Armagh City Banbridge & Craigavon Borough

INFRASTRUCTURE, ENERGY AND TRANSPORT REPORT

SEPTEMBER 2016
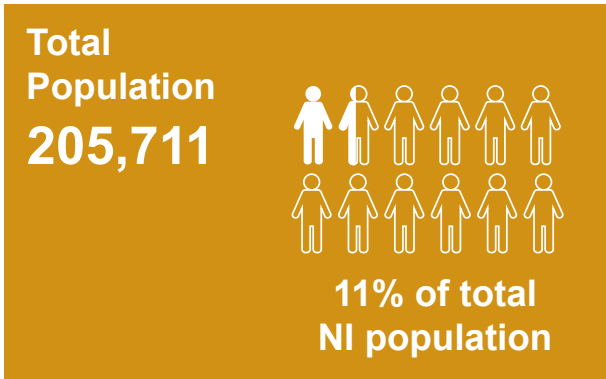
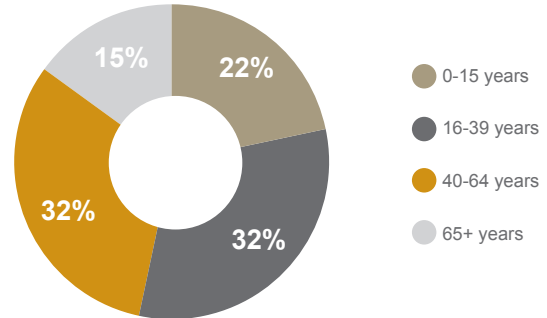**Armagh City Banbridge & Craigavon**
Borough Council

INTRODUCTION

The purpose of this document is to provide an overview of the topics relating to Infrastructure, Energy and Transport in Armagh City, Banbridge and Craigavon Borough to help inform the development of a community plan. Information is presented on a range of topics including transport, renewables, waste and broadband.
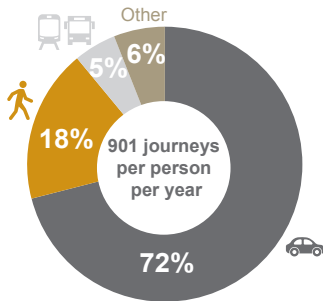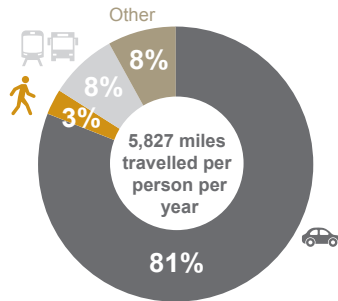
Population (2014)

Total Population 205,711

11% of total NI population

Population by Age

- 22% 0-15 years
- 32% 16-39 years
- 32% 40-64 years
- 15% 65+ years

Transport

Journeys - Northern Ireland (2013-2015)

Average journeys by main mode

Other 6%
5%
18%
72%

901 journeys per person per year

Average distance travelled by mode

Other 8%
8%
3%
81%

5,827 miles travelled per person per year

Average journey length

Overall	6.5 miles
🚗	7.3 miles
🚶	0.9 miles
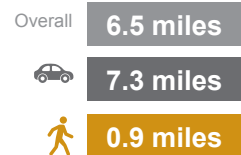
Top three reasons for travel

- Shopping 18%
- Leisure 23%
- Commuting 15%
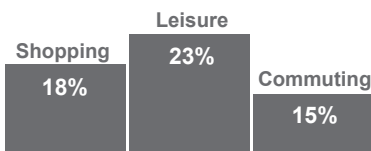
School travel: 4-11 year olds

- 31%
- 14%
- 55%
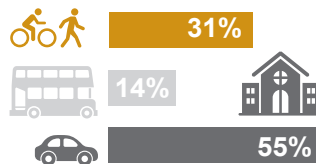
School travel: 12-18 year olds

- 18%
- 48%
- 33%
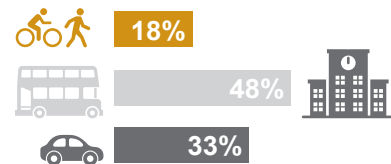
Travel to work (Census 2011)

	Car or van	On foot	Bus, minibus or coach	Other method of travel	Work mainly at or from home
Armagh City, Banbridge and Craigavon	78%	6%	2%	4%	11%
Northern Ireland	74%	8%	5%	3%	10%
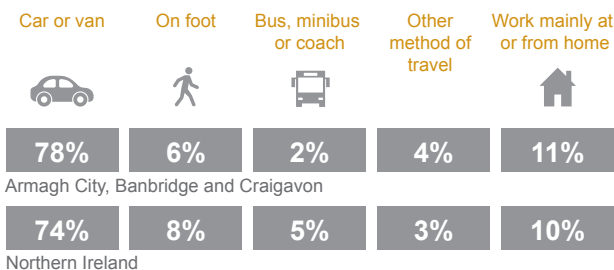
Household access to car or van (Census 2011)

18% Armagh City, Banbridge and Craigavon

23% Northern Ireland
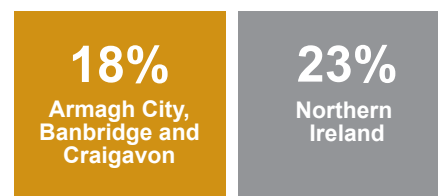
of households have no access to a car or van

Broadband (2015)

Fixed broadband

Average broadband speed - Northern Ireland

Download	Upload
↓	↑
28.3 Megabits per second	4.5 Megabits per second

Premises could not receive download speed of greater than or equal to 10 Megabits per second

16% Armagh City, Banbridge and Craigavon

14% Northern Ireland

Mobile geographic coverage

Complete not-spots (no coverage available) - Northern Ireland

5% Voice

7% Data

Renewables

Percentage of electricity consumed from indigenous renewable sources – Northern Ireland (2001/02 – 2015/16)

25.4%

1.5%

30%
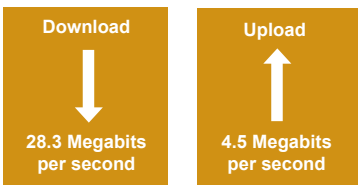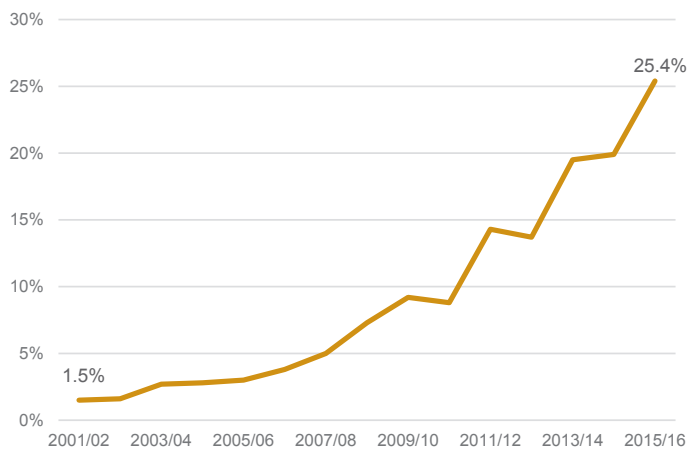25%
20%
15%
10%
5%
0%

2001/02 2003/04 2005/06 2007/08 2009/10 2011/12 2013/14 2015/16

90% of renewable electricity generated from wind sources - Northern Ireland (2015/16)

Armagh City, Banbridge and Craigavon

1% of renewable electricity generation in Northern Ireland (2014)

Waste (October - December 2015)

24,328 tonnes of waste collected in Armagh City, Banbridge and Craigavon (Local authority collected municipal waste)

11% of Northern Ireland total

Waste management rates

	Recycling (Household waste)	Energy recovery (Local authority collected municipal waste)	Landfill (Household waste)
Armagh City, Banbridge and Craigavon	46%	36%	18%
Northern Ireland	40%	19%	40%

Recycling includes preparing for reuse, dry recycling and composting.

POPULATION

In 2014 the population of the Borough was estimated at 205,711 (11.2% of the total NI population). The Borough has a similar age profile to NI, with the majority (63%) being working age (16-64 years).

The 2014 based population projections show the population of the Borough is projected to increase by 10.4% or almost 21,400 people to 2024 - almost double the rate of population increase projected for NI as a whole (5.3% increase). As with NI as a whole the Borough has both a growing and ageing population.

The number of children (i.e. those aged 0-15) is projected to increase by 4,400 people (9.6%) from 45,700 to 50,100.

The working age population (i.e. those aged 16-64) is projected to increase by 8,600 people (6.6%) from 129,800 in mid-2014 to 138,400 in mid-2024.

The number of those aged 65 and over is projected to increase by 8,500 people (28.0%) from 30,200 to 38,700 over the ten years from mid-2014 to mid-2024. Within this group, the number of people aged 85 and over is projected to increase by 1,700 people (50.1%).
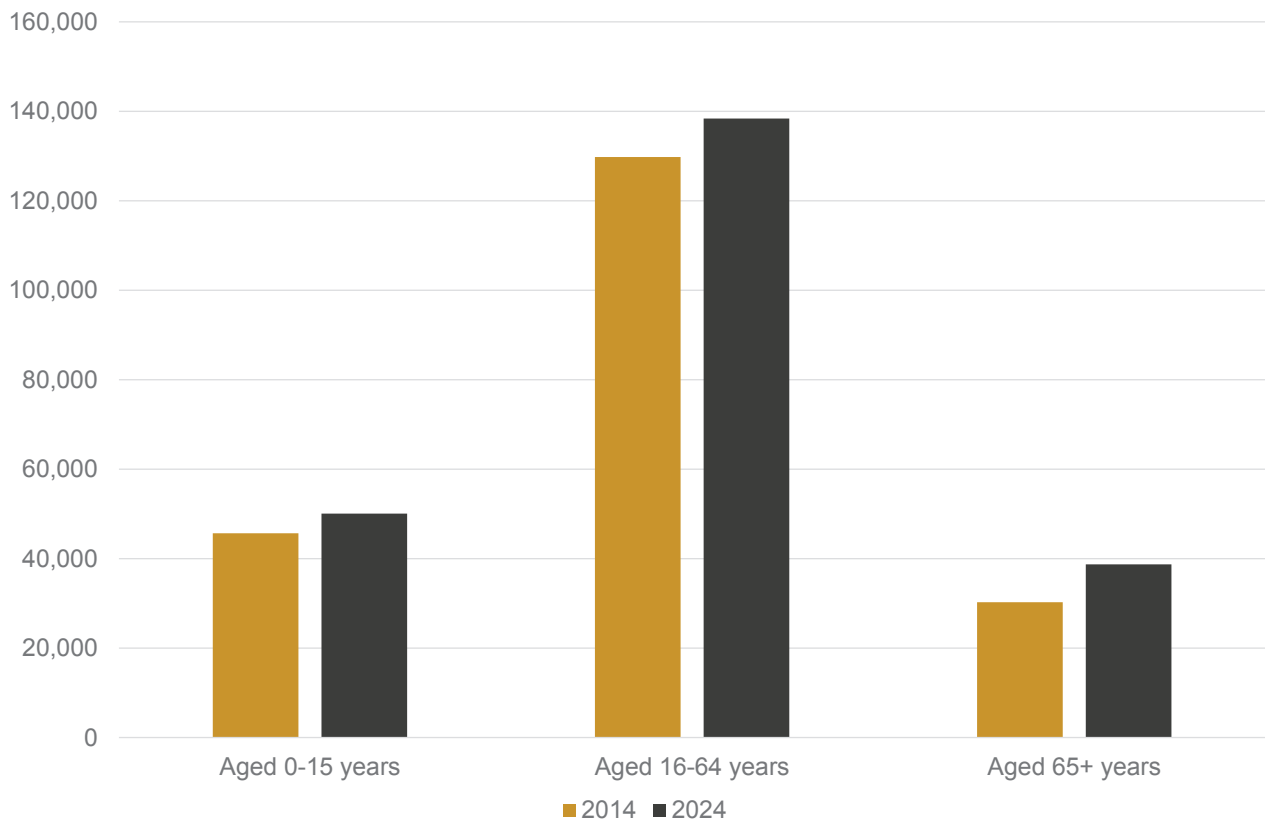
Figure 1. Population, Armagh City, Banbridge and Craigavon 2014 - 2024. Source: NISRA.

The number of households is projected to increase from 77,762 in 2014 to 85,688 in 2024, an extra 7,926 households or a 10% increase (2012 based household projections). This is higher than the increase projected for NI overall (6%). The average household size in the council area (2.63) was slightly higher than NI (2.54), but both are expected to decrease over time.

SETTLEMENTS - CITY CENTRE, TOWNS, VILLAGES AND SMALL SETTLEMENTS

The existing Area Plans which cover the Borough recognise a settlement hierarchy which places the hubs of Armagh City, Craigavon Urban Area (Portadown, Central Craigavon and Lurgan) and Banbridge as the main settlements.

Within this hierarchy, the Borough also has six smaller local towns (Keady, Markethill, Tandragee, Dromore, Rathfriland and Gilford), 29 villages and 66 small settlements.

The 2011 population of the largest Borough settlements are shown below. Both the Planning and the NISRA settlement classification used Settlement Development Limits (SDLs) to define the spatial extent of settlements; the Settlement Development Limit of the Craigavon Urban Area includes the three elements of Portadown, Central Craigavon and Lurgan. Populations for these three individual elements are not currently available.

Settlement	NISRA Classification	ACBCBC Planning Classification	2011 Census Population
Craigavon Urban Area (includes the three elements of Portadown, Central Craigavon and Lurgan)	Large Town (population 18,000+)	Urban Area and Hub	64,193
Banbridge	Medium Town (population 10,000 - 17,999)	Main Town and Hub	16,653
Armagh		City and Hub	14,749
Dromore	Small Town (population 5,000 - 9,999)	Local Town	6,011
Waringstown	Intermediate Settlement (population 2,500 - 4,999)	Village	3,647
Tandragee		Local Town	3,486
Keady		Local Town	3,036
Richhill		Village	2,821
Rathfriland	Village (population 1,000 - 2,499)	Local Town	2,472
Dollingstown		Village	2,126
Gilford		Local Town	1,927
Donaghcloney		Village	1,701
Markethill		Local Town	1,652
Magheralin		Village	1,337
Laurelvale / Mullavilly		Village	1,284
Aghagallon		Village	1,056
Bleary		Village	1,011
	Settlements with populations of less than 1,000 or open countryside		

Table 1. NISRA Settlement Classification 2015, Armagh City, Banbridge and Craigavon Borough Council Planning Classification, Census 2011 population.

In the NISRA settlement classification a prescriptive urban-rural classification is not produced, but a default urban-rural classification is provided; where settlements with a population of over 5,000 being classified as urban. Note this differs from the Council Planning Department classification of settlements which considers issues such as the population, location and settlement role, including facilities provided and rural catchment.

Looking at 2011 Census results just over half of the Borough's population (51%) lived in urban areas based on the NISRA default urban / rural classification, while just under half (49%) lived in rural areas (compared to 63% urban and 37% rural for Northern Ireland overall using the NISRA classification). The Borough had a higher proportion of its population living in rural areas than NI overall. These estimates differ from the estimates using Planning Department's classification of urban and rural which estimates that approximately 72% of the Borough households live within the urban area (hubs, local towns and villages); a higher percentage than when using the NISRA classification.

REGIONAL DEVELOPMENT STRATEGY

The Regional Development Strategy (RDS) 2035 identifies a number of gateways within Northern Ireland which are strategically important to be well connected in order to compete globally. It identifies Craigavon Urban Area, Banbridge and Armagh City as hubs and states that they have the potential to form a cluster and to capitalise on their strategic position on the Belfast/Dublin and Belfast/Enniskillen/Sligo economic corridors.
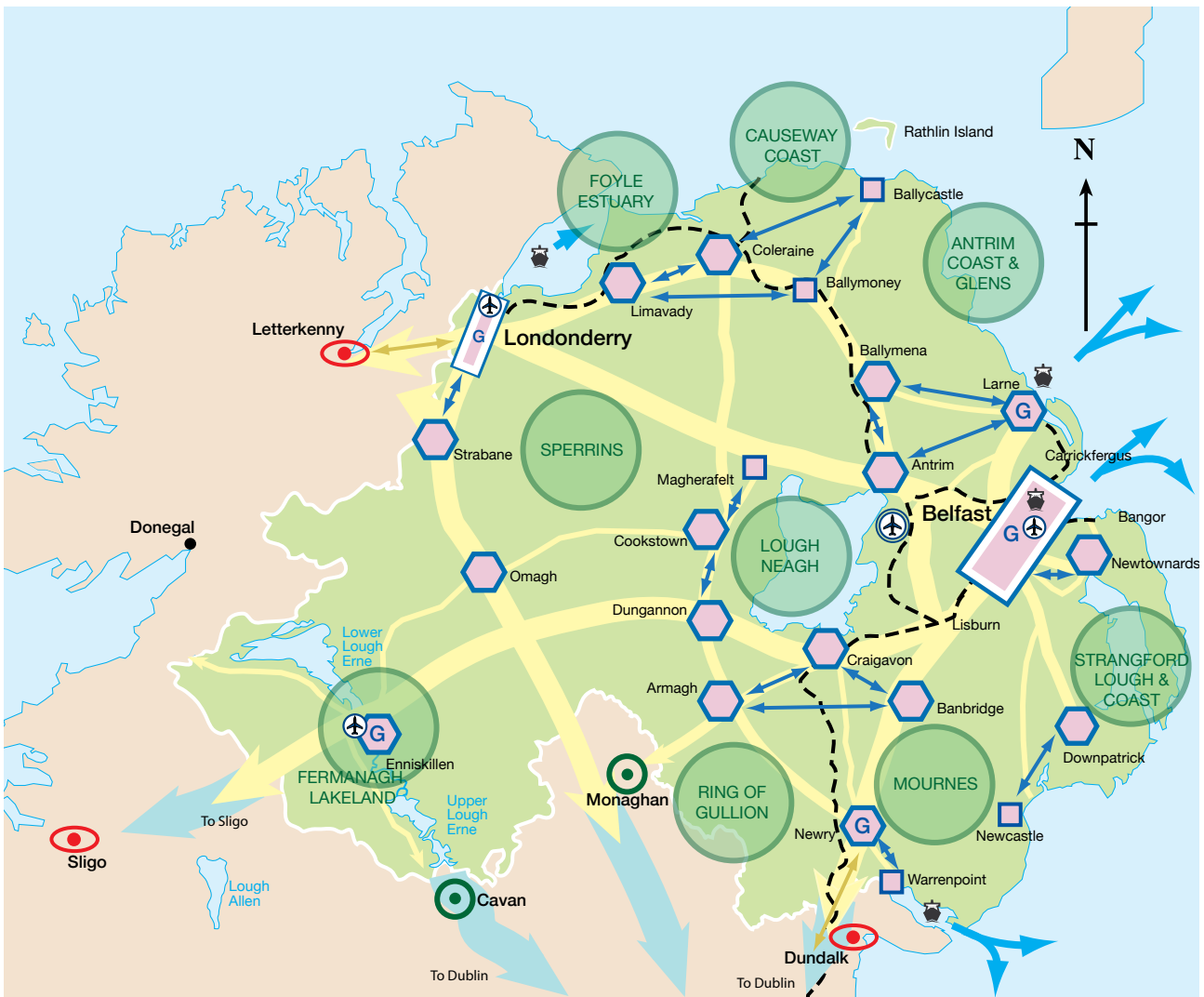

Figure 2. Spatial Framework for Northern Ireland. Source: Regional Development Strategy 2035.

The strategy makes clear that this is not a rigid framework and other towns can work together in clusters. For example, Armagh is free to develop links with Dungannon, Newry and Monaghan, along the 'link corridors' of the A29, A28 and A3 respectively. Monaghan is a hub in the Republic's National Spatial Strategy and the nearby border area would benefit from joined-up spatial planning between the two jurisdictions.

The Borough sits between three 'strategic natural resources' (i.e. Lough Neagh, the Ring of Gullion and the Mourne Mountains) which offer some of Northern Ireland's best potential for leisure and tourism.

Hub settlements "should not compete for scarce resources" and therefore should co-operate where they are geographically close to each other.

INTEGRATED TRANSPORT

The Regional Strategic Transport Network plan 2015, plans the maintenance, management and development of the NI Strategic Transport Network. It comprises the complete rail network, a portion of which travels through the Council area, 5 Key Transport Corridors (KTC's), 2 of which travel through the Council area; 4 Link Corridors, Belfast Metropolitan Transport Corridor's and the remainder of trunk road networks. It also identifies a cross border route between Armagh and Monaghan.
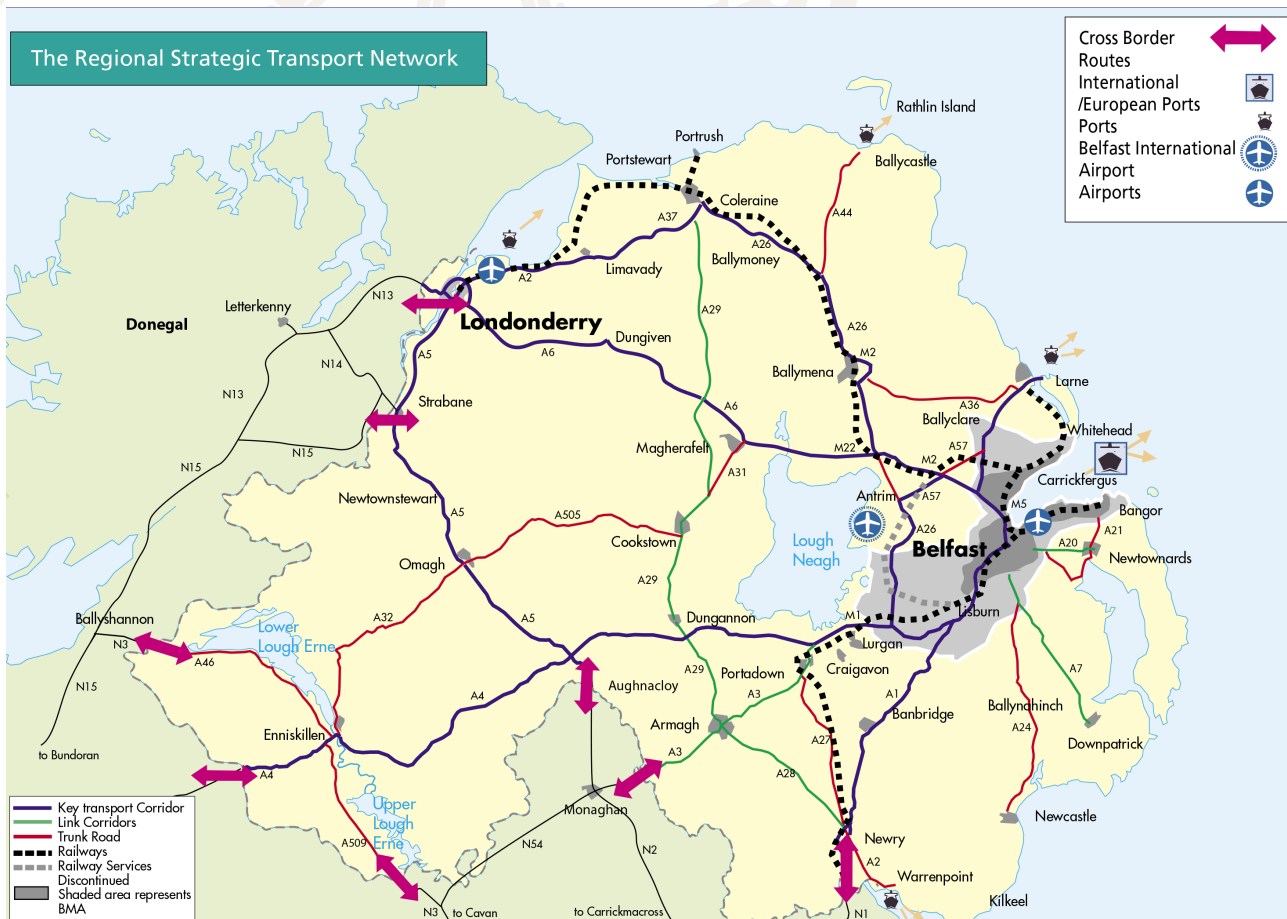

Figure 3. Regional Strategic Transport Network. Source: Regional Strategic Transport Network Transport Plan 2015.

Bus Services

Local bus services for Armagh, Banbridge and Craigavon are provided by Translink/Ulsterbus/Goldline Services. There is a main bus station in Armagh, a main Depot at Highfield Craigavon (although this does not have a passenger facility), and a new bus station has opened at Kenlis Street, Banbridge. There are currently no bus stations in either Portadown or Lurgan.

Within the urban areas, there are several services within Armagh City, Portadown, Craigavon, Lurgan and Banbridge. Express (Goldline) services run to destinations within Northern Ireland and the Republic of Ireland. Bus Eireann Airport Service (X1) runs Dublin to Belfast via Newry and Banbridge and (33) runs from Dublin, Dublin Airport - Monaghan - Armagh - Portrush. Regular services also operate to the local towns and villages, though many are limited to school time requirements.

There are two highway Park and Ride/Share sites within the Council area. One is located close to the M1 motorway at Loughview Roundabout, Lurgan, whilst the other is at the Creamery site at Rathfriland Road, Banbridge adjacent to the A1 dual carriageway.

Rail Services

Translink NI Railways operates scheduled rail services in NI serving a number of routes including Belfast to Newry, which runs through Lurgan, Portadown, Scarva and Poyntzpass. The line offers a combination of express services and trains that stop at each halt and station. The Portadown to Bangor line offers regular railway services between 6am and 11pm (39 trains each way Monday-Saturday & and 19 on a Sunday).

In addition to the local services, the flagship cross-border Enterprise Service links Belfast and Dublin by rail, with a stop at Portadown and is jointly operated between Translink NIR and Iarnrod Eireann. It provides 8 services in each direction Monday -Saturday and 5 in each direction on Sundays.

Community Transport

Community transport is a term covering a wide range of solutions usually developed to cover a specifically identified transport need, typically run by the local community for local neighbourhoods on a not-for-profit basis. Community transport provides the connectivity needed to get otherwise isolated or excluded groups of people to a range of destinations, and helps to develop sustainable communities. It is often provided via minibuses and volunteer car schemes. The main community transport providers in Armagh City, Banbridge and Craigavon Borough are Armagh Rural Transport and Down Armagh Rural Transport partnership. Both these providers offer community car schemes, door to door or dial a ride and group transport. There are a variety of additional providers offering group transport including Ballymore Open Centre and Shankill (Lurgan) Community Projects.

A stakeholder engagement report on the community transport services provided by the rural community transport partnerships in Northern Ireland in 2015, found high levels of user satisfaction with existing community transport services and that interaction with their local community transport partnership was positive in terms of user experience. Nevertheless the stakeholders surveyed provided insights into how the existing service could be enhanced and delivered in a more customer centric approach. Some of these recommendations from surveyed users and stakeholders include:

- Providing more weekend and evening demand responsive services.

- Accepting that current demand responsive services have become more than a 'transport option' for many, rather 63% of the surveyed sample state that current community transport services have become a life-line service which needs to be maintained and enhanced with increased funding.

- Since almost 50% of service users avail of community transport to access health services there is an ever-pressing need for an urgent dialogue with Health & Social Services at a strategic level to resource community transport and support core government subvention.

- There is an identified need for increased market and awareness raising of community transport services at all levels, local, regional, and digital.

In an era of austerity where reduced budgets have become the 'new normal' the research report highlighted the growing reliance on community transport for the rurally isolated and the vulnerable living in rural areas where there is an insufficient or non-existent public transport infrastructure. As community sector budgets decrease the report identifies cost as a growing barrier to community group usage of community transport across Northern Ireland.

Research undertaken in 2014 for Down Armagh Rural Transport aimed to estimate the social return on investment that the partnership has generated for its stakeholders. It found the range of services provided generates a social value of approximately £1:£17 over a five year period. The extrapolated 5 year period was used due to the impact being experienced by stakeholders beyond the period the service is delivered. Half of this value was to Dial a Lift users, followed by Group Members accounting for 51% and 24% of the total social value created, respectively.

Car or Van Availability

The 2011 Census showed that 82% of households in Armagh City, Banbridge and Craigavon Borough had access to at least one car or van - 41% of total households had one car or van, while a further 30% of households had 2 cars or vans. This was slightly higher than levels in NI overall, where 77% of households had access to at least one car or van. In contrast 18% of households in the Borough had no cars or vans compared to 23% in Northern Ireland overall.

	Percentage of households by number of cars or vans in household					
	No cars or vans	1 or more cars or vans	1 car or van	2 cars or vans	3 cars or vans	4 or more cars or vans
Antrim and Newtownabbey	20	80	43	29	6	2
Armagh City, Banbridge and Craigavon	18	82	41	30	7	3
Belfast	38	62	42	16	3	1
Causeway Coast and Glens	19	81	42	29	7	3
Derry City and Strabane	29	71	42	22	5	2
Fermanagh and Omagh	17	84	39	32	9	4
Lisburn and Castlereagh	15	85	42	33	7	3
Mid and East Antrim	20	81	42	29	7	3
Mid Ulster	15	85	39	32	9	5
Newry, Mourne and Down	18	82	40	30	8	4
Ards and North Down	17	83	42	32	7	2
Northern Ireland	**23**	**77**	**41**	**27**	**6**	**3**

Table 2. Car or van availability, Local Government Districts. Source: 2011 Census, NISRA.

Lagan River District Electoral Area had the highest car or van availability, with 91% of households having 1 or more cars or vans, while levels were lowest in Lurgan and Portadown District Electoral Areas, three quarters (75%) of households had one or more cars or vans available to use.

	Percentage of households by number of cars or vans in household					
	No cars or vans	1 or more cars or vans	1 car or van	2 cars or vans	3 cars or vans	4 or more cars or vans
Armagh	19	81	41	29	8	3
Banbridge	16	84	41	32	8	3
Craigavon	17	83	45	30	6	2
Cusher	11	89	38	36	10	5
Lagan River	9	91	37	40	10	4
Lurgan	25	75	43	25	5	2
Portadown	25	75	42	24	6	3
Armagh City, Banbridge and Craigavon	**18**	**82**	**41**	**30**	**7**	**3**

Table 3. Car or van availability, District Electoral Areas, Armagh City, Banbridge and Craigavon. Source: 2011 Census, NISRA.

Levels of access to cars or vans differ by household composition. In Armagh City, Banbridge and Craigavon Borough in 2011, the highest levels of no car or van access were seen in one person households (41%), especially those where the person is aged 65 and over (50%). Lone parent households with dependent children also had high levels of no access (33%).

	All house-holds	Percentage of households by number of cars or vans available in household					
		No cars or vans	1 or more cars or vans	1 car or van	2 cars or vans	3 cars or vans	4 or more cars or vans
One person household	19,534	41	59	55	3	1	0
Aged 65 and over	7,962	50	50	48	1	0	0
Other	11,572	35	65	60	5	1	0
One family and no other people	51,430	10	90	36	41	10	4
All aged 65 and over	4,926	9	91	64	25	2	0
Couple family households with no children	10,304	6	94	38	50	5	1
Couple family households with dependent children	19,094	4	96	27	55	10	4
Couple family households with all children non-dependent	7,032	3	97	19	35	29	15
Lone parent households with dependent children	6,375	33	67	56	9	2	1
Lone parent households with all children non-dependent	3,699	20	80	43	28	7	2
Other household types	4,542	18	82	37	29	11	6
With dependent children	1,818	14	86	32	31	15	8
All full-time students	6	17	83	33	33	0	17
All aged 65 and over	356	31	69	51	15	2	1
Other	2,362	19	81	39	29	8	5
All households	**75,506**	**18**	**82**	**41**	**30**	**7**	**3**

Table 4. Car or van availability by household composition, Armagh City, Banbridge and Craigavon. Source: 2011 Census, NISRA.

On Census day 2011, there were 26,496 people aged 65+ years in Armagh City, Banbridge and Craigavon Borough living in households, 78% of these lived in households with access to a car or van.

	All usual res-idents aged 65 and over in households	Number of usual residents age 65+		Percentage of usual residents aged 65+	
		No cars or vans in household	1 or more cars or vans in household	No cars or vans in household	1 or more cars or vans in household
Antrim and Newtownabbey	19,232	4,759	14,473	25%	75%
Ards and North Down	26,448	5,648	20,800	21%	79%
Armagh City, Banbridge and Craigavon	26,496	5,945	20,551	22%	78%
Belfast	45,945	19,312	26,633	42%	58%
Causeway Coast and Glens	20,784	4,441	16,343	21%	79%
Derry and Strabane	17,701	5,197	12,504	29%	71%
Fermanagh and Omagh	15,118	2,981	12,137	20%	80%
Lisburn and Castlereagh	20,209	4,180	16,029	21%	79%
Mid and East Antrim	21,371	4,976	16,395	23%	77%
Mid Ulster	16,701	3,283	13,418	20%	80%
Newry, Mourne and Down	21,964	4,716	17,248	21%	79%
Northern Ireland	**251,969**	**65,438**	**186,531**	**26%**	**74%**

Table 5. Usual residents aged 65 and over by car or van availability. Source: 2011 Census, NISRA.

In 2011, 23% of households in Northern Ireland had no car or van, however, these levels varied by tenure. Households renting from Housing Associations (61%) or the NIHE (59%) were the most likely to have no car or van availability, while the Private rented (39%) and in particular Owner-occupied (10%) sectors had lower levels of no car or van availability.

Method of Travel to Work

The 2011 Census showed that in Armagh City, Banbridge and Craigavon Borough the majority of people (78%) aged 16 to 74 years who were in employment usually travelled to work by car or van. Of the total people aged 16 to 74 years who were in employment, 61.4% usually drove a vehicle to work, a further 10.3% were members of a car or van pool, 5.2% usually travelled to work as a passenger in a car or van and 1.0% travelled by taxi.

The proportions who used public transport were much lower, of people aged 16 to 74 years who were in employment, 2.3% travelled to work by bus, minibus or coach and 1.7% by train.

A further 5.6% of people usually walked to work, while 0.6% cycled and 0.4% travelled by motorcycle, scooter or moped. In addition, 10.6% worked mainly at or from home.

The proportions using the different methods of travel to work in the Borough, were similar to those seen in NI overall.

	Method of travel to work (%)										
	Work mainly at or from home	Train	Bus, mini-bus or coach	Motor-cycle, scooter or moped	Driv-ing a car or van	Passen-ger in a car or van	Car or van pool, shared driv-ing	Taxi	Bicy-cle	On foot	Other meth-od
Antrim and New-townabbey	8.5	1.1	6.3	0.5	59.9	5.4	9.6	1.4	0.9	5.8	0.7
Ards and North Down	9.4	2.9	3.2	0.6	61.3	4.4	9.7	0.9	0.7	6.3	0.9
Armagh City, Banbridge and Craigavon	10.6	1.7	2.3	0.4	61.4	5.2	10.3	1.0	0.6	5.6	0.9
Belfast	7.4	1.1	13.2	0.6	45.1	4.6	8.2	2.9	2.0	14.5	0.5
Causeway Coast and Glens	12.4	1.1	1.9	0.3	60.0	4.8	10.9	0.7	0.5	6.6	1.0
Derry City and Strabane	10.7	0.3	3.7	0.2	55.7	5.7	10.4	2.9	0.5	9.1	0.7
Fermanagh and Omagh	14.6	0.2	1.3	0.2	61.4	4.2	10.3	0.7	0.5	5.7	0.9
Lisburn and Cas-tlereagh	9.1	1.9	5.1	0.5	61.4	4.1	9.5	0.8	0.9	6.0	0.7
Mid and East Antrim	9.6	3.0	2.0	0.6	60.2	5.6	10.0	1.0	0.6	6.6	0.9
Mid Ulster	13.9	0.2	1.7	0.1	61.0	5.3	10.4	0.6	0.3	5.5	1.2
Newry, Mourne and Down	11.9	0.5	2.7	0.2	59.8	5.1	10.9	0.7	0.5	6.7	1.0
Northern Ireland	**10.3**	**1.3**	**4.8**	**0.4**	**57.7**	**4.9**	**9.8**	**1.4**	**0.9**	**7.7**	**0.8**

Table 6. Method of travel to work. Source: 2011 Census, NISRA. Note - All usual residents aged 16-74 years (excluding students) in employment and currently working.
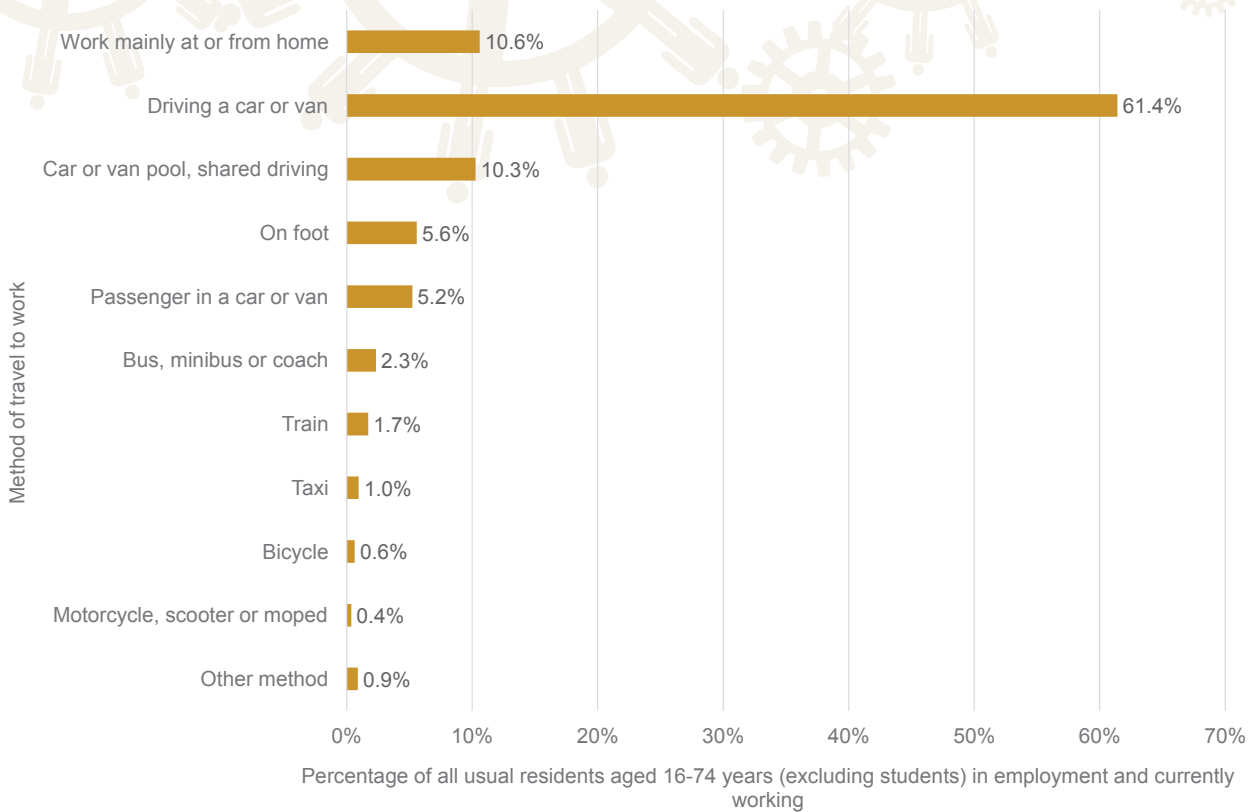
Figure 4. Method of travel to work, Armagh City, Banbridge and Craigavon. Source: 2011 Census, NISRA.

In Armagh City, Banbridge and Craigavon Borough, in 2011, people aged 16 to 74 years who were in employment and lived in households with access to a car or van were much less likely to use public transport to travel to work (3%) than those without such access (14%). These were both lower than the NI overall levels, 5% and 20% respectively. Public transport users being people whose method of travel used for the longest part, by distance, of the usual journey to work or study is train, bus, minibus or coach (public or private).

	Use public transport to travel to work	
	In households with access to a car or van	**In households without access to a car or van**
Antrim and Newtownabbey	6	25
Ards and North Down	5	20
Armagh City, Banbridge and Craigavon	3	14
Belfast	11	28
Causeway Coast and Glens	2	11
Derry City and Strabane	3	13
Fermanagh and Omagh	1	5
Lisburn and Castlereagh	6	23
Mid and East Antrim	4	14
Mid Ulster	2	7
Newry, Mourne and Down	3	9
Northern Ireland	**5**	**20**

Table 7. Use of public transport to travel to work by access to car or van in household (people aged 16 to 74 years in employment). Source: 2011 Census, NISRA.

Journeys

The NI Travel Survey 2013-2015 contains key information on journeys taken by Northern Ireland residents by mode of travel and purpose of journey.

Average journey length - The average journey length for the period 2013-2015 was 6.5 miles. Over the time period 2013-2015, each person in Northern Ireland travelled on average 5,827 miles per year (approximately 16 miles travelled per person per day).

On average, there were 901 journeys made per person per year over the period 2013-2015 (more than 2 journeys per person per day).

Car journeys - 72% of all journeys were made by car (as a driver or passenger). On average, 645 car journeys were taken per person per year in 2013-2015.

Walking - 18% of all journeys taken were taken by walking. There were 160 walking journeys per person per year in 2013-2015. The average distance walked per person per year in Northern Ireland as a whole was 162 miles, with an average walking journey length of 0.9 miles.
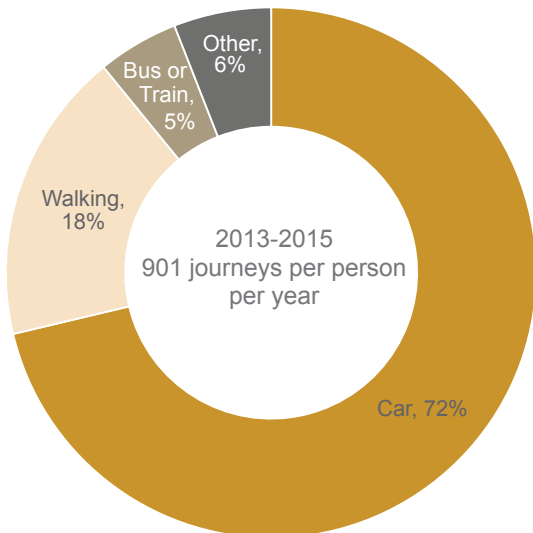

Figure 5. Average number of journeys per person per year by main mode, Northern Ireland, 2013-2015. Source: Travel Survey for NI, Department for Infrastructure.
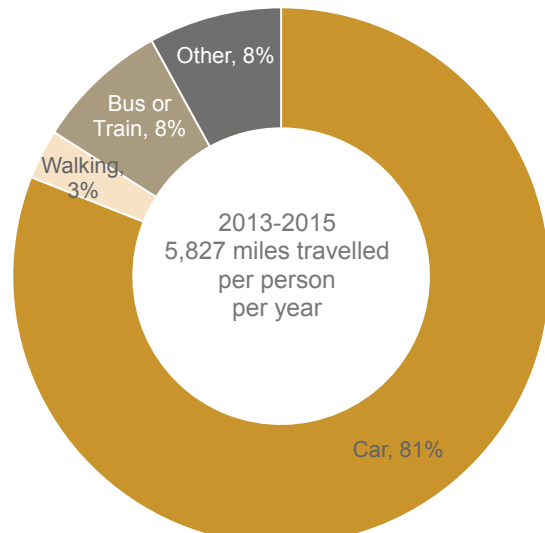
Figure 6. Average distance travelled per person per year by main mode, Northern Ireland, 2013-2015. Source: Travel Survey for NI, Department for Infrastructure.

Why people travel - Shopping is the top single reason for making a journey (18% of all journeys). In 2013-2015, 23% of journeys were made for leisure purposes (visiting friends at private home/elsewhere, entertainment/social activities, sports, and holiday/day trip), 18% for shopping, 15% for commuting and 12% for personal business (for services such as bank, doctor or library). This is in line with results from previous years included in the report (back to 2010-2012).

School Travel - In 2013-2015, the most commonly used main method of travel to or from school for the 4-11 age group was the car (55%), followed by walking or cycling (31%) and then the bus (14%). For the 12-18 age group it was the bus (48%), followed by the car (33%), and then walking or cycling (18%).
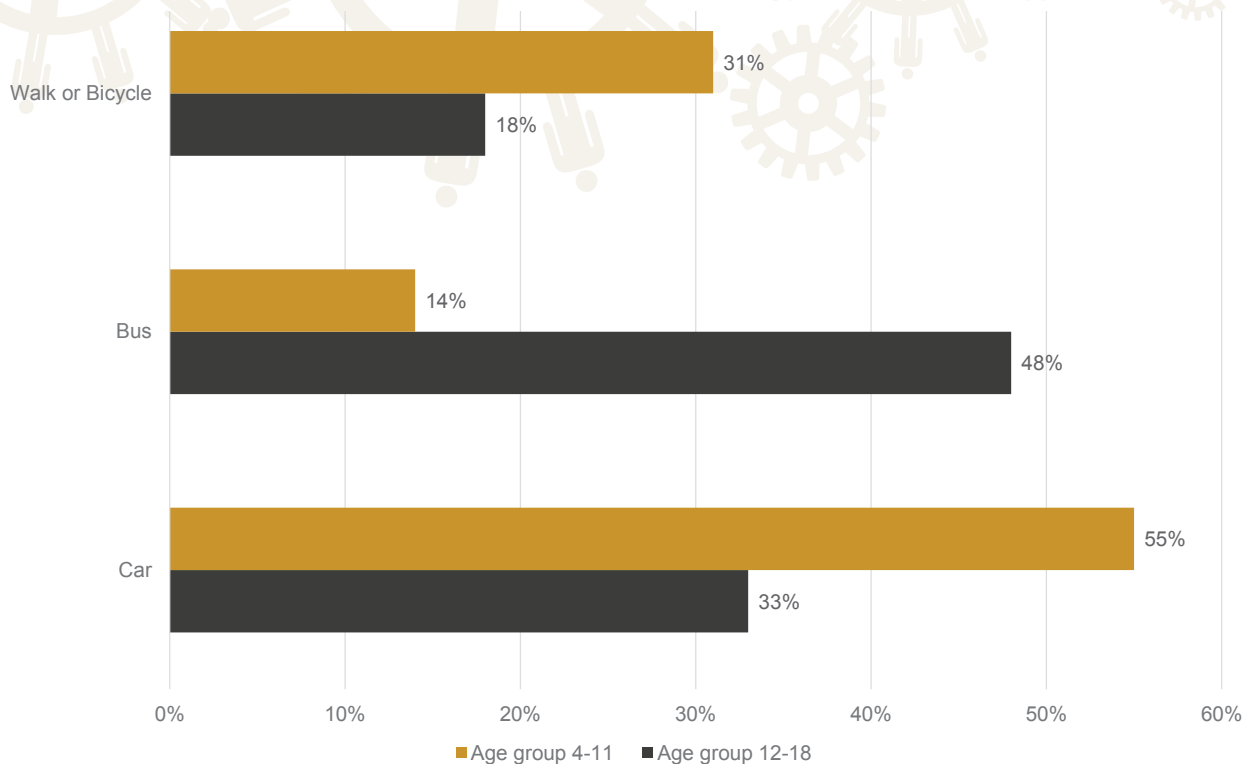
Walk or Bicycle — 31% (Age group 4-11), 18% (Age group 12-18)
Bus — 14% (Age group 4-11), 48% (Age group 12-18)
Car — 55% (Age group 4-11), 33% (Age group 12-18)

■ Age group 4-11   ■ Age group 12-18

Figure 7. Journeys to and from school, Northern Ireland, 2013-2015. Source: Travel Survey for NI, Department for Infrastructure.

Road Lengths

There are 3,546 kilometres of roads in the Borough (14% of total road length in Northern Ireland), of this 27 km are motorway (24% of total motorway in Northern Ireland), and 263 km are A roads (dual and single carriage way).

	Road Length (km)	Motorway Road Length (km)	A Roads: Dual Carriageway Road Length (km)	A Roads: Single Carriage-way Road Length (km)	B Roads: Road Length (km)	C Roads: Road Length (km)	Unclassified Road Length (km)
Antrim and Newtownabbey	1,357	35	14	112	150	239	807
Ards and North Down	1,152	0	27	137	58	165	766
Armagh City, Banbridge and Craigavon	3,546	27	30	232	399	678	2,179
Belfast	1,079	12	21	91	51	35	869
Causeway Coast and Glens	2,633	0	5	292	452	443	1,440
Derry City and Strabane	2,313	0	18	92	257	451	1,495
Fermanagh and Omagh	3,970	0	0	318	447	884	2,322
Lisburn and Castlereagh	1,352	26	12	113	142	228	832
Mid and East Antrim	1,735	7	26	164	236	309	993
Mid Ulster	3,369	7	28	225	404	688	2,018
Newry, Mourne and Down	3,051	0	29	322	290	604	1,806
Northern Ireland	**25,557**	**115**	**209**	**2,096**	**2,886**	**4,724**	**15,527**

Table 8. Road lengths 2015. Source: Department for Infrastructure.

Road Traffic

Transport NI within the Department for Infrastructure (DfI) is the sole road authority in Northern Ireland, responsible for over 25,000 kilometres of public roads. The annual road traffic estimates report provides estimates of the vehicle kilometres travelled (VKT) each year in NI, by road category and vehicle type. Road traffic data are a key source of management information on Northern Ireland's infrastructure

In 2014, overall road traffic in Northern Ireland was estimated at 19.8 billion vehicle kilometres. This has remained relatively consistent over the period 2008 to 2014 with the exception of a small increase in 2009.
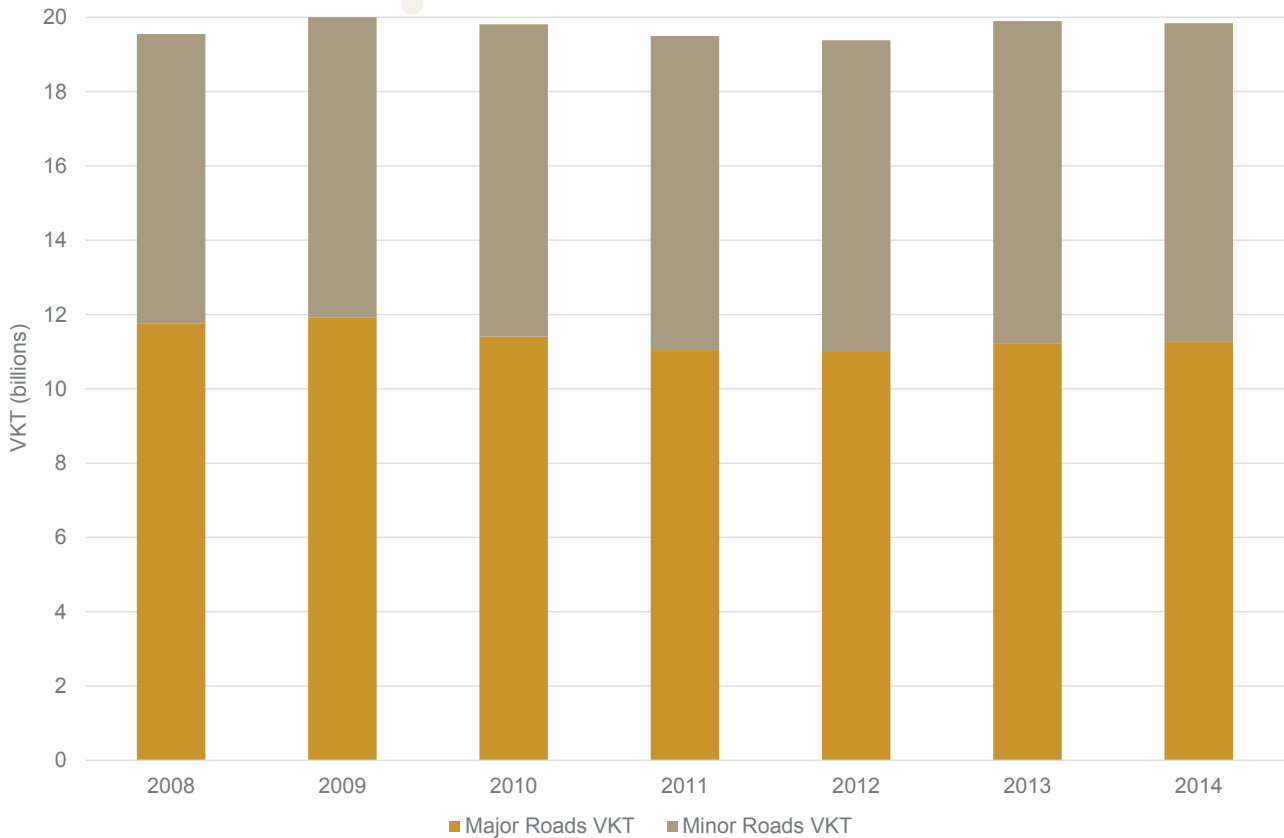
Figure 8. Vehicle kilometres travelled on Major and Minor roads, Northern Ireland, 2008 to 2014. Source: Department for Infrastructure.

Major roads account for only 10% of the total road length in NI, yet the traffic on these roads contributes to 57% of the total vehicle kilometres travelled. Conversely, the minor road network accounts for 90% of the total road length in NI and the traffic on these roads contributes to the remaining 43%.
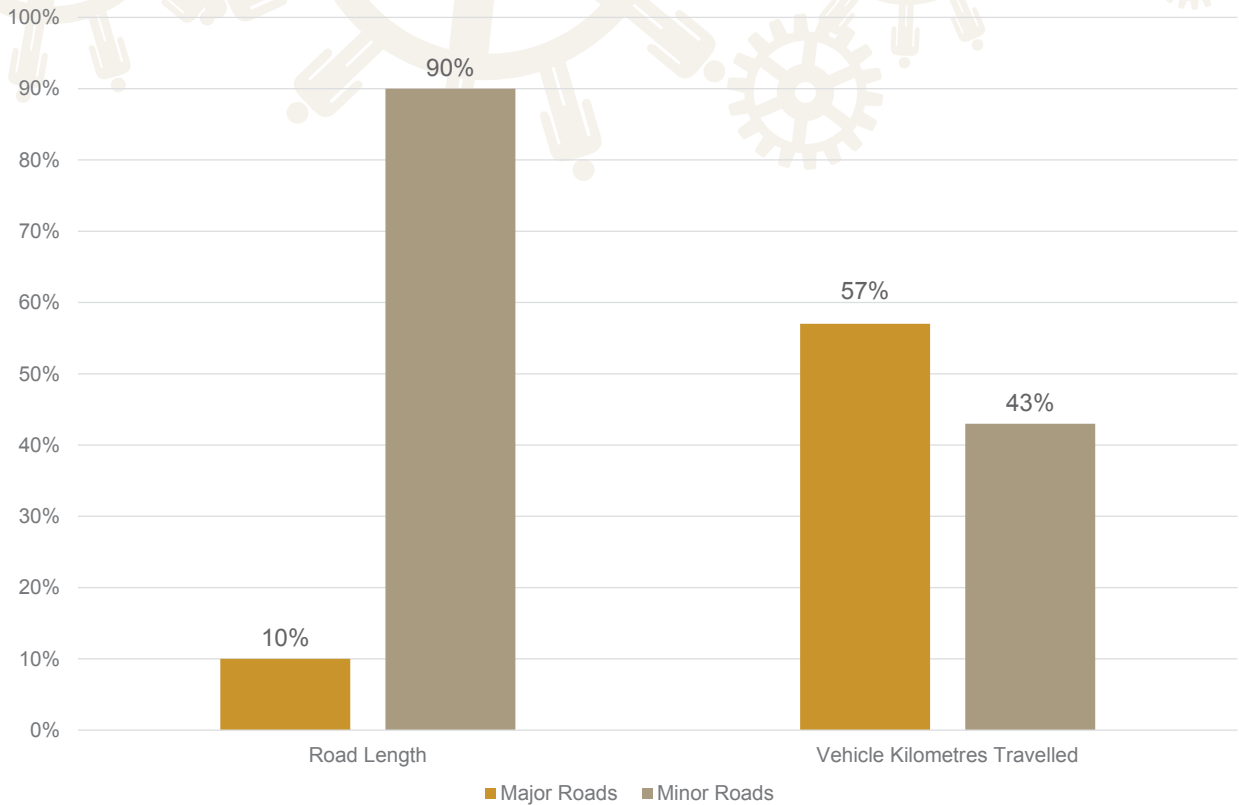
Figure 9. Vehicle Kilometres Travelled compared with Road Length Proportions on Major and Minor Roads, Northern Ireland, 2014. Source: Department for Infrastructure.

Less than 1% of the total road network in Northern Ireland is motorway yet motorway traffic accounted for 8% of the total vehicle kilometres travelled in 2014.

In 2014, 8.6 billion vehicle kilometres (43% of the total) were travelled on minor roads.

Among major roads, trunk A rural roads carried the largest proportion of traffic, 4.3 billion vehicle kilometres in 2014, around a fifth (21%) of the total.

In 2014, cars accounted for almost 9 out of every 10 vehicle kilometres travelled on Northern Ireland roads with 17.7 billion vehicle kilometres travelled. Car traffic has remained relatively constant between 2008 and 2014
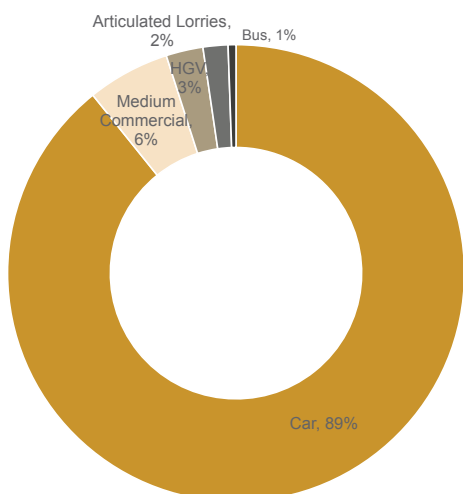

Figure 10. Road Traffic by Vehicle Type in Northern Ireland: 2014. Source: Department for Infrastructure.

Road Traffic Collisions

The Police Service of Northern Ireland statistics on injury road traffic collisions are the main source of information used in Northern Ireland for monitoring and tracking trends on the number of persons killed, seriously and slightly injured as a result of collisions on our roads.

During 2015/16 there were 6,150 injury road traffic collisions in Northern Ireland. These collisions resulted in 9,654 casualties of whom 75 were killed, 707 were seriously injured and 8,872 were slightly injured. The numbers of causalities and injury road traffic collisions have shown an upward trend since 2010/11. Compared with ten years ago the total number of injury road traffic collisions and casualties has shown an increase with 535 more collisions (up 9.5%) and 422 more casualties (up 4.6%) recorded than that of 2006/07.

Figure 11. Reported Injury road traffic collisions in Northern Ireland 2006/07 to 2015/16. Source: PSNI.

The numbers of people seriously injured in road traffic collisions has declined over the most recent 10 years, from 1,194 in 2006/07 to 707 in 2015/16.

In 2015/16 there were 75 fatalities recorded. Lower than the number ten years ago (128), but higher than in 2011/12 of 52.

	Collisions				Casualties				
	Fatal Colli-sions	**Serious Collisions**	**Slight Collisions**	**All Injury Collisions**	**Killed**	**Seriously Injured**	**KSI Casu-alties**	**Slightly Injured**	**Total Casu-alties**
2006/07	112	886	4,617	5,615	128	1,194	1,322	7,910	9,232
2007/08	101	844	5,376	6,321	110	1,076	1,186	8,562	9,748
2008/09	99	813	5,237	6,149	106	998	1,104	8,367	9,471
2009/10	90	793	5,304	6,187	101	995	1,096	8,579	9,675
2010/11	54	736	4,757	5,547	58	891	949	7,847	8,796
2011/12	51	689	4,899	5,639	52	806	858	7,972	8,830
2012/13	50	659	5,057	5,766	53	779	832	8,187	9,019
2013/14	57	611	5,344	6,012	60	725	785	8,596	9,381
2014/15	72	590	5,401	6,063	76	731	807	8,652	9,459
2015/16	69	569	5,512	6,150	75	707	782	8,872	9,654

Table 9. Recorded Injury Road Traffic Collision Statistics, Northern Ireland, 2006/07 - 2015/16. Source: PSNI. Note - KSI is Killed or seriously injured.

Principal Causation Factors

The main principal causation factors for KSI casualties during 2015/16 were 'excessive speed having regard to conditions and 'inattention or attention diverted' which both had 94 KSI casualties recorded in 2015/16. The next highest was 'impaired by drugs/alcohol - driver rider' with 68 KSI casualties.

Gender and Age of Road Traffic Collision Casualties

Fatalities - Of the 75 people killed on Northern Ireland's roads in 2015/16, 56 were male and 19 were female. Most of the fatalities were from either the 16 to 24 age group (21 deaths) or from those aged 65 and over (18 deaths) with over half of those killed coming from these age categories.

People Seriously Injured - Although males typically account for approximately three fifths of people seriously injured over a year, proportionally there were more females seriously injured in 2015/16 (38.9%) than in 2014/15 (33.0%). Across the various age bands, those aged 16-24 accounted for the most seriously injured by age group in both years (23.9% of all people seriously injured in 2015/16 and 26.7% in 2014/15).

In 2015/16 Armagh City, Banbridge and Craigavon 106 people were either killed or seriously injured (9 fatalities and 97 seriously injured). While the fatality number was the same as in 2014/15, the numbers seriously injured increased from 84.

	2014/15					2015/16				
	Killed	Seriously Injured	Total KSI	Slightly Injured	Total	Killed	Seriously Injured	Total KSI	Slightly Injured	Total
Antrim & Newtownabbey	3	45	48	678	726	5	51	56	711	767
Ards & North Down	6	52	58	583	641	5	48	53	655	708
Armagh City, Banbridge & Craigavon	9	84	93	825	918	9	97	106	763	869
Belfast City	8	114	122	2,259	2,381	5	102	107	2,290	2,397
Causeway Coast & Glens	7	73	80	512	592	9	66	75	549	624
Derry City & Strabane	3	48	51	634	685	4	33	37	631	668
Fermanagh & Omagh	12	45	57	527	584	7	42	49	518	567
Lisburn & Castlereagh City	7	48	55	719	774	5	75	80	849	929
Mid & East Antrim	6	50	56	578	634	5	57	62	545	607
Mid Ulster	4	71	75	587	662	10	57	67	610	677
Newry, Mourne and Down	11	101	112	750	862	11	79	90	751	841
Northern Ireland	**76**	**731**	**807**	**8,652**	**9,459**	**75**	**707**	**782**	**8,872**	**9,654**

Table 10. Road traffic casualties by Policing District 2014/15 and 2015/16. Source: PSNI. Note - KSI is Killed or seriously injured.

Air Quality

The air that we breathe is vital to our health and wellbeing. Good air quality is essential for human health, the climate, habitats and the built environment. Government statistics estimate that air pollution in the UK reduces the life expectancy of every person by an average of 7-8 months, with an associated cost of up to £20 billion each year (Source: Department of Agriculture, Environment and Rural Affairs).

The Council's statutory 'Air Quality Updating and Screening Assessment 2015' has identified that the greatest contribution to air pollution in the Borough is from road traffic, particularly in the town centres of Armagh, Portadown and Lurgan where the road network is frequently congested. It is estimated road traffic accounts for over 85% of the emissions in Armagh City, Banbridge and Craigavon Borough. Other sources such as industry, agriculture or construction, make a relatively small contribution to local emissions.

The report notes that given the size of the rural hinterland, public transport options are limited and there is a greater tendency to rely on the private car as the primary means of transport. The road network within the Borough is regarded as a route hub to the border with the Republic of Ireland and is a main through-route between mid-Ulster and the south-east of Northern Ireland and hence has a traffic flow higher than that which could be created by local traffic alone.

Air quality in the Borough is monitored at a number of locations. Particulate Matter (PM10) and Nitrogen Dioxide (NO2) would be considered as the pollutants most at risk of breaching the objective limits in the Borough as a result of road traffic.

In 2014 there were 3 sites where nitrogen dioxide (NO2) levels exceed the health-based objective limit of 40ug/m3 (Greenpark Terrace, Railway Street / Mall West in Armagh and Mill Street in Tandragee). The Greenpark Terrace and Railway Street / Mall West sites have been declared as Air Quality Management Areas (AQMAs) as required by the Environment (NI) Order 2002, Mill Street in Tandragee will be formally declared in 2016. Where AQMAs exist, the Council is required to produce Action Plans along with partners such as the Department of Infrastructure and Translink to reduce air pollution.

Proximity to Services Deprivation

The Northern Ireland Multiple Deprivation Measure (NIMDM) 2010 identifies small area concentrations of multiple deprivation across Northern Ireland. It provides information on seven types or 'domains' of deprivation and an overall multiple deprivation measure.

The purpose of the proximity to services domain is to measure the extent to which people have poor geographical access to key services, including statutory and general services, it uses expected road travel times.

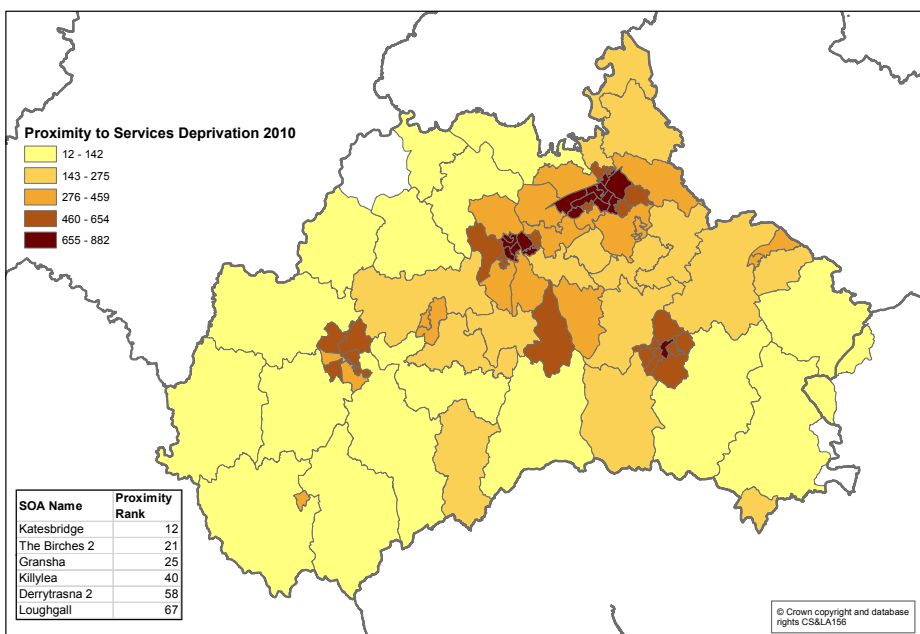The Borough has six areas in the 10% most deprived areas in NI on the proximity to services measure.

Figure 12. Proximity to Services Deprivation, NIMDM 2010. Top six areas in most deprived 10% in NI listed. Source: NISRA.

Car Parking

Responsibility for off street car parks transferred from the then DRD Roads Service to Councils on 1st April 2015 as part of the Transfer of Functions under the Reform of Public Administration. This resulted in a total of 51 car parks, including 1 Pay on Foot car park, i.e. the Mall West Car Park in Armagh, transferring to the Armagh City, Banbridge & Craigavon Borough Council. Of the 51 car parks, 33 are free to park in and 18 are charged with a breakdown across the various towns in the Borough shown in the table below.

Town	Car Parks - Free		Car Parks - Charged		Car Parks - Total	
	Number	Spaces	Number	Spaces	Number	Spaces
Armagh	4	224	6	744	10	968
Keady	4	139	-	-	4	139
Markethill	1	50	-	-	1	50
Tandragee	1	36	-	-	1	36
Banbridge	4	221	4	360	8	581
Dromore	3	138	-	-	3	138
Gilford	1	21	-	-	1	21
Rathfriland	1	56	-	-	1	56
Lurgan	9	540	3	233	12	773
Portadown	5	449	5	665	10	1,114
Total	**33**	**1,874**	**18**	**2,002**	**51**	**3,876**

Table 11. Off street car parks, 2016. Armagh City, Banbridge and Craigavon Borough Council.

Whilst the council is responsible for off street car parking, towns may also have on street or other car parking facilities available. It should be noted there are other opportunities for parking, such as in Craigavon Central Area there are 3,023 spaces across four retail sites.

Cycle Routes

National Cycle Network

The National Cycle Network is a millennium project, the aim of which is to provide a safe, attractive, high quality network of traffic-free paths and traffic calmed roads running through and connecting to major urban centres of the United Kingdom. The following is a list of the National Cycle Routes in the Armagh City, Banbridge Craigavon Borough:

• Newry Canal (Route 9) - This cycle and walking route travels along the Newry Canal Towpath from the Bann Bridge in Portadown to the Town Hall in Newry along a 20 mile path. The towpath passes through Scarva and Poyntzpass.

• Loughshore Trail (Route 94) - This route starts at Maghery, travels through Portadown and back towards the Lough at Kinnego Marina (Oxford Island). The route then follows the Lough up towards Antrim past Aghagallon and Gawleys Gate past Portmore Lough where it leaves the Borough.

• Ulster Canal (Route 11) - The portion of this cycle route within the Borough starts at Maghery past Peatlands Park through Clonmore, Tamnamore, Collegeland and Charlemont before leaving the Borough at Blackwatertown.

(Data Source: Sustrans National Cycle Network website 2015, via Planning).

There are also other local cycle routes within the Borough that contain elements of and link into one or more of the National Cycle Routes (Source: www.cycleni.com, via Planning):

• Orchard County: A 33 mile route travels from Loughgall-Blackwatertown-Charlemont-The Argory-Clonmore-Maghery-Birches-Annaghmore.

• Tassagh: A 25 mile route travels from Armagh City-The Navan Centre– Milford-Tassagh Viaduct-Seagahan Dam-Killycapple-Cavanacaw- Armagh City.

- Craigavon Cycle Trail: A 35 mile route travels from Portadown along the Newry Canal Towpath to Knock Bridge then Knocknamuckly-Bluestone-Bleary-Waringstown-Magherealin- Cranagh Bridge, Aghagallon along the Lagan Canal – Kinnego – Craigavon Lakes & Park – Portadown.

- Bann Montiagh Trails: This routes offers a number of trails that travel along three routes ranging between 5 and 13 miles between the River Bann and Lough Neagh southern shore. It includes points of interest along the way such as the Bannfoot where the Bann meets Lough Neagh, Lough Gullion, Ardmore Point, Derrytrasna and through the townlands of Derrytagh South, Derryloiste, Derryinver, Derrycrow, Derrytagh, Ardmore and Derrycor.

- Birches & Maghery Trails: This routes offers a number of trails that travel from Maghery Country Park – Milltown-Columbkille beside the Bannfoot-The Birches-Clonmakate-past Derryadd Lough on towards and through Peatlands Park – Maghery.

- Katesbridge: A 19 mile route travels from Katesbridge alongside the route of then former railway line runs close to Corbet Lough then into the Dromara Hills towards Waringsford-Fedany Road - Katesbridge.

- Drumlins and Canal. A 22 mile route that is a mixture of rolling drumlin countryside and flat canal towpath. The route starts with Banbridge- Loughbrickland. From here the route climbs steeply to overlook Loughbrickland Lake and then you descend towards Poyntzpass. The route joins the canal towpath here for a six-mile flat run to Scarva. Soon the route leaves the canal towpath at Madden's Bridge and joins the main Gilford to Tandragee road for a short spell before turning into Gilford, where the route climbs to the north of the town before descending through the village of Lawrencetown. You then cross the River Bann and follow the south side of the river to Banbridge.

Other Borough Networks / Greenways include:

- The Craigavon Community Greenway Project saw the revitalisation of the seven mile cycle corridor linking Portadown and Lurgan towns' train stations as well as the hospital and local communities. The Portadown to Lurgan project installed three toucan crossings, saw the refurbishment of eight underpasses as well as widening and enhancing the path with lights and signs, additional cycle lanes, resurfacing, markings and landscaping.

- The Craigavon 'Black Path' cycle and pedestrian network links the neighbourhoods of the Craigavon New Town to Portadown and Lurgan in dedicated car-free pathways.

BROADBAND

The 'Connected Nations 2015 - Northern Ireland' report produced by OFCOM, describes how businesses rely on telephone and internet services to sell goods and services, connect to customers, deal with suppliers and manage their workforce. Beyond this, many digital businesses rely on broadband services for the actual delivery of their products and services. Reliable and high quality broadband and mobile connections are becoming ever more important to commerce and to the wider economy.

Fixed Broadband

In 2015, average download speeds were 28.3 Mbit/s and average upload speeds were 4.5Mbit/s in Northern Ireland. In line with overall trends and previous OFCOM research, premises in rural Northern Ireland which have lower speeds available to them tend to also use less data over the course of a month.

	Average download sync speeds (Mbit/s)	Average monthly data usage (GB)	Average upload speeds (Mbit/s)	Average data use during peak time (Mbit/s)
Urban	32	85	5	28
Rural	18	57	4	17
Northern Ireland	**28**	**77**	**4**	**26**

Table 12. Download, upload and data usage in urban and rural areas of Northern Ireland. Source: Connected Nations 2015 - Northern Ireland, OFCOM.

Evidence suggests that those consumers with faster connections are more likely to rate their broadband experience good. In general, 10Mbit/s appears to be the tipping point beyond which most consumers rate their broadband experience as 'good'. This continues to support OFCOM's view that a minimum of 10Mbit/s is required by the typical household. In Armagh City, Banbridge and Craigavon 16% of premises could not receive download speed of greater than or equal to 10Mbps, compared to 14% of premises in Northern Ireland overall. Superfast broadband (SFBB) is described as delivering headline download speeds of greater than 30 Mbit/s. In areas where Superfast broadband services are available, the usage differential described above is less marked.
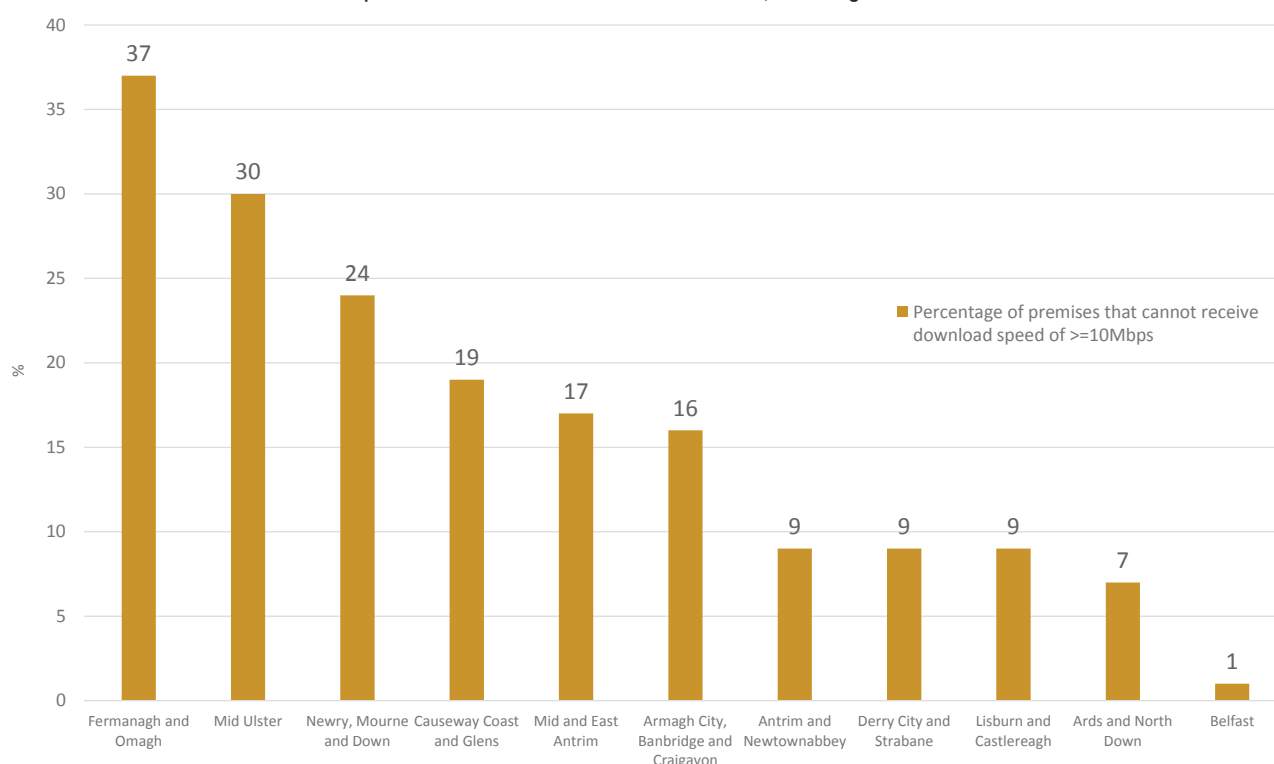

Figure 13. Percentage of premises that cannot receive download speed of >=10Mbps. Source: Connected Nations 2015 - Northern Ireland, OFCOM.

Ofcom, operators and governments have been aware of and reporting on the differential between speeds in urban and rural areas

for some time. Even where superfast speeds are available in rural areas they tend to be slower than in urban areas due to the dispersion of premises and the distance of premises from cabinets with a Fibre to the Cabinet (FTTC) solution. The graph below outlines this speed differential for both SFBB and non-SFBB connections, and for urban and rural areas.
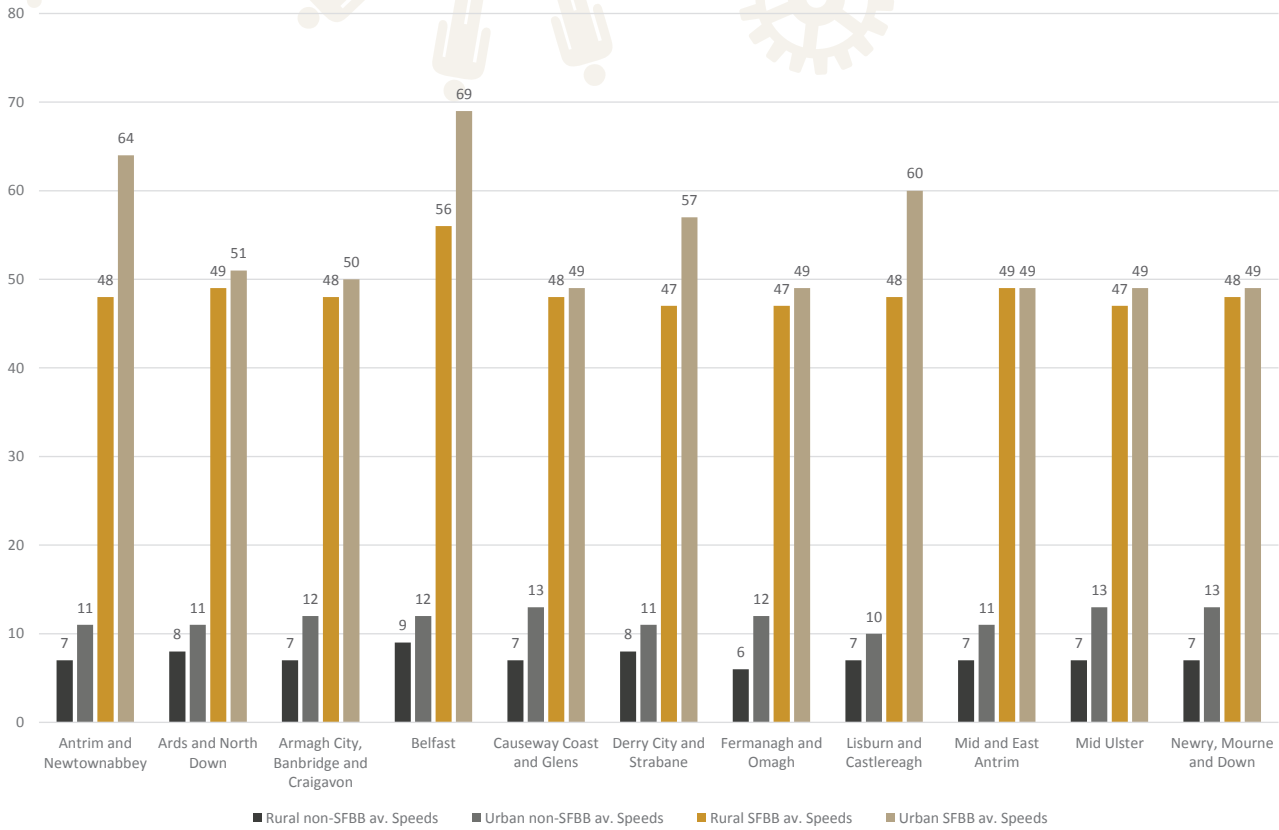

Figure 14. Superfast speeds and non-superfast speeds by urban and rural settlement. Source: Connected Nations 2015 - Northern Ireland, OFCOM.

BT have installed "Fibre To The Cabinet" across Northern Ireland and these cabinets can often be seen at 'cross roads'. The theory is that citizens (businesses and the public) then get a broadband connection from the cabinets. However, when a property is more than 1Km from a cabinet, as is the case in many rural areas broadband is not possible. The council is taking forward four pilot projects on rural broadband provision - the four areas selected are Blackwatertown, Clady/Milltown, Donaghcloney and Ednego/Kilmacrew. This work will help to inform the practicalities and costs associated with effective broadband provision for all our citizens.

The 'Fibre at the Crossroads' (June 2016) report by Irish Central Border Area Network (ICBAN) considered infrastructure solutions for high speed internet in the central border region of Northern Ireland/Ireland. The key aim of the report is to take digital fibre connections deeper into the distribution network within rural areas – thus ensuring that rural towns, villages and communities are better enabled to avail of these services into the future. The report gives two sets of recommendations: one set reflecting BT's dominant position in Northern Ireland's rural marketplace; the second are opportunities for Councils as owners of passive infrastructure to encourage competition and assist in accelerating the adoption of direct fibre access services.

Project Kelvin

Project Kelvin is an extensive submarine and terrestrial cable deployment that directly connects Northern Ireland to North America. The €29.5m project is a collaborative initiative between the Department for the Economy and the Republic of Ireland's Department of Energy, Communications and Natural Resources (DCENR) and funded under the Interreg IV Programme.

The cable, brought ashore at Portrush, connects to Hibernia Networks' terrestrial fiber optic ring consisting of 13 towns and cities, including Armagh, Ballymena, Belfast, Coleraine, Londonderry, Omagh, Portadown, Strabane, Letterkenny, Castleblayney, Dundalk, Drogheda and Monaghan.

Mobile Coverage

There are four Mobile Network Operators (MNOs) in the UK: EE, Telefonica (O2), Three and Vodafone. In addition, there are a number of virtual Mobile Networks Operators who do not have their own network infrastructure but have commercial agreements to use the infrastructure of one of the MNOs[1]. OFCOM describes how it is recognised that mobile coverage varies across the UK and is generally less good in rural than in urban areas. There remain some areas of Northern Ireland not covered by all four operators and some with no mobile communications coverage at all.

- Not-spots are areas where there is currently no coverage available.

- Partial not-spots are areas which have coverage from some but not all of the four major mobile networks.

In geographic terms, Northern Ireland has 5% voice not-spots, less than the UK as a whole (13%) and substantially less than Scotland where 29% of landmass is not covered. A similar pattern can be seen when looking at data coverage. Northern Ireland has 7% of its landmass not covered by a data service from any operator, compared to the UK average of 21%.

	Indoor Voice (premises)	Outdoor Voice (premises)	Indoor Data (premises)	Outdoor Data (premises)	Voice (geographic)	Data (geographic)
Partial not-spots	29%	10%	38%	25%	29%	50%
Complete not-spots	4%	1%	5%	1%	5%	7%
Premises covered by all operators	67%	89%	57%	73%	66%	43%

Table 13. Partial and complete not-spots, coverage by all operators, Northern Ireland. Source: Connected Nations 2015 - Northern Ireland, OFCOM.

Complete and partial not-spots are more prevalent in rural areas. This reflects the relative population densities in these areas.

		Indoor Voice (2G + 3G)	Outdoor Voice (2G + 3G)
Partial not-spots	Urban	16%	2%
	Rural	61%	27%
Complete not-spots	Urban	<1%	0%
	Rural	14%	3%
Premises covered by all operators	Urban	84%	98%
	Rural	26%	69%

Table 14. Urban and rural premises voice coverage, Northern Ireland. Source: Connected Nations 2015 - Northern Ireland, OFCOM.

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[1] Mobile Coverage in the UK: Government plans to tackle 'mobile not-spots', House of Commons Briefing Paper, March 2016

ENERGY

Energy Supply

Energy supply in the borough is primarily produced by the use of fossil fuels to generate electricity. The Council area needs a continuous and sustainable source of energy supply in order to meet the needs of a modern society and to underpin economic growth. Currently the electricity supply within the Council area and Northern Ireland as a whole is not an issue.

There are three electricity interconnectors linking the Northern Ireland grid operated by Northern Ireland Electricity plc and the Republic of Ireland grid operated by the Electricity Supply Board.

The proposed North South interconnector also known as the Tyrone-Cavan Interconnector will involve the construction of a new 275/400kV substation and a new 400kV overhead line between Turleenan (North of Moy) and Woodland / Batterstown (Co. Meath), a distance of approximately 85 miles. The inquiry into the Tyrone/Cavan electricity interconnector proposal opened in March 2012 and was adjourned. The inquiry has recommenced, in June 2016, and The Planning Appeals Commission (PAC) has indicated that it will be held in two stages. The first stage of the inquiry will only consider the preliminary issues and the merits of the proposals will not be considered until the next stage.

Future Energy Supply

The previous Department of Enterprise Trade and Investment (DETI) published a report on a long term vision for energy covering electricity, heat and transport: Envisioning the Future, Considering Energy in Northern Ireland to 2050. The report from 2013, is a vision of what might happen by 2050: the outcomes are neither a prediction nor a plan and the study does not, therefore, propose a strategy. Instead, the vision is intended to guide thinking on what can be achieved in 2050 and what early decisions and activities may be needed to support development towards 2050.

Over a long term period, such as the four decades to 2050, a very wide range of events and developments could take place. In the preceding four decades the energy system in the UK has moved from a coal dominated system, through a boom in hydrocarbon production and use, to a recent trend to decarbonisation.
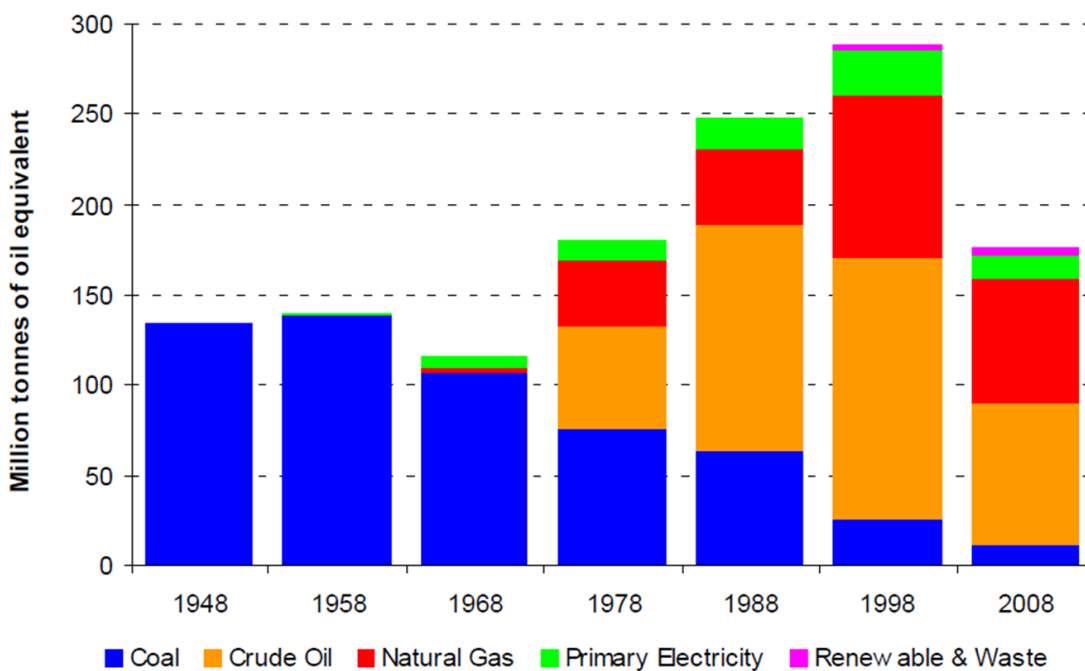

Figure 15. UK indigenous production of energy. Source: Department of Energy and Climate Change via report Envisioning the Future, Considering Energy in Northern Ireland to 2050 (2013).

Over the coming 4 decades it is likely that the pace of change will be even more rapid than in the past. So new policy directions may emerge, new technologies will be introduced and behaviours and attitudes will change. Hence creating a single view of energy supply and demand in Northern Ireland in 2050 would create an impression of being a prediction, while in reality it is impossible to predict events that far ahead. Two scenarios were developed:

Scenario 1: This considers a continuation of trends from 2020 in the move toward increased security of supply and decarbonisation;

Scenario 2: This considers a more aggressive change towards higher security of supply and greater decarbonisation, with higher levels of energy efficiency and greater moves to renewable energy.

The energy vision developed for Northern Ireland in 2050 suggests that significant progress towards decarbonisation could be achieved, especially under the more ambitious Scenario 2. Reduction of 55% to 80% in energy related Green House Gas (GHG) emissions could be achieved through:

- a switch to renewable electricity as the main form of electricity generation;

- a move to renewable heat;

- improved efficiency of buildings, industry processes, light and appliances;

- uptake of electric vehicles, plug in hybrid vehicles and fuel cell vehicles.

The scenarios for 2050 also envisage a significant change in energy security of supply for Northern Ireland. For fossil fuels the reliance on oil for heating is expected to be very significantly reduced, replaced by gas, renewable heat and electricity. For transport, oil will continue to dominate the fuel mix, making transport the main sector that will be exposed to international energy cost fluctuations. The scenarios suggest that fossil fuel imports could fall from 96% in 2010 to between 68% and 41% in 2050. From a net importer of electricity, Northern Ireland could be a significant net exporter.

Energy costs are the product of volume of energy used and the price paid per unit of consumption. The scenarios suggest that fossil fuel use may fall, potentially significantly, whereas electricity consumption may increase. Long term energy price projections are often overtaken by events in the global energy sector. In addition there are no UK energy price projections for 2050. In general fossil fuel and electricity prices are expected to rise, so the main concern on energy costs is for electricity. A trend in rising electricity costs could be managed by considering how to deploy lower cost electricity generation options. In particular, the use of smart grid solutions or energy storage, as an alternative flexible technology to open cycle gas turbine generation. A move to these technologies would also reduce the costs of wider reinforcement of the electricity network. So these technologies would reduce costs and reduce GHG emissions.

To achieve these changes in GHG emissions and security of supply would require a sustained and concerted effort to deliver and this would also require all sectors of the economy to play their part in making the changes envisaged.

Energy Consumption

Total energy consumption in Northern Ireland is available in the 'Energy in Northern Ireland 2016' report from the Department for Infrastructure, which amalgamates data from a number of sources – NIE Networks, Utility regulator and the Department for Energy and Climate Change (DECC).

Some 46,264 GWh of energy was consumed in Northern Ireland in 2013 (13,784 GWh from electricity and gas and 32,480 GWh from other fuels). This was equivalent to 3.2% of the total energy consumption in GB for the same year.

	2009	**2010**	**2011**	**2012**	**2013**
Electricity	8,049	8,432	8,235	8,095	8,181
Gas	3,984	4,487	4,834	5,008	5,603
Other (Coal, Manufactured fuels, Petroleum products, Bio energy & wastes)	35,291	36,815	32,976	31,523	32,480
Total Energy consumption NI	**47,324**	**49,734**	**46,045**	**44,626**	**46,264**
Total Energy Consumption GB	1,506,847	1,510,205	1,447,081	1,435,022	1,426,912
NI as a % of GB	3.1%	3.3%	3.2%	3.1%	3.2%

Table 15. Total energy consumption (GWh) in Northern Ireland, 2009 - 2013. Source: Energy in Northern Ireland 2016 report, Department for Infrastructure. Note – data from NIE Networks, Utility Regulator and DECC.

Information is available by Local Government District for Electricity (experimental statistics) and Coal, Manufactured fuels, Petroleum products, Bio energy and Wastes from the Energy in NI report, the total Gas consumption however is not broken down by Local Government District.

In the Borough, 3,327 GWh of energy was consumed from petroleum products (12% of Northern Ireland total).

	Coal	**Manufactured Fuels**	**Petroleum Products**	**Bio energy**	**Total (excludes Electricity and Gas)**
Antrim and Newtownabbey	383	35	2,294	47	2,759
Ards and North Down	172	2	1,562	60	1,797
Armagh City, Banbridge and Craigavon	363	43	3,327	105	3,837
Belfast	76	60	1,937	9	2,081
Causeway Coast and Glens	212	14	2,412	106	2,744
Derry City and Strabane	609	4	2,049	108	2,769
Fermanagh and Omagh	376	4	2,853	121	3,354
Lisburn and Castlereagh	268	16	2,385	64	2,733
Mid and East Antrim	274	21	2,196	78	2,569
Mid Ulster	847	28	3,425	167	4,466
Newry, Mourne and Down	234	30	3,015	93	3,371
Northern Ireland	**3,814**	**255**	**27,455**	**957**	**32,480**

Table 16. Northern Ireland Energy Consumption (GWh) by Local Government District, 2013. Source: DECC in Energy in Northern Ireland 2016 report, Department for Infrastructure. Note – excludes Electricity and Gas.

In the Borough over half (56%) of energy consumption from petroleum products was in road transport, similar to Northern Ireland level (52%).

	Armagh City, Banbridge and Craigavon		Northern Ireland	
	GWh	%	GWh	%
Industrial	435	13%	5,190	19%
Domestic	1,002	30%	7,794	28%
Road transport	1,870	56%	14,333	52%
Rail	20	1%	139	1%
Total petroleum products	**3,327**	**100%**	**27,455**	**100%**

Table 17. Energy Consumption (GWh) of petroleum products in Armagh City, Banbridge and Craigavon Borough and Northern Ireland, 2013. Source: DECC in Energy in Northern Ireland 2016 report, Department for Infrastructure.

Experimental statistics show that in 2013/14, Armagh City, Banbridge and Craigavon Borough consumed 904 GWh of electricity (12% of the total GWh for Northern Ireland). In the Borough, 39% of consumption was domestic (349 GWh) and 61% was non-domestic (555 GWh), similar proportions to NI overall (40% and 60% respectively). Note the data are based on billed units from customers that have been connected for at least 12 months and cover the period 1 April 2013 to 31 March 2014. Therefore, the consumption figures will not match exactly with those shown for 2013 in Table 15.

	Domestic			Non-domestic		
	Total consumption (kWh)	Total number of meters	Average consumption per meter (kWh)	Total consumption (kWh)	Total consumption (kWh)	Average consumption per meter (kWh)
Antrim and Newtownabbey	236,524,556	58,576	4,038	366,208,560	3,603	101,640
Ards and North Down	289,008,377	70,140	4,120	235,741,346	4,124	57,163
Armagh City, Banbridge and Craigavon	349,390,774	82,675	4,226	554,611,079	6,296	88,089
Belfast	471,633,699	136,360	3,459	1,047,058,574	11,340	92,333
Causeway Coast and Glens	253,200,595	63,228	4,005	255,449,626	4,672	54,677
Derry City and Strabane	236,198,249	60,502	3,904	435,369,114	4,649	93,648
Fermanagh and Omagh	185,570,697	47,002	3,948	349,441,235	4,281	81,626
Lisburn and Castlereagh	321,779,682	79,334	4,056	360,096,788	4,578	78,658
Mid and East Antrim	241,698,001	58,653	4,121	338,773,753	3,981	85,098
Mid Ulster	232,272,759	52,227	4,447	417,785,910	5,272	79,246
Newry, Mourne and Down	291,085,053	68,182	4,269	303,988,262	5,771	52,675
Unallocated	6,007,132	2,056	2,922	27,712,862	205	135,185
Northern Ireland	**3,114,369,574**	**778,935**	**3,998**	**4,692,237,109**	**58,772**	**79,838**

Table 18. Experimental electricity consumption (kWh) statistics at Local Government District level, 2013-14. Source: DECC in Energy in Northern Ireland 2016 report, Department for Infrastructure.

Renewables

Renewable energy can be defined as energy derived from natural processes (e.g. sunlight and wind) that are replenished at a faster rate than they are consumed. Solar, wind, geothermal, hydro, and some forms of biomass are common sources of renewable energy. Renewable electricity is therefore any electricity generated from any of these sources.

The Northern Ireland Environmental Statistics Report March 2016 published by the Department of Agriculture, Environment and Rural Affairs (DAERA) provides information on renewable energy.

The Northern Ireland Executive's Programme for Government 2011-2015 set a target to "Encourage achievement of 20% of electricity consumption from renewable sources by 2015". The Northern Ireland Executive's Strategic Energy Framework has set a target of 40% electricity consumption from renewable sources by 2020.

In 2015/16, 1,979 Gigawatt hours (GWh) of electricity in Northern Ireland was generated from indigenous renewable sources. This was equivalent to 25.4% of total electricity consumption in that period.

There has been a sizable increase in the amount of electricity generated from indigenous renewable sources since 2001/02, when only 128GWh (1.5% of total electricity consumed) was from renewable sources.
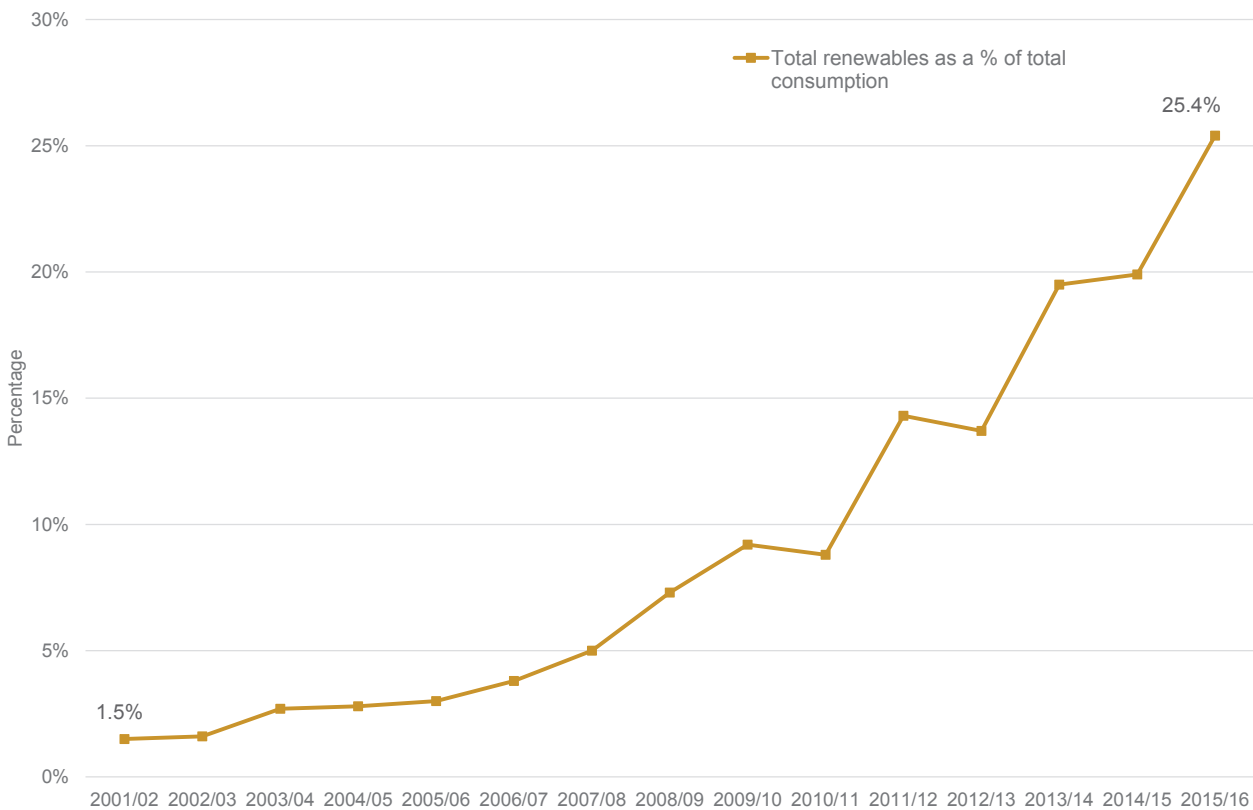
Figure 16. Percentage of electricity consumed from indigenous renewable sources, 2001/02 - 2015/16. Source: Northern Ireland Environmental Statistics Report March 2016, Department of Agriculture, Environment and Rural Affairs and Electricity consumption and renewable generation in Northern Ireland year ending March 2016, Department for the Economy.

The vast majority (90%) of renewable electricity generated within Northern Ireland is generated from wind sources.
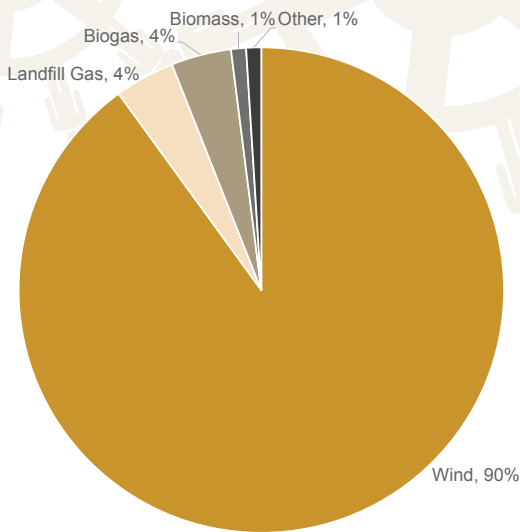
Figure 17. Renewable electricity generation by type of generation (April 2015 to March 2016). Source: Department for the Economy.

Changes in renewable electricity generated are therefore heavily influenced by increases/decreases in stock (i.e. more or fewer wind turbines in operation) or weather (i.e. a particularly windy or non-windy year) or both.

A number of new wind turbines/wind farms have come into operation over recent years - a list of these by county is available at http://www.iwea.com/windfarmsinireland.

The introduction of new wind farms can have the 'step change' effect that can be observed in recent years. In addition, more recently there has been increased generation from some other renewable sources (e.g. biomass and biogas).

Renewable electricity generation has linkages with other government policies such as climate change and energy efficiency. These other policies can have a direct influence on future deployment of renewables and the generation and consumption of electricity.

The long term trend that can be observed from the figures is a general increase in the generation and consumption of renewable electricity in NI since 2001. A large part of this increase can be attributed to the introduction of the Northern Ireland Renewables Obligation (NIRO) in 2005 which provides a revenue stream for renewable electricity generation in the form of Renewable Obligation Certificates (ROCs). The NIRO closed to new large scale onshore wind on 31 March 2016, to new small scale wind on 30 June 2016 and will close to all new non-wind technologies on 31 March 2017.

The Department of Energy & Climate Change (DECC) in UK produces renewable electricity data at a District Council level (the previous 26 council areas) for Northern Ireland. The latest year available is for 2014 and results have been aggregated into the new 11 council areas.

One percent of renewable electricity capacity and generation was produced by Armagh City, Banbridge and Craigavon Borough. Over three quarters (76%) of renewable electricity capacity and generation (78%) was accounted for by three of the 11 council areas namely: Causeway Coast and Glens; Derry City and Strabane; and Fermanagh and Omagh. This is perhaps unsurprising given that the majority of the large onshore wind turbines would be located in these council areas.

	Number of sites	Capacity (MW)	Percentage of total Capacity	Generation (MWh)	Percentage of total Generation
Antrim and Newtownabbey	35	31	4%	82,272	5%
Ards and North Down	10	2	0%	5,484	0%
Armagh City, Banbridge and Craigavon	35	6	1%	18,341	1%
Belfast	7	6	1%	15,457	1%
Causeway Coast and Glens	51	159	20%	298,629	18%
Derry City and Strabane	57	206	26%	508,284	30%
Fermanagh and Omagh	55	237	30%	513,834	30%
Lisburn and Castlereagh	20	4	1%	11,940	1%
Mid and East Antrim	47	25	3%	58,507	3%
Mid Ulster	59	45	6%	93,494	6%
Newry, Mourne and Down	31	7	1%	25,826	2%
Unallocated	12,294	68	9%	54,807	3%
Northern Ireland	**12,701**	**796**	**100%**	**1,686,875**	**100%**

Table 19. Renewable electricity generation, capacity and site numbers by District Council Area as at end 2014. Source: DECC via Energy in NI 2016 report, Department for the Economy.

Note - 'Unallocated' means those sites (and associated capacity and generation) that were not able to be matched to a council area due to incomplete or a lack of postcode information. The most sites (around 97%) were unallocated. However, further analysis shows that the vast majority (11,857 or over 96%) of the 12,294 unallocated sites are solar PV sites and these account for only 9% of capacity and 3% of generation.

Renewable energy applications

The Northern Ireland Planning Statistics report (April 2015 - March 2016) gives further details on renewal energy applications received and decided. The Department for Infrastructure monitors the number of renewable energy applications. These include single wind turbines, wind farms, solar panels, biomass energy, heat pumps, anaerobic digestion, hydroelectric schemes etc. The majority of renewable energy applications are for single wind turbines. Planning permission is required for all environmental installations.

The overall number of renewable energy applications received in Northern Ireland in 2015/16 was 329. The number of applications fell by 38.6% when compared to 2014/15. The number of applications received annually peaked in 2011/12 with 820 applications received in that year. It is likely that the high levels at this time were driven by the NI Executive's targets for electricity consumption from renewable sources, with a target of 20% to be achieved by 2015, and 40% by 2020. The decline in recent years may be partly due to a reduction in government funding available, as well as a lack of capacity on the power grid to allow for new connections.
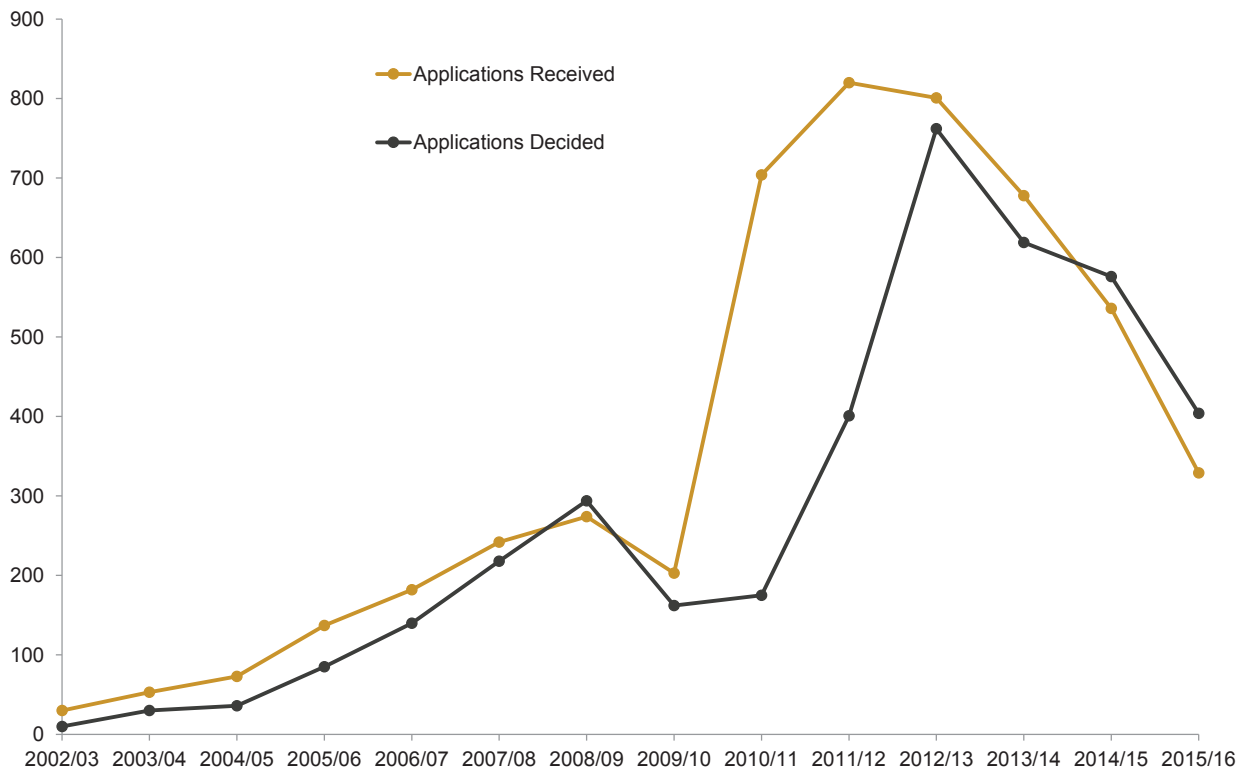
Figure 18. Renewable energy applications, 2002/03 to 2015/16. Source: NI Planning Statistics, Department for Infrastructure.

More than 7 out of every 10 renewable energy applications received in 2015/16 were for single wind turbines. Although single wind turbines continue to dominate renewable energy applications, over the last year applications have decreased by a very sizeable 41.8%.

In 2015/16 there were 29 applications received and 25 applications approved in the borough. For the same time period the Armagh City, Banbridge and Craigavon Borough had a renewable energy application approval rate of 83.3%, compared to 80.4% for NI overall.
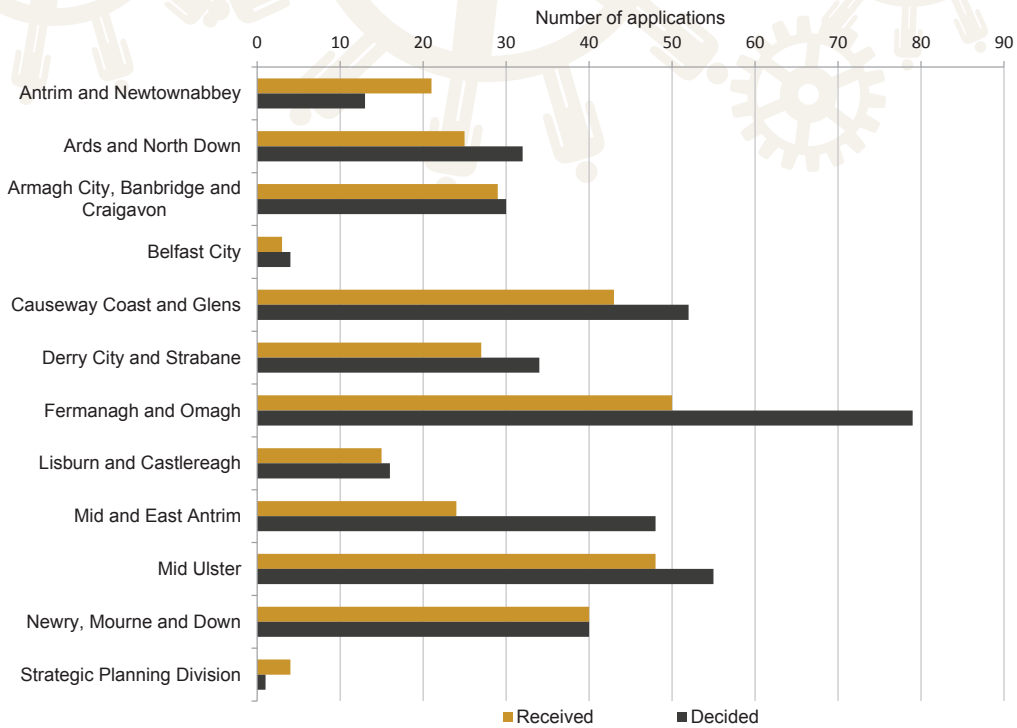
Figure 19. Renewable energy applications received and decided (2015/16). Source: NI Planning Statistics, Department for Infrastructure.
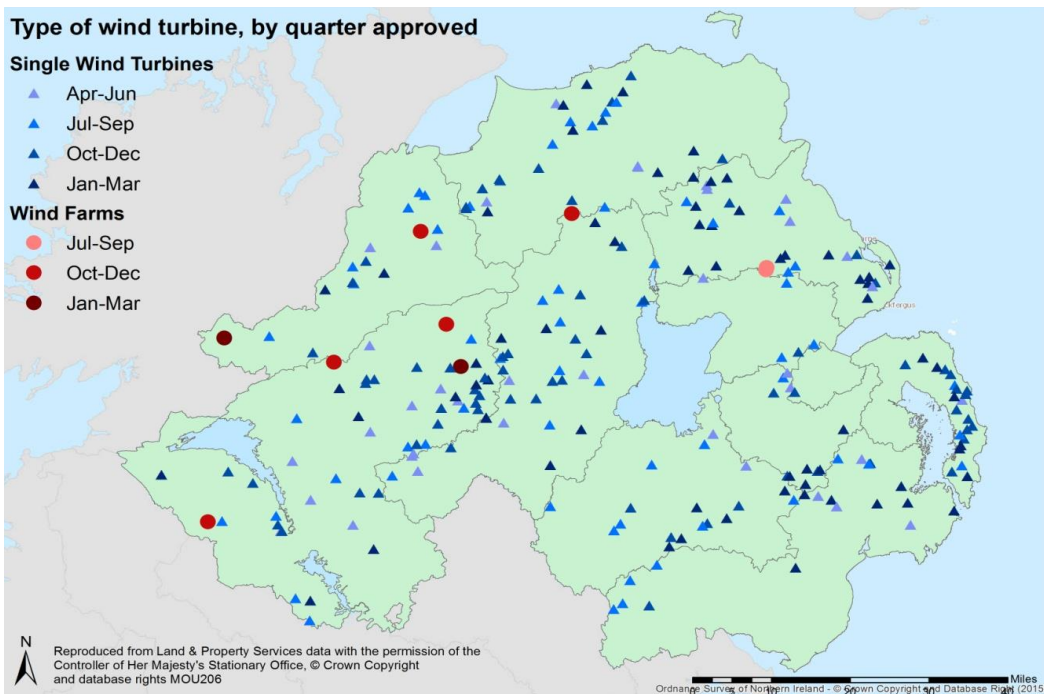

Figure 20. Location of approved wind energy applications by council, 2015/16. Source: NI Planning Statistics, Department for Infrastructure.

The planning department in the council 'Public Utilities Paper November 2015' describes how the Borough is located a significant distance away from the Atlantic Ocean and the strongest prevailing south westerly winds. This and the relatively low altitude of much of the Borough countryside means that it has been the subject of a small number of windfarm applications compared to Northern Ireland as a whole.

Energy Efficiency

The Housing Executive has a key role under the 1995 Home Energy Conservation Act to identify, promote and monitor progress of energy efficiency throughout all tenures in the residential sector in Northern Ireland. The energy efficiency of a dwelling is determined primarily by the fuel source and heating type. Other factors such as insulation and double glazing are also important. The latest House Condition Survey (HCS) carried out in 2011, recorded a 22.5% improvement in the energy efficiency of the occupied housing stock in Northern Ireland between 1996 and 2011. Evidence would suggest that the Northern Ireland figures are broadly representative of Armagh City, Banbridge and Craigavon Borough[2].

Considerable progress has been made to date in upgrading the energy efficiency of all housing stock across all tenures in Northern Ireland.

Central Heating

The 2011 House Condition Survey defines "central heating" as a heating system with a distribution system sufficient to provide heat in at least two rooms. Overall, the proportion of dwellings in Northern Ireland with central heating is very high. In 2011, 99% of dwellings were recorded as having central heating, up from 95% in 2001. Of those properties in Northern Ireland that did not have central heating; the majority (85%) of these were vacant properties.

Fuel Sources and Heating Systems

The type of fuel used for heating is a key determinant of the energy efficiency of a dwelling. Oil remains the predominant fuel source for domestic heating in Northern Ireland, 68% of dwellings had oil central heating, followed by gas (17% of dwellings). Gas has seen an increase from 4% of dwellings in 2001.
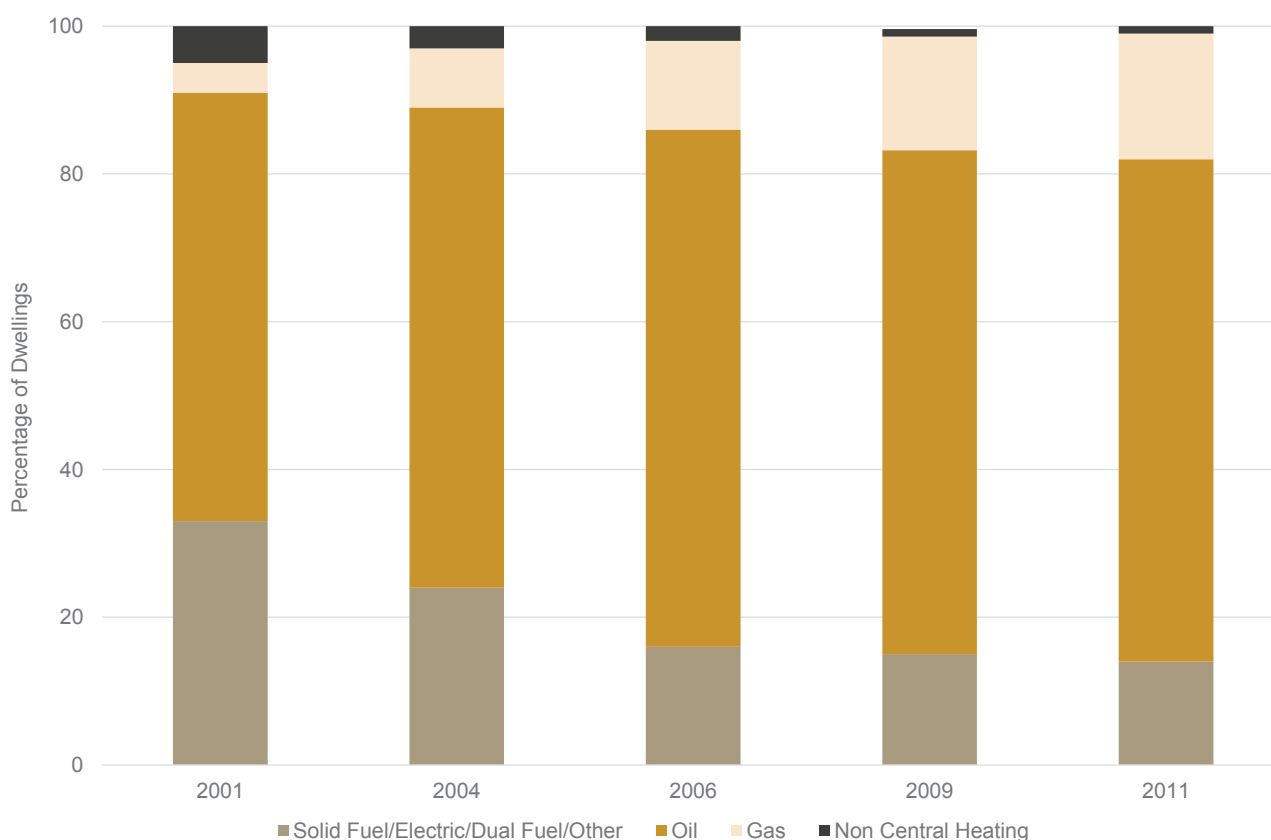
Figure 21. Central heating by fuel type, Northern Ireland, 2001 - 2011. Source: House Conditions Survey, Northern Ireland Housing Executive.

Oil fired central heating was the predominant fuel type for all tenures. Owner occupied properties were more likely to have oil central heating (76%), while social housing had the highest levels of gas central heating (34%).

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[2] Armagh City, Banbridge and Craigavon Housing Investment Plan 2015-2019, Northern Ireland Housing Executive.
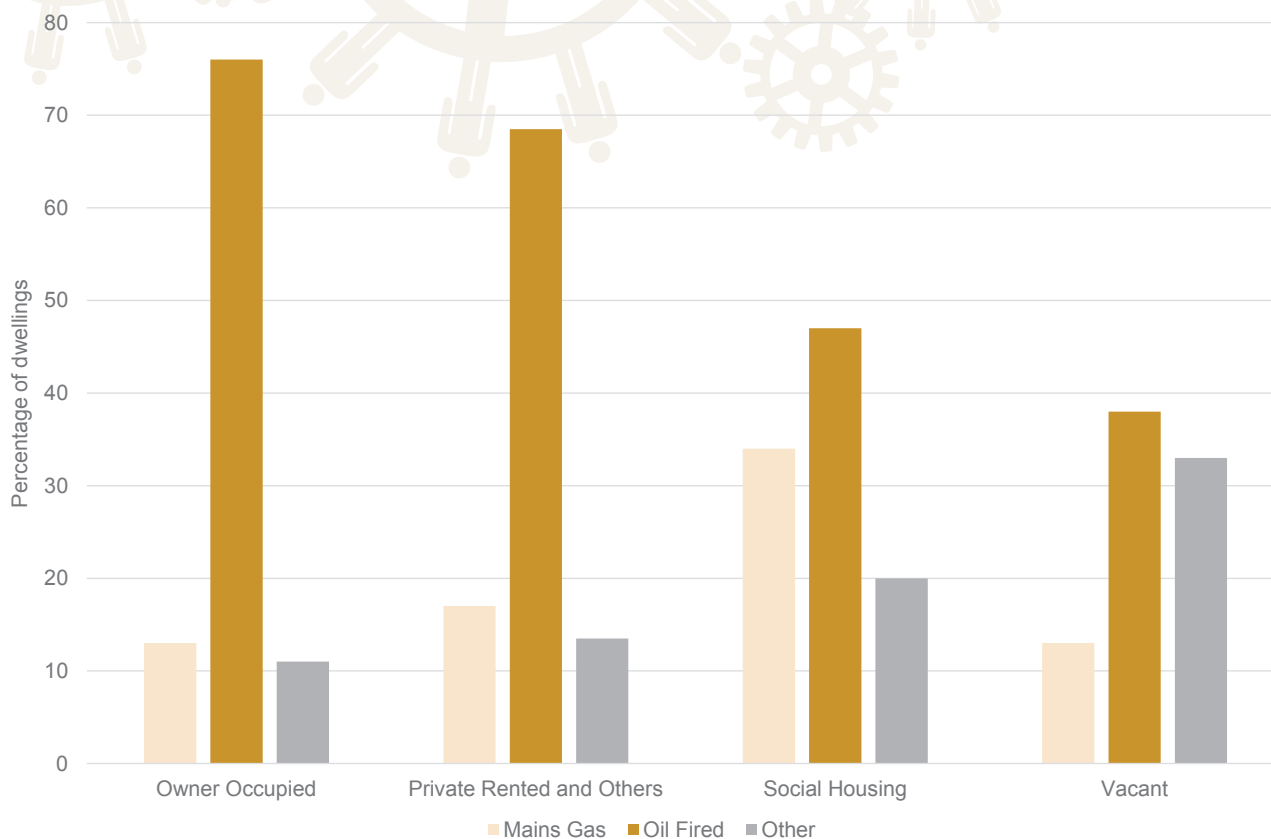
Figure 22. Central heating fuel by tenure, Northern Ireland, 2011. Source: House Conditions Survey, Northern Ireland Housing Executive.

Loft Insulation

In 2011 in Northern Ireland, of those dwellings where there was the potential for loft insulation, 96% had loft insulation, the same level as in 2009. Of these, the proportion of dwellings found to have the highest standard of insulation in terms of thickness (more than 150mm) continues to increase, from 30% in 2009 to 35% in 2011.

Double Glazing

In 2011, 81% of dwellings in Northern Ireland had full double glazing. Levels of full double glazing were similar by tenure, with owner occupied and private rented both at 84% and social housing 78% of dwellings.

SAP Rating

The Standard Assessment Procedure (SAP) is the Government's standard method of rating the energy efficiency of a dwelling. The SAP rating provides a comparative measure of the energy efficiency of dwellings. The lower the score the lower the energy efficiency and the higher the score the higher the efficiency; a SAP rating of 100 represents zero energy cost. The rating can be over 100 for dwellings that are net exporters of energy.

In 2011, the average SAP rating (SAP09) of Northern Ireland's dwelling stock was 59.6, up from 47.8 in 2001. For comparison the average SAP rating in 2011 for England was 55.7.

In 2011 in Northern Ireland, social housing had the highest SAP rating (68) of the tenure types. Households living in dwellings with lower energy efficiency ratings remain the most vulnerable groups where the household reference person was elderly, retired or on low income.
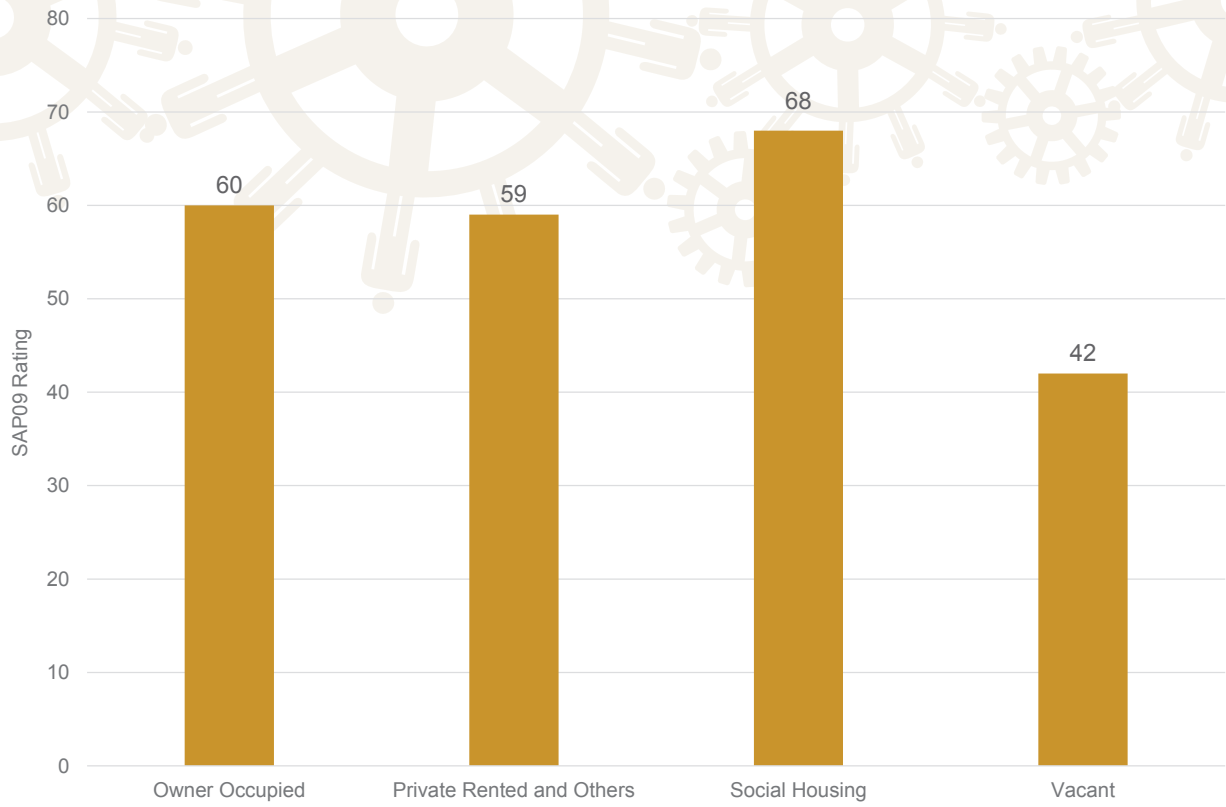
Figure 23. SAP rating by dwelling tenure, Northern Ireland, 2011. Source: House Conditions Survey, Northern Ireland Housing Executive.

WASTE

'Delivering Resource Efficiency' the Northern Ireland Waste Management Strategy (2013) has a focus on waste prevention (including re-use), preparing for re-use and recycling, and moves the emphasis of waste management in Northern Ireland from resource management to resource efficiency i.e. using resources in the most efficient way while minimising the impact of their use on the environment.

The strategy follows the priority order for waste treatment set out in the Waste Hierarchy, a cornerstone of EU waste policy and legislation. The primary purpose of the hierarchy is to minimise adverse environmental effects from waste and to increase resource efficiency in waste management and policy. It gives top priority to preventing waste in the first place. When waste is created, it gives priority to preparing it for re-use, then recycling, then recovery, and last of all disposal (e.g. landfill or incineration without energy recovery).

Waste Hierarchy

Prevention

Preparing for Re-Use

Recycling

Other Recovey

Disposal

Most preferred

Least preferred
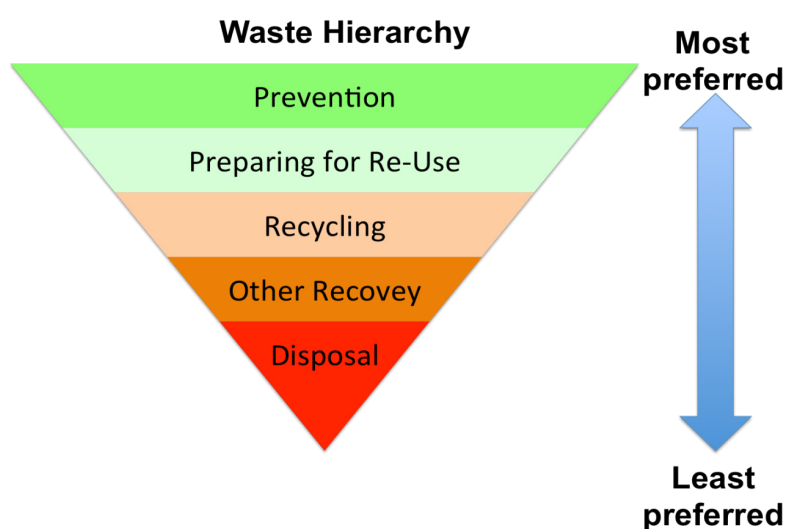
Figure 24. Waste Hierarchy. Source: Article 4, Waste Framework Directive (Directive 2008/98/EC).

Local Authority Collected Municipal Waste Management

Northern Ireland local authority collected municipal waste management statistics are published by the Department of Agriculture, Environment and Rural Affairs (DAERA). The latest quarter are provisional estimates for available October- December 2015. Finalised data for 2015/16 are scheduled to be published on 1 December 2016. Information is presented here on the following topics:

- Waste arisings

- Recycling (reuse, dry recycling and composting)

- Energy recovery

- Landfill

Compared to other councils and Northern Ireland overall, Armagh City, Banbridge and Craigavon Borough has relatively higher recycling and energy recovery rates and lower landfill rates.
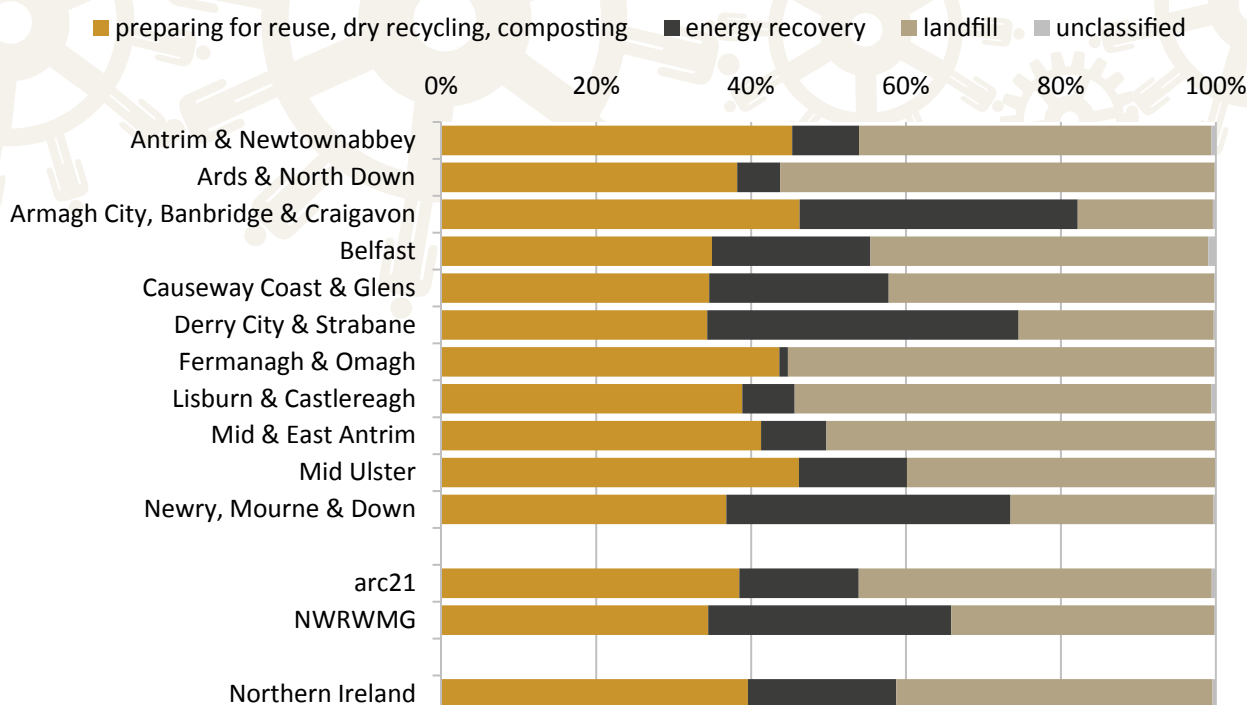
Figure 25. LAC municipal waste preparing for reuse, dry recycling, composting, energy recovery and landfill rates, by council and Northern Ireland, October to December 2015. Source: DAERA.

Waste Arisings

Northern Ireland's councils collected 230,354 tonnes of local authority collected (LAC) municipal waste between October and December 2015. This was a 2.9% rise on the 223,847 tonnes collected during the same three months of 2014 and was the third consecutive quarter 3 increase.

In Northern Ireland since 2006/07 household waste has accounted for 86-89% of total LAC municipal waste each quarter. In the latest quarter (October to December 2015) household waste accounted for 88.9%. Household waste includes materials collected directly from households via kerbside collections, material taken to bring sites and civic amenity sites as well as several other smaller sources. The remaining 11.1% was non household waste.

The longer term trend in October to December each year has been a gradual reduction in LAC municipal waste arisings of 14.6% across six years from a high of 253,956 tonnes between October and December 2006 to a low of 216,987 tonnes between the same three months of 2012. In the three years since, arisings have increased by 6.2% to 230,354 tonnes in the current quarter (Oct-Dec 2015).
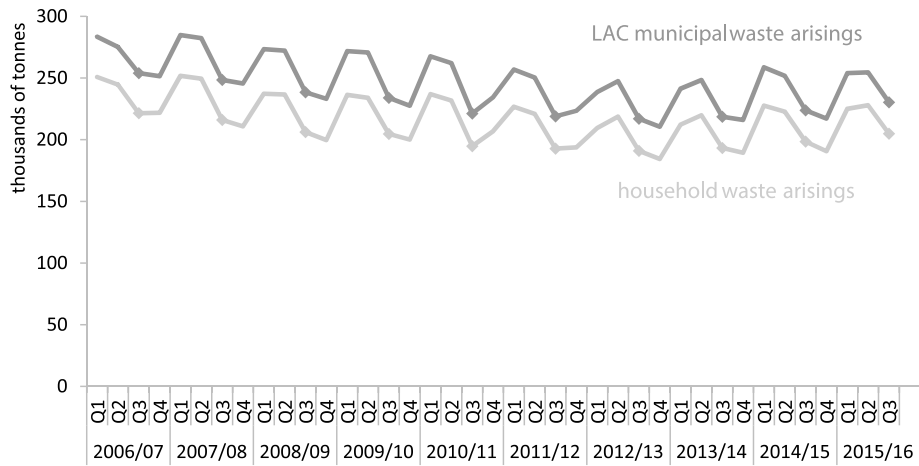
Figure 26. Waste arisings, Northern Ireland, quarterly from 2006/07 to 2015/16. Source: DAERA.

Factors affecting LAC municipal waste arisings, the majority of which is household waste, include individual household behaviours, the advice and collection services provided by councils and to some extent the state of the economy which continues to show signs of recovery.

The proportion of Northern Ireland's total LAC municipal waste collected by each council broadly reflects the population within the councils. In Armagh City, Banbridge and Craigavon Borough 24,328 tonnes of waste were generated in October - December 2015, 11% of waste generated in Northern Ireland.
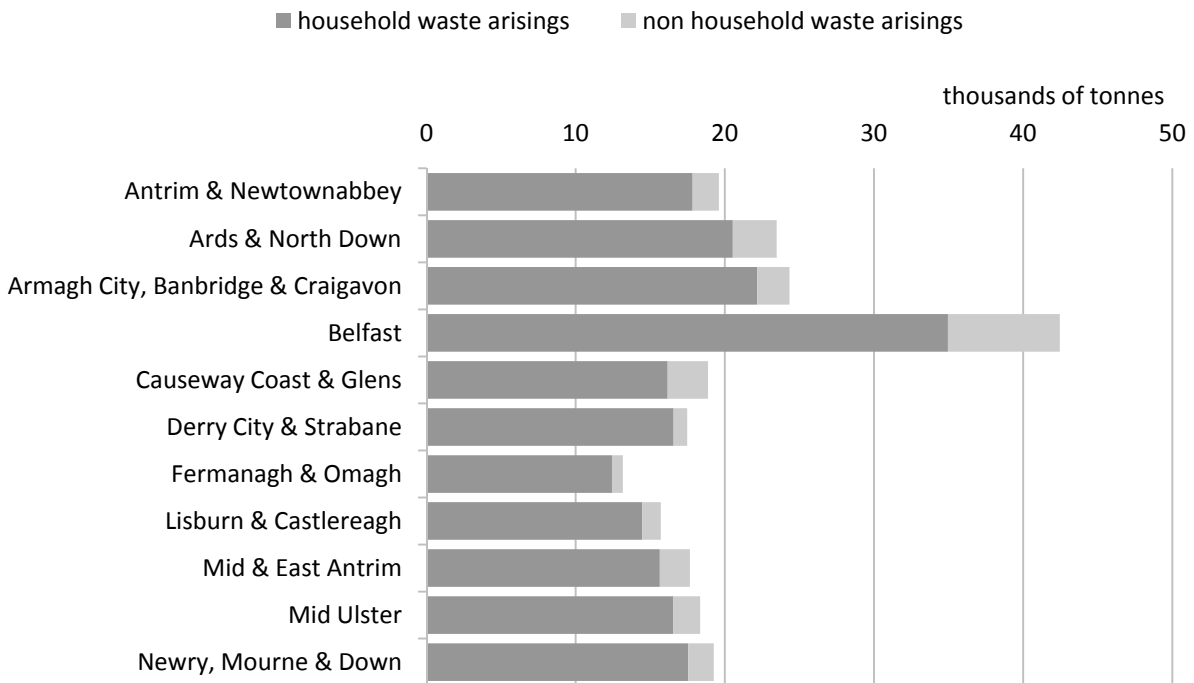
Figure 27. LAC municipal waste arisings by council and Northern Ireland, October to December 2015. Source: DAERA.
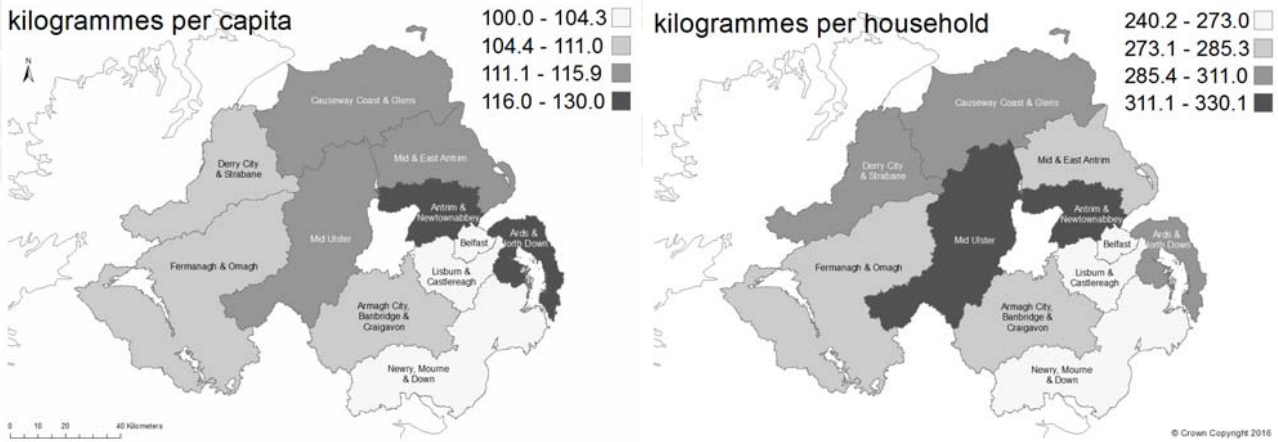
Figure 28. Household waste arisings per capita and per household by council Northern Ireland, October to December 2015. Source: DAERA.

Recycling (preparing for reuse, dry recycling and composting)

The household waste preparing for reuse, dry recycling and composting rate was 40.3% between October and December 2015. This was an increase on the 38.5% recorded during the same three months of 2014 and returns this series to an upward trend. At council level, rates varied from 48.2% in Mid Ulster to 33.1% in Derry City & Strabane.

There has been a steady increase in the household waste recycling and composting rate from 26.5% in October to December 2006 to a peak of 40.2% in October to December 2015. Waste sent for preparing for reuse (136 tonnes Oct-Dec 2015) has been included from 2015/16 and adds 0.1 percentage points to the rate.
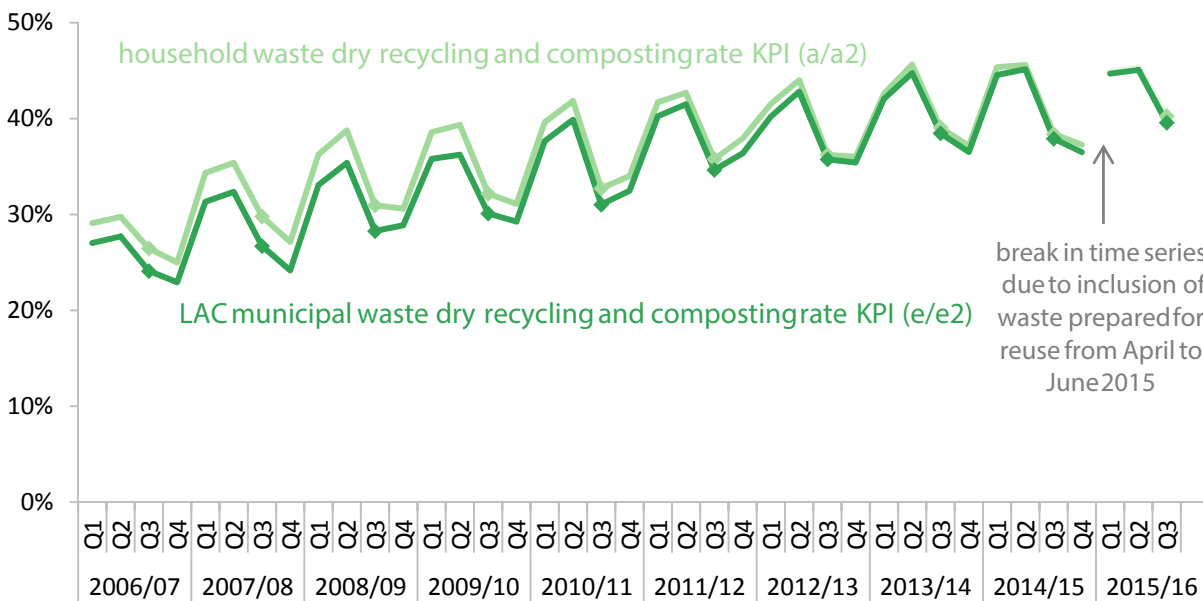

Figure 29. Waste sent for preparing for reuse, dry recycling and composting, Northern Ireland, quarterly from 2006/07 to 2015/16. Source: DAERA.

Armagh City, Banbridge and Craigavon Borough had the second highest household waste preparing for reuse, dry recycling and composting rate, at 45.6%, after Mid Ulster at 48.2%.
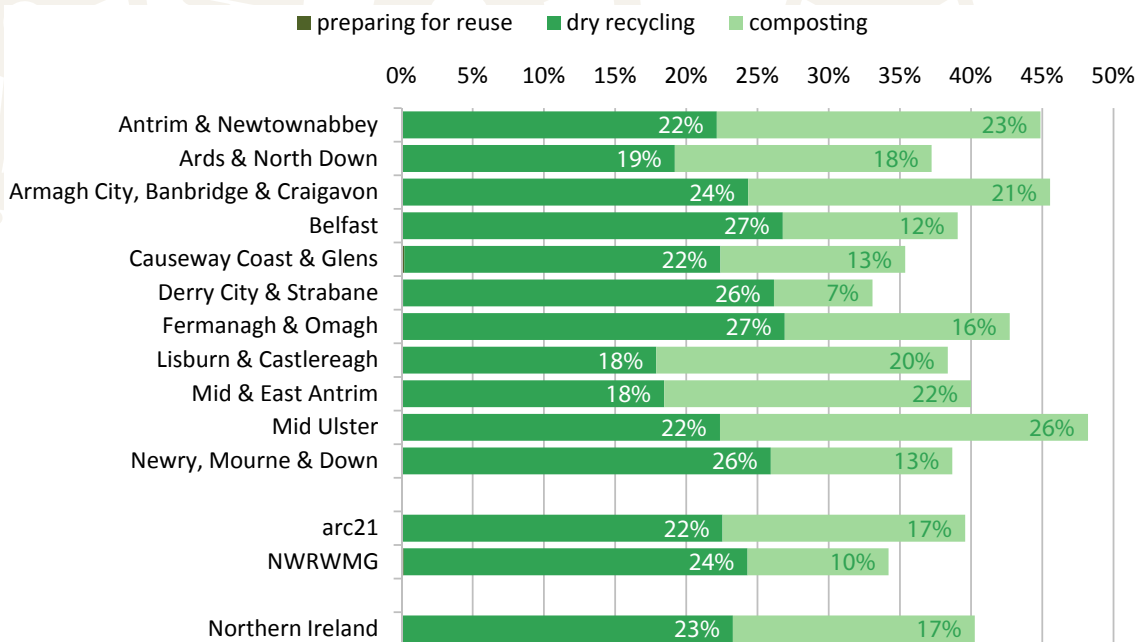
Figure 30. Household waste preparing for reuse, dry recycling and composting rate by council and Northern Ireland, October to December 2015. Source: DAERA.

Energy Recovery

Energy recovery, is the term used when value is gained from waste products by converting them into energy. The major method used is incineration with energy recovery, although other technologies exist. Generating energy from waste by incineration is preferable to landfill, although preparing for reuse, dry recycling and composting are preferable to both.

There was zero, or very small quantities, of LAC municipal waste sent for energy recovery before 2009/10. Strong growth followed from 2010/11 to 2014/15 with the energy recovery rate increasing from 0.5% between October and December 2009 to 19.2% for the same three months of 2015. Most of the growth has been driven by mixed residual LAC municipal waste sent for energy recovery, with the specific streams proportion reaching 2-3% in 2013/14 and remaining around that level since.

Mixed residual LAC municipal waste sent for energy recovery is combustible residual waste collected from the kerbside and from civic amenity sites and processed into refuse derived fuel at material recovery facilities. The specific streams element of energy recovery is mostly wood but also includes furniture, carpets and mattresses, mostly collected from civic amenity sites.
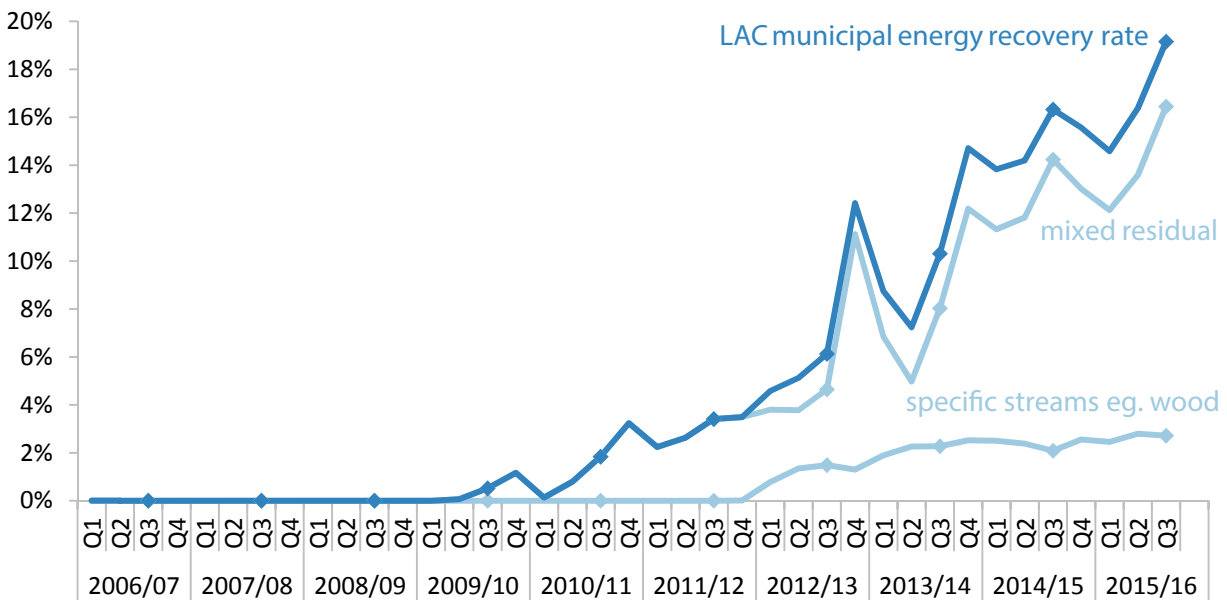

Figure 31. LAC municipal waste sent for energy recovery, Northern Ireland, quarterly from 2006/07 to 2015/16. Source: DAERA.

Almost one-fifth (19.2%) of LAC municipal waste was sent for energy recovery. This rate was almost three percentage points higher than the 16.3% sent during the same three months of 2014. Armagh City, Banbridge and Craigavon Borough had an energy recovery rate of 35.9%, third highest after Derry City and Strabane and Newry, Mourne and Down. As for most councils, energy recovery for mixed residual waste in Armagh City, Banbridge and Craigavon Borough accounted for a greater proportion of the total energy recovery than specific streams such as wood.
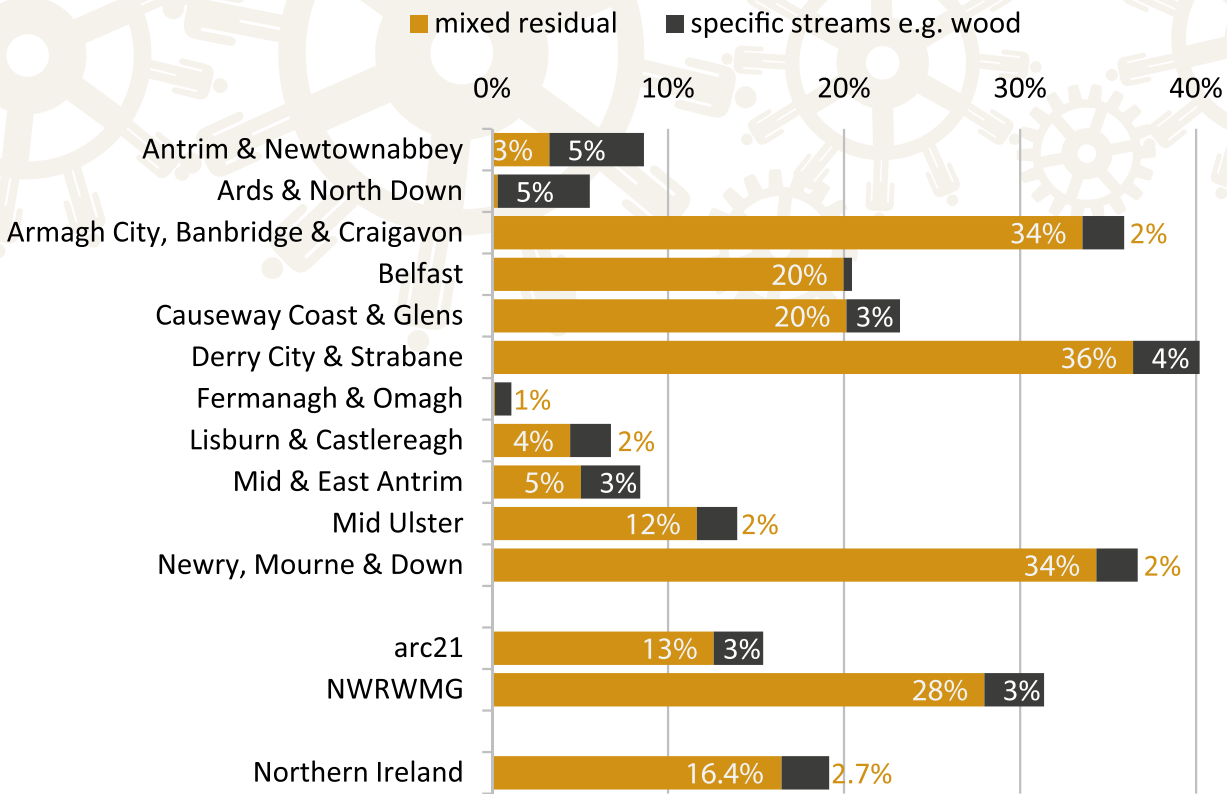
Figure 32. LAC municipal waste energy recovery rate by council and Northern Ireland, October to December 2015. Source: DAERA.

Landfill

The NI landfill rate has now reached its lowest ever level for the October to December quarter. The long term trend has seen the October to December household waste landfill rate fall consistently from 73.5% in October to December 2006 to 40.1% in October to December 2015. This is also the first time that it has been below the household waste recycling rate (40.3%) for this quarter. Note that the landfill rate exhibits seasonality and the April to June and July to September quarters tend to have lower rates than October to December and January to March. The seasonality stems from the higher proportion of compostable garden waste arising during spring and summer.
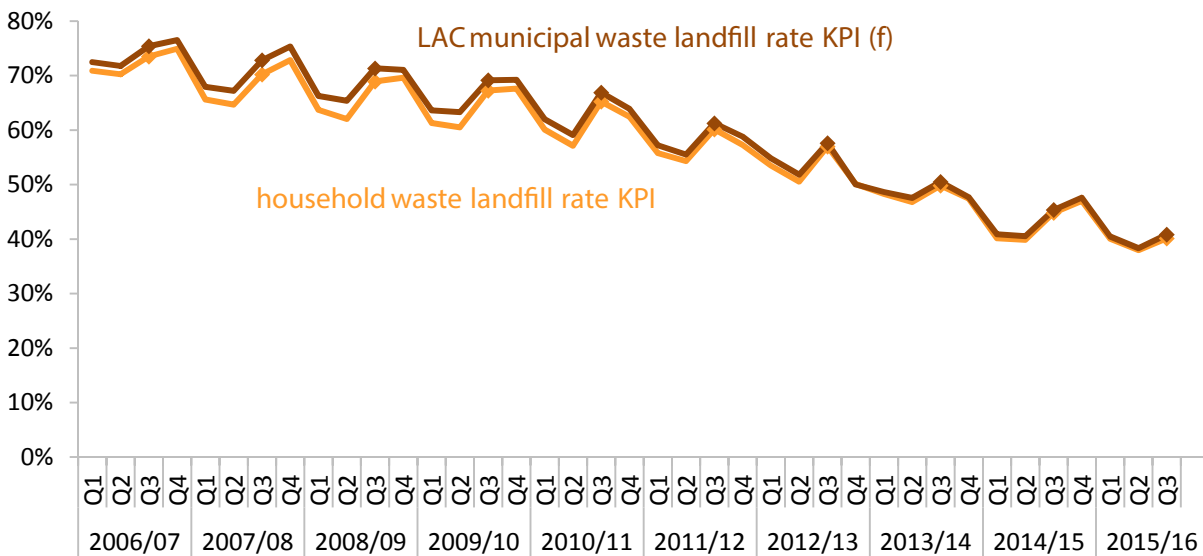

Figure 33. Waste sent to landfill, Northern Ireland, quarterly from 2006/07 to 2015/16. Source: DAERA.

Armagh City, Banbridge and Craigavon recorded the lowest household landfill rate of all the council areas at 17.6%, less than half the Northern Ireland rate of 40.1%.
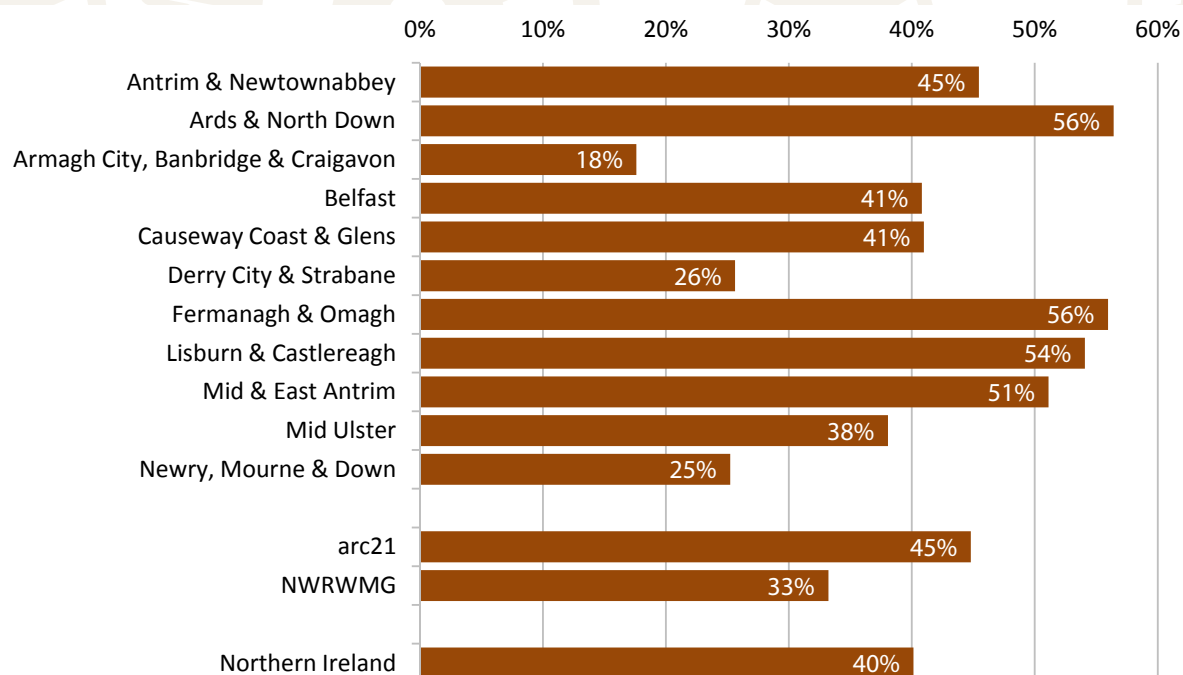
Figure 34. Household waste landfilled by council and waste management group Northern Ireland, October to December 2015. Source: DAERA.

Material, mainly from residual waste treatment, can also be sent for energy recovery in the form of refuse derived fuel (RDF) which also diverts it from landfill. In addition, the ongoing Rethink Waste campaign is encouraging the NI population to Reduce, Reuse and Recycle their waste. Landfill Tax for household waste continues to be the main driver for local authorities to reduce landfill. Other considerations include a limit on the amount of biodegradable LAC municipal waste as measured by KPI (g).

Facilities

The Armagh City, Banbridge and Craigavon Council operates nine centres for recycling and disposing of household waste in the Borough. The Borough also has over 50 'Bring banks' (i.e. bottle banks, textiles and dry recycling).

Recycling Centre	Location
Station Road	Station Road, Armagh City
Keady	Keady Business Centre, Annvale Road, Keady
Markethill	Markethill Business Centre, Fairgreen, Markethill
Tandragee	Madden Road, Tandragee
Banbridge	Scarva Road, Banbridge
Dromore	Mossvale Road, Dromore
Rathfriland	Ballyroney Road, Rathfriland
Fairgreen	Fairgreen, Duke Street, Portadown
New Line	New Line, Tandragee Road, Lurgan

Table 20. Recycling Centres in Armagh Banbridge and Craigavon. Source: Paper 6 Public Utilities Paper November 2015, Planning Division, Armagh City, Banbridge and Craigavon Borough Council.

Council is currently operating under the joint SWAMP2008 Waste Management Plan, however are in the process of producing a joint Council Waste Management Plan in collaboration with Fermanagh and Omagh District Council and Mid-Ulster District Council.

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