

MANAGING WASTE SUSTAINABLY

A Consultation Paper

SUMMARY

Learning to live differently

National Assembly for Wales
July 2001

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FOREWORD



Archaeologists often learn a great deal about earlier civilisations from examining their waste heaps. What will the archaeologists of the future learn about us from our landfill sites? That we are profligate and so far have ignored our own best interests in what we discard. They will not be able to believe that, although we know that many materials are of finite supply, and that excess use of energy creates climate change, we continue to ignore these facts and waste resources.

Our current practices fit badly with the unique statutory duty placed upon the National Assembly for Wales, to promote sustainable development. To offer our children a sustainable future we must seek to reduce the amount of waste we create and to manage what we do produce more responsibly.

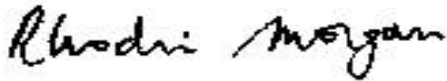
We landfill 95% of our domestic rubbish. Much of that can be re-used or recycled. In most cases recycling materials - plastic, glass, paper, wood, textiles, metals - saves energy and has other environmental benefits over using new materials. We also waste the potential social and economic benefits by creating jobs from recycling materials and then using those materials. The economic and environmental benefits are even greater if we can minimise the generation of waste in the first place.

This consultation paper asks you to comment on proposals by the National Assembly for Wales for a new Wales Waste Strategy, one which will lift Wales from being one of the worst performers in Europe, to being one of the best. The strategy will also allow Wales to comply with existing and expected European Union legislation.

If the new Strategy is to be successful it will need widespread support and involvement from a wide range of organisations, from industry, local government, the voluntary sector, the public sector and specialist bodies, and we are already co-operating widely with organisations in these areas through the Wales Waste Forum. Local authorities in Wales have been closely involved in the development of the strategy and will have a crucial role to play in its delivery. But above all, the changes needed will affect us all as individuals and to be effective the strategy will need the support of the public

and especially householders. That is why we hope that as many people as possible will respond to this consultation. And that is why also, in considering the development of their own waste strategies, local authorities will need to consult fully with their local communities on the full range of options.

Archaeologists often find evidence of sudden changes affecting past civilisations, of events which reflect new ways of life adopted over short periods of time, sometimes voluntarily, sometimes as a result of outside pressures. The new Wales Waste Strategy offers an opportunity to adopt new practices, not only regarding waste, but also more widely, and gain real benefits for our society and the environment. We hope you will be able to support the proposals and that you will comment on the options offered in this consultation paper.



Rt.Hon Rhodri Morgan AM
First Minister



Sue Essex AM
Minister for Environment

SUMMARY

Introduction and purpose

- 1 Wales is near the bottom of the European league in waste¹ management and must do better. We need to challenge why we are producing so much waste and squandering finite natural resources as a consequence. We are also missing an economic opportunity to change unavoidable waste into a resource that can generate wealth. The National Assembly for Wales is committed to a more sustainable approach to waste management creating both challenges and opportunities. It is seeking views on its proposals contained in the draft waste strategy document² as outlined in this Summary. The aim is to introduce, by early 2002, a final Wales waste strategy to supersede within Wales *Waste Strategy 2000 – England and Wales*, the current waste strategy for Wales. We will continue to need to work closely with the UK Government and the other devolved administrations to ensure that non-devolved policy instruments, such as taxation, help to support our strategy. Delivering our strategy will depend upon action within Wales and action in co-operation with the UK Government and other devolved administrations.
- 2 The draft Wales waste strategy sets out proposals for a challenging but realistic programme of change for the next twenty years to be driven by the Assembly in close collaboration with local government and other partners. It will be a strategy which moves Wales from an over reliance on landfill to a more sustainable approach. This will be based on preventing waste wherever possible, and maximising the use of unavoidable waste as a resource to derive maximum economic, social and environmental benefit to Wales, enabling it to be model for sustainable waste management. It will set the framework for what needs to be done, including the development of an integrated and adequate network of facilities to manage waste in a sustainable way. It also means tackling litter and illegal waste management. All must play a part in the strategy's delivery, including the general public. Importantly, the draft strategy aims to allow flexibility for local decision making by local authorities and the communities they serve whilst ensuring that various legal commitments are met.
- 3 The development of a separate waste strategy for Wales follows a commitment given to carry out an early review of *Waste Strategy 2000*. This reflects the devolved responsibilities which the Assembly has for waste policy. The Assembly intends that the waste strategy for Wales produced following this consultation exercise, together with Environment Agency Wales' '*Strategic Waste Management Assessment 2000: Wales*'³, will satisfy UK and European

¹ The term 'waste' used in this document refers to solid and liquid wastes (including sludges) other than those discharged directly to atmosphere or to water.

² A copy of the full consultation document is available on the Assembly's web site: www.wales.gov.uk. A paper copy can be obtained from David Holbrook at the Assembly (see contact details provided at the end of this document).

³ The Agency's SWMA for Wales contains detailed information on waste arisings and management at a local level in Wales (either to a sub-regional level or to an individual local authority level where possible). A copy can be obtained from WRC - Tel: 01793 865000 (price:£50). It will shortly be made available on the Agency's web site: www.environment-agency.gov.uk.

Union legislative requirements for waste management plans (or strategies). Such plans must cover all wastes, and must include specific sections on hazardous waste, packaging waste and biodegradable waste. The strategy will need to be flexible to take account of future legislation likely to emerge from Europe.

- 4 The process of preparing for a separate waste strategy for Wales began in November 1999 with the preparation of a scoping study. To help it take forward the review of Waste Strategy 2000, the Assembly set up the Waste Policy Support Unit in Environment Agency Wales. The results of the scoping study were published⁴ at a conference in October 2000 – “Challenging Waste”. In the light of views expressed at the conference, preliminary proposals for the strategy were discussed in the Assembly's Environment, Planning and Transport Committee in November 2000. The Environment Minister Sue Essex then established the Wales Waste Forum in December 2000 to advise on the development of the waste strategy and in particular on the consultation paper. Various aspects of the consultation paper have also been discussed separately with key stakeholder groups, including waste producers, local government, the waste industry, the community recycling sector, Environment Agency Wales, UK Government and the other devolved administrations.
- 5 This document summarises the main consultation paper. As a summary document, it cannot go into detail, nor can it describe all of the proposed options. For example, there are important sections on packaging and hazardous wastes in the main document which are not covered in this summary. The reader is urged to refer to the main document if more detail is required. A list of the questions asked in the main document is provided near the end of this Summary.

Waste management in Wales

- 6 Around 11 million tonnes of controlled waste is produced in Wales of which around 4 million tonnes is landfilled⁵ (see Chapter 2 and Annexes 3 and 4 of the main document for further details). Of the 1.5 million tonnes of municipal waste produced only around 5% is recycled and the rest is landfilled. Wales has one of the lowest municipal waste recycling rates in Europe.
- 7 Municipal waste production in Wales from 1996/97 to 1998/99 increased at around 6% per year. This was attributable largely to increased collection of commercial waste. Household waste increased at 2% per annum over the same period. However, because the available annual data is limited, it is not possible to make predictions of future trends in waste growth with any degree of confidence; the results of future municipal waste surveys will help to provide more robust evidence on trends.

⁴ ‘Options for a Welsh Waste Strategy: A Technical Report for the National Assembly for Wales.’ ECOTEC and WS Atkins. September 2000.

⁵ The picture is affected by the 2.8 million tonnes of waste produced by the metal refining industries and by their exceptional performance in re-using and recycling their waste materials and by-products. This exaggerates the recycling performance across industry as a whole.

Guiding principles

- 8 The Assembly subscribes to the traditional guiding principles of waste management established by the European Union, namely the waste hierarchy (which puts waste prevention as the top priority and landfill the lowest), the best practicable environmental option (BPEO), best available techniques, polluter pays, producer responsibility, precautionary principle, proximity and self sufficiency (see Chapter 3 of the main document for further details). There is no conflict between these principles and the following key generic principles identified by the Assembly:

Sustainable development.

- 9 Waste management in Wales should conform to the principles of sustainable development, namely that it should be carried out in a way which does not place undue social, economic or environmental burdens on either present or future generations and which ensures social equity, effective protection of the environment, the prudent use of natural resources and the maintenance of high and stable economic growth and employment. The aim is to decouple waste production from economic growth.

Consultation and equal opportunity.

- 10 If public services are to serve people better public bodies need to know more about what people want. Rather than imposing solutions, government at all levels should consult and work with people. Also, the principle of equality of opportunity should be applied throughout the development of waste plans/strategies. All sectors of the population must be involved from the earliest stage and the process should encourage and enable all communities to participate on an equal basis, by taking account of their different needs and interests.

Integration/partnership.

- 11 Integrated approaches are likely to deliver the most benefits at least cost. Integration has many facets and includes:
- designing policies and programmes so that they are mutually reinforcing;
 - partnership between the public, private and voluntary/community sectors;
 - partnership between local authorities;
 - using a mix of options within the waste hierarchy to manage different waste streams in accordance with the BPEO principle;
 - life cycle consideration of the environmental impacts of a product;
 - integration at a UK level of a range of fiscal and legal instruments to tackle the problem of waste;
 - funding and grant schemes reinforcing the integrated approach.

The drivers

- 12 The development of the Wales waste strategy is being carried out during a period of intense policy and legislative evolution, particularly at the European level. It is therefore important that the strategy development anticipates in

advance the likely direction that will have to be taken and provides flexibility to meet new requirements. (See Chapter 3 of the main document.)

- 13 The most significant EC Directive driving change is the Landfill Directive which includes the following key requirements:
- the substantial reduction in the amount of biodegradable municipal waste (BMW) being landfilled:
 - by 2010 to reduce BMW landfilled to 75% of that produced in 1995;
 - by 2013 to reduce BMW landfilled to 50% of that produced in 1995;
 - by 2020 to reduce BMW landfilled to 35% of that produced in 1995.
 - a ban on the landfilling of corrosive, oxidising, highly flammable, flammable or explosive waste; liquid waste; infectious hospital and other clinical wastes arising from medical or veterinary establishments; and tyres;
 - the cessation of the co-disposal of hazardous and non-hazardous waste after 2004;
 - the treatment of all wastes prior to landfill.

Strategic policies for waste

- 14 The Assembly's proposals for strategic waste policies are described in Chapter 3 of the main document. Key policies are:

A waste elimination led strategy.

- 15 The top priority in Wales should be action to not only curb future growth in waste but also to reduce the amount of waste produced, particularly hazardous waste, ensuring that waste production is decoupled from economic growth. This will require close co-operation with the UK Government and the other devolved administrations, often within an EU framework.

Segregation of waste at source will be encouraged.

- 16 Waste materials including biodegradable wastes should be segregated at source as far as practically possible in order to:
- reduce contamination;
 - extract maximum value;
 - highlight to the producer (especially householders) the value of the waste being discarded;
 - facilitate their handling;
 - reduce their impact on the environment;
 - provide individual householders with advice and information so that more sophisticated waste minimisation messages can be applied to ensure progress is made on reducing waste disposal tonnages.
- This will require working closely with local authorities with regard to the separate collection of municipal waste.

Development of recycling and composting markets in Wales.

- 17 The Assembly will work with the Waste and Resources Action Programme⁶ and others to develop appropriate recycling and compost markets in Wales in order to:
- make recycling/composting economically self-sustaining within the context of local authority budgets for collecting and disposing of materials discarded from households, businesses and industry;
 - create new jobs in Wales;
 - reduce the environmental damage caused by transporting recyclable materials;
 - progress towards the implementation of many of the recommendations made within the Institute of Welsh Affairs report⁷ on the development of recycling markets in Wales.
- 18 The Assembly recognises that the key to the successful development of stable markets for composted biodegradable waste is the establishment of recognised standards, preferably on a UK or EU wide basis.

Other solutions to managing waste sustainably.

- 19 The Assembly's preference is to maximise waste prevention, recycling and composting, and to minimise incineration and landfill. However, it is likely that there will be an irreducible residue which due to gross contamination will require other means of management. Given that landfill is at the bottom of the waste hierarchy, there are strong grounds to try to manage this residual waste further up the waste hierarchy. The main overseas examples of more sustainable waste management practices rely on a mix of approaches; technologies with energy from waste make an important contribution in reducing unacceptable dependence on landfill in these countries.
- 20 The Assembly recognises that people perceive that energy recovery processes may have potential impacts on health. In accordance with the precautionary principle such potential impacts must be thoroughly considered and compared with those of other options, such as landfill, before these processes are used. We must always bear in mind that there is no wholly risk-free way of managing and disposing of waste.
- 21 The operation of energy from waste facilities are regulated under the Pollution Prevention and Control (PPC) Regulations. Any waste disposal or management facility, including energy from waste plants, are subject to licensing, monitoring and regulation. Health authorities are consulted as part of the process in determining an application for a PPC permit. In order to be granted a permit, energy from waste facilities must meet stringent emission standards set by the EC Waste Incineration Directive (WID), which applies to all energy from waste technologies and processes, to protect health and the environment. Standards

⁶ WRAP is a new organisation that has been set up by the UK Government with support from the devolved governments to help remove barriers to recycling and create stable and efficient markets for recycled materials and products.

⁷ Waste in Wales - A National Resource: Generating Prosperity Through Recycling. Institute of Welsh Affairs 2000.

being introduced by the WID are far more stringent than those which have historically existed.

- 22 If the level of waste arisings continues to increase, the residual waste which will need to be disposed of could be very considerable indeed, notwithstanding the achievement of a high degree of recycling. Dealing with this residual waste will be one of the key issues local authorities will need to address in consulting their local communities on the way forward in managing and disposing of waste.

Development planning for the creation of a waste management infrastructure.

- 23 In accordance with the principles of spatial planning, the development planning process needs to ensure that the right waste and materials' handling facilities are developed in the right place at the right time and that adequate provision of land is made for these facilities.

Involvement of the community.

- 24 The community should have a central role in achieving sustainable waste management. Participation and consultation will be strongly encouraged in new schemes in order to ensure that local communities:
- understand the need to manage the wastes they produce;
 - have a say in deciding the best solution for managing it;
 - should gain economic advantage from recovering valuable materials from their own wastes.

Education and awareness.

- 25 Education will form an important part in raising awareness and understanding of waste issues in order to ensure that people make informed decisions and take responsibility at a local level on how the materials they discard should be managed.

Other policies

- 26 Other policies proposed are (see Chapter 3 for further details):
- An innovative approach to product design;
 - Re-use of materials;
 - Recycling as a key element of sustainable waste management;
 - A hierarchy for the management of biodegradable waste (BW);
 - A continued need for landfilling;
 - An innovative approach to waste management;
 - A regional approach;
 - Litter and illegal disposal of waste;
 - Better waste data;
 - Funding.

Key issues

- 27 To manage municipal waste more sustainably, local authorities will need to introduce **comprehensive schemes for the separate kerbside collection of recyclable and compostable materials**. The Assembly considers that

partnerships between local authorities and the community and private sectors will be beneficial. The active and enthusiastic participation of householders will be crucial.

- 28 **Curbing growth in municipal waste arisings must become a priority for all.** The challenge in meeting the Landfill Directive targets to limit the amount of biodegradable municipal waste going to landfill is enormous, especially if growth is significant. For example, if municipal waste grows at 3% each year, by 2020 the amount of biodegradable waste which will have to be diverted will be around 1.4 million tonnes. If waste arisings remained stable each year at current quantities then only around 0.6 million tonnes would have to be diverted.
- 29 The Assembly's policy to give **priority to waste minimisation** needs to be embraced by businesses in Wales. Waste minimisation projects in Wales have made a good start (see Chapter 2 of the main document for a summary), but there is scope for business to do a lot more. Waste minimisation is not just an environmental goal; it can make a significant contribution to business efficiency in relation to lean production and improvements in productivity. For example, businesses often underestimate how much their waste costs them (see Chapter 5 of the main document for more detail). These costs are incurred not only through the cost of disposal but also from:
- the purchase costs of discarded raw materials;
 - the value of the reject product;
 - the cost of discarded packaging;
 - the energy and resources used to process materials which are thrown away.
- The Assembly is seeking views on whether businesses would benefit from adopting targets for minimising waste.
- 30 There are opportunities for industry and commerce to consider waste reduction options from the design of a product, through its manufacturing process, to the way it is transported, packaged and ultimately retailed. Products can be manufactured so that they are more durable and re-usable, less disposable and more recyclable. **Businesses need to assess the likely benefits of adopting the concept of eco design in order to make themselves more competitive.** Eco design is the process of redesigning and re-manufacturing goods and services to enable reuse and recycling, or reduce harmful effects when they are returned to the environment and producing more with less. This embraces the principle of 'producer responsibility', which is a key principle in sustainable waste management.
- 31 **Businesses in Wales also need to embrace the concept of Integrated Product Policy.** This is an evolving approach being developed by the European Commission. It begins by asking how the environmental performance of products can be improved most cost effectively. It is founded on the consideration of the impacts of products throughout their life cycle.
- 32 The Landfill Directive is likely to have a significant impact on the management of industrial and commercial waste in Wales. For example, around 2 million tonnes of waste could require treatment under the Directive. Together with the ban on the landfill of certain wastes, this will mean that **alternative waste management**

routes will need to be sought for many wastes currently landfilled. The diversion of wastes to other treatment options will prove more expensive for waste producers and will provide a further economic incentive to minimise waste production (as will additional increases in the Landfill Tax).

- 33 **The reduction in the amount of biodegradable industrial and commercial waste going to landfill** is a key objective of the Landfill Directive (although no targets are set in the Directive). The aim is to reduce the amount of methane emitted to the atmosphere as biodegradable waste decomposes in landfills (methane is a powerful greenhouse gas). It is estimated that there are around 843,000 tonnes of biodegradable industrial and commercial waste landfilled which could be readily diverted to other options such as re-use, recycling, composting, anaerobic digestion and energy recovery.
- 34 **Litter and fly tipping are widespread problems in Wales.** Litter is unsightly, can encourage vermin, harm wildlife and is expensive to remove. It also has a detrimental effect on tourism and inward investment leading to an impact on the economy of Wales. Local newspapers frequently carry articles or letters complaining about littering. There is also a serious problem with organised fly tipping and illegal disposal of wastes. The problem has increased in part due to the effects of the Landfill Tax, with rogue waste carriers offering cheap 'disposal' services to waste producers.

BOX 1 ILLEGAL WASTE MANAGEMENT FACES TOUGH FINES

Over the last twelve months three skip companies in south west Wales have been fined a total of over £63,000 for illegal waste disposal following prosecutions brought by Environment Agency Wales. In the latest prosecution, the person involved was fined £15,000 and ordered to pay costs of £6,474. Officers of Environment Agency Wales had undertaken covert surveillance at the defendant's property, after an aerial surveillance flight had identified large quantities of waste including wood, plastic, paper, cardboard, construction and demolition waste at a farm. The waste was being illegally tipped there and subsequently burnt. Among the items in the waste was a significant quantity of asbestos. These illegal activities had saved the person concerned thousands of pounds by avoiding legitimate disposal costs and landfill tax. This in turn allowed him to offer cheaper rates than other, legally operating disposal firms.

Opportunities

- 35 There are tremendous opportunities for new businesses and community enterprises to evolve in Wales to recover value from waste materials. Community initiatives such as the development of Community Strategies and Communities First present a strong opportunity to 'mainstream' sustainable waste management into community thinking. This can be both in terms of recovering value from waste and creating jobs and in terms of cleaning up the local environment. Community led recycling schemes can act as a focus for building community spirit.

BOX 2 EXAMPLE OF A COMMUNITY LED KERBSIDE COLLECTION PROJECT

Wastesavers Recycling Association (WRA) is a non-profit making community based recycling association based in Newport Gwent. It is an enrolled Environmental Body, receiving Landfill Tax Credit Scheme funding, which operates a green box kerbside collection scheme in partnership with Newport County Borough Council (NCBC). The partnership has enabled a pilot project of five years to serve the 55,000 residents of Newport with kerbside collections, growing at 10,000 properties per year. To date, 20,000 properties are being served with a further 10,000 coming on line later this year. WRA collects newspapers, magazines, mail, all types of glass, steel and aluminium cans, textiles, clothing and shoes. To date, over 2,000 tonnes of material have been recycled and saved from landfill.

In addition to its valuable contribution to promoting good waste management practices, the partnership provides employment, training and volunteering opportunities which all assist in the implementation of this successful scheme.

- 36 Waste management is in a period of exceptional change and unprecedented, but exciting, challenge. Global competition and technological changes are reshaping waste management. Innovation will be essential and businesses in Wales have an opportunity to develop best practice and become leaders in such a growth field. An indigenous waste "goods and services" sector providing goods and services locally and outside of Wales could generate a substantial number of jobs. Wales could become a leader in sustainable waste management practices.
- 37 This is an opportune time for investment in waste minimisation, in new waste infrastructure and in the development of an innovative waste goods and services sector. Wales is able to take advantage of the European Structural funds and also specific funding for recycling identified from the New Opportunities Fund. In addition, devolution means that the Assembly is able to determine its priorities for funding in Wales in order to ensure that its policies are delivered.
- 38 Starting from a low base point enables Wales to take advantage of lessons learnt from mistakes elsewhere and to 'leapfrog' the pack. Wales has the opportunity to put a sustainable integrated waste management system in place quickly and achieve rapid results. A mix of rural and urban areas will enable the establishment of composting and anaerobic digestion systems that could deal with organic materials very effectively. It could link with the need for farm diversification and boost the development of organic farming (which is experiencing growth at present). The use of natural organic composts will reduce the need for chemical fertilisers, improve soil structure and enhance water retention/reduce rate of runoff and pollution of watercourses. Wales can also develop its own paper and glass reprocessing capacity as well as looking at small-scale solutions to other materials' re-use for local markets.

Key targets

- 39 The Assembly will use targets to set the direction in which Wales must move to achieve sustainable waste management. They are required to give a clear focus on what needs to be achieved in order to deliver the Assembly's strategic waste policies and to meet the requirements of European legislation. They also act as a benchmark for progress to be monitored. In some cases the scope for targets is constrained by the requirements of EU and UK legislation; in others the

Assembly has the ability to set its own targets. Some of the targets will need to be very specific whilst others will allow flexibility at the local level.

- 40 Options for targets are presented in Chapter 4. Key preferred targets are proposed as:

Municipal waste:

- 41 The Assembly considers that there must be a significant increase in municipal waste recycling and composting rates in order to:
- deliver its strategic policies for sustainable waste management;
 - achieve the Landfill Directive targets to divert biodegradable municipal waste from landfill without a major reliance on energy from waste;
 - ensure that recycling of packaging from the municipal waste stream makes a significant contribution towards meeting the EC Packaging Directive targets.
- 42 Accordingly, the Assembly proposes targets for local authorities to ensure that the recycling and composting⁸ rates for municipal waste improve significantly beyond the current average of 5%. These targets complement measures to limit the amount of municipal waste being sent to landfill (see below). The preferred targets for municipal waste are:
- by 2003/04 achieve 15% recycling/composting of municipal waste with a minimum of 5% composting (with only compost derived from source segregated materials counting) and 5% recycling;
 - by 2006/07 achieve 25% recycling/composting of municipal waste with a minimum of 10% composting and 10% recycling;
 - by 2009/10 achieve 40% recycling/composting of municipal waste with a minimum of 15% composting and 15% recycling.
- 43 Household waste often contains hazardous wastes (e.g. waste solvents, pesticides, oil, batteries, etc). It is important that these are removed from the general municipal waste stream as far as possible in order to prevent environmental impacts when they are buried in a landfill or combusted in an incinerator. It is also important that householders have a convenient alternative way of disposing of such materials. The Assembly therefore considers that all civic amenity sites in Wales should contain facilities for dealing with certain categories of household hazardous wastes (where waste licensing and planning permission allows). It therefore proposes the following additional target:
- by 2003/04 all civic amenity sites should have facilities to receive and store, prior to proper disposal, bonded asbestos sheets and refrigerants and, prior to recycling, oils, paints, solvents and fluorescent light bulbs.
- 44 Local authorities will need to take account of these targets when developing their Policy Agreements with the Assembly.
- 45 For achieving the EC Landfill Directive requirements to limit the amount of biodegradable municipal waste (BMW) going to landfill, the Assembly will allocate each local authority permits specifying the maximum amount of BMW

⁸ Anaerobic digestion and other forms of biological treatment may contribute to the composting targets subject to Assembly approval.

which it can landfill in any given year. The Assembly has not made a decision yet on whether such permits will be tradable in Wales. Options for allocating the permits to each local authority are discussed further in Chapter 4 of the main document.

- 46 Curbing growth and reducing household waste arisings are needed to:
- make a major contribution to sustainable waste management and to prevent environmental deterioration and resource depletion;
 - help reduce waste management costs;
 - make it much easier for local authorities to achieve their Landfill Directive targets and will greatly reduce the potential need for energy-from-waste.
- 47 Many of the factors controlling the amount of waste discarded by householders are largely beyond the control of individual local authorities and indeed many are beyond the direct control of the Assembly. Therefore the Assembly considers that it would not be appropriate to set a waste minimisation target for local authorities alone to meet. However, it expects authorities to make a contribution towards persuading householders to reduce their waste arisings and encourages them to set a target for waste reduction within Best Value. For example, local authorities can promote home composting as a way of reducing the amount of biodegradable household waste they have to collect and deal with.

BOX 3 RESEARCH INTO HIGH FIBRE COMPOSTING AT THE CENTRE FOR ALTERNATIVE TECHNOLOGY (CAT).

Research into high fibre composting is now in its second year at CAT, funded through the Landfill Tax Credit Scheme by Powys County Council, Hanson Environment Fund and local farmers.

High fibre composting incorporates non-recyclable waste paper and cardboard into the composting process, reducing household waste by 50% and improving the compost at the same time. Combined with other activities, CAT's research shows that householders with gardens could reduce the quantity of domestic refuse by up to 90%. The project involves the compost advisor working with 65 local households, with the results of the research made available to the public.

- 48 The Assembly considers that setting targets would be an important start in ensuring that action is taken at all appropriate levels to initially reduce the level of growth in arisings and then potentially reverse them. The Assembly will seek to achieve these targets by working with UK Government, the European Union, local authorities and other partners to influence the factors which govern the amount of household waste. For example, action needs to be taken to influence behaviours of consumers and householders and to secure changes in retailing, consumer products and packaging.
- 49 The Assembly proposes the following preferred target on which it is seeking views:
- by 2009/10 (and to apply beyond) waste arisings per household should be no greater than those in 1997/98.

Waste minimisation target for the public sector

- 50 The public sector is the ninth largest source of waste from industry and commerce. The Assembly wishes to see public sector waste production reduced to help reduce public spending now and in anticipation of future increases in the cost of waste disposal. The Assembly, therefore, sets itself and the public sector the following target and encourages business to join us by considering the preferred targets proposed in paragraph 52 below:
- by 2005 to reduce the amount of waste produced to 95% of that produced in 1998;
 - by 2010 to reduce the amount of waste produced to 90% of that produced in 1998.

Industrial and commercial waste

- 51 The Assembly considers that setting a waste minimisation target for industrial and commercial waste would be beneficial for the following reasons:
- it would demonstrate a clear commitment to the highest priority objective in the EC Waste Framework Directive;
 - industrial and commercial waste (including that arising from construction and demolition activities) constitutes 88% of all controlled wastes;
 - it would provide a means by which the performance and effectiveness of waste minimisation initiatives funded from the public purse can be measured (the European Union, UK Government and the Assembly are providing significant funds to support businesses in preventing and reducing their wastes - see Chapter 2 for current initiatives and Chapter 5 for new initiatives);
 - it would help provide an impetus for those businesses who have yet to embark on waste minimisation;
 - waste prevention and minimisation will save businesses money and make them more competitive by enabling them to make more efficient use of resources;
 - it would make a significant contribution towards the key sustainable development principle of conserving resources.
- 52 It will be for individual businesses to decide whether to adopt a target for waste minimisation. However, the following targets for businesses are proposed as a basis for this consultation:
- by 2005 achieve a reduction in waste produced by businesses in Wales equivalent to 5% of the 1998 figure;
 - by 2010 achieve a reduction in waste produced by businesses in Wales equivalent to 10% of the 1998 figure;
 - by 2005 to reduce the amount of industrial and commercial waste going to landfill to 85% of that landfilled in 1998;
 - by 2010 to reduce the amount of industrial and commercial waste going to landfill to 80% of that landfilled in 1998;
 - by 2005 to reduce the amount of biodegradable industrial and commercial waste sent to landfill to 85% of that landfilled in 1998;
 - by 2010 to reduce the amount of biodegradable industrial and commercial waste going to landfill to 80% of that landfilled in 1998;
 - reduce the amount of hazardous waste generated by around 20% by 2010 compared with 2000 and in the order of 50% by 2020.

Implementation

- 53 Options are presented in Chapter 5 of the main document for an action plan to deliver the proposed policies, targets and instruments identified in Chapters 3 and 4. The proposed action plan is divided into the following key priorities:
- Sustainable resource management;
 - Infrastructure development;
 - Education and marketing of the strategy;
 - Improving our understanding;
 - Better regulation and enforcement;
 - Effective leadership/consultation.

Sustainable resource management

- 54 A sustainable approach requires us to manage resources in an efficient way, minimising their use and minimising wastage wherever possible. For wastes that are produced we need to recover and re-use the resources they contain.

Funding

- 55 The Assembly recognises that implementation of the Wales waste strategy and relevant European Directives will incur additional costs for local authorities and others. There are a number of different funding programmes both within the Assembly and from other sources which can be used. These include:
- the Standard Spending Assessment for local authorities;
 - Best Value Performance Improvement Grants for local authorities;
 - supplementary funding for municipal waste recycling and composting;
 - New Opportunities Fund;
 - Landfill Tax Credit Scheme;
 - European Structural Fund Objective 1 and Objective 2 programmes for Wales;
 - Private Finance Initiative;
 - Sustainable Technologies Initiative (funded by DTI and EPSRC);
 - Regional Selective Assistance grants (from the Assembly);
 - SmartWales.
- 56 In order to help take forward the strategy and meet the proposed recycling and composting targets, the Assembly is providing an additional £40m over the next three years. £3 million is available for 2001/02 and there are indicative figures of £13 million for 2002/03 and £24 million for 2003/04. In 2001/02 the funding breakdown is:
- £1.5 million to further recycling/composting in Welsh local authorities (to be allocated on a formula basis as part of a three year programme);
 - £500,000 to fund a compositional analysis of municipal waste;
 - £650,000 to WRAP and related recycling market development projects in Wales;
 - £100,000 to fund Regional Waste Planning Groups;
 - £200,000 to Environment Agency Wales to support their work of investigating illegal waste management operations;
 - £50,000 for other waste related spending in Wales.

Indicative figures for funding for local authority recycling/composting in 2002/03 and 2003/04 are likely to be in the region of £11 million and £22 million respectively.

- 57 The New Opportunities Fund is a Lottery distributing body with the remit of funding health, education and environment projects, which will help create lasting improvements to the quality of life, particularly in disadvantaged communities. Under its latest policy directions, by 2004, it is required to commit in Wales, £6.5m (including administrative costs), to projects that:
- enhance the quality of life of local communities;
 - expand community sector waste, reuse, recycling and composting.
- The money will be split on an equal basis between the two strands.

Municipal waste

- 58 Actions are proposed in Chapter 5 to encourage householders to reduce waste arisings and to enable local authorities to meet the recycling and composting targets.
- 59 Householders can significantly reduce the amount of rubbish they put into the domestic waste bin. Examples of actions that could be taken include:
- purchasing appropriate quantities of certain types of goods - over purchasing leads to the production of waste materials and is wasteful of resources (e.g. DIY products; perishable items);
 - choosing not to purchase products designed to be disposable, for example plastic razors, paper plates, dusters and wipes etc.;
 - purchasing goods which are sensibly packaged, including the purchase of loose produce where practicable;
 - using re-usable shopping bags at the supermarket instead of acquiring additional plastic bags at every visit;
 - preventing unwanted 'junk mail' from entering household waste by registering with the Mailing Preference Service⁹;
 - home composting which can make a useful contribution towards minimising waste;
 - donating unwanted products to community groups, charity shops and others;
- 60 The municipal waste stream contains large quantities of materials that could be recycled or composted by local authorities in partnership with the community recycling sector and the waste industry. Glass, paper, steel, aluminium, textiles, plastics, furniture and electrical equipment may all be diverted from landfill and used to obtain revenue, whilst card and other biodegradable wastes may be diverted for composting. The Assembly wishes to promote the recycling and composting of materials through, in order of priority:
- kerbside collections and associated 'clean' Materials Recovery Facilities (MRFs);
 - 'bring sites' and recycling centres;

⁹ Mailing Preference Service, Department AM, Freepost 22, London, W1E 7EZ. To register details with the Mailing Preference Service the telephone number is 0845 0700707. To register online, the address is mps@dma.org.uk

- extraction from mixed municipal waste in 'dirty' MRFs (which should be used only where they add to the quantities of material recovered, rather than replacing other methods of materials recovery).

BOX 4 A KERBSIDE COLLECTION INITIATIVE IN CAERPHILLY

Caerphilly County Borough Council was one of the first local authorities in Wales to use Landfill Tax Credit Scheme funding for the introduction of a pilot kerbside recycling and education initiative. The scheme is operated under the auspices of a partnership between the Wales Environment Trust, Caerphilly County Borough Council and Ecovert.

Householders segregated the materials into carrier bags and placed them into a 53 litre green box at the kerbside. The collection crew then placed these materials into a dedicated non-compaction vehicle, during their fortnightly collection service. An Environmental Education and Research Officer provided information and advice to householders.

The project initially covered 8,000 properties across the Borough and from January 2000 to August 2000 included a further 8,000 properties. During the year 2000/01 approximately 1,000 tonnes of recycled material was diverted from landfill.

Schools have also been targeted in the promotion of recycling with an art competition to select illustrations for publicity leaflets, and a competition to reward schools achieving the greatest collection rate.

BOX 5 GWYNEDD RECYCLING SERVICE

Gwynedd Recycling Service is a community group set up in 1994 to improve recycling rates and provide valuable opportunities for local people (particularly those with learning difficulties) to develop skills and increase their employment potential. In partnership with the local authority and a private waste company, recyclable materials are collected from 30 bring sites throughout Gwynedd. A service is also provided to collect, refurbish and re-use white goods and furniture. £220,000 of National Lottery funding was obtained to run office paper and bulky household waste projects from 2000-2002.

Source: "Recycling in Action – Leading case studies across England and Wales". Friends of the Earth, 2001

- 61 The Assembly considers that there are opportunities for local authorities to substantially improve the segregation of materials suitable for recycling and composting at civic amenity (CA) sites. Current best practice suggests that as much as 50%, possibly even as high as 80%, of the wastes taken to CA sites by householders can be readily segregated for recycling and composting. This could be achieved by closer on site supervision of householders bringing waste to the site, by making it easier to access the recycling banks (e.g. through better signage) and by providing incentives for staff or companies operating the sites to increase recycling and composting rates.

BOX 6 EXAMPLE OF A HIGH RECYCLING RATE AT A CIVIC AMENITY SITE IN WELSHPOOL, POWYS

Powys County Council has adopted a policy to develop eight new civic amenity sites dedicated to recycling. The first such site opened in Welshpool in 2000 under a contract between the Council and a local company. The site is designed to achieve a maximum recycling rate with a minimum rate of 60% specified as a condition. In fact, the site is currently recycling over 80% of bulky wastes which is probably the best performance in the UK. The site also contains facilities for receiving and storing a range of household fluorescent light tubes, oils, household chemicals, automotive batteries and hazardous wastes, including: bonded asbestos and refrigerants.

- 62 The Assembly proposes that local authorities adopt a phased approach in order to meet the proposed composting targets. The 5% target proposed for 2003/4 can be achieved by collecting green waste separately at the kerbside, at civic amenity sites and from the local authority's own municipal sources. This green waste can then be composted using, for example, an inexpensive 'open windrow' technique, producing high quality compost. It is likely that composting targets of 10% and 15% for 2006/7 and 2009/10 respectively will require local authorities to introduce schemes to collect separately kitchen waste from households. Experience gained in collecting and composting green waste and producing a marketable product can then be put to good use in dealing with the more challenging kitchen waste. Local authorities should, in the first instance, look to meeting their own needs for compost, e.g. in parks.

BOX 7. CONWY COUNTY BOROUGH COUNCIL, AN EXAMPLE OF GOOD COMPOSTING PERFORMANCE

Conwy CBC operates a central composting scheme for wastes arising from civic amenity sites, grounds maintenance depots and the municipal materials recovery facility (MRF) site. During 1999 – 2000, 11,630 tonnes of wastes consisting of cut and collect grass, leaves and shredded green wastes were composted at the site, netting a saving on disposal costs and also allowing a re-sale premium. This represents a municipal waste composting rate of 13%.

Industrial and commercial waste

- 63 The Assembly is doing the following to help businesses take action to minimise their wastes:
- ensuring that an appropriate level of expenditure is hypothecated to Wales from the funding for the UK Envirowise¹⁰ programme which provides free practical advice and guide on waste minimisation;
 - providing £0.2 million match funding of the £3.2 million Objective 1 Arena Network/Groundwork Wales 'Environmental Innovation and Competitiveness' project to fund specifically support for EMS for SMEs;
 - providing £0.3 million to the WDA to support EMSs for large business in the Objective 1 area and all businesses in the rest of Wales;
 - sponsoring with other partners a major seminar programme on environmental issues for businesses, including a major conference on business and environment in Autumn 2001;
 - continuing with its Business and Environment Campaign;
 - providing general awareness raising e.g. through articles in the media;
 - considering how best to co-ordinate the provision of waste minimisation advice to businesses in Wales;
 - considering leading a waste minimisation campaign for the public sector.
- 64 Proposals are presented in Chapter 5 for the better co-ordination and targeting of waste minimisation advice to businesses in Wales. Priority should be given to reducing hazardous, biodegradable and packaging wastes.

¹⁰ Envirowise can be contacted on 0800 585794, e-mail: helpline@envirowise.gov.uk, website: www.envirowise.gov.uk.

Recycling market development

- 65 The Assembly is co-funding the UK Waste and Resources Action Programme (WRAP) which is a new organisation that has been set up by the UK Government with support from the devolved governments. Its aim is to help remove barriers to recycling and create stable and efficient markets for recycled materials and products. It will seek to optimise the volume and value of materials recovered from the UK waste streams. The Assembly is providing additional funds to promote the work of WRAP in Wales and to support recycling market development projects in Wales.

BOX 8 EXAMPLES OF NEW GLASS RECYCLING INITIATIVES IN WALES

Wales Environment Trust have brokered a partnership with Conway Concrete Products Ltd to make use of glass recycle. Conway manufacture in South Wales a number of concrete products such as paving blocks and have a high demand for crushed aggregate. Crushed recycled glass has been identified as a suitable substitute for virgin materials in the manufacturing process. It is hoped that a facility will be operational at the Caerleon site in mid 2001. It is expected that such a facility would process a minimum of 30,000 tonnes of glass over the next two years.

Arena Network have been helping Richardson Ltd to establish a new depot and reprocessing plant for recycled glass in South Wales to supply Owens Corning, a major manufacturer of fibreglass. It is anticipated that the plant will be operational within the next twelve months and will have an initial planned capacity of around 30,000 tonnes of recycled glass per year.

Infrastructure development

- 66 It is a key aim of the Wales waste strategy to ensure the establishment of an adequate and integrated network of waste management installations. The Assembly has a statutory duty to achieve this under the EC Waste Framework Directive. UK legislation¹¹ stipulates that it is the responsibility of local planning authorities in Wales to ensure that provision for such a network is made within their Unitary Development Plans (UDPs).
- 67 The huge changes in waste management practices driven by Europe and proposed by the Assembly will require major changes in the infrastructure needed for waste management in Wales. To meet this and other challenges the Assembly is currently reviewing planning policies for Wales; the latest proposals in the draft 'Planning Policy Wales' have been drawn up in tandem with the development of the Wales waste strategy. These waste planning policies are supplemented by a Technical Advice Note (TAN) for waste which has also recently been subject to consultation. The consultation paper included recommendations for the setting up of Regional Waste Groups. The Assembly also advocates that local authorities identify sites for new facilities, or at least areas of search, in their Unitary Development Plans.

Facilities for municipal waste

- 68 Preliminary work to identify the likely number of new facilities required to meet the recycling and composting and reduction to landfill targets for municipal waste is summarised in Table 1.

¹¹ The Waste Management Licensing Regulations 1994

Table 1. Number of waste management facilities required to meet the Landfill Directive targets and recycling/composting targets of 40% from 2010 onwards.

Year	2010	2013	2020
Number of MRFs (30,000 t)	20-27	20-34	20-39
Number of composting facilities (20,000 t)	11-16	11-18	11-22
Number of energy from waste facilities (100,000 t)	0	0-4	3-9

Facilities for industrial and commercial waste

69 The Landfill Directive requirements to treat wastes prior to landfill, ban certain wastes from landfill and ban co-disposal of hazardous and non-hazardous wastes, will potentially require a significant number of new waste management facilities to be developed, including:

- a substantial increase in the number of materials recovery facilities (MRFs);
- biological treatment facilities (e.g. composting, anaerobic digestion) to ensure that the proposed target to reduce the amount of biodegradable industrial and commercial waste to landfill is met
- more transfer stations;
- more crushing/sorting plants (e.g. for demolition wastes and excavated materials);
- a limited number of energy recovery facilities (eg. by incineration gasification, pyrolysis, refuse derived fuel production etc);
- facilities to manage the 233,000 tonnes of special waste which are normally sent to landfill (on the assumption that there will be few hazardous landfills in Wales after 2004);
- more treatment facilities (around 2 million tonnes of industrial and commercial waste produced in Wales is landfilled and most of this will have to be treated under the Directive);
- alternative waste management options will have to be found for:
 - ~6600 tonnes of tyres which are currently landfilled in Wales;
 - ~70,000 tonnes of corrosive waste which went to landfill in 1998/99;
 - ~750 tonnes of solvents which were landfilled in 1998/99;
- a limited number of hazardous waste landfill sites will be required (at least one in south Wales and one in north Wales are likely to be needed to comply with the proximity principle);
- a continuing need for landfill to deal with residual municipal waste and treated industrial and commercial waste (see below).

Landfill need

70 Potential landfill requirements have been analysed for two different scenarios: an optimistic one assuming that all targets will be met and a pessimistic one assuming 3% annual growth in all wastes and only the municipal waste recycling/composting and Landfill Directive targets being met. The results indicate that if all the targets are met then in 2010 around 3.2 million tonnes of waste will need to be landfilled and the cumulative landfill capacity requirement from 2001-2010 will be 36.3 million tonnes. If there is 3% growth in waste arisings and only the municipal waste targets are met, then in 2010 around 5.4 million tonnes of waste will need to be landfilled and the cumulative landfill capacity requirement from 2001-2010 will be 49.4 million tonnes. Estimated landfill capacity in 1999 was in excess of 37.5 million tonnes. If growth is maintained and the reduction targets for industrial and commercial waste are not

met then Wales will face a considerable shortage in landfill capacity over the next 10 years.

Establishing the infrastructure

- 71 The necessary infrastructure identified above to implement the changes proposed in this draft strategy will be largely delivered by the private sector with important contributions from local authorities and the community/voluntary sector (e.g. community composting schemes and recycling centres). The Assembly is committed to a plan led approach whereby, as far as possible, the need for new facilities is identified in Regional Waste Plans and Unitary Development Plans. Suitable sites or areas for new facilities will be identified as far as possible during the development plan process (in full consultation with local communities).

Education

- 72 The Assembly considers that education in relation to waste is needed specifically in order to:
- change behaviour of both consumers and manufacturers (e.g. to move away from the 'throw away society', both in terms of littering and disposal in the dustbin);
 - increase awareness (e.g. to show what happens to waste put into the bin);
 - increase participation (e.g. in kerbside collection);
 - alter prejudices (e.g. to put the environmental impact of waste management facilities into context with impacts from other developments);
 - see waste as a valuable resource.
- 73 It is proposed that education initiatives in Wales should target the following groups as the initial priorities:
- householders;
 - schools and colleges;
 - those who litter and illegally dispose of waste;
 - industry and business (as both product manufacturers and waste producers).
- 74 The Assembly encourages the setting up by local government and its partners of a Wales waste awareness initiative to provide support for local action to target the first two groups identified above.
- 75 In order to ensure that education campaigns target the four main priority audiences proposed above, the Assembly will:
- work with the Wales Waste Forum and its Education Sub-Group and other potential partners to explore opportunities to get all of the priority campaigns off the ground;
 - strongly encourage local authorities to produce a communications strategy as part of their municipal waste management strategy, matching education to the change in waste management practices they wish to achieve;
 - seek to ensure a Welsh brand for the waste educational campaigns and undertake negotiations with the Welsh and UK media to also support the local campaigns;

- assist local authorities in Wales carrying out a co-ordinated promotion of the Buy Recycled message by supporting national negotiations with major supermarkets to support the various initiatives taking place;
- help progress educational campaigns by supporting further research through WRAP to help identify the barriers to recycling and how these can be overcome, and whether financial or other incentives can be economic and effective;
- encourage future education projects to have a monitoring component to enable better understanding of the way different messages change actual behaviour, rather than intentions to change behaviour;
- support the creation of a national web site containing information and ranking of effective research methods, best practice and educational materials to support the local and national strategies.

Improving our understanding

- 76 There are many areas where we need to improve our understanding of waste management in Wales, particularly with respect to provision of data, understanding behaviour and innovative approaches. This will involve working with a number of organisations and groups to ensure there is a co-ordinated approach and sensible use of resources.
- 77 The Assembly has commissioned consultants to undertake a study on the quantity and composition of municipal waste in Wales, and the factors affecting generation rates. The consultants will produce a protocol which local authorities will be able to use to obtain information on their waste composition. Better data on the components of the waste stream which are recyclable, compostable, combustible and biodegradable will allow better future planning. Information on the factors that affect waste generation will also help identify the potential for waste minimisation and reuse.
- 78 There are plans to set up an academic Centre of Waste Excellence in Wales, taking forward the various research initiatives on waste already being carried out in Welsh universities in a more co-ordinated way and addressing research needs identified in the strategy.

Better regulation and enforcement

- 79 Current waste legislation is extensive and complicated. With its commitment to better regulation, the Assembly will encourage UK Government to review current primary waste legislation to make it simpler and, where possible, to consolidate it into as few legal instruments as possible, whilst still meeting the requirements of EC Directives.
- 80 The Assembly will ensure that appropriate guidance is made available to those affected by waste legislation. We are a partner in Envirowise which was set up to provide advice to businesses on environmental technology and best practice. We will also work closely with Environment Agency Wales to ensure that it produces adequate and timely guidance for regulated businesses¹².

¹² Guidance can be found on the Agency's web site: www.environment-agency.gov.uk

- 81 The Assembly intends to promote a programme for tackling litter. We will consult with local authorities and other bodies in Wales on the best ways to reduce the problem of littering. Tackling litter should be an important criterion in Best Value reviews of waste management. The Assembly will require a litter plan (as described in Part 2, Chapter 3 of the Code of Practice on Litter and Refuse) to be included in the Municipal Waste Management Strategies of each local authority. We will co-operate with the review of litter legislation announced by the Department of the Environment, Transport and the Regions (DETR). It will press for changes in primary legislation to enable local authorities to retain monies received from payment of littering fines. We will also carry out a review of secondary litter legislation and will consult with stakeholders during this process. The review will include consideration of:
- litter in watercourses and ponds and on their banks;
 - litter on private land;
 - the management of trade wastes;
 - enforcement of litter laws and prosecution of offenders.
- 82 The Assembly regards the tackling of littering as an urgent priority and will be making additional funds available for local authorities to address the problem. Other actions in the strategy, including improvements to civic amenity site management and additional funding to tackle illegal dumping (see below) will also contribute to the Assembly's objective of tackling litter.
- 83 The Assembly is committed to stamping out the illegal disposal of waste, from the small scale dumping of black bags full of rubbish through to the large scale operation of illegal tips. The Assembly supports the soon to be agreed joint Local Government/ Environment Agency Protocol on Fly Tipping which clarifies the shared responsibilities for clearing up different types of fly tipped waste. The Assembly also strongly supports Environment Agency Wales' 'Targeted Enforcement' campaign and is providing an additional £200,000 in 2001/2 to support it.

Effective leadership and consultation

- 84 EC Directives require government at all levels to ensure that waste is managed properly and that plans are in place for waste management. The Assembly will lead the delivery of the waste strategy. It will also set an example and encourage and persuade others to follow. To achieve this it will co-ordinate efforts at an all Wales level, it will encourage partnerships and it will seek to provide the funding where necessary. It will ensure appropriate liaison within Wales between key stakeholders such as local government and Environment Agency Wales, and outside Wales with UK Government departments and other UK bodies. The Assembly will also check and monitor progress and will step in to resolve problems where required. It will also use its powers of direction where necessary.
- 85 The UK government has a vital role to play in introducing fiscal and legal instruments and in influencing UK business to make the changes to waste management practices required by the international and European community. Indeed, many of the changes that the Assembly would like to see rely on action at a UK level.

- 86 The Assembly is committed to a 'joined up approach' and will ensure that the waste strategy both complements and engages with all the other Assembly strategies. All those strategies will have regard to the waste policies contained in the final waste strategy, and actions which overlap between strategies will reinforce rather than duplicate each other.
- 87 The Assembly will implement its own internal waste management policies within its environmental policy. It will reduce its own waste arisings and will recycle wherever possible. Under its Green Procurement programme it will ensure that it purchases, where ever possible, recycled products, items of long durability, items with a low hazard and items which are designed for easy recyclability.
- 88 The Assembly also has direct influence over a large number of public services. It intends to persuade them to carry out Green Procurement and will require them to take measures to reduce their wastes.

Who is responsible for helping the Assembly to implement the waste strategy?

- 89 All, including individuals and businesses, must make a substantial contribution towards the implementation of the strategy if we are to achieve a sustainable approach to waste management in Wales. Chapter 5 of the main document outlines the key roles and actions which the following will have to undertake (in addition to the contribution that the Assembly itself can make):
- product manufacturers;
 - industrial and commercial waste producers;
 - the construction industry;
 - retailers;
 - the general public;
 - local authorities;
 - waste management industry;
 - community/voluntary sector;
 - environmental goods and services business sector;
 - Welsh Development Agency;
 - Environment Agency Wales;
 - UK Government

Appraisal of the likely outcomes of the strategy

- 90 Chapter 6 of the main document seeks to appraise the draft strategy within the context of sustainable development. The following impacts and outcomes are subject to preliminary appraisal:

Environment

- 91 From limited work using life cycle analysis undertaken for the Scoping Study for the Wales Waste Strategy¹³, the following general comments about the

¹³ 'Options for a Welsh Waste Strategy: A Technical Report for the National Assembly for Wales.' ECOTEC and WS Atkins. September 2000.

environmental impacts of different management options can be made for municipal waste:

- recycling generally uses less energy overall than the use of virgin materials in products – this reduces greenhouse gas emissions;
- energy from waste¹⁴ reduces the use of fossil fuels in power stations (although part of the waste consists of fossil fuels e.g. plastics) – this also reduces greenhouse gas emissions;
- recycling and energy from waste have less environmental impact than landfill due to the reduction in greenhouse gases and the reduced use of energy when recycling or recovering energy;
- the environmental impacts of recycling are generally lower than those of energy from waste because recycling generally results in greater energy savings overall (even if transportation of waste for recycling is taken into account);
- recycling and energy from waste tend to have less impact on acidification than landfill due to reduced emissions of sulphur oxides from the reduced energy requirements of recycling or from energy recovered from waste. This is because less coal is used to generate electricity;
- recycling and energy from waste tend to consume less non-renewable resources than landfill. This is through recycling and energy recovery leading to less consumption of fossil fuels, iron and aluminium;
- reducing the biodegradable landfill component and better landfill gas utilisation tend to lessen the greenhouse effect.

Health

- 92 The Assembly is committed to the development and use of health impact assessment and is encouraging other organisations in Wales to do the same. Chapter 6 and Annexes 8 and 9 of the main document give guidance on the use of health impact assessment and will be used to assess the impact of the final strategy. A key point is that any risk to health arising from the management of waste must be properly compared against the normal or background risks to which all members of society are subject. For example, the chief determinants of ill health and death in wealthy countries are now genetic inheritance, lifestyle (which is partly constrained by poverty) and the afflictions of old age.
- 93 Previous studies of individual waste management sites are subject to some reporting bias as many are undertaken in response to locally expressed concerns about health. There is some evidence that although reported symptoms are worse in the potentially exposed residents who believe that a hazard exists to their health, the potentially exposed, who do not believe this, report no more symptoms than a control group.
- 94 Few conclusions about health risks from waste management operations can be drawn from previous studies. Potential risks include:
- inhalation related to a number of fungi and bacteria associated with biodegradable waste (bioaerosols may act as a transport mechanism);
 - the presence of pathogenic micro-organisms as contaminants in waste (e.g. coliform bacteria from animal faeces, Weil's disease from vermin);

¹⁴ Incineration was modelled - other energy from waste technologies are available.

- the release of volatile substances and dust into the atmosphere from landfills;
- emissions from vehicles transporting wastes to management facilities;
- emissions of volatile substances and particles from waste incinerators;
- illegal fly tipping of hazardous wastes.

95 At present there is no conclusive evidence of significant health risks to populations living in the vicinity of modern waste management sites. However, the understanding of the interaction between the environment and health is constantly evolving. Projects due to be reported include health effects of landfill, incineration, and composting as well as health impacts of developments in waste management practices. These and other data will in due course inform the conduct of a health impact assessment of the Wales waste strategy. They must also be incorporated into health impact assessments carried out by Regional Waste Groups and local authorities in the production of their Unitary Development Plans.

Employment

96 In general, waste management techniques further up the waste hierarchy generate more direct jobs. Waste minimisation might be regarded as the exception – however, this can serve to safeguard jobs indirectly by making businesses more efficient and hence competitive. It also provides employment for those providing advice on waste minimisation and for those working in companies to implement the advice. The Assembly's policies for the segregation of wastes at source and of using waste materials as a resource require both new equipment and additional human resources.

97 Table 2 provides an estimate of the potential human resource requirements in 2010 if the Assembly's preferred option for municipal waste recycling and composting targets is implemented (as opposed to carrying on with the current recycling rate of 5%). Figures are provided for 0% and 3% growth in municipal waste arisings. The analysis indicates that an additional 450-9,500 jobs will be created. The actual number will depend upon the collection method chosen by each local authority and the types of markets found for the recyclate.

Social

98 The social impacts of implementing the strategy are difficult to quantify. Much depends upon the degree to which the community is engaged at the local level and upon local decisions implementing the strategy. The social impact can be assessed in terms of both an optimistic view and a pessimistic view on the changes that are likely to happen.

Table 2. Summary of estimated human resource requirements in 2010 arising from the management and recovery of municipal waste in Wales.

Waste management system	Scenario	Human resource requirements in 2010 for different municipal waste growth rates (persons)	
		0% growth	3% growth
'Traditional' approach	As per current practice	2,468	3,421
Achieving the preferred recycling/composting targets	MINIMUM – i.e.: fortnightly alternating collection of recyclables and residual waste; use of a 'dirty MRF'; minimum reprocessing jobs; composting, min. RDF-EfW; and min. landfill.	2,917	4,160
	MAXIMUM – i.e. Separate collection of recyclables and compostables with sorting of recyclables on vehicle (fortnightly) plus bulking up & baling plus residual collection (weekly); maximum reprocessing jobs; composting, max RDF-EfW; and max landfill.	9,000	12,838
Number of additional jobs created	MINIMUM – As above	449	739
	MAXIMUM –As above	6,532	9,417

Optimistic assessment

99 An optimistic assessment of the social impacts of the strategy suggests that the following are potential outcomes:

- the additional jobs created will have a positive benefit on economic welfare;
- reduced landfill will reduce the anxieties of local people;
- community involvement in recycling and composting enterprises will improve social cohesion and generate 'social capital';
- householder participation in kerbside recycling schemes will enhance the sense of social responsibility arising from their contribution towards improving the environment and recovering valuable materials from waste. It conforms to the desirability of social inclusion in sustainable development;
- greater awareness of waste as a problematic issue, but with positive solutions, can reduce the injustices caused whereby small numbers of citizens bear the consequences of the inaction of the majority;
- waste materials come to be seen as resources. Extending product life and re-using materials comes to be seen as 'wise' rather than 'unfashionable';
- improving the problem of litter and fly tipping will result in cleaner neighbourhoods and will help to improve the amenity value of the locality. This will also generate pride in living spaces and improve the attractiveness of Wales (with potential benefits in terms of tourism and inward investment).

Pessimistic assessment

100 It is feasible that there may be potentially the following adverse social outcomes, particularly if communities are not engaged effectively in decision making and if they are not enabled to participate:

- there could be increased alienation if decisions are made without adequate information being provided and without adequate consultation;
- there could be a reluctance to accept any type of materials handling facilities, perpetuating the 'bad neighbour' view of any facility handling waste materials;

- any increase in costs for the management of municipal waste may have adverse social impacts, particularly on low income groups.

Financial

101 A broad estimate of the costs of implementing the strategy is given in Chapter 6. The following changes are analysed for their financial impacts:

- for municipal waste (for 0% and 3% growth rate), collection and disposal costs have been estimated for the following scenarios:
 - SCENARIO 1: the 'base case', which implies carrying on as we are - 5% recycling, landfill the rest (i.e. this option will fail to comply with the Landfill Directive targets);
 - SCENARIO 2: Waste Strategy 2000 recycling targets (i.e. 30% recycling in 2010), landfill up to Landfill Directive targets, the rest to energy from waste (EfW);
 - SCENARIO 3: 40% recycling (15% composting) from 2010, landfill to Landfill Directive targets, EfW for the rest (where required).
 - SCENARIO 4: 40% recycling (15% composting) by 2010, 60% recycling (20% composting) from 2013 onwards, landfill to Landfill Directive targets, EfW for the rest (where required).
- for hazardous & banned wastes:
 - the costs for the management of hazardous and 'banned' waste in Wales arising from changes brought in by the Landfill Directive (i.e., hazardous only landfills, alternative disposal methods, requirement for pre-treatment, banning of disposal of certain wastes).
- for all wastes sent to landfill:
 - a broad estimate of likely costs for the management of all wastes being sent to landfill arising from changes to landfill practice and requirement for pre-treatment in Wales under the Landfill Directive.
- diverting other biodegradable wastes from landfill:
 - estimated costs of implementing the target to reduce the amount of biodegradable waste to landfill in Wales (by 2005 landfill less than 85% of BW landfilled in 1998).
- meeting other targets:
 - cost implications for meeting other targets proposed in Chapter 4.

102 The estimated financial costs to local authorities for each of the municipal waste scenarios are identified in Table 3. The 'Low' costs for the 'base case' assume that Landfill Tax only rises by £1 per tonne until 2004 whereas the 'High' costs anticipate an annual £1 per tonne cost until 2020. If the rate of increase in Landfill Tax is not altered then the Assembly's preferred option for managing municipal waste and meeting the Landfill Directive targets in Wales ('Scenario 3'), could cost an extra £22–667 million to achieve over the next 20 years, depending upon growth. The Assembly's preferred option places more reliance on recycling and composting to achieve the Directive's targets in comparison to Scenario 2 which relies more on energy from waste. This relates to the higher capital expenditure required for energy from waste facilities.

103 It is important to note that growth of 3% each year could result in extra costs of between £420-620 million as compared to 0% growth. This demonstrates how crucial it is to control such growth.

104 The estimated costs to business for implementing the other aspects of the Landfill Directive are summarised in Table 4 (these are subject to considerable uncertainties).

Table 3 Summary cost figures for municipal waste for 0% growth rate (net present value)

Cost category	Time period	Costs (£ million)				
		Range	SCENARIO 1 (Base Case)	SCENARIO 2 (WS 2000)	SCENARIO 3 (40% Recycling/Composting)	SCENARIO 4 (60% Recycling/Composting)
For 0% growth						
Cost (Net Present Value)	to 2010	LOW	725.40	732.88	731.50	731.50
		HIGH	913.94	966.66	948.50	948.50
	to 2013	LOW	857.43	870.11	867.93	869.59
		HIGH	1102.42	1171.71	1147.81	1151.52
	to 2020	LOW	1104.52	1134.13	1126.92	1136.16
	HIGH	1488.29	1583.59	1546.99	1561.23	
Cumulative Capital Expenditure	to 2010	LOW	4.2	72.2	34.2	34.2
		HIGH	6.0	119.5	72.0	72.0
	to 2013	LOW	4.2	122.8	34.2	43.8
		HIGH	6.0	200.0	72.0	91.5
	to 2020	LOW	4.2	147.8	84.2	51.0
	HIGH	6.0	238.0	148.0	106.5	
For 3% growth						
Net Present Value	to 2010	LOW	872.94	883.03	881.39	881.39
		HIGH	1103.62	1172.56	1149.52	1149.52
	to 2013	LOW	1072.53	1090.86	1088.81	1090.71
		HIGH	1388.67	1483.85	1454.76	1458.10
	to 2020	LOW	1504.27	1553.42	1551.51	1558.26
	HIGH	2064.33	2205.67	2171.55	2177.13	
Cumulative Capital Expenditure	to 2010	LOW	4.2	133.6	51.6	51.6
		HIGH	9.0	219.5	105.0	105.0
	to 2013	LOW	4.2	237.2	155.8	97.6
		HIGH	9.0	382.0	269.0	189.5
	to 2020	LOW	7.8	398.0	295.2	176.4
	HIGH	13.5	629.5	486.0	325.5	

Table 4 Summary cost estimates for Landfill Directive effects on non-municipal wastes in Wales

Landfill Directive requirement	Costs (£k)		
	Low	Med	High
Banned Corrosive Wastes	192	360	528
Banned Liquid Wastes	650	2,480	4,320
Pre-treat Haz Wastes	4,372	7,758	11,143
Pre-treat Non Haz Wastes	-1,590	29,545	60,680
Totals	3,624	40,143	76,671

Monitoring

105 The Assembly is committed to working with its partners to ensure that progress in implementing the waste strategy is adequately monitored. This will include the following information sources:

- the annual DETR/NAW municipal waste survey;
- Best Value Performance Indicators;
- Sustainable Development Indicators;
- Environment Agency Triennial National (Industrial and Commercial) Waste Production Survey ;
- Environment Agency licensed waste management facility input/output returns;
- Environment Agency special waste tracking data;
- other surveys will be carried out on particular waste streams;
- regional waste plans;
- local authority municipal waste strategies;
- local authority Unitary Development Plans.

106 The Assembly will consider extending the role and operation of the Wales Waste Forum to allow it to act as a 'Wales Waste Strategy Monitoring Group'. The Forum, with its wide representation of key stakeholders, could perform a very useful function in monitoring the implementation of the strategy.

Review

107 Given the enormous changes facing waste management over the next few years, the Assembly considers that the Wales waste strategy should be reviewed initially every three years. The draft strategy has drawn upon a number of assumptions. These include costs, growth in waste, achievable levels of recycling and composting, and waste composition. The position will need to be reassessed when more reliable information, particularly on growth and composition, become available as a result of Assembly sponsored actions to improve data.

108 Reviews will be carried out by the Assembly in close co-operation with its partners, including local government, Environment Agency Wales, the waste industry, the community recycling sector, the WDA, and UK Government and the other devolved administrations.

Concluding remarks

109 The Assembly has taken on an important responsibility to produce its own waste strategy. The Landfill Directive provides a strong driver for change. We must ensure that Wales rises to the challenge and exploits to the full the opportunities presented by devolution. Wales is a manageable size in which to plan properly, partnerships are much easier to forge, and its sustainable development duty will hopefully provide a beacon for others to follow. The intention is to turn waste into wealth, create additional employment and improve the environment and social well being as a consequence.

CONSULTATION QUESTIONS

The Assembly welcomes views on the following questions asked in the main consultation document:

CHAPTER 1: Introduction

- Q1 Do you support this Purpose and if not how would you like to see it improved?
- Q2 Do you support these aims for the strategy and if not how would you like to see any of them amended, deleted or added to?
- Q3 Do you support these principles and if not how would you like to see any of them amended, deleted or added to?

CHAPTER 3: The drivers and aspirations and the potential problems and opportunities

- Q4 In moving from landfill what role, if any, do you see for energy-from-waste technologies in contributing to sustainable waste management? Which, if any, of the options in Annex 7 offers realistic prospects of contributing to sustainable waste management, and under what circumstances? Do you have any comments on Annex 7 that will help to develop this as a framework for assessing options?
- Q5 Do you support these proposed strategic Assembly policies for Wales - if not how would you like to see them changed?
- Q6 Do you think that we have covered adequately the most significant implications of the statutory drivers and strategic waste policies on waste management in Wales? Are there any other significant implications which you would like to bring to our attention?
- Q7 Is there anything else of significance which has hindered us in the past?
- Q8 Are there any other opportunities which you think are important?

CHAPTER 4: Options for targets & policy instruments

- Q9 Do you think that it is worthwhile and meaningful to set a municipal waste minimisation/stabilisation target and what are your views on the two proposed options?
- Q10 Can a meaningful and measurable target be set for local authorities to ensure that home composting diverts significant quantities of biodegradable waste away from the household waste stream?

- Q11 What are your views on each of the proposed options for recycling and composting targets and do you agree with the preference for Option 2 (i.e. a recycling and composting target of 40% for 2010 and beyond)?
- Q12 What are your views on these proposed targets to ensure the provision of facilities for certain types of hazardous household wastes at civic amenity sites?
- Q13 Do you think it is desirable to set a target to reduce the amount of waste produced in the public sector?
- Q14 Do you think that it is worthwhile having a target to reduce the amount of industrial and commercial waste being produced in Wales? If yes, which of the two options would you prefer, or can you suggest any alternatives? Should different targets be set for different sectors and can you suggest which sectors can make the biggest contribution?
- Q15 Do you agree with these targets to reduce the amount of industrial and commercial waste sent to landfill?
- Q16 Do you agree with these targets to reduce the amount of biodegradable industrial and commercial waste sent to landfill?
- Q17 Do you think it appropriate for the Assembly to adopt this target for the minimisation of special/hazardous waste?
- Q18 For which special/hazardous waste streams can minimisation targets sensibly be set?
- Q19 Should targets be set for the reuse and recycling of C&D waste in Wales in advance of any Directive and at what level should they be set?
- Q20 Do you agree that the Assembly should have some form of 'safety net' in place in case of under performance (i.e. by allocating to local authorities say only 95% of the available permits to restrict the amount of biodegradable municipal waste going to landfill)?
- Q21 What are your views on the nature of a permit for the landfilling of biodegradable municipal waste and what sort of audit system do you think is required?
- Q22 What are your views on the appropriate method of allocation of landfilling permits to local authorities in Wales?
- Q23 Which of the two options, i.e. a tradable permit system or a non-tradable system, for landfill permits is the most desirable and which is most likely to deliver compliance with the targets?
- Q24 Do you agree that there should be interim targets restricting the landfilling of biodegradable municipal waste before the first Landfill Directive target date (2010), should they be mandatory and when should they start?

- Q25 Do you consider that a regionally based compliance system for local authorities to meet the Landfill Directive targets could work and, if so, how?
- Q26 What are your views on sanctions that could be applied to local authorities failing to comply with the limits on the landfilling of biodegradable municipal waste?
- Q27 Are local authorities and relevant 'third parties' content for the updating of The Environmental Protection (Waste Recycling Payments) Regulations Schedule to be discontinued?
- Q28 Do you believe that the Assembly should make recycling credit payments to third parties mandatory? What would be the implications of such a change, including for local authority finances?
- Q29 What roles do you think should be played by the public, private and voluntary sectors respectively in the Landfill Tax Credit Scheme, and how best can they work together?
- Q30 Do you agree that the Assembly should work with other governments to introduce producer responsibility legislation rather than seeking to establish different arrangements in Wales?
- Q31 Do you agree that producer responsibility legislation to ensure the recycling of farm films is desirable?
- Q32 Are there any other products or materials which you think should be subject to producer responsibility obligations?
- Q33 What are your views on the introduction of requirements for mandatory participation in source segregating recyclable and compostable materials, or the use of variable charging or a rebate on Council Tax as possible mechanisms to increase recycling/composting participation rates? Are there any incentives which you think could be offered to householders to encourage them to recycle?
- Q34 Do you agree that the recovery of energy from mixed wastes should not count as renewable energy?
- Q35 Do you support the need for an Energy from Waste Tax?
- Q36 Should the Assembly make representations to the UK Government to introduce differential taxes for greener products?

CHAPTER 5: The way forward & responsibilities for delivery

- Q37 What actions do you think the public can take to significantly reduce the amount of waste they put into the domestic rubbish bin and how can such actions be encouraged?

- Q38 Do you think that the requirement for local authorities to determine the composition of their municipal waste should be made mandatory?
- Q39 Do you agree that the provision of waste minimisation support to businesses in Wales needs co-ordinating and do you have any views on how this could be co-ordinated best?
- Q40 What are your views on the support packages for waste minimisation for businesses outlined in Boxes 5.7 and 5.8?
- Q41 Do you support a waste minimisation campaign targeted at the public sector?
- Q42 Do you support these proposals for packaging re-use projects in Wales?
- Q43 Do you support the setting up of a Wales waste awareness initiative and how do you think it should operate?
- Q44 Do you support these waste education proposals? How could they be improved?
- Q45 What other ways could the Assembly market the strategy?
- Q46 What other research needs are there and how can they be addressed?
- Q47 What waste legislation would you like to see reviewed and why? Can you suggest any way of simplifying or improving it?
- Q48 What additional guidance on waste legislation and waste management best practice would you like to see provided?
- Q49 What other action do you think need to be taken to tackle the problem of litter?
- Q50 What else do you think the Assembly needs to do to ensure effective leadership of the implementation of the strategy?
- Q51 What further contribution do you think local authorities can make towards sustainable waste management?
- Q52 What else would you like the WDA to do to contribute to sustainable waste management?
- Q53 What do you think Environment Agency Wales' main roles should be to help Wales achieve the goal of sustainable waste management?
- Q54 Do you support these suggestions for action by the UK Government and are there any others you would like to add?
- Q55 What are your views on these possible hurdles which may need to be overcome?

CHAPTER 6: Appraisal of the impact and outcomes of the strategy

Q56 Do you support this approach to assessing the impacts of the waste strategy on health? Are there any other health factors which you consider should be taken into account in decisions about the strategy?

RESPONSE TO THE CONSULTATION

Comments on the consultation document are invited, to be received at the address given below by 5th October 2001. Comments should be addressed to:

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Responses received will be available for public scrutiny. If you wish your comments to be confidential then please make that clear in your response.