

FORTY SHADES OF GREEN? THE ENVIRONMENT

Introduction

Northern Ireland has made significant steps over the past decade to improve our environmental record and to move towards more sustainable development. The region has seen the overall recycling rate for household waste rise in recent years from 4.9% in 1998/99 to 31.7% in 2007/08. There remain, however, a number of challenges to sustainable development in the region in the 21st century.

The environment in Northern Ireland has been greatly impacted by the growth in housing over the last quarter of a century. While this has been necessary to meet the needs of a growing population, the new infrastructure it demands has had a direct impact on every aspect of the environment. It has seen new roads built to service outlying estates; increased reliance on cars to access employment, with concomitant increases in emissions. The land taken for housing and roads affects the habitats of humans and animals to varying degrees.

All housing growth increases demand for water and produces more waste, both sewage and household waste. However, the landscape in Northern Ireland has been particularly and acutely affected by the growth in new housing built on greenfield sites on the outskirts of cities and larger towns and in 'dormitory' towns within commuting distance of Belfast and Derry-Londonderry. Development policy, as set out in *Shaping Our Future: the regional development strategy 2025* has an objective which promotes a more sustainable form of development by encouraging compact urban forms and promoting more housing within existing urban areas. It is too soon to have data about the success of this objective; however, the economic downturn may have an impact in terms of an overall decline in building.

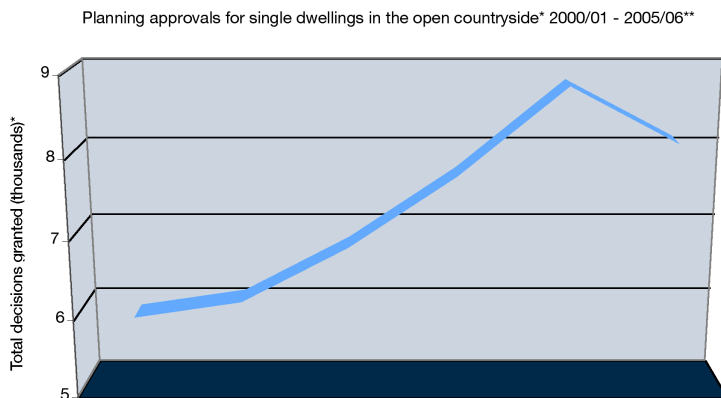
Planning

Decisions on whether to allow proposals to build on land or change the use of buildings or land are made by the Planning Service. In determining whether or not to grant planning permission, the Planning Service will refer to a number of planning policy documents which include the Regional Development Strategy, Area Development Plans, the Planning Strategy for Rural Northern Ireland and Planning Policy Statements. Between April 2007 and March 2008, the Planning Service received almost 28,000 applications for planning permissions and consents. Of these, more than nine out of ten (91.6%) were approved.¹

While there is a Public Service Agreement (PSA) target to decide 60% of major applications within twenty three weeks of their receipt, in 2007/08, 40% of major planning applications were decided within this period, compared with 38% in 2006/07. However, 60% of major planning applications were decided within thirty six weeks, compared to thirty eight weeks in 2006/07. This was in the context of a reduction of more than 1,300 in applications for full planning permission and some 500 in applications for outline planning permission in 2007/08 compared to 2006/07.

There was much controversy in Northern Ireland about the impact of the draft Planning Policy Statement 14 (PPS 14) which was introduced in 2006 under Direct Rule and which imposed a presumption against development outside settlements right across Northern Ireland. It may be the case, however, that the controversy served the environment well by encouraging much needed debate on planning policy. When a review of the draft Planning Policy was undertaken by the Assembly, led by then Minister for the Environment, Arlene Foster, there was a consensus that while draft PPS 14 was too restrictive, the previous unrestricted development was unsustainable. The extent to which the previous situation was untenable can be seen in Figure 1 which was produced as part of the monitoring of one of *Shaping Our Future's* objectives: "to create and sustain an attractive and unique rural environment in the interests of the rural community and the region as a whole". As is evident from the level of planning approvals for single dwellings in the open countryside, this was unsustainable if an "attractive and unique rural environment" was to be maintained.

Figure 1: Planning Approval for Dwellings in the Countryside



Source: DRD (2006) ² *Shaping Our Future Monitoring Report 2005 - 2006*

Following the review of planning policy in rural areas, a revised proposal, draft PPS21, was published for consultation in November 2008. Aiming to balance the needs of rural communities with the need to protect the environment, it includes:

- The reinstatement of Dispersed Rural Communities (developments of small and appropriately sited groups of houses);
- Greater potential for planning permission to replace dwellings;
- New policy for the reuse or replacement of non-residential buildings as dwellings;
- More flexibility on social and affordable housing in rural areas;
- The reintroduction of a policy for a dwelling to meet compelling personal or domestic circumstances;
- Policy on farm dwellings and farm diversification brought into line with current agriculture and rural development policy.

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Draft PPS 21 applies outside settlements across Northern Ireland except in Special Countryside Areas. Countryside Policy Areas (CPAs) are exceptional landscapes, such as mountain ranges, stretches of the coast or lough shores, and certain views or vistas. In these areas, development is allowed only in exceptional circumstances.

Planning in Northern Ireland is governed by a range of legislation, regional strategies, plans, programmes and policy statements. Table 1 outlines a range of these.

Table 1 Strategy, Policy and Legislation directing Landscape, Land Use and Management (PPS – Planning Policy Statements)

National Policy	The Planning (Northern Ireland) Order 1991 The Planning Reform (Northern Ireland) Order 2006 Historic Monuments and Archaeological Objects (Northern Ireland) Order 1995 Amenity Lands Act (Northern Ireland) 1965 The Nature Conservation and Amenity Lands (Northern Ireland) Order 1985 The Wildlife Order (Northern Ireland) 1985 The Nature Conservation and Amenity Lands Amendment (Northern Ireland) 1995 The Environment (Northern Ireland) Order 2002
Regional Strategies	Regional Development Strategy for Northern Ireland "Shaping our Future" 2001 Northern Ireland Rural Strategy 2007-2013 Northern Ireland Sustainable Development Strategy 2006 Northern Ireland Forestry - A Strategy for Sustainability and Growth 2006 Northern Ireland Biodiversity Strategy 2002
Regional Guidance	DOE Statement of Policy on Protected Landscapes 'Shared Horizons' 2003 PPS 2 Planning and Nature Conservation (under review) PPS 6 Planning, Archaeology and the Built Heritage PPS 7 Quality Residential Environments PPS 12 Housing in Settlements For a full list of PPS see www.planningni.gov.uk Earth Science Conservation Review Geological Sites in Northern Ireland 2003 DARD's Strategic Plan 2006-2011
Regional Plans & Programmes	Northern Ireland Rural Development Plan 2007-13 Northern Ireland Rural Development Programme 2007 - 13 Northern Ireland Sustainable Development Implementation Plan 2006 Area Development Plans

Source: Environmental Heritage Service (2008), *State of the Environment Report*, p.92

Preservation and Architectural Heritage in Northern Ireland

Concern about the number of vacant properties and the threat to buildings of historical or architectural value, from neglect and illegal demolition has led to planning policy favouring the retention and repair of buildings rather than demolition and replacement. The Northern Ireland Environment Agency has the aim of rescuing 200 buildings at risk over a 10 year period (as first established in the Northern Ireland Sustainable Development Strategy in 2006).

A University of Ulster research report (A Study into Vacant Domestic Property, 2007) noted 48,000 empty properties in Northern Ireland, including many buildings of interest, such as those on the BHARNI Register (*The Built Heritage at Risk Northern Ireland Register*). The fact that approximately 72% of entries are in private ownership (both commercial and individual), and the majority are sited in rural areas, reinforces the need for effective planning and targeted public policies that encourage re-use whilst discouraging vacancy. One policy development which aims to do this is the decision taken in October 2008 by the Minister for Finance and Personnel in the Northern Ireland Executive to impose a rating of 100% on empty homes.

Northern Ireland and Climate Change

The issue of climate change has dominated discussion of the environment in recent years. Policy in Northern Ireland has responded to the challenge of climate change.

In 2006, *First Steps Towards Sustainability: A Sustainable Development Strategy for Northern Ireland* was published.³ The Strategy pointed out that climate change is already affecting Northern Ireland. For example:

- 9 of the 15 warmest years recorded since 1841 have occurred since 1990;
- The average sea level is now about 10 cms higher than it was in 1900;
- Over 40,000 properties are currently at risk of river flooding.

Climate change is inextricably linked to our demand for energy which, as the main producer of CO₂, contributes the vast bulk of our greenhouse gas emissions. Although there is no solid fuel, oil or gas processing carried out in Northern Ireland, the region is largely dependent on coal, oil and gas for power generating. Around 75% of greenhouse gas emissions are accounted for by the 16 million tonnes of CO₂ produced annually through the burning of coal, oil and gas. Energy from renewable energy sources such as windfarms, hydropower schemes and wave turbines provided just 5.8% of electricity consumed in 2005/06.⁴ Since 2002 the 'Renewable Obligation' has placed a commitment on electricity suppliers to source a rising proportion of their electricity from renewable sources. In 2006/07 the target was 6.7% rising to 15.4% in 2015/2016. Research by Diaz Rainey and Ashton (2008)⁵, using figures from OFGEM, shows that the present level of generation of renewable energy is far below the target. England and Wales produce 68% of the requirement, Scotland produces 85% with Northern Ireland producing only 9% of its electricity needs from renewable sources.

Emissions from fossil fuel sources impact on indicators of air quality and greenhouse gas emissions which, scientific evidence shows, affect climate change. As well as emissions caused by power generation, road transport, particularly private cars, contributes to high levels of carbon dioxide and nitrous oxide emissions. The demographics of the region, the configuration of its labour market, a limited public transport system outside the Greater Belfast area and a poorly developed rail system have led to considerable reliance on road transport. Over 84% of journeys to work in Northern Ireland are undertaken by private

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transport, compared to just over 70% in the UK generally (SOE Report, 2007, p.23).

A study of greenhouse gas emissions for England, Scotland, Wales and Northern Ireland for the years 1990, 1995, 1998 to 2006 examined emissions of the basket of greenhouse gases being monitored under the Kyoto Protocol.⁶ They are:

- Carbon dioxide (CO₂)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulphur hexafluoride (SF₆)

The resultant estimates are consistent with the United Nations Framework Convention on Climate Change (FCCC) reporting guidelines; they showed that the UK distribution of regional net greenhouse gas emissions in 2006, expressed in terms of global warming potentials (GWP), is:

- England 77.1%
- Scotland 9.1%
- Wales 7.8%
- Northern Ireland 3.4%
- Unallocated 2.6%

Table 2 below is taken from that study and shows the changes in Northern Ireland's emissions of greenhouse gases between 1990 and 2006. The basket of greenhouse gases that are monitored are weighted by global warming potential (GWP). The GWP for each gas is defined as its warming influence relative to that of carbon dioxide. As the principal man-made greenhouse gas that affects the earth's temperature, carbon dioxide (CO₂) is the reference gas against which other greenhouse gases are indexed and therefore has a Global Warming Potential of 1. Therefore, all GHG emissions are presented as carbon dioxide equivalent, in line with international reporting and emissions trading protocols. For example, sulphur hexafluoride (SF₆), largely used in heavy industry to insulate high-voltage equipment and to assist in the manufacturing of cable-cooling systems, is one of the six greenhouse gases monitored. It is to be curbed under the Kyoto Protocol. Its global warming potential is 23,900 times that of CO₂ when compared over a 100 year period.

Greenhouse gas emissions for Northern Ireland, measured as their million tonne of CO₂ equivalent have decreased overall by 6% since 1990. There has been a small (1.5%) decrease in CO₂; methane (CH₄) emissions have decreased by 20%, nitrous oxide by 17% and perfluorocarbons (PFCs) by 100%. By contrast, hydrofluorocarbons (HFCs) have increased by over 500% and sulphur hexafluoride (SF₆) by 352%. The bottom three rows of this table indicates the extent to which net emissions of CO₂, CH₄ and N₂O have been impacted by Land Use, Land Use Change and Forestry (LULUCF).

Table 2: GHG Emissions for Northern Ireland

Northern Ireland	Mt CO ₂ Equivalent											% Change BY to 2006
	1990	1995	1998	1999	2000	2001	2002	2003	2004	2005	2006	
CO ₂	16.6	16.9	15.8	16.0	15.8	16.1	14.8	14.7	14.8	15.5	16.3	-1.5%
CH ₄	4.1	4.0	3.9	3.7	3.5	3.4	3.3	3.3	3.2	3.2	3.3	-20.6%
N ₂ O	3.1	3.3	3.4	3.5	3.2	3.3	2.6	2.8	2.7	2.6	2.6	-17.0%
HFC5	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	505.0%
PFC5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-100%
SF ₆	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	352.6%
Total (Net Emissions)	23.9	24.3	23.3	23.3	22.8	23.0	21.1	21.0	20.9	21.6	22.5	-6.0%
Net CO ₂ Emissions from LULUCF	0.0	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	

Source: AEA (2008) *Greenhouse Gas Inventons for England, Scotland & Northern Ireland: 1990 - 2006*

In 2007, the Department of the Environment and Environment and Heritage Service jointly published the Scottish and Northern Ireland Forum for Environmental Research (SNIFFER) report *Preparing for Climate Change in Northern Ireland*. The report looked at how Northern Ireland needs to prepare for the impact of climate change on the economy, the built environment and social well-being and included strategies for the public sector to deal with each impact. This included increasing public awareness, reviewing planning and design to reduce flood risk, improved management and maintenance of buildings and to enhance emergency planning.

Waste Management in Northern Ireland

Waste management strategies in Northern Ireland are shaped by the EU Waste Framework Directive. This requires member states to produce waste management plans based on a hierarchy that promotes prevention, recovery and recycling of waste, with disposal, whether in landfill or by incineration, used only as a last resort (see Figure 2 below). The Landfill Directive includes targets for the reduction of biodegradable waste sent to landfill, as well as standards that aim to prevent pollution of the environment by harmful chemicals and gases that develop in landfill sites. The Packaging and Packaging Waste Directive includes targets for the recovering and recycling of packaging waste for the UK. Northern Ireland does not have its own packaging waste recovery targets.

Figure 2: Waste Management Hierarchy in Northern Ireland



Source: Environmental Heritage Service (2008) *State of the Environment Report* p.141)

Plans to implement Northern Ireland's contribution to meeting the UK's targets set by these EU directives are set out in the Northern Ireland Waste Management Strategy 2006-2020⁷ and by three sub-regional Waste Management Plans. The three sub-regional plans were developed jointly by consortia of local councils. The consortia are:

Arc 21 which is made up of Antrim, Ards, Ballymena, Belfast, Carrickfergus, Castlereagh, Down, Larne, Lisburn, Newtownabbey and North Down Councils;

The Southern Waste Management Group (SWaMP) which comprises Armagh, Banbridge, Cookstown, Dungannon, Fermanagh, Newry and Mourne and Omagh Councils

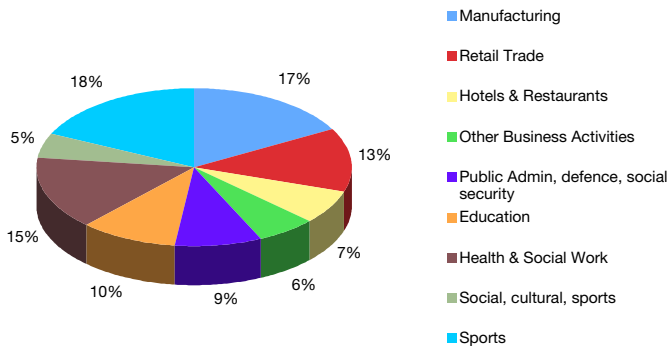
The North West Regional Waste Management Group (NWRWMG), which is made up of Ballymoney, Coleraine, Derry-Londonderry, Limavady, Magherafelt, Moyle and Strabane Councils. The sub-regional plans establish targets for waste prevention, recovering and recycling waste and the amount sent to land fills or incinerators, as well as the actions to achieve those targets. Most of these targets impact on household waste streams, rather than industrial and commercial waste.

The Packaging Waste Regulations do place obligations on companies with a turnover of more than £2 million and handling over 50 tonnes of packaging per year to register with the Environment and Heritage Service and recover and recycle a proportion of their packaging waste. Since smaller businesses are not covered by these regulations, only 390 businesses in Northern Ireland came under the regulations in 2005. Their combined packaging recovery obligation for that year was 127,987 tonnes.⁸

A large proportion of commercial and industrial waste could be recovered and recycled but

most tends to be sent to landfill. Commercial and industrial waste is not subject to the same level of audit as household waste, so there are not the same levels of data available for year on year reductions or increases in landfilled commercial and industrial waste. Figure 3 shows the areas that produce the most commercial and industrial waste. Some of these areas, like health and social care which produces 15% of such waste, education which produces 10%, and public administration which produces 9% are within the public sector and could be relatively easily audited and levels of waste reduced, recovered and recycled so helping to reduce Northern Ireland's landfill levels.

Figure 3: Breakdown of Commercial and Industrial Waste (2002)



Source: *Environmental Heritage (2008) State of the Environment Report, p.143*

As mentioned above, Municipal Waste which is overwhelmingly household waste, is subject to strict audit in preparation for meeting the targets set by the Landfill Directive. Since January 2005, district councils have to formally report municipal waste data on a quarterly basis. This allows close monitoring of the extent to which Northern Ireland is meeting the targets of our Landfill Allowance Scheme (NILAS). NILAS is designed to ensure that the amount of Biodegradable Municipal Waste (BMW) sent to landfill is reduced through setting limits for each district council.

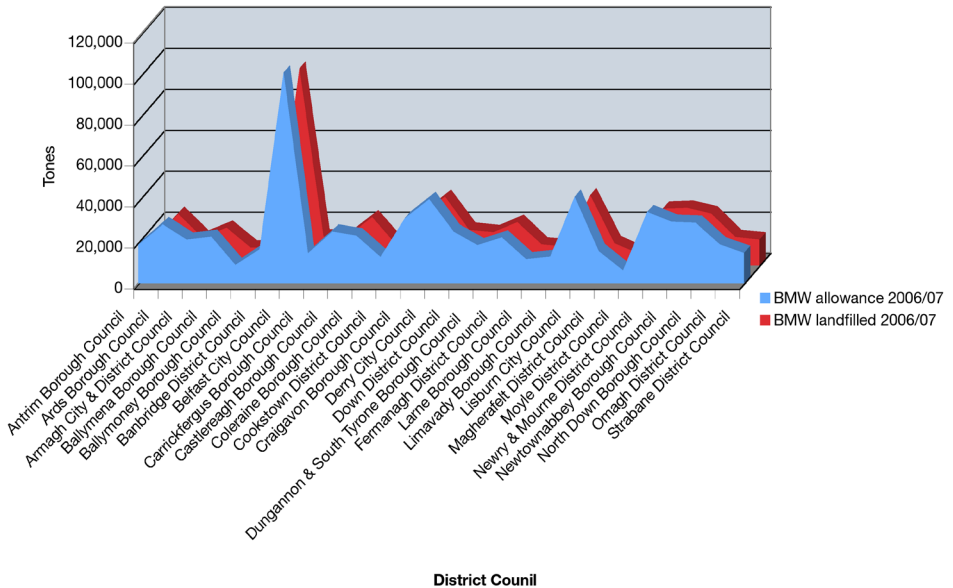
All twenty six district councils in Northern Ireland achieved their 2006/07 landfill allowance obligations by both diverting Biodegradable Municipal Waste from landfill and, where necessary, transferring allowances. One allowance represents one tonne of BMW that can be sent to landfill. In 2006/07, the total amount of BMW which was permitted to be sent to landfill was 655,545 tonnes. The total amount reported to have been sent to landfill was 535,716 tonnes. In 2006/07, 18.3% of landfill allowances were not utilised, an increase from the 16.3% not utilised in 2005/06. Over the last two years Northern Ireland has reduced the amount of BMW sent to landfill by 22,294 tonnes.

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The Southern Waste Management Group (SWaMP) sent 135,835 tonnes of BMW to landfill in 2006/07, 23.70% less than their allocated allowances. The amount of BMW sent to landfill by the ARC21 Waste Management Group (WVG) was 295,624 tonnes, 16.3 % less than their allocated amount. In the North West Regional Waste Management Group (NWRWVG), two district councils were involved in the transfer of landfill allowances: Coleraine Borough Council had a deficit of 1,830 allowances. Therefore, Ballymoney Borough Council transferred 1,830 allowances to Coleraine Borough Council, which allowed them to meet their obligations under the Regulations. Figure 4 below shows levels of landfill allowances across the region in 2006/07 and the actual landfill used by district councils, while Table 3 shows the huge progress which has been made by households between 2002 and 2008 in recycling their waste.

Over the next 13-14 years the allocations for each district council, and Northern Ireland as a whole, will progressively reduce making it vital for more BMW to be diverted from landfill. In 2007/08, 641,235 tonnes of BMW can be sent to landfill in Northern Ireland, reducing to 626,925 tonnes in 2008/09. This amount further reduces to 470,000 tonnes in 2009/10, the first Landfill Directive target year.

Figure 4: Landfill Allowance Utilization 2006/2007



Source: DOE/EHS (2007) "Landfill Allowance Scheme Regulations, Annual Report"

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Table 3: Percentage of Household Waste Recycled 2002 - 08

District Council	Percentage of Household Waste Recycled					
	2002	2003	2004/05	2005/06	2006/07	2007/08
Antrim BC	19.1	22.4	38.39	44.02	47.11	48.73%
Ards BC	9.6	9.0	20.40	24.02	25.45	27.61%
Ballymena BC	21.0	18.0	23.39	26.87	28.15	26.54%
Belfast CC	4.0	4.6	8.86	14.36	18.95	23.24%
Carrickfergus BC	8.2	10.5	17.20	17.41	21.89	33.16%
Castlereagh BC	5.0	12.1	22.24	32.53	34.91	37.69%
Down DC	13.5	13.3	19.17	33.69	32.16	31.56%
Larne BC	6.0	9.6	16.49	25.00	31.63	37.44%
Lisburn CC	9.0	9.2	12.25	19.83	25.08	31.95%
Newtownabbey BC	16.5	17.0	19.90	22.54	24.79	30.27%
North Down BC	11.1	12.6	17.21	24.63	32.97	38.05%
ARC21 Total	9.7	10.6	16.70	22.90	26.80	30.88%
Ballymoney BC	10.2	9.9	24.02	24.44	24.75	26.21%
Coleraine BC	6.8	11.6	18.60	24.26	25.67	29.86%
Derry CC	2.7	7.2	13.72	28.07	24.37	31.93%
Limavady BC	2.5	10.9	27.33	35.88	28.51	35.97%
Magherafelt DC	4.9	18.1	31.42	35.66	35.26	38.09%
Moyle DC	2.1	4.6	11.32	25.51	26.53	34.51%
Strabane D C	4.1	8.6	17.32	21.30	22.81	23.00%
NWRWMG Total	4.6	10.1	19.30	27.60	26.30	31.31%
Armagh City & DC	16.5	21.0	23.30	26.70	32.83	37.28%
Banbridge DC	29.5	33.3	39.21	40.99	45.13	45.70%
Cookstown DC	17.3	16.2	20.06	28.14	31.57	36.31%
Craigavon BC	16.1	19.3	23.35	29.29	29.96	34.67%
Dungannon & South Tyrone BC	10.9	13.4	20.13	19.54	24.93	30.22%
Fermanagh DC	10.6	17.5	21.04	20.77	27.83	28.84%
Newry & Mourne DC	9.3	13.4	20.03	24.86	27.83	30.09%
Omagh DC	9.1	12.2	19.62	17.77	27.95	38.09%
SWAMP Total	14.3	18.0	23.00	25.90	30.50	34.4%
NI Total	10.0	12.5	18.9	24.5	27.7	31.90%

Source: (Assembly Questions: Written Answer AQW 8411/08) and NIEA (2008) ¹⁰

Key Policy Challenges

Overall, then, there is clear evidence that the population of Northern Ireland has become more aware of the environmental issues facing the region. Through the coming years, perhaps the most pressing challenges will be the continued growth of waste produced and the urgent need to reduce greenhouse gas emissions and take into account the impact that climate change has begun to have on the region. Additional challenges exist in relation to planning and architectural heritage, including the need to reconcile the demand for affordable housing with the need to protect the environment.

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