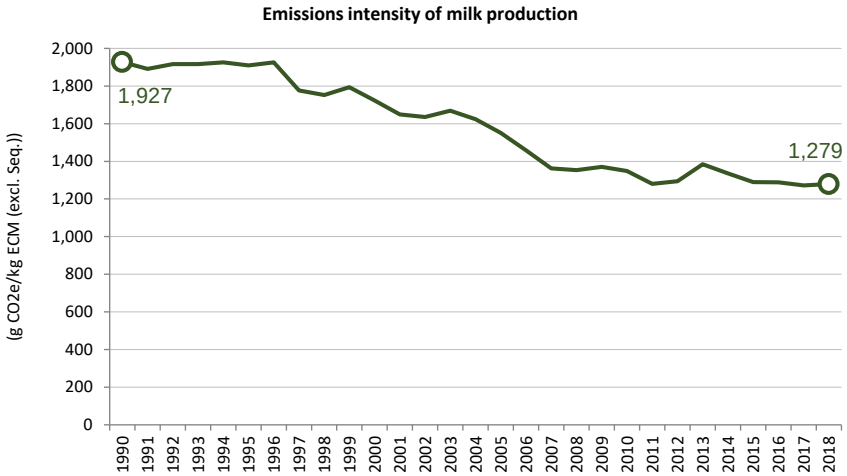
Source: Department for Transport, Vehicle Licensing Statistics, Table VEH0131
https://www.gov.uk/government/statistics/vehicle-licensing-statistics-january-to-march-2019

Refers to electric or hybrid electric vehicles eligible for Department for Transport Plug-in Car or Vans grants. For more details, see:
https://www.gov.uk/plug-in-car-van-grants/eligibility
The location of the registered keeper is based on the contact address held by DVLA, and does not necessarily reflect where the vehicle is kept.
Northern Ireland and Great Britain figures are provisional and may be revised for greater consistency with table veh0104.

Intensity Indicator

Return to Contents Page

6.1 - Agriculture indicator - Emissions intensity of milk production



Emissions intensity of milk production

Longer term trend - 1990 to 2018

Emissions intensity of milk production (g CO_2e/kg ECM (excl. Sequestration))

Northern Ireland, 1990 - 2018

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Emissions intensity of milk production	1,927	1,891	1,916	1,917	1,925	1,910	1,925	1,776	1,752	1,794	1,723	1,649	1,636

continued...

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Emissions intensity of milk production	1,669	1,623	1,551	1,459	1,363	1,354	1,371	1,349	1,280	1,294	1,384	1,336	1,289

continued...

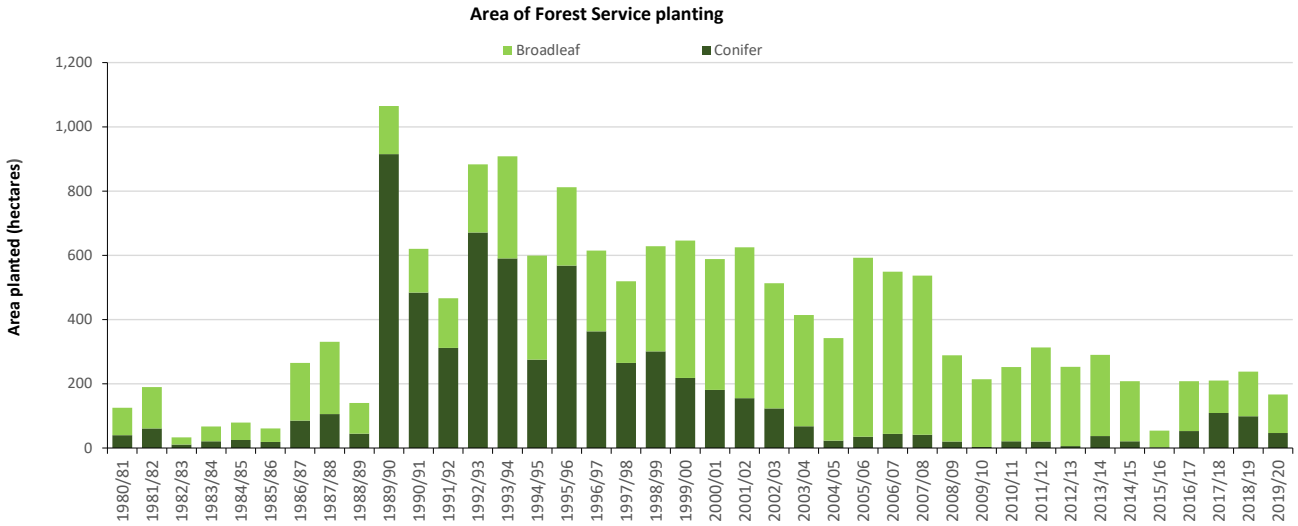
	2016	2017	2018
Emissions intensity of milk production	1,288	1,272	1,279

Source: Department of Agriculture and Rural Development Northern Ireland
https://www.daera-ni.gov.uk/publications/greenhouse-gas-emissions-northern-ireland-dairy-farms

Note: Chart only displays population average, Farm Business Survey average no longer shown.

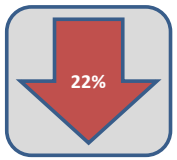
Return to Contents Page

6.2 - Agriculture indicator - area of new forest and woodland plantings



Total new planting

10 year change - 2009/10 to 2019/20



Forest Service new planting statistics (hectares)

Northern Ireland, 1980/81 to 2019/20

Year	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94
Conifer	40	61	11	21	25	19	85	106	45	915	484	312	671	590
Broadleaf	85	129	22	46	54	42	180	225	95	150	136	154	212	318
Total	**125**	**190**	**33**	**67**	**79**	**61**	**265**	**331**	**140**	**1,065**	**620**	**466**	**883**	**908**

continued...

Year	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Conifer	275	568	363	265	301	218	181	155	123	68	23	35	44	41
Broadleaf	324	244	252	254	327	428	407	470	390	346	319	557	505	496
Total	**599**	**812**	**615**	**519**	**628**	**646**	**588**	**625**	**513**	**414**	**342**	**592**	**549**	**537**

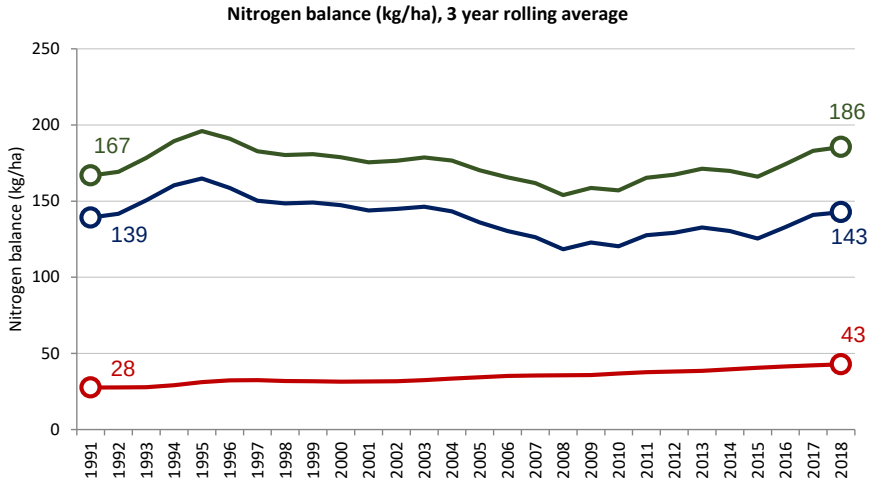
continued...

Year	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Conifer	20	3	21	20	6	37	21	2	53	109	99	47
Broadleaf	269	211	231	293	247	253	187	52	155	101	139	120
Total	**289**	**214**	**252**	**313**	**253**	**290**	**208**	**54**	**208**	**210**	**238**	**167**

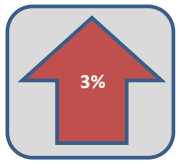
Source: Forest Service Northern Ireland, Northern Ireland Environmental Statistics Report, Table 5.8
https://www.daera-ni.gov.uk/publications/northern-ireland-environmental-statistics-report-2020

Return to Contents Page

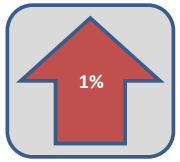
6.3 - Agriculture indicator - soil nitrogen balance (3 year average)



Nitrogen balance
Longer term trend - 1991 to 2018



Nitrogen balance
Recent change - 2017 to 2018



Nitrogen balance (kg / ha) with livestock feeds at 17% protein level
Northern Ireland, 1990 - 2018, 3 year averages

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Nitrogen input total	-	167	169	178	189	196	191	183	180	181	179	175	177	179	177
Nitrogen output total	-	28	28	28	29	31	32	33	32	32	31	32	32	32	33
Nitrogen balance	**-**	**139**	**142**	**150**	**160**	**165**	**159**	**150**	**148**	**149**	**147**	**144**	**145**	**146**	**143**

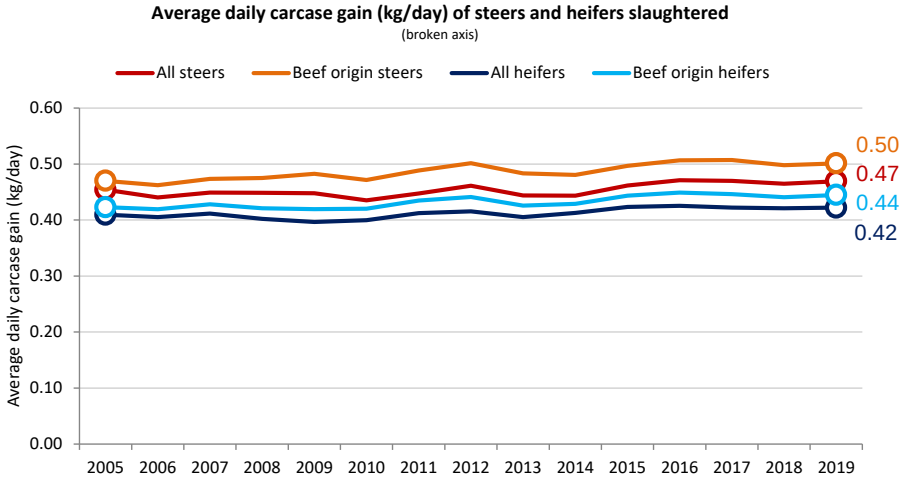
continued...

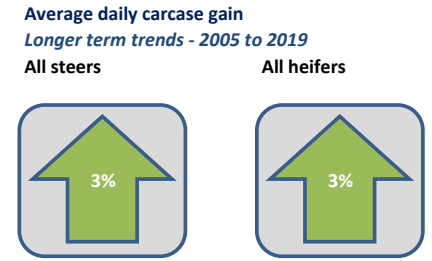
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Nitrogen input total	170	166	162	154	159	157	165	167	171	170	166	174	183	186
Nitrogen output total	34	35	35	36	36	37	38	38	39	40	41	41	42	43
Nitrogen balance	**136**	**130**	**126**	**118**	**123**	**120**	**128**	**129**	**133**	**130**	**125**	**133**	**141**	**143**

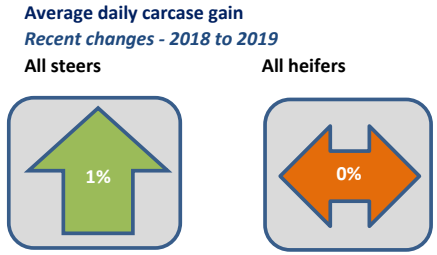
Source: Department of Agriculture, Environment and Rural Affairs Northern Ireland

Return to Contents Page

6.4 - Agriculture indicator - average daily carcase gain of beef cattle







Average daily carcase gain (kg/day) of steers slaughtered

Northern Ireland, 2005 to 2019

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
All steers	0.45	0.44	0.45	0.45	0.45	0.44	0.45	0.46	0.44	0.44	0.46	0.47	0.47	0.46	0.47
Dairy origin	0.43	0.42	0.42	0.42	0.42	0.41	0.43	0.43	0.42	0.42	0.44	0.45	0.45	0.45	0.45
Beef origin steers	0.47	0.46	0.47	0.48	0.48	0.47	0.49	0.50	0.48	0.48	0.50	0.51	0.51	0.50	0.50
Pure dairy	0.40	0.38	0.38	0.39	0.39	0.40	0.39	0.39	0.38	0.38	0.39	0.40	0.40	0.39	0.40

Average daily carcase gain (kg/day) of heifers slaughtered

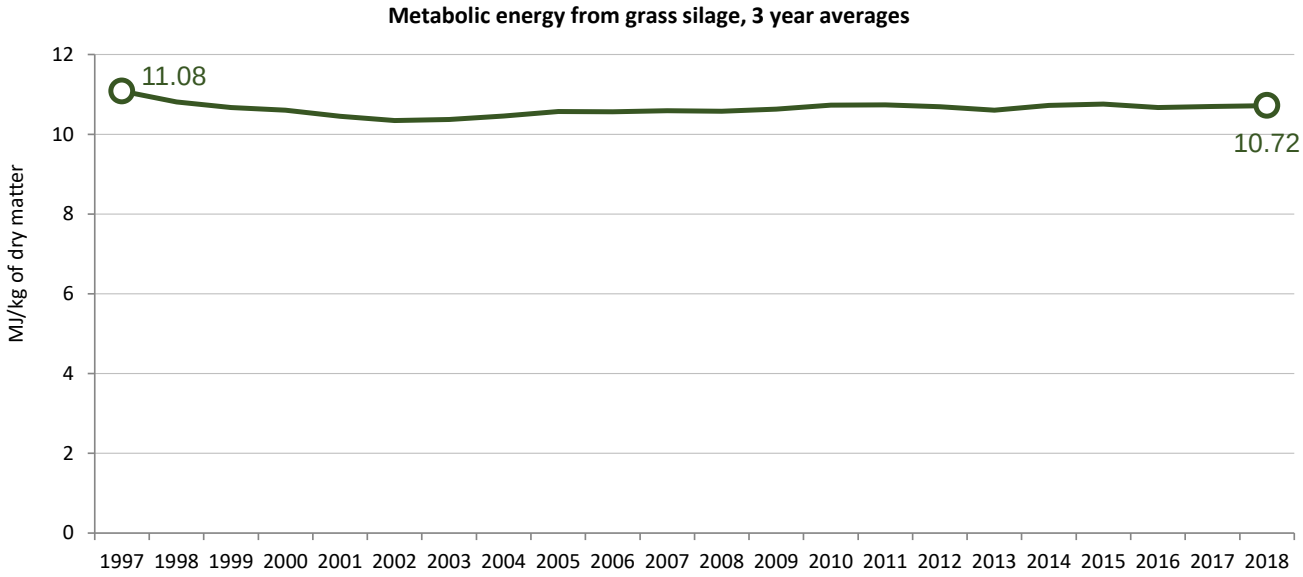
Northern Ireland, 2005 to 2019

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
All heifers	0.41	0.41	0.41	0.40	0.40	0.40	0.41	0.42	0.41	0.41	0.42	0.43	0.42	0.42	0.42
Dairy origin	0.38	0.38	0.38	0.37	0.36	0.36	0.38	0.38	0.37	0.38	0.40	0.40	0.40	0.40	0.40
Beef origin heifers	0.42	0.42	0.43	0.42	0.42	0.42	0.43	0.44	0.43	0.43	0.44	0.45	0.45	0.44	0.44
Pure dairy	0.34	0.31	0.31	0.30	0.30	0.30	0.31	0.31	0.31	0.32	0.32	0.32	0.31	0.31	0.32

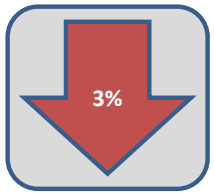
Source: Department of Agriculture, Environment and Rural Affairs Northern Ireland

Return to Contents Page

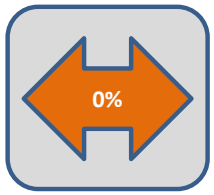
6.5 - Agriculture indicator - metabolic energy from grass silage



Metabolic energy from grass silage, (3 year averages)
Longer term trend - 1997 to 2018



Metabolic energy from grass silage, (3 year averages)
Recent change - 2017 to 2018



Metabolic energy from grass silage (MJ/kg of dry matter)

Northern Ireland, 1997 to 2018, 3 year averages

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Metabolic energy (MJ/kg dry matter)	11.08	10.81	10.67	10.61	10.45	10.34	10.37	10.46	10.57	10.56	10.59

continued…

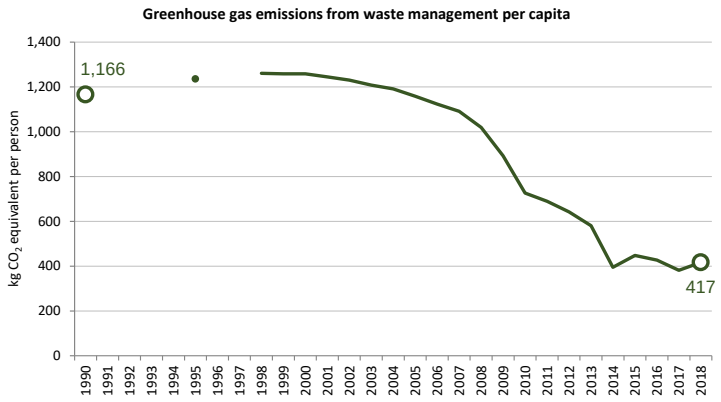
Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Metabolic energy (MJ/kg dry matter)	10.58	10.63	10.73	10.73	10.69	10.60	10.72	10.76	10.67	10.70	10.72

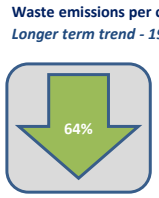
Source: Department of Agriculture, Environment and Rural Affairs Northern Ireland

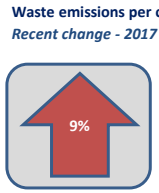
Intensity Indicator

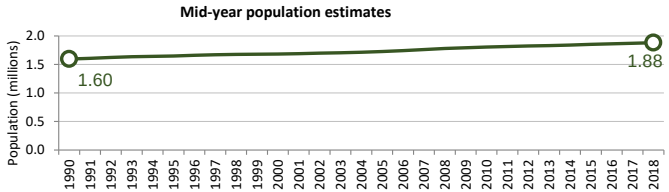
Return to Contents Page

7.1 - Waste indicator - greenhouse gas emissions from waste management per capita









Greenhouse gas emissions from waste management per capita

Northern Ireland, 1990 to 2018

	Units	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Waste management emissions	$ktCO_2e$	1,860					2,037			2,115	2,113	2,118	2,102	2,089	2,059	2,042
Mid-year population estimate	persons	1,595,595	1,607,295	1,623,263	1,635,552	1,643,707	1,649,131	1,661,751	1,671,261	1,677,769	1,679,006	1,682,944	1,688,838	1,697,534	1,704,924	1,714,042
Waste emissions per capita	**$kgCO_2e$ / person**	**1,166**					**1,235**			**1,261**	**1,258**	**1,258**	**1,245**	**1,231**	**1,208**	**1,191**

continued...

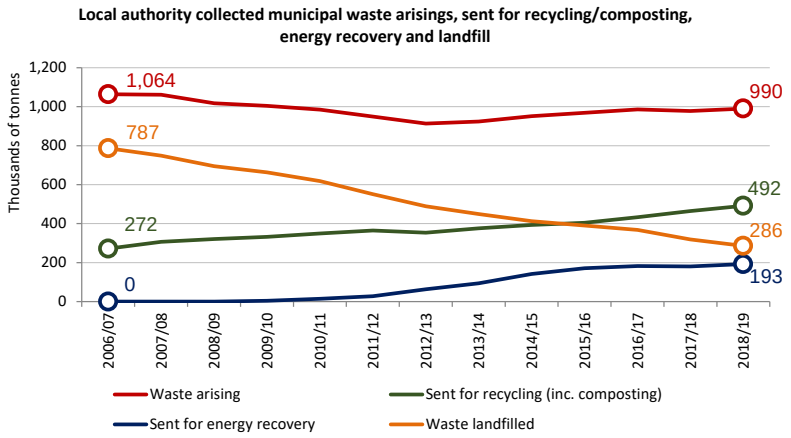
	Units	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Waste management emissions	$ktCO_2e$	2,001	1,958	1,923	1,813	1,601	1,311	1,250	1,171	1,063	727	829	794	714	784
Mid-year population estimate	persons	1,727,733	1,743,113	1,761,683	1,779,152	1,793,333	1,804,833	1,814,318	1,823,634	1,829,725	1,840,498	1,851,621	1,862,137	1,870,834	1,881,641
Waste emissions per capita	**$kgCO_2e$ / person**	**1,158**	**1,123**	**1,091**	**1,019**	**893**	**726**	**689**	**642**	**581**	**395**	**447**	**427**	**381**	**417**

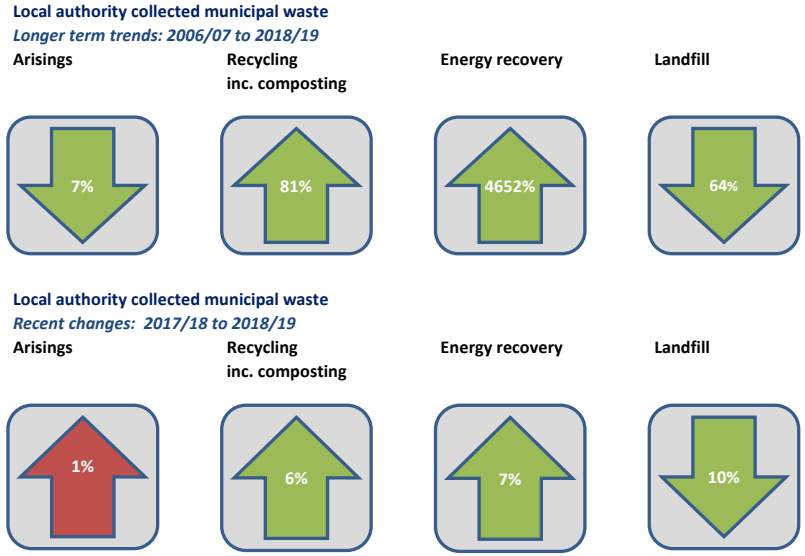
Source: Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland: 1990-2018
https://naei.beis.gov.uk/reports/reports?section_id=4
NISRA mid year population estimates
https://www.nisra.gov.uk/publications/2019-mid-year-population-estimates-northern-ireland

Note: Figures for greenhouse gas emissions are updated annually due to ongoing improvements to data collection or estimation techniques.

Return to Contents Page

7.2 - Waste indicator - local authority collected municipal waste





Local authority collected (LAC) municipal waste arisings, recycling (inc. composting) and landfill

Northern Ireland, 2006-07 to 2018-19

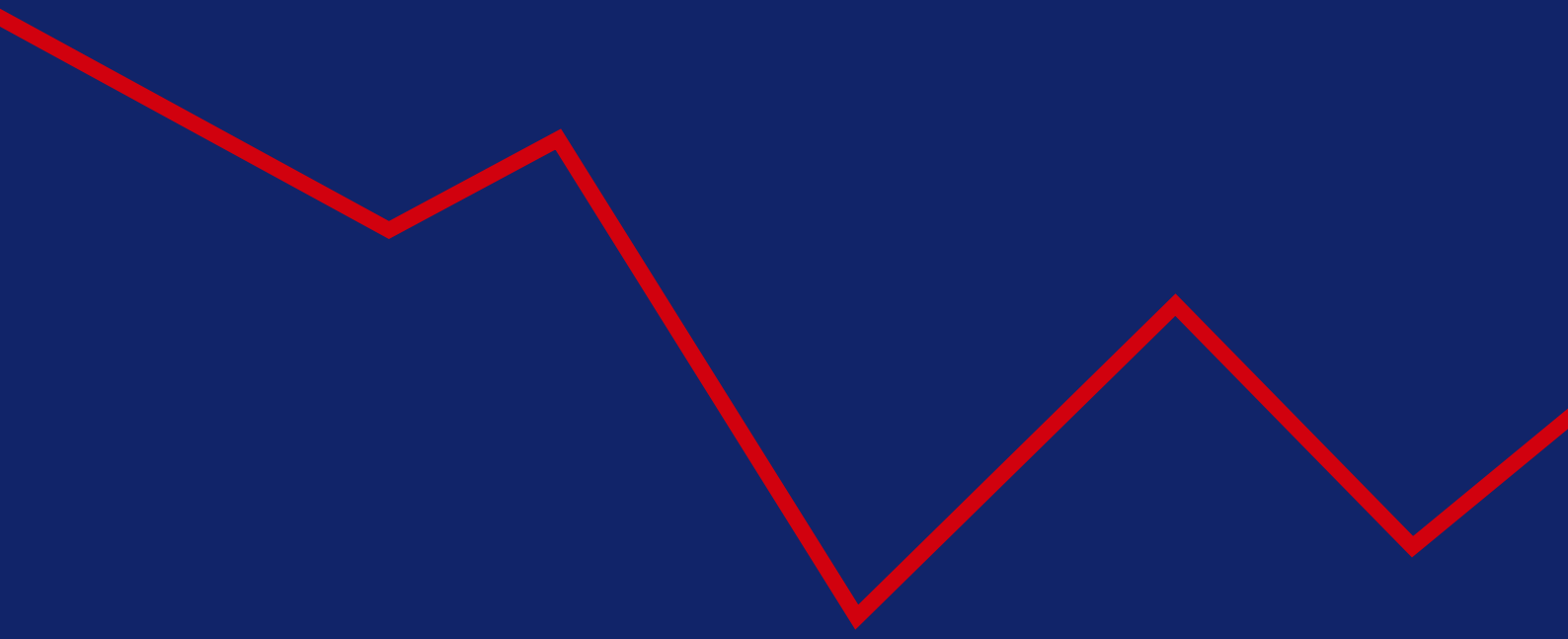
	Units	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
LAC municipal waste arisings	Tonnes	1,064,090	1,061,108	1,017,215	1,004,020	985,176	949,491	913,546	924,412	951,423	969,157	985,994	977,817	990,233
LAC municipal waste sent for recycling (inc. composting)	Tonnes	271,730	306,242	321,457	332,392	349,929	364,320	353,961	375,683	392,962	404,732	432,847	464,287	491,520
LAC municipal waste sent for energy recovery	Tonnes	1	1	0	4,052	14,075	27,590	63,043	93,382	141,835	170,913	182,034	179,899	192,537
LAC municipal waste landfilled	Tonnes	786,951	749,228	694,904	663,697	618,531	551,472	489,437	448,990	412,755	390,256	367,484	319,212	285,905

Source: Northern Ireland LAC Municipal Waste Management Statistics, DAERA
https://www.daera-ni.gov.uk/articles/northern-ireland-local-authority-collected-municipal-waste-management-statistics

Note: Tonnes for recycling/composting/landfill calculated by multiplying percentage recycled/composted/landfilled by total LAC municipal waste arisings.

Policy, Economics and Statistics Division
Department of Agriculture, Environment
and Rural Affairs
Dundonald House
Upper Newtownards Road
Ballymiscaw
BELFAST
BT4 3SB

Copies of this booklet can be made available on request in alternative formats.
Please telephone 028 9052 4063



Department of
Agriculture, Environment
and Rural Affairs
www.daera-ni.gov.uk

INVESTORS
IN PEOPLE

DMS 20.21.087