

Delivering Resource Efficiency

NORTHERN IRELAND WASTE
MANAGEMENT STRATEGY



Continuing our current
pattern of resource use
is not an option.



Contents

Ministerial Foreword	5
Executive Summary	6
PART 1: SETTING THE SCENE	11
European Union Context	11
Northern Ireland Context	11
Programme for Government	12
Review of Performance	12
Key Strategic Drivers	13
Overarching Principles	16
Overarching Considerations	18
PART 2: POLICIES AND ACTIONS	23
Section 1: WASTE PREVENTION	23
1.1 Development of Waste Prevention Programmes	24
1.2 Producer Responsibility Schemes	25
1.3 Environmental Management Systems	25
1.4 Carrier Bag Levy	26
1.5 Re-Use	27
Section 2: PREPARING FOR RE-USE	28
Section 3: RECYCLING	29
3.1 Developing Recycling Potential	30
3.2 Producer Responsibility	34
3.3 Voluntary Agreements	37
3.4 Municipal Waste Recycling	38
3.5 Commercial & Industrial Waste Recycling	40
3.6 Construction & Demolition Waste Recycling	42
Section 4: OTHER RECOVERY	44
4.1 Waste Infrastructure	44
4.2 Planning Considerations	47
Section 5: DISPOSAL	48
5.1 EU Landfill Diversion Targets	48
5.2 Northern Ireland Landfill Allowances Scheme	50
5.3 Supporting Policies	51
Section 6: BETTER REGULATION AND ENFORCEMENT	53
6.1 Better Regulation	53
6.2 Enforcement	55
Section 7: COMMUNICATION AND EDUCATION	57
Section 8: DELIVERY AND GOVERNANCE	59
Annex 1 - Summary of Actions and Targets	62
Annex 2 - List of Supporting Documents	64
Annex 3 - Image Credits	66

Ministerial Foreword



Everything we do has an impact on our environment and ultimately on the quality of life of future generations. This is particularly true of the way we deal with our waste. It is widely accepted that waste should be treated as a resource with a value. This Strategy aims to set a direction towards using that resource more efficiently, to make it a key element in developing and promoting a low carbon, circular economy. In doing so it supports the objectives set out in the European Union Resource Efficiency Roadmap.

To realise this ambition we must ensure that we adhere to the principles of the Waste Hierarchy, prioritising waste prevention, including re-use, above all else to reduce our reliance on finite resources.

We have increased the amount of residual waste which is recycled. Last year nearly 40% of household waste was sent for recycling or composting, up from 24.7% when the 2006 Waste Strategy was published. But we need to go much further to meet our ambition of delivering resource efficiency. That is why this Strategy contains proposals to introduce a 60% recycling target by 2020 for local authority collected municipal waste and proposals to pave the way for specific recycling targets for commercial and industrial waste.

It is not possible to prevent, re-use or recycle all of the waste we produce and the next priority is to extract value from the residual waste in the form of energy or other by-products through the most appropriate technologies. We have significantly reduced the amount of biodegradable municipal waste sent to landfill over the past seven years and this Strategy sets out proposals on restricting food waste from landfill which will help to accelerate this reduction.

The potential to contribute to the green economy by creating jobs in the waste sector and beyond is clear and the drive towards a better resource use will maximise those opportunities. In many cases those opportunities can best be realised through adopting an all-island approach and this Strategy has identified specific policy areas where this approach is appropriate.

Effective and powerful enforcement underpins all these efforts and we will ensure greater vigilance to stamp out waste crime.

I have been struck by the positive reaction there has been to the recent introduction of the carrier bag levy. It provides evidence that, given clear leadership, the public understands the need for resource efficiency and is prepared to play its part. We need to build on this in partnership with waste sector stakeholders to deliver on the challenging targets and actions in this Strategy to protect and exploit our precious resources in the most efficient way possible.

A handwritten signature in black ink that reads "Mark Durkan". The signature is fluid and cursive.

Mark H Durkan MLA
Minister of the Environment

October 2013

Executive Summary

The first waste management strategy for Northern Ireland was published in April 2000 and was revised in March 2006 under the title "Towards Resource Management". During 2011 the Department of the Environment carried out a scoping exercise which included a review of that Waste Strategy and relevant strategies across these islands and beyond. It was agreed that the 2006 Strategy should be revised to cover all relevant EU Directive requirements and provide a coherent approach to the waste policy framework for Northern Ireland. Following a period of extensive stakeholder engagement in early 2012, a public consultation on the draft revised Waste Management Strategy for Northern Ireland took place between 26 October 2012 and 18 January 2013.

This Strategy follows the priority order for waste treatment set out in the Waste Hierarchy, a cornerstone of EU waste policy and legislation, with Part 2 divided into seven sections containing policy measures that build on the core principles of the 2006 Strategy. The Strategy has a renewed 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.

Part 1: Setting the Scene

Strategy development is a continuous process, and is set not only in the context of Northern Ireland policy and legislation, but takes into consideration the wider context of relevant EU Environmental Directives and the current 'direction of travel' of EU policy towards life cycle thinking and a resource efficient Europe.

This part contains a brief review of performance against the aims and targets of the 2006 Strategy, and considers the key strategic drivers of resource efficiency, sustainable development, climate change, the green economy and health and social well-being. The Strategy retains the core principles of the 2006 Strategy, and enshrines the new Waste Hierarchy laid down in Article 4 of the Waste Framework Directive (WFD). The

development of solutions that encompass all waste is to be encouraged through an holistic approach that reflects the broader definition of municipal waste and exploring opportunities for integration of waste streams.

The Strategy takes into account a number of overarching considerations such as joined-up Government, better regulation and enforcement, funding and the Local Government Reform Programme. It recognises that there are strong economic and environmental benefits in seeking to ensure a compatible and complementary policy framework through an all-island approach.



Part 2: Policies and actions

Section 1: Waste Prevention

Waste prevention is the key to optimising resource efficiency and is at the top of the Waste Hierarchy. This Strategy's aim is to maintain the downward trend in waste arisings and effect a decoupling from economic growth.

The Strategy signposts the development of a Waste Prevention Programme, as required under Article 29 of the WFD, and lists a number of potential policies and interventions that may be included such as the use of financial levers and improving public perception of quality to promote re-use.

This section highlights the role of current Producer Responsibility schemes in incentivising eco-design, the contribution of voluntary responsibility deals through their commitment to reducing food and packaging waste and the benefits to both business and the environment of adopting environmental management systems. It also looks at re-use as a component of Waste Prevention and flags up the introduction of a carrier bag levy and the intention to extend this in future to avoid the negative environmental impact of discarding low cost reusable bags.

Section 2: Preparing for Re-use

A significant difference between the previous and current Waste Hierarchy is the inclusion of 'preparing for re-use' after waste prevention and before recycling. It introduces the concept of a waste ceasing to be a waste if it is prepared for re-use for its original purpose and recognises the benefits to the environment and the economy of the development of repair and re-use networks. An important aspect of this will be increasing social acceptance of the re-used goods and products through the development of a voluntary quality assurance scheme.

Section 3: Recycling

The next priority in the Waste Hierarchy is to separate waste materials for recycling. The aim is to increase materials' resource efficiency through promoting recycling of waste based on a life cycle approach balancing consumption and production. This section introduces a number of policy measures aimed at developing recycling potential including introducing separate collections of certain wastes, and achieving high quality

recycling through better quality recycle that will increase 'closed loop' recycling.

The Strategy also outlines mechanisms to promote market development, highlighting the role of WRAP and Invest NI in building supply chain confidence and working closely with companies to support the development of sustainable markets for recyclable materials. The Strategy contains higher recycling and recovery targets for packaging for the period 2013-2017, as well as targets relating to electrical and electronic equipment, end of life vehicles, and batteries and accumulators.

This section contains the new statutory target for the recycling and preparing for re-use of household waste set out in the WFD, and the commitment to consult on proposals for a 60% recycling target for local authority collected municipal waste to be achieved by 2020. It also acknowledges the difficulties in collecting robust information on commercial and industrial waste arisings and commits the Department to consulting on the introduction of a statutory reporting requirement for specified data.

Section 4: Other Recovery

It is not possible to prevent, reuse or recycle all the waste that is produced, and the next priority is to extract value from the residual waste in the form of energy and other by-products. This section looks at the infrastructure and treatment options to achieve efficient energy recovery, support energy policies, reduce carbon impacts and provide economic opportunities.

The Strategic Waste Infrastructure Programme was established in 2008 to ensure compliance with the EU Landfill Directive targets. The Strategy acknowledges that the European focus is no longer purely on diversion from landfill and the scope of the Waste Infrastructure Programme has changed accordingly to take account of the new definition of municipal waste and other factors impacting on the quantum of infrastructure capacity required to provide assurance of compliance.

A major reform of planning has been taking place since the 2006 Strategy and the Department is committed to undertaking a comprehensive consolidation and review of planning policy in advance of the transfer of planning powers to Councils in 2015. The requirement for Best Practicable Environmental Option for plans and

waste planning applications will be removed and the regional waste management plans prepared by the three District Council Waste Management Groups will be subject to Strategic Environmental Assessments.

Section 5: Disposal

The main priority of successive waste strategies has been reducing the amount of waste being sent to landfill. Landfilling of waste is both resource inefficient and contributes to climate change through the production of greenhouse gases. This section looks at existing and supporting policies such as the Northern Ireland Landfill Allowances Scheme, Landfill Tax, and the restriction of certain wastes from landfill in the wider context of resource efficiency. The EU Resource Efficiency Roadmap highlights the significant impact of the food and drinks value chain and contains a milestone of halving the disposal of edible food waste by 2020. The Department will consult on the introduction of legislation to restrict the landfilling of food waste.

Section 6: Better Regulation and Enforcement

The aim of the risk based approach developed under the Better Regulation Programme is to ensure that regulatory activities are streamlined and focused appropriately, thereby reducing the burden on business. Clear and concise guidance is beneficial to both the regulator and the regulated and strengthens the partnership approach. This section sets out proposals for an Environmental Better Regulation Bill to provide enabling legislation for the introduction of a comprehensive integrated environmental permitting regime and the rationalisation of powers of entry and related powers.

Adopting a risk based approach will enable the regulator to concentrate on serious criminality involving waste and this section notes the intention to introduce legislation to provide the necessary powers to tackle large scale organised environmental crime. Flytipping, the illegal deposit of waste on land, poses a threat to the environment and human health and a partnership approach with District Councils is being developed to tackle this issue. The Marine Litter Strategy addresses the global problem of litter entering the marine environment.

Section 7: Communication and Education

Effective behavioural change towards waste prevention and increased recycling requires a concerted strategic effort. This section sets out a number of initiatives that have been taken forward as part of the Communications Action Plan, which include 'Love Food, Hate Waste' cookery demonstrations, Eco-Schools and Educational resources provided through the Rethink Waste website. Achieving such a cultural shift will ultimately result in both environmental and socio-economic benefits for future generations and the Department will secure funding to sustain waste prevention and recycling communications beyond 2013.

Section 8: Delivery and Governance

Successful delivery of the aims, actions and targets set out in this Strategy will require the support, commitment and engagement of all the people of Northern Ireland. Leadership from Government is vital to maintain the pace of change but stakeholders from all sectors must play their part. A key aspect of delivery will be through the Waste Management Plans prepared by the three regional District Council Waste Management Groups. Revised governance arrangements have been developed for oversight and monitoring of the delivery programme, which will focus on the Strategy actions and targets. An augmented Waste Programme Board will provide the means of holding to account those bodies with responsibility for the timely delivery of the actions and targets in the Strategy.

Part 1:

Setting the Scene



A smarter use of scarce resources is both a strategic necessity and an economic opportunity.

Setting the Scene

Strategy development is a continuous process, and the Waste Management Strategy for Northern Ireland is considered as a living document requiring regular review and revision to ensure that it remains relevant and the policies and actions contained therein are appropriate.

A scoping exercise was carried out in 2011 to consider the Waste Management Strategy in the context of EU requirements and policy developments in Northern Ireland and throughout the UK and Ireland since publication, in 2006, of the Northern Ireland Waste Management Strategy 2006-2020 entitled "Towards Resource Management" (the 2006 Strategy). The exercise developed and considered a number of options for how the Strategy might be revised, and proposed a 'recast' that would incorporate all of the requirements of the relevant EU Environmental Directives coupled with a continuation and development of policies in support of resource efficiency. It proposed a recast Strategy firmly based on the principle of adherence to the Waste Hierarchy while retaining the core principles contained in the 2006 Strategy.

European Union Context

This Strategy has been developed in the context of the relevant EU Environmental Directives and the current direction of EU policy towards life cycle thinking and a resource efficient Europe.

The EU Waste Framework Directive (2008/98/EC) (WFD) requires the establishment of waste management strategies and plans and sets out the elements that must be contained within them. It also introduces statutory targets for preparing for re-use and recycling of waste from households as well as preparing for re-use, recycling and other material recovery of construction and demolition waste. The requirements of the revised WFD have been transposed into NI legislation through the Waste Regulations (Northern Ireland) 2011.

The EU Landfill Directive (1999/31/EC) aims to prevent or reduce as far as possible negative effects on the environment from the landfilling of waste, and contains targets for the reduction of

biodegradable municipal waste going to landfills.

The Roadmap to a Resource Efficient Europe (RE Roadmap) which was published by the European Commission in September 2011 defines medium and long term objectives and the means for achieving them. The vision is of a European economy that by 2050 has grown and developed in such a way that respects resource constraints and planetary boundaries, and thus contributes to a global economic transformation. A key milestone is not just to manage waste but to recognise it as a resource and thereby create a 'circular economy' with residual waste reduced as far as possible. This will require a greater focus on waste prevention followed by increased recycling.

Northern Ireland Context

The 2006 Strategy reflects the move away from simply managing the waste we produce in a more environmentally friendly manner to preventing waste and managing resources. It is set out in three parts, with the key policies and actions presented as six policy strands. The strands are as follows:

- Waste Prevention
- Recycling and Recovery
- Waste Planning
- Data & Research
- Legislation & Enforcement
- Learning & Communication

The Waste Programme Board was established in 2010 as a non statutory Advisory Committee, under the chairmanship of the Minister of the Environment, to oversee and monitor implementation of the NI Waste Management Strategy. It comprises representatives from the Department, NILGA, the three District Council Waste Management Groups, Environmental NGOs, and business groups.

In July 2011 the Board set up a Task Group to re-assess the 2006 Strategy's targets and develop a prioritised programme of objectives and key performance indicators to ensure that the Strategy could deliver the overarching aims of the revised WFD.

The resulting Addendum to the 2006 Strategy identified a number of statutory targets, key performance indicators and legislative or policy requirements that will need to be met to maintain delivery and comply with the revised WFD. Targets and indicators were organised into four categories, and a prioritised programme of interventions was recommended as the basis for a revised delivery programme.

Programme for Government

The NI Executive's Programme for Government 2011-2015 contains a specific commitment to achieve a household recycling or composting rate of 45% by the end of March 2015 under the objective 'Protecting our People, the Environment and Creating Safer Communities'. This Strategy contributes to achieving this objective. The Programme for Government also contains a commitment to reduce the consumption of single use carrier bags by 80%.

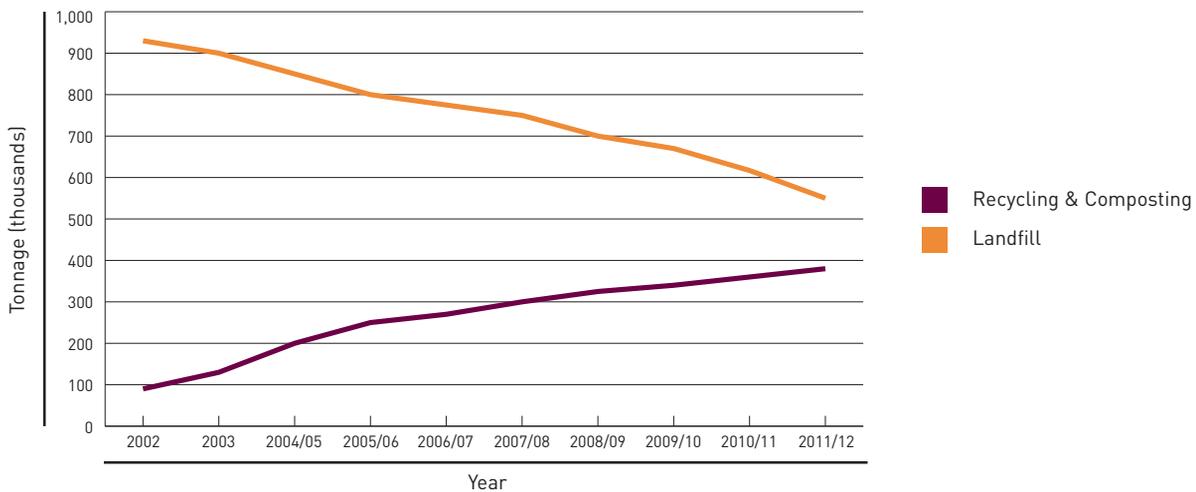
Review of Performance

The 2006 Strategy aimed to provide the framework for addressing waste as a valuable resource to be managed and utilised. The six strands contained a number of actions and targets, and an assessment of progress against each was carried out as part of the scoping exercise for this Strategy. Of the 53 identified targets and actions, 42 were assessed as having been fully achieved either within or just beyond the set timescale.

While most of the actions related to non-statutory targets, all contributed towards meeting the statutory 2010 EU and Northern Ireland Landfill Allowances Scheme (NILAS) targets for the diversion of biodegradable municipal waste from landfill and the aspirational target for a household waste recycling rate of 35% by 2010. The figure below shows how Northern Ireland's reliance on landfill has steadily declined between 2002 and 2012, with a complementary rise in recycling during the same period.



Local Authority Collected Municipal Waste Management in Northern Ireland, 2002 to 2011/12



(Graph supplied by NIEA and Analytical Services Branch, DoE)

Key Strategic Drivers

Resource Efficiency

This Strategy moves the emphasis of waste management in NI from resource management (with landfill diversion as the key driver) to resource efficiency i.e. using resources in the most effective way while minimising the impact of their use on the environment. Therefore, this Strategy has a renewed focus on waste prevention (including re-use), preparing for re-use and recycling in accordance with the Waste Hierarchy. Making more efficient use of natural resources and facilitating increased re-use and recycling is expected to have a favourable impact on the NI economy and help to promote and support 'green jobs'.

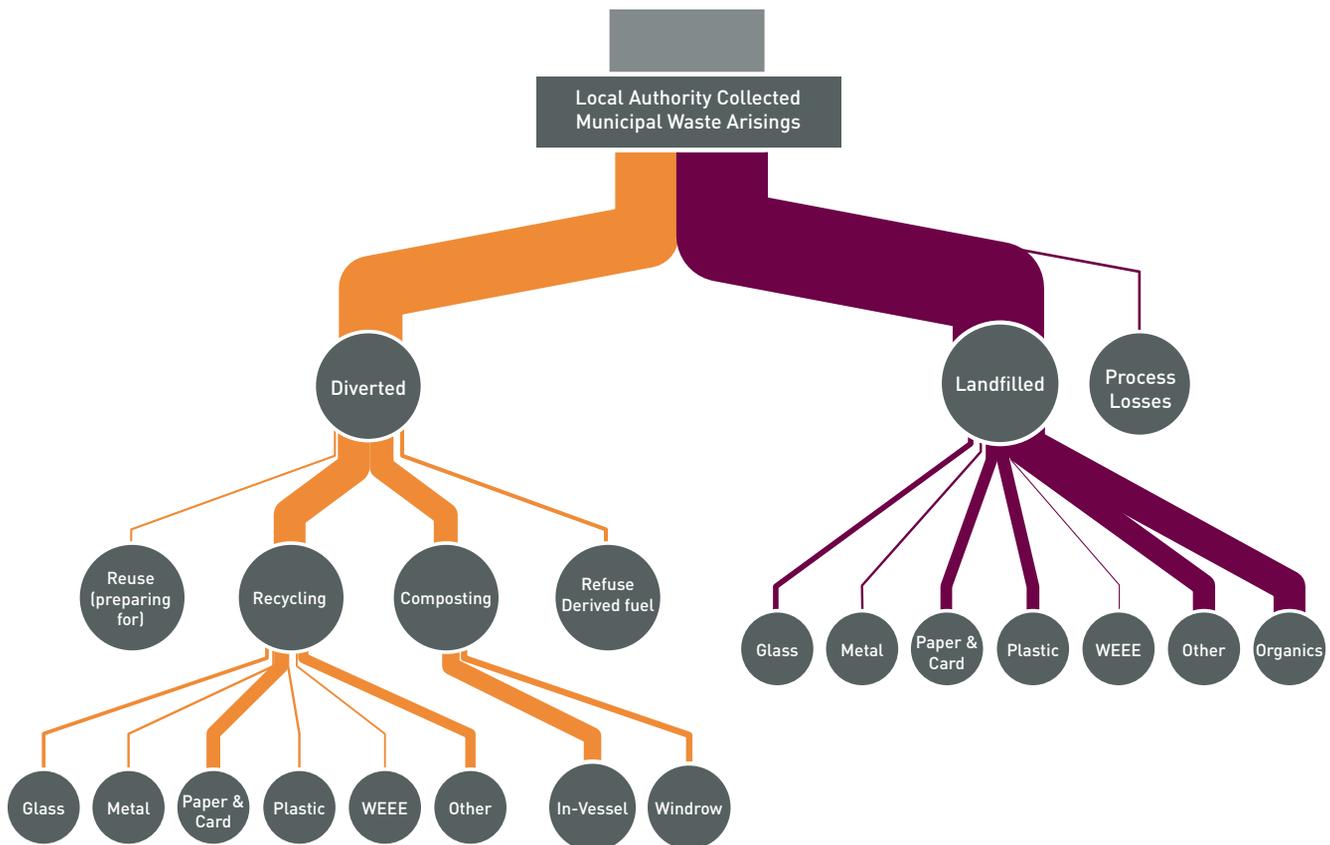
Sustainable Development

Northern Ireland's Sustainable Development

Strategy, ("Everyone's Involved"), was adopted by the Northern Ireland Executive in May 2010. Acknowledging that none of us can avoid the implications of non-sustainable lifestyles, it sets out principles and strategic objectives to ensure socially responsible economic development while protecting the resource base and the environment for future generations.

This Strategy takes into account the guiding principles of the Sustainable Development Strategy and, in particular, the six strategic objectives which are:

- Building a dynamic, innovating economy that delivers the prosperity required to tackle disadvantage and lift communities out of poverty;
- Strengthening society such that it is more tolerant, inclusive and stable and permits positive progress in quality of life for everyone;
- Driving sustainable, long-term investment in key infrastructure to support economic and social development;



Waste arisings and landfill diversion figures based on finalised 2011/12 data. Material specific breakdown based on NI Review of Municipal Waste Component Analysis (Feb 2008)

- Striking an appropriate balance between the responsible use and protection of natural resources in support of a better quality of life and a better quality environment;
- Ensuring reliable, affordable and sustainable energy provision and reducing our carbon footprint; and,
- Ensuring the existence of a policy environment which ensures the overall advancement of sustainable development in and beyond government.

Each Department has set out how they will contribute to achieving the priorities and strategic objectives of the Sustainable Development Strategy in the Sustainable Development Implementation Plan 2011-14 (“Focus on the Future”). OFMDFM, which has overall responsibility for monitoring the performance of Departments in delivering the Strategy, has established a Sustainable Development Concordat Group comprised of organisations

from all sectors. The concordat is committed to positive action to support the delivery of the Sustainable Development Strategy and binds all Departments to delivering the objectives set out in the Sustainable Development Implementation Plan. The Sustainable Development Champions’ Group (SCG) is comprised of nominated officials at senior level as a first point of contact for each Department for issues surrounding sustainable development.

The Regional Development Strategy for Northern Ireland (RDS 2035 “Building a Better Future”) was published in March 2012 and informs the spatial aspects of all other strategies. It complements the Sustainable Development Strategy and highlights the contribution that recycling more waste and recovering energy from it can make to reduce carbon footprint and GHG emissions. It recognises that managing our waste is a significant part of how we treat our environment and highlights the need to manage waste sustainably. This will



be achieved through applying both the Waste Hierarchy, introduced by the Waste Framework Directive, and the proximity principle when developing treatment or disposal facilities in order to minimise the environmental impacts of waste transport.

Climate Change

While climate change is a global issue, it requires action at a number of levels. At the highest level the Kyoto Protocol secured commitments from 37 major industrialised countries and the EU to reduce greenhouse gas (GHG) emissions, and this led to the setting of an EU target to reduce GHG emissions from 1990 levels by 20% by 2020. The UK Climate Change Act 2008, which extends to Northern Ireland, established a legislative framework for the UK to reduce its GHG emissions by 80% from 1990 levels by 2050 and by 34% by 2020. The current NI Executive Programme for Government has set an ambitious target of working towards a reduction of at least 35% by 2025.

The management of waste contributes directly to climate change through the emission of GHG from landfill sites and energy use. Overall, waste emissions account for around 3% of the UK's GHG emissions. The NI Cross Departmental Working Group on Climate Change (CDWGCC) has identified, as a key responsibility for the Department, the progression of waste management policies which should deliver less landfill waste and hence reduce emissions.

It is important that Northern Ireland builds resilience and maximises the benefits from our changing climate. The UK Climate Change Act 2008 requires relevant Northern Ireland Departments to lay programmes before the Northern Ireland Assembly setting out objectives, proposals, policies and associated timescales to address the risks and opportunities identified in the Northern Ireland Climate Change Risk Assessment. It is anticipated that the Northern Ireland Adaptation Programme will be laid in the Assembly later in 2013.

The Green Economy

The global economy is fundamentally restructuring itself in the wake of recession whilst facing the challenges of managing finite natural resources and tackling climate change. There is a shift away from unsustainable consumption and production and a movement towards new,

more environmentally friendly technologies and behaviours that can promote resource efficiency. This is sometimes referred to as the *Green Economy*. The importance of developing the green economy as a key element in encouraging business growth has been recognised in the NI Economic Development Strategy published by DETI in March 2012.

Waste management can play its part in the creation of 'green' jobs, underpin existing jobs and increase regional productivity in a number of ways, for example, through:

- The development and delivery of major waste infrastructure;
- Rethink Waste revenue funding, which provided £1.173 million for 27 projects between 2010 and 2013, with £266k awarded for 2013/14 for 10 further projects;
- The development of policy on separate collections of recyclables and plans to restrict separately collected food waste going to landfill which will support the recycling and composting industries and emerging technologies such as anaerobic digestion and in-vessel composting;
- The adoption of waste quality protocols which have the potential to create cost savings and to increase sales of waste-derived products;
- The work of the North – South Market Development Steering Group (NSMDSG) in exploring opportunities for reprocessing facilities based on the island of Ireland; and,
- Continued delivery of resource efficiency support including financial incentives for businesses.

Health and Social Well-being

This Strategy recognises that the proper management of waste can contribute to the health and social well-being of the people of Northern Ireland. Waste management must be carried out without endangering human health through pollution of water, air or soil or contamination of plants or animals. The waste management sector needs to ensure that local communities are facilitated to take an active role in re-use and recycling activities leading to a greater sense of community and social cohesion. The move towards caring for more people in their own home outlined in 'Transforming Your Care' published by DHSSPS in December 2011 will have implications for household waste collections.

Overarching Principles

The Waste Hierarchy



The Waste Hierarchy is the cornerstone of EU waste policy and legislation, and is a core principle of this Strategy. The primary purpose of the hierarchy is to minimise adverse environmental effects from waste and to increase resource efficiency in waste management and policy.

As laid down in Article 4 of the WFD, the new Waste Hierarchy is a priority order for waste management to be applied as follows:

- Prevention;
- Preparing for re-use;
- Recycling;
- Other recovery, e.g. energy recovery; and,
- Disposal.

While it is accepted that 'Prevention' is not technically a waste management measure, as it occurs before a material or object becomes waste, the reduction of waste per capita, through re-use or other policy initiatives, is key to achieving the RE Roadmap milestone of turning potential waste into a resource.

Preparing for re-use has been introduced as a new concept and the WFD ranks it above recycling in line with the aim of improving resource efficiency. The WFD hierarchy was introduced into NI legislation through the Waste Regulations (NI) 2011 and the Department produced guidance¹ on its application under regulation 17(5). The WFD also allows that specific waste streams may depart from the Waste Hierarchy where this

Definition of waste

Household Waste

is defined in the Waste and Contaminated Land (NI) Order 1997 (the 1997 Order) and Schedule 1 to the Controlled Waste Regulations (NI) 2002 (as amended) and means waste from a domestic property or other specified premises.

Municipal Waste

is defined in the Waste and Emissions Trading Act 2003 and means waste from households and other waste which is similar in nature to waste from a household. This includes C&I waste which is similar in nature to waste from a household.

Local Authority Collected Municipal Waste

is defined in the Waste and Emissions Trading

Act 2003 (Amendment) Regulations 2011, and means waste that is collected by, or on behalf of, a District Council.

Commercial and Industrial Waste

is defined in the 1997 Order and Schedules 3 and 4 to the Controlled Waste Regulations (NI) 2002 (as amended) and mostly means waste from premises used wholly or mainly for the purposes of a trade or business, sport, recreation or entertainment.

Construction, Demolition and Excavation Waste

is defined in Schedule 3 to the Controlled Waste Regulations (NI) 2002 and means waste from construction or demolition works, including waste from any preparatory works.

¹ http://www.doeni.gov.uk/guidance_on_applying_the_waste_hierarchy.pdf

is justified by life cycle thinking. The guidance describes what this means in practice for a number of common materials and products and includes an example of food waste for which current research shows that anaerobic digestion provides greater environmental benefits than composting or other recovery options.

Life Cycle Approach

The fundamental objective of the life cycle approach, or life cycle thinking, is to be aware of, and to take into account the overall impacts (environmental, economic and social) that a product or service will have throughout its whole life i.e. “from cradle to grave”. The aim of such an approach is to make decisions more transparent and from a sound basis.

At each life cycle stage there is resource and energy consumption, and impacts created. Life cycle thinking aims to minimise the negative impacts while avoiding transferring the problem from one life cycle stage to another. The WFD introduces this approach and states that, when applying the Waste Hierarchy, it may be necessary to depart from the strict hierarchy for specific waste streams if this can be shown through life cycle thinking to deliver the best overall outcome.

Polluter Pays Principle

The polluter pays principle is a guiding principle at EU level. The principle holds that the waste producer and the waste holder should manage the waste in a way that guarantees a high level of protection to the environment and human health. Therefore the costs of waste management should be borne by the original waste producer, or by the current or previous waste holders. Thus the full cost of providing services to manage waste is passed on to the waste generator. The EU Landfill Directive reflects this principle in requiring that the price to be charged for disposal of waste should as far as possible cover the costs involved in the setting up, operation, closure and aftercare of a landfill.

Principles of Proximity and Self-sufficiency

The WFD also establishes the principles of proximity and self-sufficiency within the context of the requirement for Member States (MSs) to establish an integrated and adequate network of waste disposal installations and installations for the recovery of mixed municipal waste collected from households, including such waste collected

from other producers, taking into account best available techniques.

The network is to be designed to enable the EU as a whole to become self-sufficient in waste disposal and recovery, and each MS to move towards this aim. The Directive requires that the network shall enable waste to be disposed of or, in the case of mixed municipal waste, recovered in one of the nearest appropriate installations by means of the most appropriate methods and technologies in order to ensure a high level of protection for the environment and public health. However, it also makes it clear that each MS does not have to possess the full range of final recovery facilities.

Integration of Waste Streams

In the context of this Strategy, this means encouraging the development of waste management solutions that encompass all waste. This ‘holistic’ approach reflects the broader definition of municipal waste and seeks to explore the potential benefits to be gained from co-treatment of different waste streams, including the sharing of waste infrastructure.



In agreement with the European Commission the way in which municipal waste is defined in NI has been broadened. Previously, the definition only included waste which was collected by Councils but this has been changed to include all waste from households and all wastes of a similar nature and composition to waste from households, whoever collects it. As a result, the definition now includes commercial waste which is similar in nature to household waste.

Overarching Considerations

Joined-up Government

Taking sustained and effective action on the key drivers identified in this Strategy - Resource Efficiency, Sustainable Development and Climate Change - requires a co-ordinated approach right across government.

The primary mechanism for co-ordinating the work of government on sustainable development is OFMDFM's Sustainable Development Champions Group (SCG). The purpose of the SCG is to promote sustainable development within their own Department, to contribute to the co-ordination of cross-cutting sustainable development issues across government and to inform and support the work of Ministers and other cross-Departmental groups.

Other relevant inter-Departmental groups include the DETI-led Sustainable Energy Inter-Departmental Working Group, the DOE-led Cross-Departmental Working Group on Climate Change, the DSD-led Green New Deal Working Group and the DOE-led Climate and Energy Thematic Group (part of the Barroso Task Force).

18

All-Island Approach

This Strategy takes into consideration relevant resource efficiency policies and strategies across these islands and in other parts of Europe. In particular there are strong economic and environmental benefits in seeking to ensure a compatible and complementary policy framework exists north and south. We also need to avoid introducing perverse incentives which may make illegal cross-border activity lucrative. The Department and the Department of the Environment, Community and Local Government (DECLG) along with the NIEA and the Environmental Protection Agency (EPA) work closely on the development, implementation and enforcement of waste policy and legislation. This Strategy seeks to take an all-island approach to a number of specific waste policy areas including:

- The development of elements of the Waste Prevention Programme;
- Support for re-use and repair networks;
- Consideration of an all-island voluntary quality assurance scheme for re-use;
- Identification of and support for all-island solutions in market development for recyclables;

- Ensuring compatibility between producer responsibility schemes; and,
- Co-operation in enforcement activities.



Better Regulation and Enforcement

Environmental legislation has brought about significant improvements in environmental standards and quality of life. However, in order to work well, regulation needs to be clear, targeted and proportionate to ensure that the required standards can be more readily achieved.

The EU is the source of much of our environmental legislation and, appropriately, it has placed its Better Regulation Agenda as one of its core priorities. In Northern Ireland, the Better Regulation Agenda is led and co-ordinated by DETI.

In 2001 the then Northern Ireland Executive introduced the Northern Ireland Better Regulation Strategy which aimed to minimise the burden of red tape on business. It placed obligations on all Northern Ireland Departments to promote

Better Regulation and provide clear guidance to regulated businesses.

Through the Northern Ireland Environment Agency's "Better Regulation for a Better Environment" programme the Department, in partnership with the Better Regulation Board, aims to modernise and simplify its approach to regulation to maximise environmental benefits and minimise the costs to businesses that comply with the law. The work of the Department and NIEA is described in more detail in section 6.

Funding

The Rethink Waste Fund was initiated in April 2010 to provide grants for projects aimed primarily at diverting municipal and household waste from landfill, and increasing recycling rates. In 2011 the Northern Ireland Executive gave a commitment to continue to support effective waste management by local government and provide funding for the Rethink Waste Capital Fund over the period 2011 to 2015 totalling £9.3million.

The Rethink Waste Fund provides for Capital and Revenue grant funds. Both grant funds are administered by WRAP (Waste and Resources Action Programme) on behalf of the Department. Grants under the Rethink Waste Revenue Fund are currently open to community and voluntary groups, the private sector, Councils and the three Waste Management Groups. Grants under the

Rethink Waste Capital Fund are open to Councils and the three Waste Management Groups only.

Invest NI's £12 million Sustainable Productivity Programme for the period 2012/13 to 2014/15 was launched in August 2012. This Programme which aims to achieve significant cost savings in business, delivers integrated support for resource efficiency measures across the full arena of energy, water, materials consumption and waste. Four pillars of activity underpin this programme – an interest free loan fund for energy efficiency measures; a capital grant for water and/or material saving measures; project management of resource audits, technical consultancy, sectoral initiatives and workshops; and, industrial symbiosis activity.

The Task Force for Northern Ireland established by the President of the European Commission, José Manuel Barroso, gives unprecedented regional access to Commission officials and aims to help identify the best European opportunities both in financial and non-financial terms. The Department leads the Climate Change and Energy Thematic Group of the NI Executive's Barroso Task Force Working Group and provides support to organisations seeking elective EU funding for projects relating to climate change, energy and resource efficiency. The EU's new funding period of 2014 – 2020 will see the commencement of a range of major new elective funding programmes, including: Horizon 2020, LIFE and INTERREG 5B and 5C.

Government leading by example

This Strategy recognises that government has a leading role to play in driving forward the agenda on environmental performance, sustainability and resource efficiency.

The government estate in Northern Ireland is managed centrally by the Department of Finance and Personnel (DFP). This provides a consistent approach, requiring all Departments to set out their targets and actions on waste, energy, water, estate, travel and procurement within Departmental Action Plans. Specifically, in terms of waste, government has in place a unified waste contract for the separate collection of recyclable wastes. General waste bins have been removed from main office floors

to promote waste prevention and encourage waste segregation and recycling, with positive results beginning to show.

Government recognises that as a major construction client, it has a significant role to play in driving the resource efficiency agenda. The whole life cycle of construction, from raw material extraction, through construction, building use and demolition, is energy, carbon and resource intensive. DFP's Central Procurement Directorate (CPD) and the Centres of Procurement Expertise (the "CoPEs") have a key role to play in the drive towards sustainable construction by assisting the Public Sector to embed sustainable development considerations into its spending and investment decisions.

Local Government Reform Programme

The Review of Public Administration was launched by the Northern Ireland Executive in June 2002 with the remit of reviewing the arrangements for the accountability, development, administration and delivery of public services in Northern Ireland. Proposals include the reform of local government which will see a reduction in the number of Councils from 26 to 11. This will have implications for how Councils carry out their waste management responsibilities through Waste Management Groups.

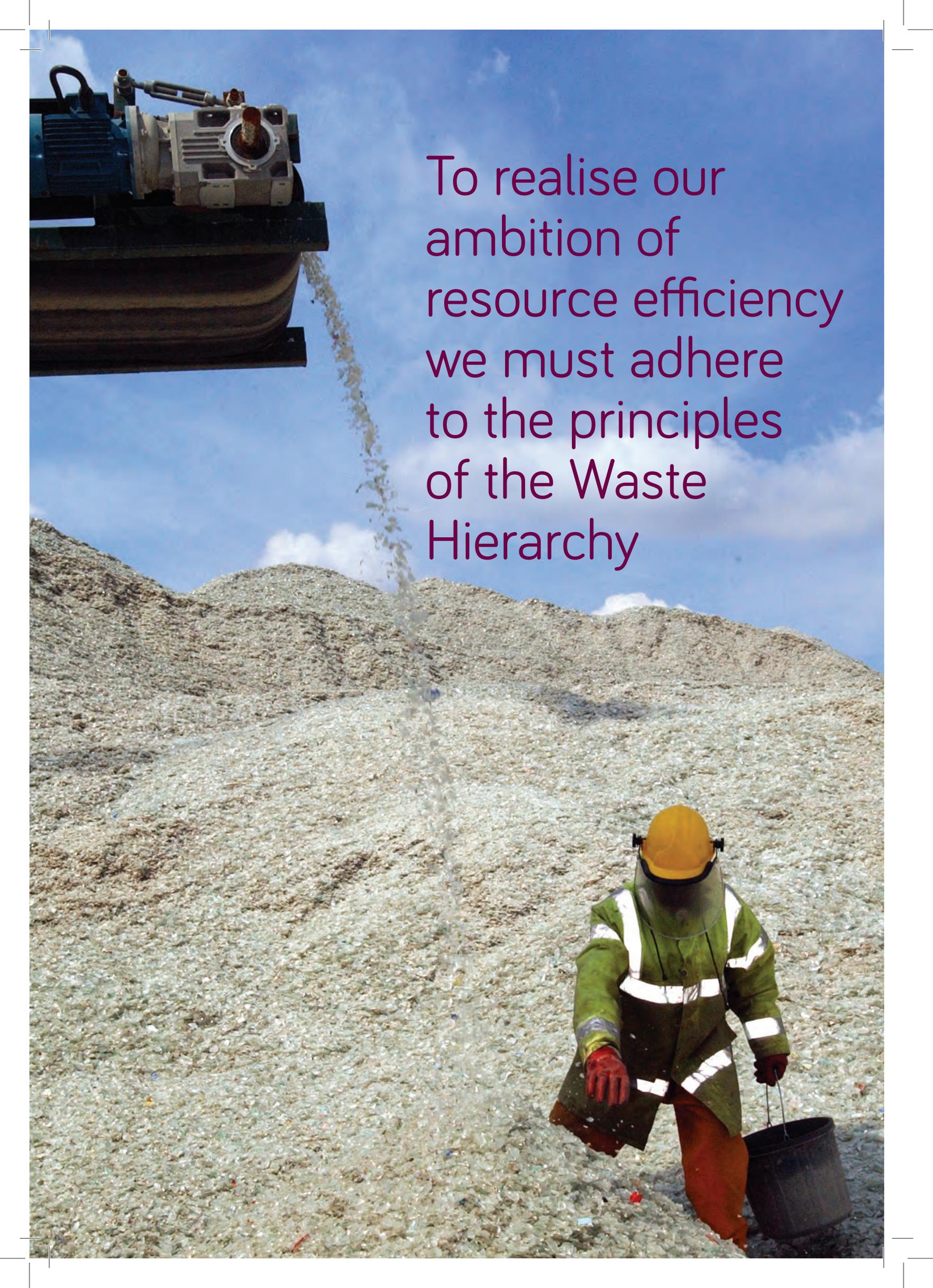
Councils are being given new responsibilities and a broader range of powers, including planning. Combined with partnership working with other Departments and agencies operating in their areas, the aim is to make Councils stronger, more effective and flexible to local need.

A structure has been put in place to drive forward the Local Government Reform Programme. This includes the establishment of Voluntary Transition Committees and Regional Transition Committees with political representation, senior officers and officials from central and local government, and NILGA.

Statutory Transition Committees, which will replace Voluntary Transition Committees, will gather information and make preparations for the incoming Councils in advance of the shadow period, which will commence after the next set of local government elections, expected in 2014. During the shadow period, the newly elected councillors will take the key decisions for the new Councils to take up their full role, functions, powers and duties in April 2015.

Part 2:

Policies and Actions

A photograph of a worker in a full-body hazmat suit, including a yellow helmet and a green and white protective suit, standing in a large landfill. The worker is holding a black bucket. In the background, a conveyor belt system is dumping a stream of waste material onto a large pile of trash. The sky is blue with some clouds.

To realise our
ambition of
resource efficiency
we must adhere
to the principles
of the Waste
Hierarchy

Section 1

Waste Prevention

Waste Prevention is key to optimising resource efficiency across all waste streams and is at the top of the Waste Hierarchy. The WFD defines prevention as *'measures taken before a substance, material or product has become waste that reduces:*

- *The quantity of waste, including through the re-use of products or the extension of the life span of products;*
- *The adverse impacts of the generated waste on the environment and human health; or*
- *The content of harmful substances in materials and products.'*

This reflects the need to promote sustainable consumption and production through improved product design and consumer behavioural change. Waste prevention also has an important role in supporting measures to reduce the impact of climate change and in providing cost savings to householders and businesses.

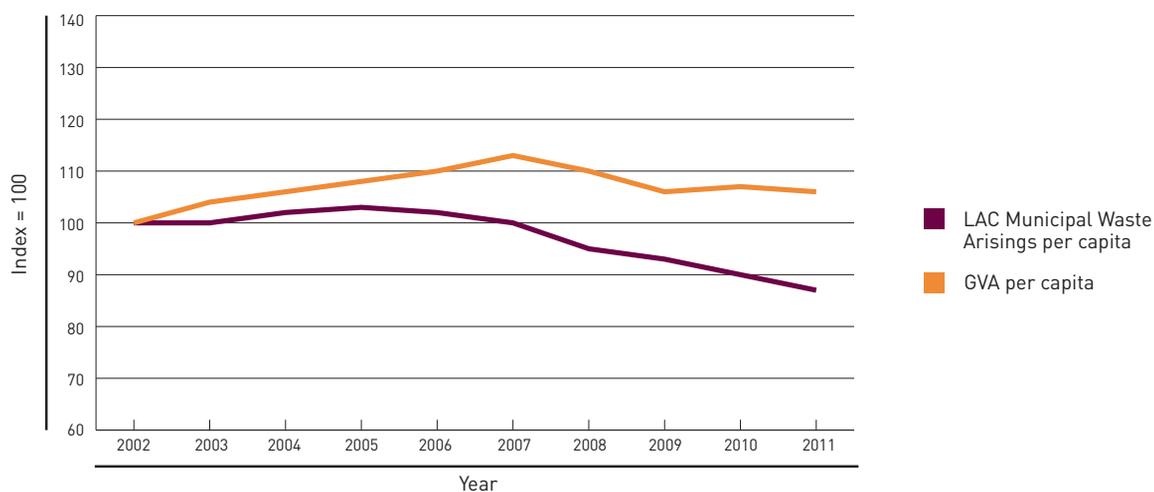
The RE Roadmap calls for a transformation in our attitude to our natural resources through greater re-use and the decoupling of economic growth

from resource use. While it does not set specific targets for waste reduction, it contains a milestone that waste generated per capita should be in absolute decline by 2020.

Progress to date

The stabilisation of waste generation was one of the key aims of the 2006 Strategy. The figure below shows the trend for Local Authority Collected Municipal Waste (LACMW) arisings per capita from 2002 to 2011 and compares this with the Gross Value Added (GVA) per capita in the NI economy over the same period. In 2010/11 almost 1 million tonnes of LACMW was collected in Northern Ireland. Overall, LACMW arisings per capita have decreased by just over 9% since 2002. There was an annual increase in arisings per capita of 2% until a peak in 2005/06, since when arisings have fallen by more than 11%. Over the same period GVA per capita, corrected for inflation, has increased marginally. Although the graph suggests potential decoupling of the relationship between economic growth and waste generation at certain points during the period, a longer more consistent time series is required before definitive conclusions could be drawn.

Local Authority Collected Municipal Waste Arisings and GVA per capita, 2002-2011



(Graph supplied by NIEA and Analytical Services Branch, DoE)

This Strategy's aim in respect of waste prevention is to maintain the downward trend in waste arisings in Northern Ireland and effect a decoupling of arisings from economic growth. Although there are currently no EU targets for Waste Prevention, any reduction in waste generated will have a significant impact on meeting EU landfill diversion targets.

1.1 Development of Waste Prevention Programmes

Under Article 29 of the revised WFD, member states must have in place Waste Prevention Programmes by December 2013. The Department aims to issue a draft Waste Prevention Programme (WPP) for Northern Ireland for consultation to meet this timescale. In developing a Programme the Department will consider the scope for a common approach on Waste Prevention initiatives with Ireland. Waste Prevention Programmes will be reviewed and revised every 6 years.

It is anticipated that the draft Programme may include the following policies and interventions:

- Developing a re-use policy in conjunction with the WPP;
- Building upon the success of voluntary agreements such as halving waste to landfill;
- Supporting the Hospitality and Food Service Sector agreement;
- Use of financial levers such as the carrier bag levy;
- Development of the communications and education programme;
- Promoting re-use and improving public perception of quality through quality assurance schemes; and,
- Sponsorship of awards that highlight and reward good practice.



It is expected that Rethink Waste funding will play an important role in underpinning the Waste Prevention Programme, especially with assistance to the Third Sector, in order to promote and support innovative, sustainable projects.

Action: The Department will consult on a draft Waste Prevention Programme for Northern Ireland by September 2013.

1.2 Producer Responsibility Schemes

The adoption of EU Directives relating to producer responsibility (PR) and the consequent UK-wide producer responsibility schemes are explained in detail at section 3.2. A fundamental principle of current producer responsibility legislation is to encourage the incorporation of eco-design in the manufacture of products. In particular, the PR schemes for packaging and waste electrical and electronic equipment encourage manufacturers to design their products to reduce the amount and type of materials used; improve the longevity of products and maximise the potential for re-use.

Voluntary responsibility deals brokered with the grocery retail sector and the hospitality and food sector also contribute to waste prevention through their commitment to the reduction of food and packaging waste – see section 3.3.

1.3 Environmental Management Systems

The promotion and development of environmental management systems (EMSs) across the

business sector, particularly among Small and Medium sized businesses (SMEs), is essential to maximising resource efficiency and supporting economic growth. Research has shown that the largest cost savings to be obtained through adopting EMSs are in the areas of waste and energy. In particular, EMSs can play a valuable role in identifying opportunities for waste reduction.

Currently businesses in Northern Ireland are supported through schemes such as Invest NI's "Sustainable Productivity Programme" and Belfast City Council's BITES Programme which is also financially supported by Invest NI/ DETI. Additional Council-managed and Invest NI-supported resource efficiency programmes are being considered by several other Councils. The Sustainable Productivity Programme can provide support to businesses wishing to investigate or implement environmental (or energy management) systems.

A 3 year strategic partnership between NIEA and Business in the Community's ARENA Network up to the end of 2014 is designed to take 270 SMEs through an environmental audit and develop EMSs for 50 businesses. The partnership includes targets for reduction in CO₂ emissions and diversion of waste from landfill.

The Construction Employers Federation (CEF) have, in conjunction with their members and with the support of government, developed Nvir-o-Cert, a simplified accredited EMS scheme aimed specifically at the smaller construction firms who would not normally have the resources to put in place a formalised EMS.

Some waste prevention initiatives funded through Rethink Waste

- FareShare received funding of £30,530 in the first round of the Rethink Waste revenue fund for their project to provide quality food, surplus 'fit for purpose' product from the food and drink industry. In the first 12 months a total of 48.3 tonnes of food waste was diverted from landfill.
- Business in the Community received £40,000 to provide small and medium sized businesses with practical support through

audits & action plans to reduce environmental impacts & increase resource efficiency. In the first 12 months a total of 886 tonnes of waste was diverted from landfill.

- The 'Incredible Edible Cloughmills' project received funding of £5,440 in 2010/11. The project enables the Cloughmills Community to work in partnership with local business, Ballymoney Council, local schools and others to promote the concept of 'growing your own vegetables', food sharing, and promoting actions to reduce the amount of food waste produced within households and the local schools.

Environmental Management Systems

An environmental management system (EMS) is a structured framework for managing an organisation's significant environmental impacts.

It can help companies comply with environmental regulations, improve their resource efficiency, reduce emissions and reduce bottom line costs. There are different types of EMSs available and businesses may choose what is appropriate for the size, complexity, nature and risks posed by the business.

When implementing an EMS, businesses should consider the value of adopting a recognised standard or scheme, such as ISO 14001, the EU Eco Management and Audit Scheme (EMAS) or the British Standard BS 8555.

legislation to extend the levy to low cost reusable bags from April 2014. The policy objective is to avoid a scenario where low cost reusable bags are discarded prematurely. This would have a negative environmental impact.

Departmental officials have worked closely with counterparts from Ireland to learn from their experience of bringing in a plastic bags tax in 2002. This engagement has proved invaluable in the development of best practice administrative arrangements for the Northern Ireland levy.

Action: The Department will bring forward further legislation to extend the levy to low cost reusable bags by April 2014.

Target: To reduce consumption of single use carrier bags by 80% within the first year of operation.

1.4 Carrier Bag Levy

It is estimated that we used around 300 million carrier bags in Northern Ireland in 2012, many of which ended up being landfilled. If discarded, carrier bags may also become an unsightly litter problem. The CO₂ emissions and air and water pollution associated with their production also have a significant environmental impact.

The introduction of carrier bag charging is highlighted in the NI Executive's Programme for Government. The aim of the levy, in support of a cleaner, greener Northern Ireland, is to reduce consumption of single use carrier bags by 80%. The primary focus of the levy is on waste prevention and resource efficiency. Any revenue raised by the levy will be used to support communities, voluntary organisations, charities, schools and businesses in delivering improved environmental outcomes.

The Single Use Carrier Bags Charge Regulations (NI) were made on 15 January 2013. The Regulations introduced a 5 pence levy on single use carrier bags, effective from 8 April 2013.

However, subject to Executive approval, the Department will bring forward additional



1.5 Re-use

As a component of Waste Prevention, re-use is defined in the WFD as any operation by which products or components that are not waste are used again for the same purpose for which they were conceived. The WFD requires Member States to take measures to promote the re-use of products.



In tune with this increasing emphasis on re-use the European Commission will, by 2016, examine the case for a mandatory 5% re-use target to be shown separately from the recycling target level in respect of Waste Electrical and Electronic Equipment.

NIEA has produced a number of regulatory position statements relating to re-use. These cover topics such as the sustainable re-use of greenfield soil in construction and on the re-use of asphalt road planings, helping to prevent these valuable materials from becoming waste in the first place.

Industrial Symbiosis

With the inclusion of re-use, as part of waste prevention, and preparing for re-use in the revised Waste Hierarchy, industrial symbiosis will play an increasingly relevant role in delivering the targets and objectives of a Waste Management Strategy that has resource efficiency at its core.

Within Invest NI's Sustainable Productivity Programme industrial symbiosis activity brings together businesses and industries from all sectors to identify and realise significant opportunities for the commercial exchange of commodities including for example water, waste and energy as well as logistics and expertise. There will be increasing potential for commercial opportunities such as these to be grasped in the years ahead as businesses focus on cost savings, compliance with statutory obligations and achieving corporate goals.

Obtaining data on re-use activities

In order to assess progress towards the aim of waste prevention (including re-use) it is important to understand and measure re-use activities. As a Waste Prevention Programme is developed it will become more important to be able to identify and quantify household items as well as materials from commerce which get reused and to know how much is reused in construction activities. Strong links with the third sector and the emerging re-use networks will play an important role in enabling access to useful data to help monitor progress in moving waste up the Waste Hierarchy towards re-use and prevention.



Government leading by example

As part of their commitment to the Halving Waste to Landfill initiative², DRD Roads Service, in 2010/11, established a baseline for materials in their construction contracts. This involved measuring and recording the total quantities in tonnes of: potential waste produced; material recycled on-site; material reused on-site; material reused off-site and material sent to landfill, for contracts exceeding £300k. In that year 89% of waste materials were reused on-site, 3% was reused off-site and only 8% was landfilled.

² <http://www.wrap.org.uk/content/what-halving-waste-landfill>. See also paragraph 3.6

Section 2

Preparing for Re-use



28

The WFD defines this activity as '*checking, cleaning or repairing products or components which have become waste so that they can be re-used for their original purpose without further pre-processing*'. Once a waste is prepared for re-use for its original purpose it ceases to be a waste and no further waste controls are placed on it. Examples of preparing products or components for re-use include: electrical equipment; furniture and carpets; bikes; paint and clothing. The Department will encourage a partnership approach between Councils and the Third Sector in the development of schemes to promote preparing for re-use.

The Department recognises the need to support and encourage the establishment and continuation of re-use and repair networks throughout Northern Ireland and the potential for co-operation through these networks on an all-island basis. The expansion of re-use and repair networks will promote the development of social enterprises at a community level and stimulate opportunities for green jobs.

Re-use not only diverts waste from landfill but also contributes to significant carbon savings

when compared with recycling. For the re-use market to grow there has to be social acceptance and confidence in the quality of the goods being sold. The availability of a re-use quality assurance scheme would assist in providing this confidence, particularly for electrical and electronic goods. Additionally, the marketing of re-used goods would be assisted if the scheme had a wider use, acceptability and profile. The Department will support the development of a certifiable re-use voluntary quality assurance scheme and work with DECLG in assessing the feasibility of introducing a scheme on an all-island basis.

Some initiatives focusing on re-use funded through Rethink Waste

- East Belfast Mission received £33,433 for development of bicycle repair & refurbishment workshop.
- Voluntary Service Lisburn received £70,000 to refurbish furniture for re-use.

Section 3

Recycling

After Waste Prevention, including re-use, the next priority is to separate waste materials for recycling. This not only reduces the environmental impact of waste, but also reduces the demand on natural resources. Recycling is defined in the WFD as *'any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes'*.

The aim is to increase materials resource efficiency through the promotion of recycling of waste based on a life cycle approach which balances consumption and production. A strong emphasis will be on ensuring that manufacturers, retailers and importers take responsibility for the costs of treatment and recycling of their products

when they become waste in line with the 'polluter pays' principle.

Recycling some materials can have greater benefits than others and this will also depend on the type of recycling undertaken. Closed loop recycling, where recycled materials are being used for the same purpose, is much better for the environment than open loop recycling, where the recycled material is 'downgraded'. An example of this is glass bottles being recycled into a new glass product rather than being crushed for aggregate. Recycling materials which have the potential to reduce carbon impact the most, such as food, paper/card, dense plastics, textiles and non-ferrous metals must be the priority.



3.1 Developing Recycling Potential

Separate collections

In order to optimise recycling, segregation of all waste materials at source is best, wherever possible. The WFD requires the separate collection of at least paper, metal, plastic and glass by 2015. The Waste Management Regulations (NI) 2011 place an obligation on Councils and private waste collectors to meet this requirement. Collecting these recyclate waste streams separately from other wastes improves the quality of recyclates by avoiding contamination with other wastes which can ultimately lead to valuable recyclates failing to meet waste acceptance criteria and being re-directed to landfill or other recovery. European Commission guidance³ issued in June 2012 indicates that in meeting this requirement, it is acceptable to collect these waste streams co-mingled providing this does not compromise the quality or quantity of the individual waste streams. The Department intends to issue comprehensive guidance by April 2014.

The WFD also requires Member States to take measures, as appropriate, to encourage the separate collection of bio-waste with a view to composting and digestion of bio-waste.

Waste collectors should be encouraged to develop appropriate collection systems where recycling performance is currently often poor e.g. in areas of social deprivation or multiple occupancy housing. This may necessitate novel and innovative waste collection systems responsive to the needs of the community. There is scope within the Rethink Waste Fund to provide financial assistance to meet this goal.

Waste collectors should also consider the scope for introducing more recycling 'on-the-go' and explore, in association with planning authorities, the potential for the introduction of alternative collection technologies.

Action: Waste collectors to ensure the separate collection of at least paper, metal, plastic and glass by 2015.

Action: The Department will issue comprehensive guidance on separate collections by April 2014.

Action: The Department will review the criteria for Rethink Waste funding to ensure that there is an appropriate emphasis on supporting projects aimed at improving recycling performance in

areas where it is currently poor.

Quality of recyclates

The WFD requires Member States to take measures to promote high quality recycling. Achieving a better quality recyclate will help to facilitate increased 'closed loop' recycling which is more resource efficient.



High quality recycling is important because it can help support growth and the green economy by maximising the economic value of the waste material collected. It can also help increase public confidence and participation in recycling. The Department will work with the waste management industry to produce transparent, robust and consistent information on quality to facilitate the proper functioning of the recyclate markets. It is intended that this will result in the development of a code of practice for operators of materials recycling facilities (MRFs) and similar establishments.

Where bio-wastes (food and green waste) are collected and treated in open windrow, In-Vessel Composters (IVC) or Anaerobic Digestion (AD) facilities they will count towards EU targets

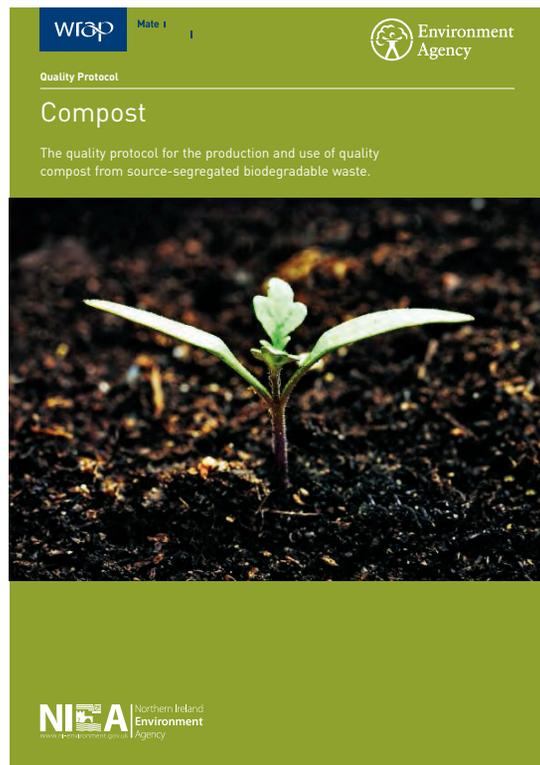
³ Guidance on the interpretation of key provisions of Directive 2008/98/EC on waste (http://ec.europa.eu/environment/waste/framework/pdf/guidance_doc.pdf)

for recycling where PAS 100 compost or, as appropriate, PAS 110 digestate is produced and subsequently used. Where compost or compost-like digestate does not meet the PAS standards but is used as a soil enhancer or for the benefit of agriculture it is classified as a recovery operation.

Action: The Department will consult on proposals for a code of practice for MRF operators by December 2013.

End of Waste and the development of Quality Protocols

In recent years there have been a number of developments aimed at defining when a waste material ceases being a waste in order to support a more efficient use of resources. The WFD sets out 'end of waste' conditions that must be met and the European Commission has published end of waste criteria for iron, steel, glass cullet and aluminium scrap⁴. The next waste streams expected to be addressed by the Commission include copper scrap metal, plastics and biodegradable waste/compost.



Where end of waste criteria have not been set at EU level, Member States may develop their own. Accordingly, the NIEA have, since 2009, been participating in the development of a UK Quality Protocols programme. Quality protocols set out how to fully recover waste from a particular

stream and turn it into a quality product. It defines the point at which waste ceases to be waste and can be used as a product without the requirement for waste management controls. By following quality protocols, producers can be confident that they are producing quality products from waste, providing confidence for end-users that the products are certified to relevant standards and do not fall under waste regulatory controls. Compliance with quality protocols is voluntary. If producers do not comply with the quality protocol in full, the material will still be regarded as waste and the onward transfer and use of the waste will be subject to the requirements of the Waste Management Licensing Regulations (NI) 2003 as amended.

The quality protocols currently in place in Northern Ireland relate to:

- The production and use of recycled gypsum from waste plasterboard;
- The production of biodiesel from waste cooking oil and rendered animal fat;
- Pulverised Fuel Ash/Furnace Bottom Ash (PFA/FBA);
- The production and use of quality outputs from anaerobic digestion of source segregated biodegradable waste;
- The production and use of quality compost from source segregated biodegradable waste;
- The production and use of processed fuel oil from waste lubricating oils;
- The production and use of poultry litter ash; and,
- The production and use of aggregates from inert waste.

The NIEA will continue to work with the Environment Agency and other relevant authorities in developing further quality protocols, where they are relevant and beneficial to Northern Ireland. Consideration is being given to developing protocols on biomethane and meat and bonemeal ash.

The Department also takes part in the EU-funded EQual project, due to run until 2015. The project aims to demonstrate to businesses and stakeholders methods to derive quality waste products without the need for waste regulation controls, in order to raise consumer confidence in using waste-derived products. To assist businesses e-tools are being developed to support end of waste decision making and for assessing compliance with quality protocols. The Department will continue to consider individual waste streams (e.g. incinerator bottom ash) for further development.

⁴ Council Regulation (EU) No 333/2011, 31 March 2011

Some recycling initiatives funded through Rethink Waste:

- Down District Council was awarded a Rethink Waste Fund (Capital) Grant of £ 432,623 in 2010/11 towards the cost of a new Household Waste Recycling Centre at Ballykine, Lisburn Road, Ballynahinch. The Centre became operational on 17 September 2011 and serves Ballynahinch and the surrounding catchment area and provides a full range of recycling facilities to reduce the volume of waste going to landfill. In the first year a total of 465 tonnes of waste was diverted from landfill.
- In 2011/12, Ballymena and Newtownabbey Borough Councils were awarded a joint grant of £242,400 to enhance collection of dry recyclables and broaden the range of materials that were able to be collected at the kerbside across two Council areas.
- A Rethink Waste Revenue grant of £46,757 was awarded in 2011/12 to Innovation Ulster Ltd. This project facilitated 16 contracting companies in the construction sector to implement and operate a certifiable environmental management system (EMS) and waste management systems.

32

Market Development for recyclates

Maximising the value of resources that derive from waste materials requires the creation of demand-led markets involving the growth and maintenance of recycling, reprocessing and manufacturing infrastructure and of stable and profitable end markets. WRAP's role in promoting market development addresses a number of key aspects including:

- Increasing the collection of quality waste materials for reprocessing – through supporting local authorities and collection and sorting service providers to capture more materials from householders and businesses;
- Developing protocols for the end of waste designation of waste-derived inputs to reprocessing;
- Building supply chain confidence in the performance of recycled content products leading to increased demand;

- Enabling financial investment into the reprocessing sector through a range of financial mechanisms and development of investor confidence;
- Building the competence and acumen of recycling sector businesses to gain investment and to grow; and,
- Providing current market data on commodity prices and economic indicators for supply and demand of key commodities such as paper, card, plastic and glass.

These all impact on resource management in Northern Ireland by creating the conditions where economic gain is maintained and can grow, conserving materials resources, reducing dependence on landfill, increasing jobs growth in the recycling and reprocessing sector and its supply chains and reducing carbon emissions.

Invest NI continues to support market development by working with companies that demonstrate they are clearly adding value and introducing new or developing technologies, or are focussed on export sales as a way of increasing Northern Ireland's productivity. Specifically, for the waste management sector, Invest NI will support businesses that can demonstrate development of sustainable markets for recyclable materials and how they can contribute to the wider aims of this Strategy to reduce the amount of waste produced and increase recycling. Support is also available to help companies with the implementation of resource efficiency projects.

The aim of the North South Market Development Steering Group (NSMDSG) is to drive forward a programme based on specific deliverables of mutual benefit and to exploit all-island economies of scale in the market for recycled materials. The Group will take action to implement an agreed work programme, through the Department of the Environment's and DECLG's delivery bodies, WRAP and rx3 respectively. The Group has identified opportunities to develop all-island knowledge on waste management to support the development of markets for recovered waste resources. Opportunities for cooperation on common goals in the areas of education, awareness and training have also been identified. Work recently carried out by the Group has included the Irish Recycled Plastic Waste Arisings Study and a report on bulky waste.

Government leading by example

Across the Government estate, a recycling contract was established in 2008 to separately collect and recycle food waste, paper, cardboard, shredded confidential paper, newspaper, plastic, metal, cans and glass. As a result, across the Stormont Estate, an overall recycling rate of 71.5% was achieved in 2011/12. By working in partnership with staff and contractors, continued improvements to this recycling rate are expected to be made. Food waste is being separately collected from Parliament Buildings on a trial basis and is being sent to in-vessel composting. It is planned that this should be continued and rolled out across more of the Stormont Estate and NIEA has established separate food waste collections from a number of their facilities.

NIEA has implemented a fully accredited ISO 14001 environmental management system across each of its four main sites. In 2012 the benefits of this were:

- Sites within the scope of ISO 14001 accreditation recycled waste within the range 60-70%;
- All office paper was purchased from recycled sources containing 100% post consumer waste;
- New waste management contracts enabled NIEA to recycle a more diverse range of waste streams across all its sites; and,
- NIEA put in place plans to pilot food waste collection for recycling from 2012.



3.2 Producer Responsibility

Producer Responsibility (PR) is aimed at shifting the costs of recovering, recycling or disposing of a product from the end user to the retailers, wholesalers and manufacturers in support of the polluter pays principle.

PR is intended to give producers an incentive to employ eco-design in the development of products that:

- Use fewer resources;
- Reduce or eliminate the use of hazardous substances in their manufacture;
- Minimise waste from the product and reduce the amount of waste going to landfill;
- Are able to be repaired or reused; and,
- Are more easily treated, dismantled and recycled.

The EU has identified certain ‘priority waste streams’ for specific action through producer responsibility mechanisms and has adopted a range of legislation designed to support the polluter pays principle for these waste streams.

Packaging Waste

Packaging waste is the most significant waste stream dealt with under PR legislation. The EU Directive on Packaging and Packaging Waste (94/92/EC) sets a minimum recovery target (60%) and recycling target (55%) as well as material specific targets for glass, paper, plastic, wood and metals in order to minimise the impact of packaging waste on the environment. These requirements are implemented through the Producer Responsibility Obligations (Packaging Waste) Regulations (NI) 2007 and only apply to businesses which handle more than 50 tonnes of packaging waste and have a turnover in excess of £2 million per annum (i.e. obligated businesses). In recognition of the potential to optimise packaging further and to address public concern about excessive packaging, higher recycling rates for aluminium, plastic and steel for the period 2013-2017 were introduced from 1 January 2013. Recycling targets for each waste stream are set out in the table above.

Meeting these targets will equate to an overall packaging recycling rate of 72.7% and an overall recovery rate of 79% by 2017, thus ensuring that the minimum EU Directive targets are met.

Material	2012	2013	2014	2015	2016	2017
Paper	69.5%	69.5%	69.5%	69.5%	69.5%	69.5%
Glass	81.0%	81.0%	81.0%	81.0%	81.0%	81.0%
Aluminium	40.0%	43.0%	46.0%	49.0%	52.0%	55.0%
Steel	71.0%	72.0%	73.0%	74.0%	75.0%	76.0%
Plastic	32.0%	37.0%	42.0%	47.0%	52.0%	57.0%
Wood	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%

Target: To achieve the recovery and recycling rates for individual packaging waste streams as set out in the table by 2017.

Target: To achieve an overall recovery rate of 79% and overall recycling rate of 72.7% of packaging by 2017.

Waste Electrical and Electronic Equipment (WEEE)

The aims of the Waste Electrical and Electronic Equipment (WEEE) Directive (2002/96/EC) are to prevent WEEE arising, to encourage re-use and recycling and to improve the environmental performance of all operators involved in the life cycle of electrical and electronic equipment (EEE). The Directive sets targets for the recovery and recycling of different product categories of EEE and an overall collection target of 4kg of WEEE per person per annum.

A recast of the WEEE Directive has been adopted and will come into force across the European Union from from 14 February 2014. The Department will consult on legislative proposals to implement the recast Directive in 2013 through the amendment of the WEEE Regulations 2006 and associated Regulations. The proposals will include:



- A move to a collection rate of 45% of EEE placed on the market by 2016 increasing to 65% of EEE placed on the market by 2019;
- A broadening of the scope of the Directive to include more EEE and a re-definition of the categories;
- An increase to all recovery and recycling targets for all categories of EEE;
- The potential to introduce a mandatory re-use target of 5%; and,
- An obligation on distributors to provide for the collection of small WEEE at certain retail shops.

Target: To achieve a collection rate of 45% of EEE placed on the market by 2016 increasing to 65% of EEE placed on the market by 2019.

Target: To achieve the recovery and recycling targets for all categories of EEE as set out in the recast WEEE Directive.

Action: The Department will consult on legislation required to implement the recast WEEE Directive by October 2013 to come into effect by January 2014.

Restriction of Hazardous Substances (RoHS)

Allied to the recast WEEE Directive, a revised EU RoHS Directive (2011/65/EU) came into effect on 2 January 2013. The Directive restricts the use of certain hazardous substances in electrical and electronic equipment (EEE) and aims to protect human health and the environment by minimising the amount of potentially hazardous substances ending up in landfill sites and recycling processes. The restricted substances are lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls and polybrominated diphenyl ethers. The revised Directive broadens the scope of the products covered, widens the definition of EEE and requires all non-compliant products to be removed from the market by July 2019.

Batteries and Accumulators

Although a relatively small waste stream, the increased collection and recycling of batteries provides a real opportunity to increase resource efficiency as too many still end up in landfill. Under the Batteries and Accumulators and Waste Batteries and Accumulators Directive (2006/66/EC) producers of batteries are responsible for the safe environmental disposal of waste batteries.



Key requirements of the Directive include:

- The registration of all 'producers' e.g. manufacturers or importers of batteries;
- A collection target for waste portable batteries of 45% of average annual sales in the UK by 2016;
- A ban on the disposal of untreated automotive and industrial batteries in landfill or by incineration and a requirement for 'producers' to arrange for the collection and recycling of waste industrial and automotive batteries; and,
- Restrictions on the use of cadmium and mercury in the design and manufacture of new batteries.

The Directive is transposed through the UK-wide Batteries and Accumulators (Placing on the Market) Regulations 2008 which places obligations on producers, distributors and treatment facilities to meet the requirements of the Directive. For example, all producers manufacturing or incorporating over 1 tonne of portable batteries per annum must join a batteries compliance scheme and contribute proportionately to the cost of recycling and all distributors who supply more than 32kg of portable batteries must take back waste portable batteries at the point of sale.

Target: To achieve a collection rate of 45% of average annual sales in the UK of all waste portable batteries by 2016.

End of Life Vehicles (ELVs)

The End-of-Life Vehicles (ELV) Directive (2000/53/EC) aims to reduce the environmental impact of vehicles (cars and vans up to 3.5 tonnes) by introducing higher environmental standards for



the treatment and dismantling of vehicles when they are scrapped. The principal objectives of the Directive are an increase in the recycling of ELV's and their components and the improved environmental performance of all the economic operators involved in the life cycle of vehicles. The Directive was transposed by UK-wide Regulations in 2003.

The End-of-Life Vehicles Directive set an overall 85% re-use, recycling and recovery target from 2006, rising to 95% in 2015. For the 2015 target, energy recovery can contribute a maximum of 10% of the total. There has been significant investment in new technologies to recover increasing value from ELVs and, in particular, the treatment of automotive shredder residue (ASR). More capacity will be needed, however, to enable the 95% target to be met, with ASR likely to be a continuing focus.

Target: To achieve an overall re-use, recycling and recovery rate for end of life vehicles of 95% by 2015.

Review of Producer Responsibility Schemes

The various PR Regulations for each of the waste streams share a common financial obligation for producers to bear the costs of collecting, treating and recovering/recycling a proportion of their products to meet targets and minimum standards and have similar administrative processes such as producer registration, approvals of compliance schemes and the authorisation of treatment facilities. However, there are also significant differences between the regimes which has led to criticism, particularly from those businesses which have to comply with more than one set of Regulations.

The Department in conjunction with DEFRA, BIS and the other devolved administrations is reviewing the suite of producer responsibility legislation with the aim of developing more

coherent and consistent PR regimes capable of delivering more effective environmental outcomes and targets at least cost to business.

This review will tie-in with a 'fitness check' of certain EU PR legislation (including the Packaging and Packaging Waste Directive, Batteries and Accumulators Directive and End-of-Life Vehicles Directive) being carried out by the European Commission. In addition the Department will play an active role in the concurrent review of the Producer Responsibility Initiative Model in Ireland being led by DECLG with the aim of ensuring a higher degree of compatibility between PR regimes north and south and reduce the potential for illegal activity due to the existence of perverse incentives.

Action: The Department will consult on revised PR Regulations by September 2014.

Tyres

Used tyres represent a particular niche problem waste stream, both environmentally and logistically. The Department continues to work closely with DECLG, District Councils, the tyre manufacturing industry, the waste industry and other partners to tackle the issue of illegal activity and poor legal compliance. A Departmental Used Tyres Working Group was established in 2011 to identify the scale of the problem of used tyres in Northern Ireland and to draw up an action plan to tackle the problems associated with this waste stream. The action plan included the commissioning of a survey, on an all-island basis, to identify the scale of the problem and an examination of the regulatory and enforcement frameworks surrounding the used tyre industry.

The survey report, issued in March 2013, included recommendations to address the issues surrounding the mismanagement of used tyres. The Environment Committee to the Northern Ireland Assembly also commissioned a report into used tyres which set out specific recommendations. In addition a task group on used tyres, established by the Waste Programme Board, has provided a report. The findings and recommendations of these reports will inform the work of the Department in developing proposals in partnership with the waste management sector to address the policy, regulation and enforcement concerns.

Action: The Department will implement the proposals contained in the Used Tyres Action Plan.

3.3 Voluntary Agreements

The establishment and implementation of voluntary agreements is becoming increasingly important in ensuring best use of resources. The Courtauld Commitment, first launched in 2005, is aimed at improving resource efficiency and reducing the carbon and wider environmental impact of the grocery retail sector. It is delivered UK-wide through WRAP who work in partnership with leading retailers, brand owners, manufacturers and suppliers.

Phase 2 of the Commitment, which ran from 2010-2012, had three targets:

- To reduce the carbon impact of all grocery packaging by 10% through reduced packaging weight, increased recycling rates and increased recycled content;
- To reduce household food and drink waste by 4%; and,
- To reduce traditional grocery product and packaging waste in the grocery supply chain by 5%.

Interim results are encouraging in respect of meeting or exceeding these targets. A report on the full 3-year results of Phase 2 will be published in Autumn 2013.

Phase 3 of the agreement was launched in May 2013 and will run for 3 years from 2013 to 2015, with targets measured against a 2012 baseline. It places further emphasis on the reduction of weight and carbon impact of grocery product and packaging waste.

The targets for Phase 3 are:

- To reduce household food and drink waste by 5% by 2015 from a 2012 baseline. Taking into account external influences, this target represents a reduction of 9% relative to anticipated changes in food and drink sales;
- To reduce traditional grocery ingredient, product and packaging waste in the grocery supply chain by 3% by 2015, from a 2012 baseline. Taking into account external influences, this target represents a reduction of 8% relative to anticipated production and sales volumes; and,
- To improve packaging design through the supply chain to maximise recycled content as appropriate, improve recyclability and deliver product protection to reduce food waste, while ensuring there is no increase in the carbon impact of packaging by 2015, from a 2012

baseline. Taking into account external influences, this target represents a carbon reduction of 3% relative to anticipated sales volumes.

Target: To reduce household food and drink waste by 5% by 2015 from a 2012 baseline.

Target: To reduce traditional grocery ingredient, product and packaging waste in the grocery supply chain by 3% by 2015, from a 2012 baseline.

Target: To improve packaging design through the supply chain to maximise recycled content as appropriate, improve recyclability and deliver product protection to reduce food waste, while ensuring there is no increase in the carbon impact of packaging by 2015, from a 2012 baseline.

A voluntary agreement involving many of the leading companies from the UK Hospitality and Food sector was launched in June 2012. The agreement aims to cut food and associated packaging waste by 5% and to increase the overall rate of food and packaging waste that is being recycled, sent to AD or composted to 70% by the end of 2015. The voluntary agreement, which was developed with industry and all four UK governments, builds on WRAP's research and work already being undertaken by the sector to enhance its waste management strategies.

Target: To achieve a reduction in food and associated packaging waste by 5% and to increase the overall rate of such waste which is recycled, sent to AD or composted to 70% by 2015.



3.4 Municipal Waste Recycling

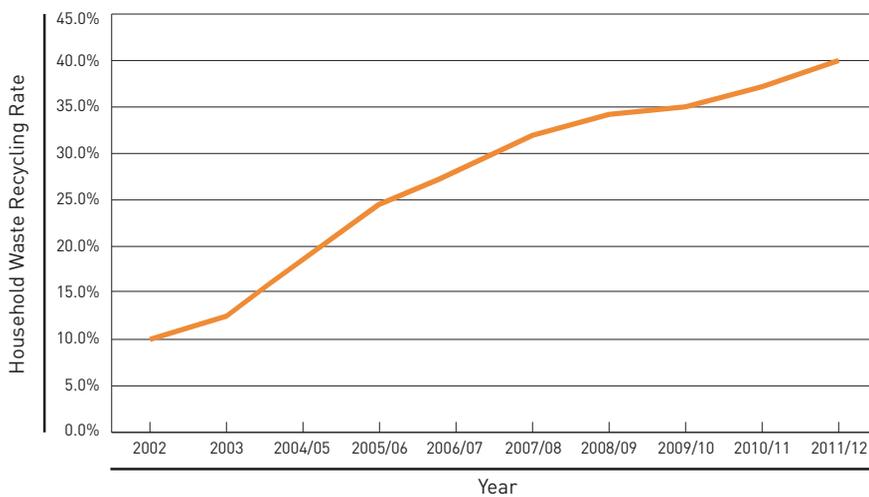
Progress to date

The 2006 Strategy contained a non-statutory target for recycling and composting of Household wastes of 35% by 2010. The figure below shows the trend for Household Waste Recycling since 2002. In particular there were large gains between 2002 and 2005/06 and slightly reduced gains in the years since then. In 2011/12, 39.7% of Household

waste was sent for recycling or composting, exceeding the 2006 Strategy target.

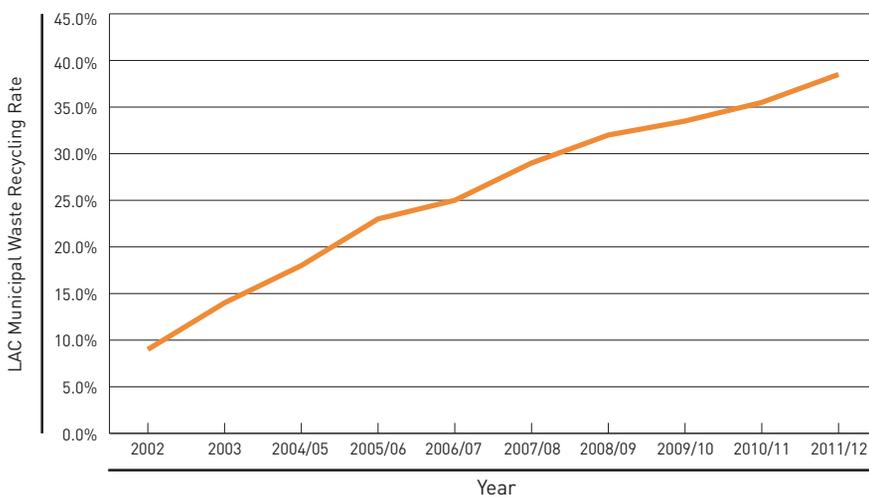
The trend for recycling of Local Authority Collected Municipal Waste (LACMW) is quite similar to that of Household waste, as indicated in the figure below. In 2011/12, 38.4% of all LACMW arisings were sent for recycling or composting. This figure has risen continuously since 2002, although the rate of increase has slowed somewhat in recent years compared with the large gains achieved between 2002 and 2005/06.

Household Waste Recycling Rate, 2002 -2011/12



(Graph supplied by Analytical Services Branch, DoE)

Local Authority Collected Municipal Waste Recycling Rate, 2002-2011/12



(Graph supplied by Analytical Services Branch, DoE)



Municipal waste recycling targets

The WFD sets a recycling target (incl. preparing for re-use) of 50% of Household waste by 2020. The Directive indicates that this target may also include waste from other origins which are similar to waste from households. This is a statutory target which must be met in order to comply with the WFD and avoid potential EU fines.

The NI Executive's Programme for Government (PfG) introduces an interim recycling target for Household waste of 45% by 2015.

However, following the outcome of a 2011 public consultation, the Department has proposed a 60% statutory recycling target for LACMW, to be achieved by 2020. This will require new primary legislation – with subsequent subordinate legislation providing the detail of the new arrangements. The Department has consulted on proposals for a new Bill which will give the Department power, exercisable through subordinate legislation, to set a statutory recycling rate. The consultation invited views on a range of issues including whom the target should apply to, the scope of the definition of 'recycling' and incentives, sanctions and penalties for the regime. The Department proposes to introduce a draft

Bill to the Assembly by 2014. It is anticipated that setting this more ambitious target will help ensure that the WFD target and the interim PfG target relating to Household waste are both met.

Through the Local Authority Support programme, delivered by WRAP, Councils will continue to be given technical support and advice in the provision of improved services to householders and local businesses on kerbside collection, home composting, communication tools, training and procurement.

Target: To achieve a recycling rate of 50% (including preparing for re-use) of Household waste by 2020.

Target: To achieve a recycling rate of 45% (including preparing for re-use) of Household waste by 2015.

Target: To achieve a recycling rate of 60% (including preparing for re-use) of LACMW by 2020.

Action: The Department will consult on legislative proposals to implement a LACMW recycling target of 60% to be achieved by 2020.

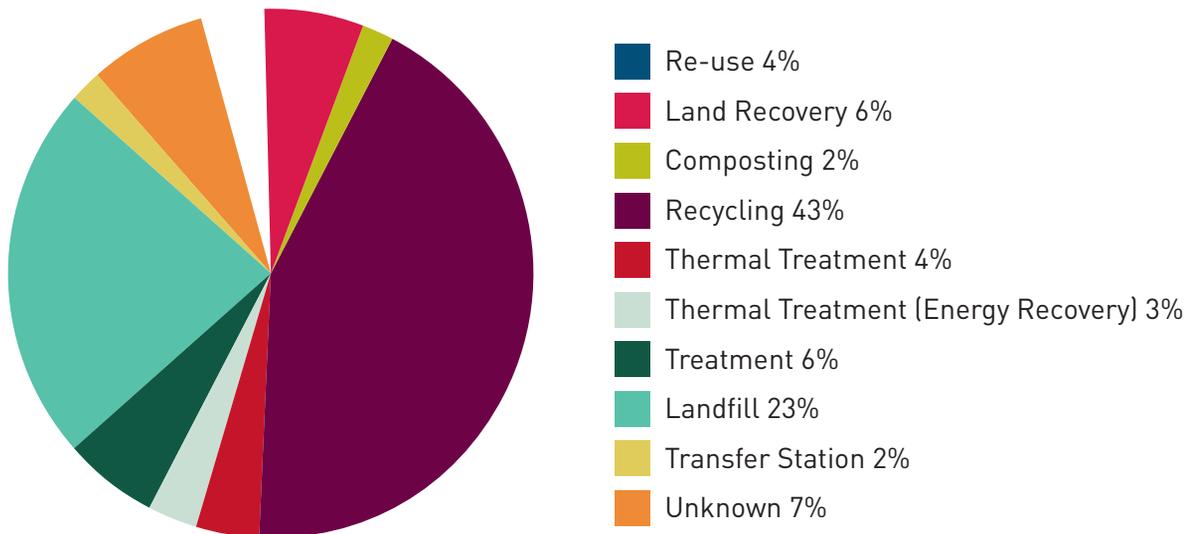
3.5 Commercial & Industrial Waste Recycling

Progress to date

The 2006 Strategy contained a non-statutory target of 60% of Commercial and Industrial (C&I) waste to be recycled by 2020. In the absence of mandatory reporting, surveys have been used to determine C&I waste arisings and levels of recycling. The latest Northern Ireland C&I survey⁵ published in 2011, which covered the year 2009, estimated that there was almost 1.3 million tonnes of C&I waste collected in Northern Ireland, 0.8 million tonnes of which was from the industrial sector and 0.5 million tonnes from the commercial sector. Of this 1.3 million tonnes, 70% was diverted from landfill. The figure below shows the destination of C&I waste arisings in 2009.

Significant benefits have been brought about in the C&I sectors through the promotion of Environmental Management Systems to support all business sectors. Furthermore, plans for the separate collection of recyclables from businesses and proposals to restrict separately collected food waste from food producers and retailers going to landfill will have a significant impact on diverting C&I waste away from landfill and moving it up the Waste Hierarchy. In addition, the launch of a number of quality protocols in Northern Ireland that specifically target certain C&I waste streams e.g. food and green waste, pulverised fuel ash and furnace bottom ash offer the potential to recycle these wastes.

Commercial and Industrial Waste Destination 2009



(Chart supplied by Analytical Services Branch, DoE)

⁵ Northern Ireland Commercial & Industrial (C&I) Waste Estimates, WRAP, November 2011

Monitoring and reporting

Currently, there is no statutory mechanism for collecting and reporting data on Commercial and Industrial (C&I) waste. Commercial waste which is collected by District Councils is monitored and reported through the WasteDataFlow system but there is no comparable system in respect of the C&I waste which is privately collected.

Waste surveys have, historically, been commissioned in order to determine information relating to C&I waste arisings and recycling figures which is required by the European Commission under the Waste Statistics Regulation (Regulation (EC) No 2150/2002) and in order to report against the 2006 Strategy target. However, waste surveys of this nature are generally subject to poor response rates and hence have a high level of uncertainty attached to their resultant estimates.

Waste operators, as part of their licence/permit conditions, are required to provide information on the waste that they handle but there is no specific statutory requirement on them to provide the level of detail through these returns which would be necessary to obtain accurate and comprehensive information on C&I waste arisings and recycling levels.

Given the lack of comprehensive or sufficiently robust data on C&I waste it is considered inappropriate, at this time, to set a recycling target specifically for C&I waste. This Strategy acknowledges, however, the increasing importance of managing waste in a more integrated way and the need to ensure that all resources are managed efficiently. The introduction of a statutory recycling target for C&I waste in the near future is therefore considered desirable. The European Commission has also indicated the possibility of proposing recycling targets for C&I waste by 2014.

In order to facilitate the setting of a statutory recycling target for C&I waste in the future and to improve the capacity to report on possible future EU targets, the Department intends to consult on proposals to introduce a statutory requirement on waste operators to provide specified data on C&I waste as a condition of their licence or permit.

Action: The Department will consult on proposals to introduce a statutory requirement on waste operators to provide specified data on C&I waste by December 2013.



3.6 Construction & Demolition Waste Recycling

Progress to date

The latest CD&E waste survey published in 2011⁶, which covered the 2009/10 financial year, estimated that there was just over 3.5 million tonnes of CD&E waste arisings in Northern Ireland. Only a certain proportion of CD&E waste arisings are subject to the revised Waste Framework Directive, i.e. non-hazardous CD&E waste excluding uncontaminated stones and soil, and this accounted for 1.2 million tonnes, of which 70% was diverted from landfill. The figure below shows the destination of CD&E waste arisings for the year 2009/10.

Construction & Demolition waste recycling targets

The WFD sets a recovery target (incl. preparing for re-use, recycling and other material recovery) of 70% for all non-hazardous Construction and Demolition waste by 2020.

The 2006 Strategy set an aspirational recycling and re-use target of 75% for CD&E waste by 2020. However, this target includes the re-use of excavated naturally occurring material which is not included in the WFD target.

It is therefore likely that the WFD target will be more challenging to achieve and, on that basis, will be the target aspired to in this Strategy.

Target: To achieve a recovery rate (including preparing for re-use, recycling and other material recovery) of 70% for all non-hazardous Construction and Demolition waste by 2020.

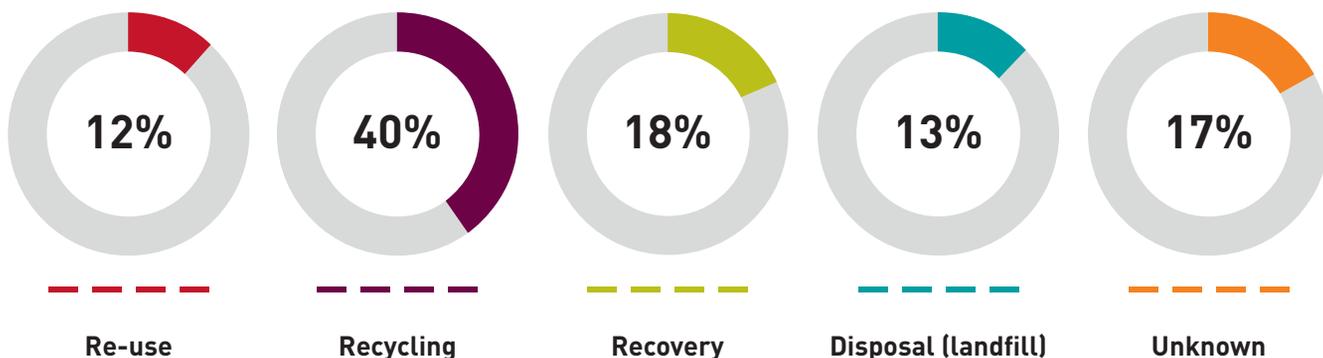
Much progress has been made under the Better Regulation work programme on setting voluntary standards for recycling and recovering certain well-managed wastes from the C&D sector. The introduction of quality protocols for certain materials e.g. gypsum, aggregates and flat glass enables these materials not only to be recycled but turned into quality products which no longer fall under the waste regulatory controls. Further development of 'C&D focussed' quality protocols is expected in the future.

Construction Resource Efficiency

The Halving Waste to Landfill Commitment was a voluntary agreement established in 2008. It was brokered by WRAP and it provided a framework through which industry could support and deliver against the industry target of halving waste to landfill by 2012. The Commitment completed at the end of 2012 and was successful in increasing awareness and in the diversion of waste from landfill, influencing over £42bn of construction contracts across the UK. The principles established through the Commitment continue to be a driver for resource efficiency in the sector.

To build on the success of Halving Waste to Landfill and the strong relationships with the sector resulting from this voluntary agreement, WRAP investigated options for driving forward resource efficiency within the Construction

Construction, Demolition and Excavation Waste destination 2009/10 (excluding uncontaminated soils and stones)



(Chart supplied by Analytical Services Branch, DoE)

⁶ Construction, demolition and excavation waste arisings, use and disposal in Northern Ireland 2009/10. WRAP, June 2011.

sector beyond 2012. In response to the need to move resource efficiency up the Waste Hierarchy, WRAP's focus has now moved away from waste management to a broader approach addressing resource efficiency to reduce resource consumption.

In relation to products this move will be twofold; reducing the quantity of products and materials used (for example, through improved design and procurement approaches) and encouraging the uptake of more resource efficient solutions.

Refurbishment will represent a larger proportion of the total construction market than has historically been the case, driven by both the current economic climate and the move towards refurbishing buildings in order to reduce their energy consumption during operation in line with the carbon reduction targets contained within the Climate Change Act. Consequently, refurbishment will be a key area of focus and the issues of reducing the waste produced and resource demands during refurbishment will be addressed.



Government leading by example

In order to contribute to meeting the 75% target for CD&E wastes contained in the 2006 Strategy, the Government Construction Clients' Group (GCCG)⁷ has, in its Sustainability Action Plan for 2012-15 set targets for reducing waste during construction and operation, including the following:

- Each Centre of Procurement Expertise (CoPE) has set a percentage waste to landfill reduction target for each year to achieve a 75% (or better) recycling or re-use of construction, demolition and excavation wastes by 2020;
- Government construction projects shall include a minimum of 10% by value of recycled content;
- Each CoPE shall sign up to the commitments of WRAP's Halving Waste to Landfill initiative;
- Government construction contractors and their supply chain to achieve a CEEQUAL or BREEAM rating of 'excellent' for all new build projects and a rating of 'very good' for all refurbishment projects.

CPD and the CoPEs will consult with industry representatives through the Construction Industry Forum for Northern Ireland (CIFNI) to develop proposals for environmental management systems (EMS) in construction procurement. The Construction Employers Federation (CEF), a member of CIFNI, has developed Nvir-O-Cert, which is designed specifically to help smaller construction firms to implement an accredited EMS.

⁷ GCCG comprises representatives from all NI government bodies involved in construction.

Section 4

Other Recovery

At present we cannot prevent, reuse or recycle all of our waste. However, some residual waste has value in the form of recoverable energy and other by-products such as soil conditioners. The Department supports efficient energy recovery from residual waste in accordance with the Waste Hierarchy which can deliver environmental benefits, reduce carbon impacts and provide economic opportunities.

Anaerobic digestion and other thermal treatment facilities provide energy from waste. Energy from waste can contribute to meeting NI's non-fossil fuel obligations and Government's policies on renewable energy, as well as helping NI meet its landfill diversion targets. In supporting efficient energy recovery the Department acknowledges that technology solutions include mechanical biological treatment (MBT) of waste which can produce a fuel (sometimes referred to as refuse derived fuel (RDF)) which may provide energy from waste through subsequent thermal treatment, for example, in a cement kiln, incinerator or gasifier.

The benefits of recovery include preventing some of the negative greenhouse gas impacts of waste

in landfill. Preventing these emissions offers a considerable climate change benefit, with the energy generated from the biodegradable fraction of this waste also offsetting fossil fuel power generation and contributing towards our renewable energy targets.

4.1 Waste Infrastructure

Background

The overarching aim of the Strategic Waste Infrastructure Programme has been to provide assurance of compliance at NI-wide level with EU landfill diversion targets for 2020. Its primary objective has been to support the development by the three Waste Management Groups on behalf of their constituent Councils of an integrated network of facilities for the recycling, recovery and disposal of waste within Northern Ireland to meet our statutory obligations and to ensure that these facilities are planned, designed and operated to provide a high level of protection for the environment and for public health.



Scope of the Programme

The Gateway Review carried out in October 2011 concluded, however, that the Programme was too focused on delivery of each of the three Waste Management Group projects and recommended adopting a more holistic approach to programme delivery.

An update of the Department's 2010 NI-wide analysis of landfill diversion requirements was commissioned in October 2011⁸ to inform the new holistic approach. It confirmed that, in light of changes across a number of areas, including waste arising, rates of recycling and available merchant capacity, provision of public sector treatment capacity of between 116,000 and 142,000tpa will be sufficient to enable NI to comply with its 2020 statutory landfill diversion obligations. The SWaMP2008 project was abandoned on foot of a legal challenge in 2012. The North West Region Waste Management Group has appointed a preferred bidder and is working towards contract close. Arc21 remains in dialogue with a bidder. Either of these residual waste treatment plants would be capable of providing this level of capacity on its own. The NI-wide analysis also acknowledges the additional benefits that the projects may generate by contributing to an increased recycling rate and compliance with any prospective landfill ban.

A revised Programme Plan which takes these factors into account has been adopted by the Department to drive delivery of the Programme aim. At project level, a series of revised milestones has been identified within project delivery plans and is the basis for the WMG's monitoring their overall progress towards the achievement of Programme milestones. In light of the Gateway advice that there was minimal room for further slippage, the two WMG projects will need to demonstrate how their local milestone deadlines continue to support Programme milestones and the delivery of the Waste Infrastructure Programme as a whole.

The role of the Waste Infrastructure Programme Board (WIPB) will be reviewed in the light of the last Gateway Review, the closure of the Executive's Strategic Waste Infrastructure Fund and the end of DOE financial support for the pre-procurement costs of the WMGs.

Action: Waste Management Groups will implement their plans in respect of residual waste infrastructure procurement.

Action: The role of the Waste Infrastructure Programme Board will be reviewed by the Department.

Export of waste

The UK Plan for Shipments of Waste sets out Government policy on shipments of waste for disposal to and from the United Kingdom. The principle of the UK Plan is to underpin the aim of self-sufficiency in the disposal of waste.

Under the UK Plan there is scope for residual waste which has undergone basic treatment (removing some recyclables, sorting and shredding) to be transferred between Northern Ireland and Ireland in either direction. There may, therefore, be some scope for facilities in Ireland to provide a commercially competitive interim solution to Councils' landfill diversion obligations, pending the introduction of appropriate locally-based facilities for addressing Northern Ireland's longer term needs. The Department has proposed a change to the Transfrontier Shipment (TFS) fees structure which should facilitate regular movements of pre-treated waste to Ireland.

There are no plans to alter the UK Plan to relax the current ban on shipment of untreated waste from Northern Ireland to any facility in Ireland or vice versa. The NIEA has published a Regulatory Position Statement⁹ on exports of treated residual municipal waste to the EU for energy recovery. The statement provides clarification on exports of mixed municipal waste and the need for treatment prior to exporting. The European Commission has indicated that they expect such waste to have undergone 'substantial' treatment and regulators across the UK are considering how this could be accommodated and reflected in further guidance to waste operators.

Action: The TFS fees structure in Northern Ireland will be amended through UK-wide legislation which will come into operation by the end of 2013.

Action: The Department will issue a revised Regulatory Position Statement by November 2013.

Supporting Energy policies

The plans for waste infrastructure in Northern Ireland need to be flexible enough to adapt to changing feedstock over time. As more waste is recycled we need to understand how to adapt to recover the best value from what is left, while delivering the best environmental

⁸ Analysis of 2020 Residual Waste Infrastructure Requirements in Northern Ireland, DOE/SIB, March 2012

⁹ http://www.doeni.gov.uk/niea/position_on_rdf.pdf



outcomes. Innovation and the appropriate use of new technologies need to be encouraged where they provide that flexibility. Given the proposed introduction of a ban on the landfilling of separately collected food waste there is scope for the development of alternative technologies including anaerobic digestion (AD) and in-vessel composting (IVC) to complement these changed circumstances in the future.

Support for Anaerobic digestion and In-vessel composting

The development of AD facilities is eligible for financial support under the Renewable Heat Incentive and Northern Ireland Renewables Obligation (NIRO). Since 2005, the NIRO has been successful in stimulating increased levels of renewable electricity. Under the system, AD operators are eligible for 4 Renewable Obligation Certificates (ROCs) per MWh for installations up to 500kW capacity and 3 ROCs per MWh for installations between 500kW and 5MW capacity. Installations over 5MW capacity are eligible for 2 ROCs per MWh, reducing to 1.9 ROCs for stations accrediting in 2015/16 and 1.8 ROCs for stations accrediting in 2016/17. A review is currently underway which will consider if ROC levels for stations up to 5MW capacity should be amended in 2015 to take account of changes to technology costs since the enhanced ROC levels were introduced in 2011.

In November 2012, DETI launched the Northern Ireland Renewable Heat Incentive (RHI) which provides long term financial support for those generating heat from a range of renewable

technologies. The Northern Ireland RHI tariff for bio-methane production and biogas combustion under 200kWth (including from AD) is currently 3.1p per kWh and will be available for the lifetime of the technology, to a maximum of 20 years. AD systems accredited under the NIRO are however not eligible to avail of the RHI as well.

DARD have provided funding to the agricultural sector through the Anaerobic Digestion/Biomass Processing Challenge Fund. The Fund supports farm scale anaerobic digestion and combined heat and power facilities fuelled by biomass by providing a grant of up to 40% of capital and installation costs to a maximum of £400,000.

The Department will continue to maintain close liaison with DARD on issues relating to agricultural waste infrastructure and with NI Water in relation to the disposal of sewage sludge, so that any opportunities for utilising feedstock from the municipal waste stream in AD or IVC facilities can be exploited.

Waste Management Plans

On behalf of their constituent Councils, the three WMGs will review and revise their WMPs by December 2013. Thereafter, formal reviews will take place at intervals of no more than six years. The revisions will address the detailed facilities and locations for the management of municipal waste and will include a specific provision for the management of all waste streams.

Action: Waste Management Groups will review and revise their Waste Management Plans by December 2013.

4.2 Planning Considerations

Planning Policy and Waste Management

Planning Policy Statement 11 'Planning and Waste Management' (PPS11) was published in 2002 and sets out the Department's policies for the development of waste management facilities. It seeks to provide the highest environmental standards in development proposals for waste management facilities and explains the relationship between the planning system and those authorities responsible for the regulation and management of waste.

Since publication of the 2006 Waste Strategy a major programme of planning reform has been advanced. This includes the introduction of a number of interventions aimed at improving planning performance in the short and longer term. For example, in relation to the time taken to process planning applications the use of pre-application discussions seeks to ensure that all relevant information is included when formal applications are submitted.

Removal of the requirement for BPEO

The Best Practicable Environmental Option (BPEO) is included in PPS11 as a key principle in pursuing greater sustainability in waste management. Proposals for Waste Collection and Treatment Facilities (Policy WM2); Waste Disposal (Policy WM3) and Land Improvement (Policy WM4) are therefore currently required to demonstrate BPEO.

However, the Department considers that the statutory Strategic Environmental Assessment (SEA) required to be undertaken by the three Waste Management Groups as part of preparing their Waste Management Plans duplicates the BPEO process and intends to remove the link with BPEO for plans and waste proposals. This is in common with the approach in other UK administrations. The Department proposes therefore to clarify the implications for planning in 2013 to coincide with the publication of this Strategy.

The SEA Directive (2001/42/EC) was transposed into NI legislation through the Environmental Assessment of Plans and Programmes Regulations (NI) 2004. It applies to a range of public plans and programmes at national, regional or local level. The Directive requires the preparation of a report that identifies and evaluates the likely significant effects on

the environment of implementing a plan or programme. The report will also include the measures that will prevent, reduce and as far as possible offset the identified adverse effects.

Although it is proposed to remove BPEO for plans and waste proposals, the concept remains one of a number of non-statutory tools that Waste Management Groups may choose to use to assess different waste management options in the development of their regional plans.

Applications for planning permission for waste facilities in NI will be assessed on their merits having regard to the existing policy framework including this Strategy, the Regional Development Strategy, Planning Policy Statements, the local development plan and all other material planning considerations.

Action: The Department (Planning and Local Government Group) will clarify the updated position on the removal of BPEO for waste proposals going through the planning process on its website and through advice to planning staff by the end of 2013.

Review of Planning Policy

The Department is committed to undertaking a comprehensive consolidation and review of existing planning policy in order to bring forward a single regional planning policy statement which will be needed in advance of the transfer of planning powers to Councils in 2015.

Existing planning policies are currently detailed and operational in nature. However, in preparing for the introduction of the new two-tier planning system it is intended that the new consolidated planning policy document will be simpler, shorter and much more strategic in focus.

Officials are at the early stage of scoping the document. As part of this scoping, consideration is being given to the range of subject policies to be included in the document; the appropriate level of detail; how it will fit into the reformed planning system and any necessary transitional arrangements.

Action: The Department aims to consolidate and review existing planning policy and consult on proposals for a single regional planning policy statement by the end of 2013.

Section 5

Disposal

Reducing the amount of waste that goes to landfill has been the main priority of successive waste strategies. We still rely too heavily on landfilling waste – not only is this an inefficient use of resources but it contributes to climate change and is unsustainable.

The diversion of waste from landfill, particularly those materials that can be recycled through closed loop processes and biodegradable wastes, will result in significant reductions in carbon impact. Landfilling of biodegradable material leads to the generation of Methane (CH_4), a Greenhouse Gas that is around 25 times more potent than Carbon Dioxide (CO_2). The latest Northern Ireland Greenhouse Gas Inventory

1990-2011 (published in June 2013) states that the waste sector contributed 454kt CO_2e .

5.1 EU Landfill Diversion Targets

The EU Landfill Directive has set targets for the reduction of biodegradable municipal waste (BMW) going to landfill to 50% of 1995 production levels by 2013 and 35% of 1995 production levels by 2020. Based on the revised definition of municipal waste this means that in Northern Ireland no more than 612,000 tonnes of BMW must be landfilled by 2013 and no more than 429,000 tonnes of BMW by 2020.

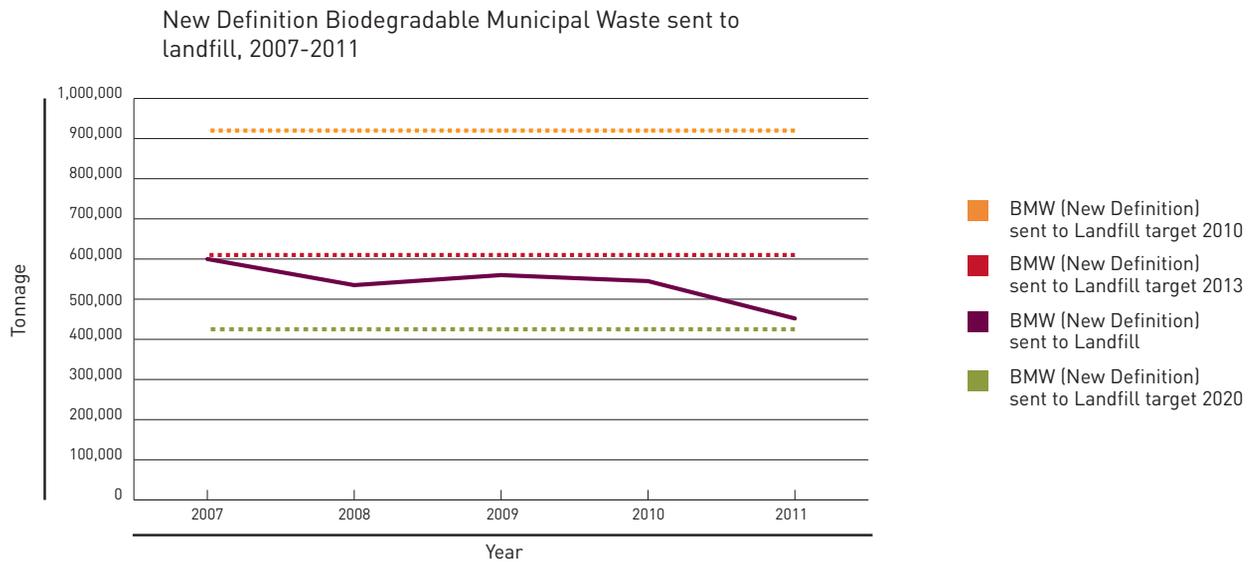


Progress to date

Information on the amount of municipal waste (under the revised definition) has only been available since 2007, as indicated in the figure below. In 2010/11 a total of 526,770 tonnes of BMW was sent to landfill and, while the 2013 target has already been met, more needs to be done to ensure that the 2020 target is achieved.

Future EU policy is set to underpin the Waste Hierarchy through a revision of the Landfill Directive and the stated intention of the European Commission to consider bringing forward proposals to introduce a ban on all biodegradable waste being sent to landfill by 2025.

Target: To landfill no more than 429,000 tonnes of BMW by 2020.



(Graph supplied by Analytical Services Branch, DoE)



5.2 Northern Ireland Landfill Allowances Scheme (NILAS)

This Strategy emphasises the need to reduce dependency on landfilling across all waste streams. However, a significant proportion of municipal waste is collected by District Councils in Northern Ireland and this has historically and will continue to be a focus of landfill diversion. The Northern Ireland Landfill Allowances Scheme (NILAS), introduced in 2005, sets the maximum amount of BMW which can be landfilled by Councils i.e. biodegradable Local Authority Collected Municipal Waste (biodegradable LACMW) annually up to 2020. The scheme has proven to be highly effective in driving actions by Councils in promoting recycling, re-use and in diverting biodegradable LACMW from landfill and has also acted as a catalyst in the development of proposals for waste treatment facilities through co-operation between Councils.

Progress to date

In each year since 2005/06, the amount of

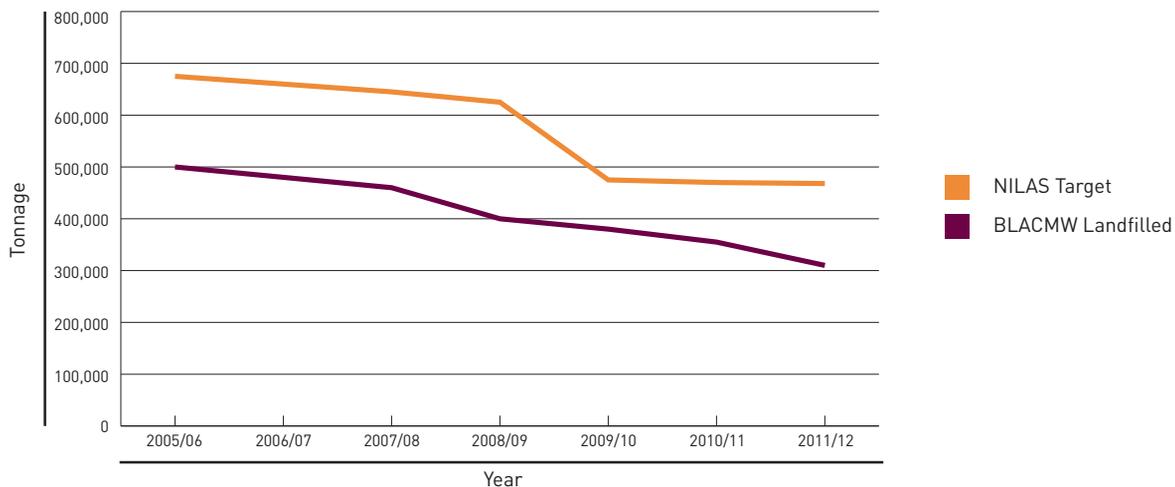
biodegradable LACMW landfilled has been below the NILAS target amount for that particular year, as indicated in the figure below.

NILAS was reviewed in 2009 and it was concluded that the scheme continued to play an important role in landfill diversion for the foreseeable future. The Department proposes to conduct a further review of the scheme after legislation has been put in place to implement proposals on a statutory target for LACMW recycling and on a landfill restriction on food waste to ascertain whether it continues to be a necessary and appropriate mechanism to divert waste from landfill. There are, however, other significant financial, legislative and environmental factors which will increasingly drive diversion from landfill as we move forward.

Target: To landfill no more than 220,000 tonnes of biodegradable LACMW by 2020.

Action: The Department will review NILAS after legislation has been put in place in respect of the statutory target for LACMW recycling and on a landfill restriction on food waste.

Biodegradable LA Collected Municipal Waste sent to Landfill
2005/06 – 2011/12



(Graph supplied by Analytical Services Branch, DoE)

5.3 Supporting Policies

Landfill Tax

Landfill Tax was introduced in 1996 and is payable by landfill site operators who may pass on the cost by way of increased charges to those disposing of waste at their sites. The standard rate for 2013/14 is £72 per tonne for active wastes and this is set to increase to £80 per tonne in 2014/15. It has become the primary fiscal lever to drive down the landfilling of waste.

Landfill Tax is currently administered by HM Revenue and Customs on behalf of the Treasury (HMT). The Department will explore with DFP the potential to argue for Landfill Tax to be devolved, whereby the NI Executive would have the power to set a rate of Landfill Tax appropriate to local circumstances and should provide a more transparent link between the revenues raised and the funding of environmental projects.

Action: The Department will submit a business case to DFP on the potential for Landfill Tax to be devolved by September 2014.

Landfill Restrictions

The EU Landfill Directive sets out criteria which control the types of wastes accepted at landfill primarily to protect the environment and human health. As a result, certain wastes such as tyres, gypsum waste, liquid waste and infectious clinical

wastes are not permitted in landfill.

There are, though, wider benefits in terms of resource efficiency and carbon impact in restricting certain other wastes from landfill. Research, commissioned by government administrations across the UK, was carried out through WRAP in 2009/10 on the feasibility and practicalities of introducing landfill bans and restrictions. Their report¹⁰, issued in March 2010, concluded that the greatest net benefits would derive from restricting paper/card, food waste, green waste, metals, textiles, wood and glass in that order. Greater benefits were derived when upstream segregation was carried out. Appropriate lead in times were found to be critical to effective implementation and to derive maximum outcomes particularly given the need to develop appropriate infrastructure. Based on this research, the Department consulted in June 2010 on proposals for restricting the landfilling of certain biodegradable and recyclable wastes. It considered whether the introduction of such restrictions would make an effective contribution to meeting the key objectives of increasing resource efficiency and reducing greenhouse gas emissions. An updated version of the report was published in November 2012¹¹ and reflected changes to the modelling, and additional analysis.

The EU Resource Efficiency Roadmap highlights the significant impact of the food and drink value chain in the EU, causing 17% of the direct GHG emissions and accounting for 28% of material



¹⁰ Landfill Bans: Feasibility Research by WRAP/Eunomia, March 2010 ¹¹ Landfill Bans: Feasibility Research by WRAP/Eunomia, November 2012

resource use. On this basis the Roadmap contains a milestone of halving the disposal of edible food waste by 2020. A waste compositional analysis for NI carried out in 2008 estimated that 25.6% of all kerbside collected waste per household is organic catering (food) waste, equivalent to 206kt per annum. Reduced food waste can contribute to improving resource efficiency and food security at a global level, and would contribute to a reduction in GHG emissions resulting from their disposal in landfill.

Following these considerations, the Department will consult on legislation which will give effect to a restriction on landfilling food waste. It is proposed to introduce an obligation on District Councils to provide receptacles for the separate collection of food waste from households; a requirement on all food waste producers to source segregate food waste and a ban on separately collected food waste being landfilled.

The Department will continue to review the potential to introduce further landfill restrictions over time in light of additional research and evidence and in line with the direction of future EU policy.

Action: The Department will consult on legislative proposals to introduce a restriction on landfilling food waste by September 2013.

Capturing methane at landfill sites

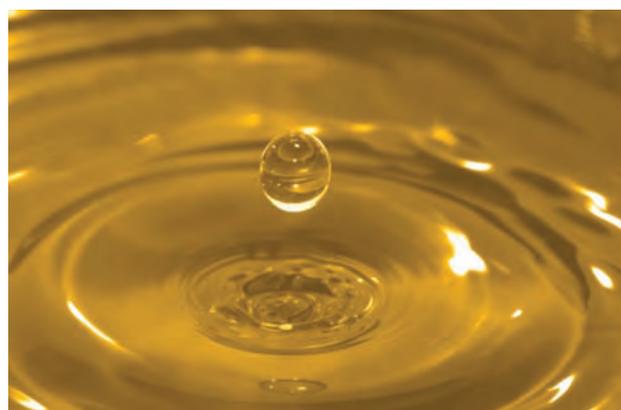
The Landfill Directive introduced the requirement to collect landfill gas (LFG) from all landfills receiving biodegradable waste which must then be treated and used. If the collected gas cannot be used to produce energy, it must be flared. LFG is comprised mainly of Methane and Carbon Dioxide. While both are greenhouse gases, the global warming potential of Methane is around 20 times that of CO₂ and flaring is considered an acceptable means of reducing the global impact of LFG emissions where it cannot be used to generate energy.

Modern engineered landfill sites are designed to capture and utilise LFG through active and passive collection systems. Utilisation of LFG is roughly divided into electricity generation, with a link to the nearest distribution 'grid', or 'direct' use. The latter is primarily for outlets within close proximity to the site including combined heat and power systems for commercial premises. In the case of smaller landfills with much less gas producing potential, there is the option of

micro-generation using micro-turbines to provide electricity for use in-situ. Gas capture and flares or engines have been installed at 17 landfill sites in Northern Ireland, with engines to be installed at 3 further landfill sites in the current year. The total representative gas flow is 9,344 m³/hr, and around 61% of this is utilised by gas engines at 3 operational sites and 3 closed sites¹².

Hazardous Waste

Hazardous waste comes from a wide range of sources including households, businesses of all types and public services, such as the Health Service, schools and universities. Although Northern Ireland does not have any specialised hazardous waste disposal sites per se, the management of certain hazardous wastes, for example hazardous wastes that are generated from households, does take place here. Whilst the treatment/recovery of some hazardous wastes, waste oil in particular, does take place in Northern Ireland, other hazardous wastes, such as those produced by industry, are for the most part shipped to Britain for disposal. Shipments of hazardous waste between Northern Ireland and Ireland for specified disposal operations are allowed provided they are in accordance with EC Regulation No. 1013/2006 on Shipments of Waste and the UK Plan for Shipments of Waste.



Because there are no specialised hazardous waste disposal sites in Northern Ireland the production of a full-scale Hazardous Waste Strategy is not required. However, the Department will develop a Hazardous Waste Policy Statement which will consider the existing Statement of Facility Needs for Hazardous Waste in Northern Ireland and provide advice to those who transport, store or handle hazardous waste on how these activities should be carried out.

Action: The Department will issue a Hazardous Waste Policy Statement by December 2013.

¹² Information provided by Land & Resource Management branch NIEA

Section 6

Better Regulation and Enforcement

6.1 Better Regulation

In 2008 NIEA began an ambitious programme of Better Regulation designed to modernise the environmental regulatory framework, simplify guidance and better target its enforcement activities and, in doing so, improving how it tackles those who do not comply with the law and undermine legitimate businesses.

In 2008, NIEA's *Better Regulation for a Better Environment*¹³ set the framework for the Better Regulation Programme which is focused around the four key areas of:

- Compliance Assistance
- Compliance Assessment
- Streamlined Permitting
- Better Enforcement

Risk-based Regulation

The Better Regulation Programme has also made significant progress in developing a risk-based approach to regulation. In the context of this Strategy this means that the five principles of "good regulation" are applied in managing all waste materials, i.e. that all regulatory activities and actions should be:

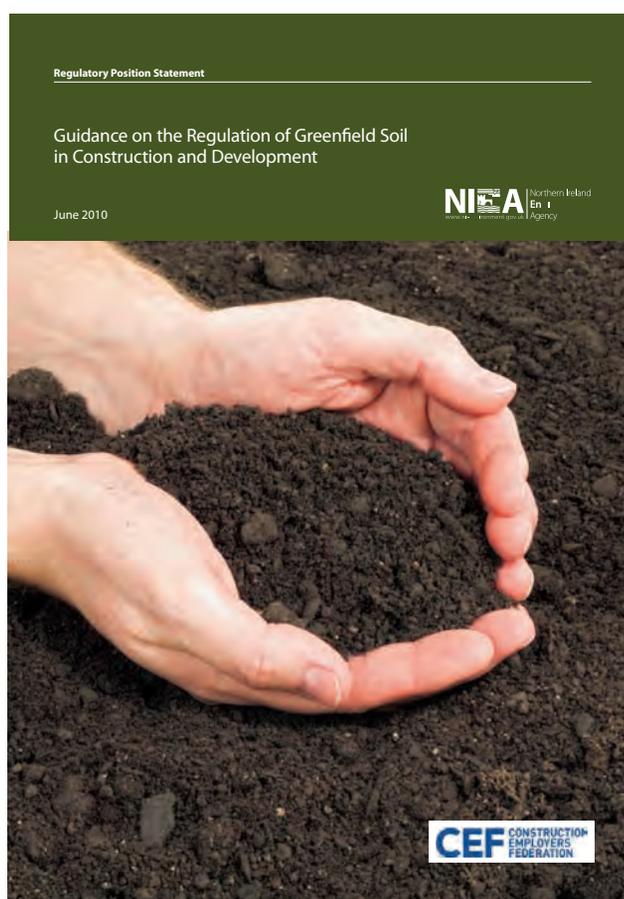
- Proportionate
- Accountable
- Consistent
- Transparent
- Targeted

The aim of this risk-based approach to regulation is to ensure that regulatory activities are streamlined and focused appropriately where they need to, thereby reducing the burden on business. NIEA have rolled out a risk assessment model to provide greater consistency across regulatory regimes.

Simplified Advice and Guidance

The often complex nature of waste regulation can make it difficult for businesses to comply. The benefit of having clear and concise guidance is palpable; for both the regulated and the regulator.

NetRegs¹⁴ is a partnership between NIEA and the Scottish Environmental Protection Agency (SEPA). It provides free online advice for businesses covering all environmental topics. The environmental advice provided is kept up to date and accurate and, importantly, can be viewed according to business sector. Complementary advice is available on the NI business information website¹⁵.



¹³ http://www.doeni.gov.uk/niea/ehs_better_regulation_programme_-_web_version.pdf ¹⁴ www.netregs.org.uk/ ¹⁵ www.nibusinessinfo.co.uk/

This partnership approach to producing sector specific guidance also extends to the work being carried out between NIEA and industry, to provide guidance on specific topics for mutual benefit of business and the environment e.g. the "Sustainable Use of Greenfield Soil in Construction and Development"¹⁶ and "Guidance on the Production of Fully Recovered Asphalt Road Planings"¹⁷.

Environmental Better Regulation legislative proposals

In 2011 the Department published an Environmental Better Regulation White Paper which outlined a range of proposals to reduce regulatory burdens and sought views from interested parties on those proposals. The feedback supported the 'general direction of travel' as envisaged by the White Paper.

In May 2013 the Department issued a consultation which was set within the context of the Department's programme for a 21st century transformation of environmental regulation in Northern Ireland and built on the responses received to the Environmental Better Regulation White Paper. The consultation focused on proposals for new primary legislation as the first phase of an ambitious programme of regulatory reform.

The proposals will make it easier for businesses and regulators to understand compliance requirements and aim to find less burdensome ways to regulate whilst retaining the focus on maximising environmental outcomes and facilitating economic growth. The measures proposed include firstly, creating a simpler more integrated environmental permitting regime by combining the current array of environmental permits into a single permit for each site. Secondly, to simplify the powers of entry and associated powers currently available to authorised officers in the Northern Ireland Environment Agency and District Councils who carry out environmental inspection and investigation.

Action: The Department intends to bring forward an Environmental Better Regulation Bill during the 2013/14 Assembly session. Further consultation exercises will be required prior to the introduction of any new legislation.

The following key projects and milestones have been completed under the Better Regulation Programme:

- Creation of an NIEA-wide Environmental Crime Unit (December 2008);
- Evaluation of the effectiveness of Environmental Management Systems as a measure of environmental compliance and performance (Jan 2009);
- DARD/DOE Better Regulation and Simplification Review (March 2009);
- Development of a risk assessment methodology for environmental regulations (March 2009);
- Publication of six Waste Quality Protocols and regulatory position statements for waste greenfield soils (between 2010 and 2011);
- Publication of the revised NIEA Enforcement Policy (Jan 2011);
- Conducting sector-specific and regulation-specific business seminars (2009 and 2012);
- Development of a system for online licence and permit applications (May 2012).

¹⁶ http://www.doeni.gov.uk/niea/index/about-niea/better_regulation/niea_soil_guidance.html

¹⁷ http://www.doeni.gov.uk/niea/a4_road_planning_info_guidance-2.pdf

6.2 Enforcement

In adopting the principles of Better Regulation and taking a risk-based approach to how we regulate waste activities, a certain degree of responsibility is being placed upon the waste industry to do the right thing. When the regulator takes a step back from the lower risk activities, allowing businesses to “get on with job”, it is essential that unscrupulous operators do not undercut legitimate businesses and that the regulator has an effective suite of penalties and sanctions to be able to take swift and appropriate action. At the other end of the spectrum, serious criminality involving waste management has far reaching implications for the environment and human health; for the health of the legitimate waste industry; the economy and on Northern Ireland’s susceptibility to incurring hefty EU infraction fines.

A number of specific work strands are being taken forward to ensure that the mechanisms are in place to tackle the various levels of illegal activity. The NIEA published a revised Enforcement Policy in January 2011. The revised policy provides guidance on the appropriateness of taking prosecution proceedings and how financial benefit is taken into account when considering appropriate enforcement action.

Tackling organised environmental crime

A significant amount of illegal activity in the waste sector over the past decade has involved organised crime. Activities such as large scale illegal dumping, fuel laundering and metal theft must be tackled through concerted multi-agency action. To complement this approach, an Environmental Crime Unit was established in the NIEA in December 2008 to provide additional expertise in criminal and financial investigations. The NIEA have developed a strategic partnership with the PSNI covering all environmental crime involving the exchange of information and joint working where appropriate. The NIEA also take an active role in the Cross-Border Fuel Fraud Group under the auspices of the multi-agency Organised Crime Task Force (OCTF) to tackle the issue of waste residue resulting from illegal fuel laundering. NIEA Environmental Crime Unit also are active members of the OCTF Criminal Finances group which furthers the use of Proceeds of Crime legislation in Northern Ireland. To assist the work of NIEA and law enforcement agencies, the Department has introduced enhanced powers in relation to stopping and searching vehicles as well as enabling authorised officers to immediately

seize and retain vehicles, plant etc, where it is suspected that environmental crime has taken, or is about to take, place.

Action: The Department will bring the Controlled Waste (Seizure of Property) Regulations (Northern Ireland) into operation by April 2014.

The Department is committed to taking action to tackle serious environmental crime, backed by resources. Following the detection of large scale illegal landfilling in 2013, NIEA took decisive action against a waste operator as part of ‘Operation Sycamore’. An expert review has been commissioned to consider the regulatory and related issues associated with this incident and the lessons that can be drawn for the future development and administration of waste management, resource efficiency and enforcement programmes.

The expert review, led by Chris Mills, former Director of the Environment Agency in Wales, is expected to be completed by November 2013.

Action: The Department will implement an Action Plan to tackle serious environmental crime informed by the recommendations of the expert review.

The Department has worked closely with DECLG in dealing with the consequences of the large scale illegal landfilling of waste from Ireland which occurred in the early part of the last decade. A Road Map for tackling these illegal waste movements was agreed in 2007 between both jurisdictions and this has resulted in a programme of work, agreed by the authorities North and South, to remove the illegal waste from Northern Ireland. Evidence obtained at initial investigation stage and during the removal of the waste has been passed to the relevant authorities to facilitate prosecutions.

Action: The Department, in partnership with key stakeholders, will implement a programme of action to repatriate illegally landfilled waste originating from Ireland.

Fly-tipping

The illegal deposit of waste on land, often referred to as ‘fly-tipping’, is being tackled through partnership working between NIEA and Councils. The Waste and Contaminated Land (Amendment) Act (NI) 2011 made provision for District Councils to take enforcement action under Articles 4 and 5

of the 1997 Order, although these have not been commenced. However, a pilot study to develop operational arrangements on fly-tipping was launched in June 2012 and 19 District Councils signed up for the study which is governed by an agreement between NIEA and each participant Council.

The purpose of the pilot study is to further develop the partnership approach, increase the Agency's clean up experience, and collect data to inform a future review of the Fly-tipping Framework. Under the conditions of the study, NIEA will be responsible for waste deposits of more than 20m³ of non-hazardous waste, with Councils responsible for amounts below this threshold. In the case of hazardous waste the division of responsibility is based on waste type. The results of the pilot study will be assessed to inform the way forward.

Clean Neighbourhoods

The Clean Neighbourhoods and Environment Act (Northern Ireland) 2011 came into effect on 1 April 2012 and contains a range of legislative measures to improve the quality of the local environment by giving Councils additional powers to deal with litter, fly-posting and graffiti, dogs, noise, statutory nuisance, nuisance alleyways, abandoned and nuisance vehicles and abandoned shopping trolleys.

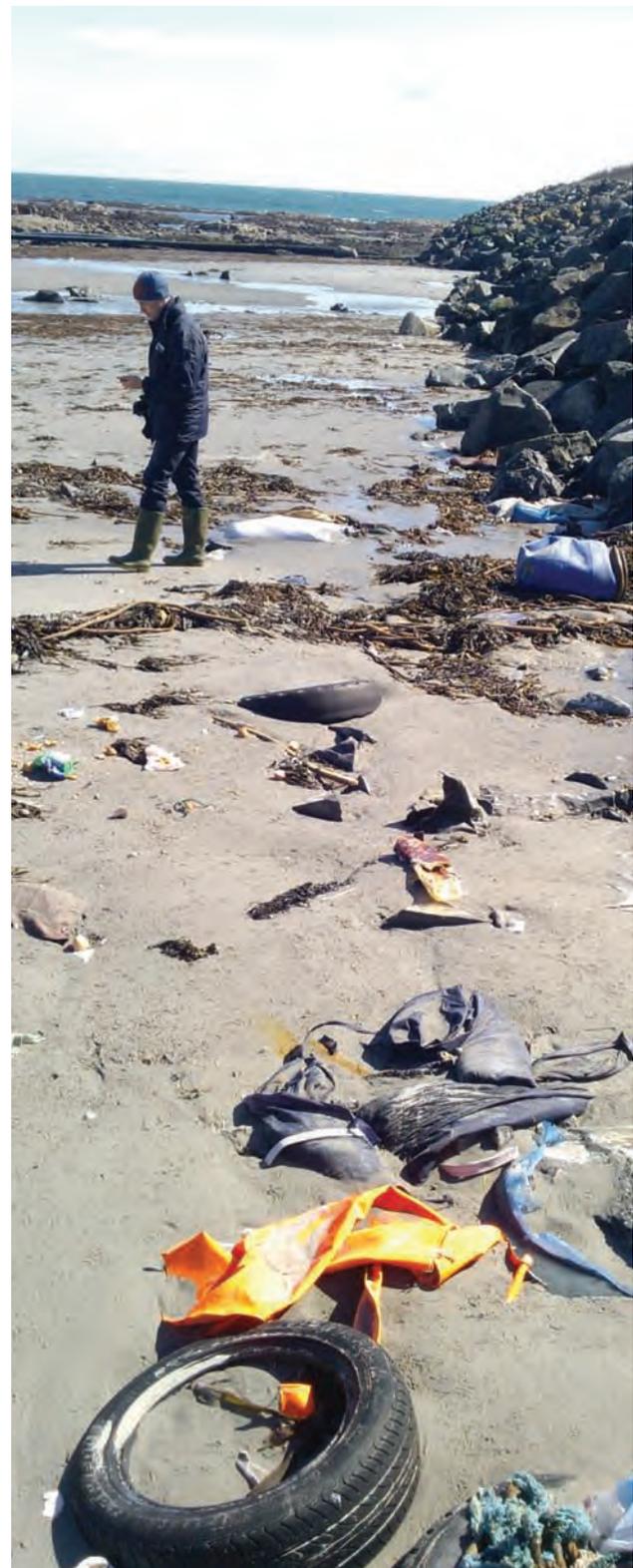
Marine litter

Marine litter is a global problem which can be a threat to ecosystems, has socio-economic costs and can also pose a risk to human health. The Department published a Marine Litter Strategy¹⁸ in July 2013 which aims to address the levels of marine litter present on our coast. The Strategy seeks to build on the strengths of existing measures, identify proposals that will help overcome weaknesses, and maximise opportunities and minimise threats to addressing the levels of litter present in the coastal and marine environment.

The Strategy underpins developments in marine legislation such as the Marine and Coastal Access Act 2009; the Marine Policy Statement, which was adopted in 2011 and the Northern Ireland Marine Bill, which was introduced in 2012.

The Strategy has two proposed strategic goals:

- reducing the levels of additional litter entering the marine environment; and,
- the removal of litter which is currently present on the coast in order to meet the objective of an overall reduction in the number of visible litter items within specific categories/types on coastlines from 2010 levels by 2020.



¹⁸ http://www.doeni.gov.uk/ni_marine_litter_strategy.pdf

Section 7

Communication and Education



Rethink Waste campaign

The Rethink Waste campaign, launched in March 2010, seeks to effect a cultural shift towards waste prevention and resource efficiency and improved environmental quality in Northern Ireland. It also aims to raise awareness of the simple steps that people can take to reduce the amount of waste sent to landfill and improve our environment for future generations. The campaign has activities and elements to promote the brand and the 3 "Rs" (Reduce, Reuse, Recycle), and includes opportunities to reach members of the target audiences, including businesses, community and voluntary sector, local communities and the education sector.

Effective behavioural change towards waste prevention and reinforcement of recycling behaviour will ultimately result in a cost saving in reducing the need for extra infrastructure and collection facilities as well as reducing the risk of EU fines. This level of behavioural change and action requires a concerted strategic effort. A Communications Action Plan that includes public relations activity, advertising and opportunities for key stakeholders to get involved has been devised and will run until late 2013. The following initiatives have been taken forward as part of this Action Plan:

Cookery demonstrations

'Love Food, Hate Waste' cookery demonstrations were started in November 2010 aimed at engaging with the public and helping them to reduce food waste. The demonstration package offered the opportunity for partnership working with Councils and has been widely covered in local media.

Composting demonstrations

These demonstrations are incorporated in local Council-led events throughout the year. The composting demonstrations assist in promoting home composting and thus diverting organic waste from landfill. They include a visual display of household items suitable for composting, information on how to get started, details of what not to compost and an interactive session.

Big Spring Clean

During 2011 and 2012 the Department partnered with TIDY NI for the Big Spring Clean. Although the primary message of this event relates to litter, previous Big Spring Cleans highlighted the proportion of litter collected that could have been recycled. With sponsorship from Rethink Waste the message has been broadened to recycle any waste produced.

Educational tools

Waste education links into a wide range of curriculum subjects and areas; in particular

maths (waste audits and statistics), science (the study of different materials for recycling), English (discussion of waste issues and debate) and art (posters and craft work with 'waste' materials). The Rethink Waste website contains a number of educational resources such as factsheets, ideas for teachers and activity books.

Eco-schools

Part funded by the Department, and administered by TIDY NI, the aim of Eco-schools is to make environmental awareness and action an intrinsic part of the life and ethos of the school, both for staff and pupils. Over 750 schools in Northern Ireland are registered. Eco-schools in Northern Ireland have been working closely with the Department on a Rethink Waste project and this has resulted in the launch of new teacher information sheets and classroom activities for key stage 1, 2 and 3.

Two websites have been established: the main site, rethinkwasteni.org, and a dedicated food

waste prevention site, lovefoodhatewasteni.org. Traffic to both sites has been steadily increasing and each contains practical hints and tips on waste prevention.

A Rethink Waste advertising campaign commenced in January 2011 to raise awareness and understanding of waste prevention and recycling issues and give the audience tangible, practical tips for action in support of being responsible and playing their part in cutting down the amount of waste we produce.

Although the Department will retain strategic oversight of education and communication, it will consider the most appropriate way of delivering future campaigns and communication plans from the autumn of 2013.

Action: The Department will secure funding to sustain waste prevention and recycling communications post 2013 by April 2014.



Section 8

Delivery and Governance



Successful delivery of the aims, actions and targets set out in this Strategy requires the support, commitment and engagement of all the people of Northern Ireland. While leadership from Government is essential to ensure that the pace of change is maintained, it will be vital for the key stakeholders from all sectors, government and non-governmental to play their part through effective partnership working. A key aspect of delivery will be through the development of Waste Management Plans by the three regional District Council Waste Management Groups.

Existing Governance Model

The 2006 Strategy recognised the need to have a means of measuring and monitoring

progress in its implementation and this led to the establishment of a non-statutory advisory committee, the Strategic Waste Board (SWB), chaired by the Minister to oversee a strategy delivery programme.

In February 2010 Departmental officials, in conjunction with NILGA colleagues reviewed the existing arrangements for strategy delivery on the basis of a partnership approach between central and local government. As a result the current Waste Programme Board (WPB) was established combining the remits of the former SWB and Waste Programme Steering Group and taking on the role of Programme Board. The Board acts as the forum for oversight and strategic overview of implementation, and provides a means of

holding to account the various delivery bodies. Membership of the Board was expanded by the Minister in 2012 and is currently comprised of:

- Minister of the Environment (Chair);
- Permanent Secretary (DOE);
- Deputy Secretary, Environment and Marine Group (DOE);
- Elected representative of NILGA;
- Two elected representatives from each of the three WMGs; and,
- Six representatives from the construction, business and NGO sectors.

In addition a number of officials are in regular attendance to support members.

New Governance Model

In the revised governance model shown in figure 1 below, the Board will be augmented by inviting appropriate representatives from DARD, DFP and DETI to join as full members. This is in recognition of the role that these Departments can play in delivering aspects of the Strategy and the wider aim of greater resource efficiency for Northern Ireland.

The inclusion of DARD on the Board is aimed at assisting discussions about opportunities for

integration with agricultural waste streams. DETI's involvement on the Board reflects its role in driving renewable energy and working with businesses through Invest NI to increase resource efficiency and supporting the green economy. DFP plays a key role in delivering wider resource efficiency through sustainable procurement policies for government supplies, services and construction, and membership of the Board will help develop such policies in the wider waste management context.

Another key difference is the separation of the secretariat function and the Strategy implementation monitoring/reporting function. The joint secretariat for the WPB, made up of staff from the Department's Environmental Policy Division (EPD) and NILGA, will continue to serve the WPB and commission reports and papers for the Board but responsibility for Strategy implementation monitoring and reporting will transfer to a separate team within EPD.

Monitoring/Reporting arrangements

The Strategy sets out 26 specific actions and 17 targets covering Waste Prevention; Recycling; Other Recovery; Disposal; Better Regulation and Enforcement and Communication and Education. These form the template for regular monitoring and reporting to the Board. The Department has direct responsibility for 23 of the actions, with the remainder falling to the District Councils/Waste Management Groups. District Councils/ Waste Management Groups are the responsible delivery bodies for 4 of the 17 identified targets.

Strategy implementation monitoring reports to the Board will alternate between two types of report. The first will be a formal update on the 43 identified actions and targets contained in the Strategy, with progress indicated by a RAG system and accompanying comments. This will be presented to the Board every 6 months. The second type of report, to be presented to the Board at alternate meetings, will consist of a more detailed update on specific actions and/or targets as identified by the Board.

The combination of the two types of report will ensure that at least every 6 months the Board members will have a full overview of progress across all aspects of the Strategy, but will also be able to identify specific issues arising from the full report that they consider will require further information to enable the Board to fulfil its monitoring and oversight role.

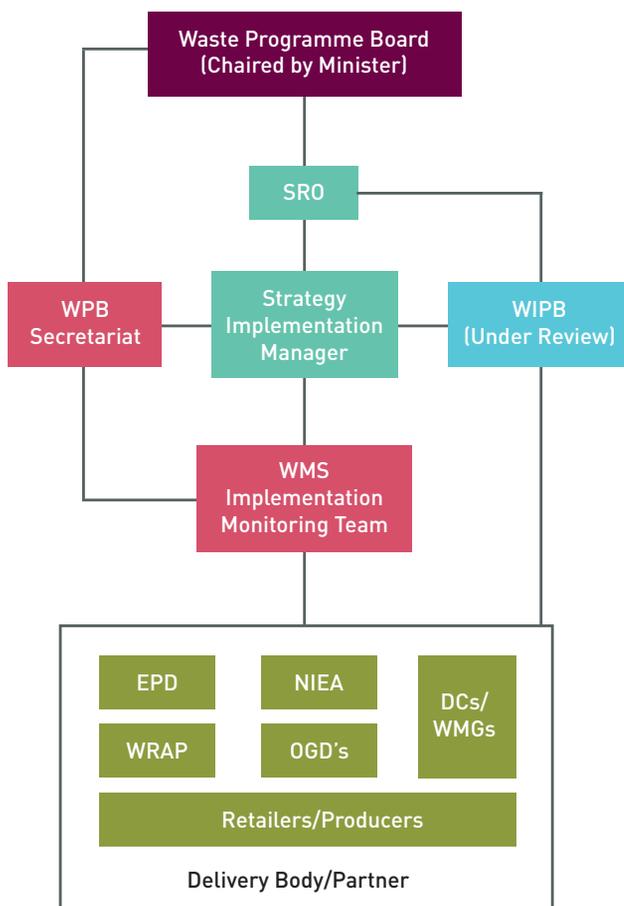


Fig. 1 WMS 2013 Governance Model

Annexes

Summary of Actions and Targets

Annex 1

Section 1 Waste Prevention

Action: The Department will consult on a draft Waste Prevention Programme for Northern Ireland by September 2013.

Action: The Department will bring forward further legislation to extend the levy to low cost reusable bags by April 2014.

Target: To reduce consumption of single use carrier bags by 80% within the first year of operation.

Section 3 Recycling

3.1 Developing Recycling Potential

Action: Waste collectors to ensure the separate collection of at least paper, metal, plastic and glass by 2015.

Action: The Department will issue comprehensive guidance on separate collections by April 2014.

Action: The Department will review the criteria for Rethink Waste funding to ensure that there is an appropriate emphasis on supporting projects aimed at improving recycling performance in areas where it is currently poor.

Action: The Department will consult on proposals for a code of practice for materials recycling facility (MRF) operators by December 2013.

3.2 Producer Responsibility

Target: To achieve the recovery and recycling rates for individual packaging waste streams as set out in the table by 2017.

Target: To achieve an overall recovery rate of 79% and overall recycling rate of 72.7% of packaging by 2017.

Target: To achieve a collection rate of 45% of EEE placed on the market by 2016 increasing to 65% of EEE placed on the market by 2019.

Target: To achieve the recovery and recycling targets for all categories of EEE as set out in the recast WEEE Directive.

Action: The Department will consult on legislation required to implement the recast WEEE Directive by October 2013 to come into effect by January 2014.

Target: To achieve a collection rate of 45% of average annual sales in the UK of all waste portable batteries by 2016.

Target: To achieve an overall re-use, recycling and recovery rate for end of life vehicles of 95% by 2015.

Action: The Department will consult on revised PR Regulations by September 2014.

Action: The Department will implement the proposals contained in the Used Tyres Action Plan.

3.3 Voluntary Agreements

Target: To reduce household food and drink waste by 5% by 2015 from a 2012 baseline.

Target: To reduce traditional grocery ingredient, product and packaging waste in the grocery supply chain by 3% by 2015, from a 2012 baseline.

Target: To improve packaging design through the supply chain to maximise recycled content as appropriate, improve recyclability and deliver product protection to reduce food waste, while ensuring there is no increase in the carbon impact of packaging by 2015, from a 2012 baseline.

Target: To achieve a reduction in food and associated packaging waste by 5% and to increase the overall rate of such waste which is recycled, sent to AD or composted to 70% by 2015.

3.4 Municipal Waste Recycling

Target: To achieve a recycling rate of 50% (including preparing for re-use) of Household waste by 2020.

Target: To achieve a recycling rate of 45% (including preparing for re-use) of Household waste by 2015.

Target: To achieve a recycling rate of 60% (including preparing for re-use) of LACMW by 2020.

Action: The Department will consult on legislative proposals to implement a LACMW recycling target of 60% by 2020.

3.5 Commercial & Industrial Waste Recycling

Action: The Department will consult on proposals to introduce a statutory requirement on waste operators to provide specified data on C&I waste by December 2013.

3.6 Construction & Demolition Waste Recycling

Target: To achieve a recovery rate (including preparing for re-use, recycling and other material recovery) of 70% for all non-hazardous Construction and Demolition waste by 2020.

Section 4 Other Recovery

4.1 Waste Infrastructure

Action: Waste Management Groups will implement plans in respect of residual waste infrastructure procurement.

Action: The role of the Waste Infrastructure Programme Board will be reviewed by the Department.

Action: The TFS fees structure in Northern Ireland will be amended through UK-wide legislation which will come into operation by the end of 2013.

Action: The Department will issue a revised Regulatory Position Statement by November 2013.

Action: Waste Management Groups will review and revise their Waste Management Plans by December 2013.

4.2 Planning Considerations

Action: The Department (Planning and Local Government Group) will clarify the updated position on the removal of BPEO for waste proposals going through the planning process on its website and through advice to planning staff by the end of 2013.

Action: The Department aims to consolidate and review existing planning policy and consult on proposals for a single regional planning policy statement by the end of 2013.

Section 5 Disposal

5.1 EU Landfill Diversion Targets

Target: To landfill no more than 429,000 tonnes of BMW by 2020.

5.2 NILAS

Target: To landfill no more than 220,000 tonnes of biodegradable LACMW by 2020.

Action: The Department will review NILAS after legislation has been put in place in respect of the statutory target for LACMW recycling and on a landfill restriction on food waste.

5.3 Supporting Policies

Action: The Department will submit a business case to DFP on the potential for Landfill Tax to be devolved by September 2014.

Action: The Department will consult on legislative proposals to introduce a restriction on landfilling food waste by September 2013.

Action: The Department will issue a Hazardous Waste Policy Statement by December 2013.

Section 6 Better Regulation and Enforcement

6.1 Better Regulation

Action: The Department intends to bring forward an Environmental Better Regulations Bill during the 2013/14 Assembly session. Further consultation exercises will be required prior to the introduction of any new legislation.

6.2 Enforcement

Action: The Department will bring the Controlled Waste (Seizure of Property) Regulations (Northern Ireland) into operation by April 2014.

Action: The Department will implement an Action Plan to tackle serious environmental crime informed by the recommendations of the expert review.

Action: The Department, in partnership with key stakeholders, will implement a programme of action to repatriate illegally landfilled waste originating from Ireland.

Section 7 Communication and Education

Action: The Department will secure funding to sustain waste prevention and recycling communications post 2013 by April 2014.

List of Supporting Documents

Annex 2

Revised Waste Framework Directive
[Directive 2008/98/EC]

The Waste Regulations (Northern Ireland) 2011
[2011 No. 127]

The Waste and Contaminated Land (Northern Ireland) Order 1997
[1997 No.2778 (N.I.19)]

Council Directive 1999/31/EC on the landfill of waste
[the Landfill Directive]

The Northern Ireland Waste Management Strategy 2006 – 2020 “Towards Resource Management”

Addendum and Delivery Programme to the N.I. Waste Management Strategy 2006-2020
[June 2011]

Government Review of Waste Policy in England 2011
[Defra, June 2011]
(www.defra.gov.uk/publications/2011/06/14/pb13540-waste-review/)

Scotland’s Zero Waste Plan
[June 2010, ISBN 978-0-7559-8306-3]

Towards Zero Waste “One Wales: One Planet” The Overarching Waste Strategy Document for Wales
[June 2010, ISBN 978-0-7504-5580-0]

Draft Statement of Waste Policy – For Consultation [DECLG, 2010]

A New Recycling Policy Consultation Document
[DOE, March 2011]
(www.doeni.gov.uk/recycling_policy_consultation.pdf)

Planning Policy Statement (PPS) 11: Planning & Waste Management
[DOE, December 2002]

Planning Policy Statement (PPS) 18: Renewable Energy
[DOE, August 2009]

Climate Change Act 2008
(c.27)

Climate Change (Scotland) Act 2009
(asp 12)

Northern Ireland Sustainable Development Strategy “Everyone’s Involved”
[OFMDFM, 2010]
(www.ofmdfmi.gov.uk/sustainable-development-strategy_lowres_2_.pdf)

Focus on the Future: Sustainable Development Implementation Plan 2011-2014
[OFMDFM, 2011]
(www.ofmdfmi.gov.uk/focus_on_the_future.pdf)

Regional Development Strategy (RDS 2035) “Building a Better Future”
[DRD, January 2012]
(www.drdni.gov.uk/rds_2035.pdf)

Producer Responsibility: Policy Evaluation, Final Report to the Scottish Government
[eunomia, May 2011]

Consultation on the Introduction of Restrictions on the Landfilling of Certain Wastes
[DOE, June 2010]

Council Directive on the Promotion and the Use of Energy from Renewable Sources
[Directive 2009/28/EC, 23 April 2009]

The UK Renewable Energy Strategy
[HM Government (DECC), July 2009]

Energy: A Strategic Framework for Northern Ireland
[DETI, September 2010]
(www.detini.gov.uk/strategic_energy_framework_sef_2010_-3.pdf)

Bioenergy Action Plan for Northern Ireland 2010 – 2015

[DETI, February 2011]
(www.detini.gov.uk/bioenergy_action_plan_for_northern_ireland_2010_-_2015_-_final-2.pdf)

Anaerobic Digestion Strategy and Action Plan

[Defra/DECC, June 2011]
(www.defra.gov.uk/publications/2011/06/14/pb13541-anaerobic-digestion-strategy/)

Guidance on Applying the Waste Hierarchy

[DOE, October 2011]
(www.doeni.gov.uk/guidance_on_applying_the_waste_hierarchy.pdf)

Applying the Waste Hierarchy: Evidence Summary

[DOE, September 2011]
(www.doeni.gov.uk/guidance_on_applying_the_waste_hierarchy_evidence_summary.pdf)

Roadmap to a Resource Efficient Europe

[COM(2011) 571, 20 September 2011]
(www.ec.europa.eu/environment/resource_efficiency/index_en.htm)

Waste Management – A Northern Ireland Analysis

[DOE, March 2010]

Analysis of 2020 Residual Waste Infrastructure Requirements in Northern Ireland

[DoE/SIB, March 2012]

Northern Ireland Commercial & Industrial (C&I) Waste Estimates

[WRAP, November 2011, ISBN: 1-84405-456-X]

Construction, demolition and excavation waste arisings, use and disposal in Northern Ireland 2009/10

[WRAP, June 2011, ISBN: 1-84405-457-457-8]

Towards a new National Waste Policy Discussion Document

[DECLG, August 2011]

A Resource Opportunity – Waste Management Policy in Ireland

[DECLG, July 2012]

Policy Statement – Zero Waste Regulations

[Scottish Government, October 2011, ISBN: 978-1-78045-457-3]

Consultation on the Legal Definition of Waste and its Application

[Defra, January 2010]

Towards Zero Waste Action Plan 2012-2015

[Belfast City Council, 2012]
(www.belfastcity.gov.uk/waste/docs/waste-action-plan.pdf)

Review of the Thematic Strategy on the Prevention and Recycling of Waste

[COM(2011) 13, January 2011]
(www.ec.europa.eu/environment/waste/strategy.htm)

Guidance on the Interpretation of Key Provisions of the Directive 2008/98/EC on Waste

[DG Environment, June 2012]
(www.ec.europa.eu/environment/waste/framework/pdf/guidance_doc.pdf)

UK Plan for Shipments of Waste

[Defra, 2007]
(www.doeni.gov.uk/niea/waste-shipments.pdf)

Cross-Departmental Working Group on Climate Change – Annual Report May 2012

[DOE, 2012]

Tackling Priority Materials in Northern Ireland

[WRAP, April 2012]

Landfill Bans: Feasibility Research

[WRAP/Eunomia, March 2010]
http://www2.wrap.org.uk/downloads/FINAL_Landfill_Bans_Feasibility_Research.db42010e.8796.pdf

Programme For Government 2011-2015

[NI Executive, March 2012]
(<http://www.northernireland.gov.uk/index/programme-for-government-and-budget-v1.htm>)

Better Regulation for a Better Environment

[EHS, March 2008]
(http://www.doeni.gov.uk/niea/ehs_better_regulation_programme_-_web_version.pdf)

Northern Ireland Marine Litter Strategy

[DOE, July 2013]
http://www.doeni.gov.uk/ni_marine_litter_strategy.pdf

Image Credits

Annex 3

Image Position	Image Subject/Title	Courtesy of/Credit
Front Cover	Food waste Unpacking the bag/Rethink Waste	Courtesy of WRAP Photograph by Aaron McCracken/ Harrisons
Page 6	Home composting	Courtesy of WRAP
Page 10	From waste to value	Courtesy of WRAP
Page 14	Comber Estuary Saltmarsh in Strangford Lough	Paul Corbett DOENI/NIEA
Page 17	Wrapped hay bales – Farm Plastic	Courtesy of WRAP
Page 18	Furniture repair	Courtesy of WRAP
Page 22	Glass cullet	Courtesy of WRAP
Page 24	Re-usable Bag	Photograph by Aaron McCracken/ Harrisons
Page 26	Bag for life	Courtesy of WRAP
Page 27	Re-used furniture	Courtesy of WRAP
Page 28	White goods repair	Courtesy of WRAP
Page 30	Recycling picker at MRF	Courtesy of WRAP
Page 31	Quality protocol cover	Reproduced with permission of the Environment Agency
Page 34	WEEE - computer monitors	Courtesy of WRAP
Page 35	Used batteries	Courtesy of WRAP
Page 36	End of life vehicles	Courtesy of WRAP
Page 37	Packaging	Courtesy of WRAP
Page 39	Recycling point	Courtesy of WRAP
Page 43	Construction & Demolition Waste	Courtesy of WRAP
Page 44	Landfill Gas Generators Giant's Park, Belfast	Reproduced with permission of Belfast City Council
Page 46	On-farm anaerobic digester at the Agri-Food and Biosciences Institute, Hillsborough, Co. Down	Image ©AFBI 2013
Page 48	Working face of a landfill site	Courtesy of WRAP
Page 49	In the Clover – Natural Regeneration Giant's Park, Belfast	Reproduced with permission of Belfast City Council
Page 51	Food waste and kitchen caddy	Courtesy of WRAP
Page 52	Oil Droplet	Courtesy of WRAP
Page 53	Quality protocol cover	Reproduced with permission of the Environment Agency
Page 56	Marine litter at Portavogie	Courtesy of Tidy Northern Ireland
Page 58	Weighing up the waste/Eco-School project	Courtesy of WRAP
Page 59	Giant's Causeway	Reproduced courtesy of Northern Ireland Tourist Board
Page 67	Re-useable Bag	Courtesy of WRAP





NORTHERN IRELAND WASTE MANAGEMENT STRATEGY

Goodwood House
44 - 58 May Street
Town Parks
Belfast
BT1 4NN