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Waste Action Scotland

National Waste Strategy: Scotland

Orkney and Shetland

Area Waste Plan

SCOTTISH EXECUTIVE

do a little change a lot

SEPA
Scottish Environment Protection Agency

Orkney and Shetland Area Waste Plan

Prepared by SEPA

March 2003

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Foreword by Orkney and Shetland Waste Strategy Group Chair

I am very pleased to present the first ever Orkney and Shetland Area Waste Plan (AWP). The two independent Orkney and Shetland Waste Strategy Area Groups have been working hard since early 2000 to prepare a long-term, integrated plan for the management of waste in the area. In each island group this process has been carried out in consultation with a range of stakeholders, including individual members of the public, community organisations, voluntary groups and industry representatives. I would like to thank everyone involved for their constructive comments.

Orkney and Shetland are unlike mainland Scotland in many ways, not least in terms of the unusually high costs and logistical complexities associated with managing waste in such a remote area. The indigenous industries – crofting, fishing, fish-production and processing, agriculture, and the oil and gas sector – are highly sensitive to external economic pressures, and it is vital that this and future plans support rather than threaten their future stability.

The Orkney and Shetland area already has one of Scotland's strongest track records in sustainable waste management. However, this Plan proposes further improvements that will address potential growth in waste arisings, and substantially increase the level of waste recovered and recycled. The measures proposed will reduce the quantity of household and commercial waste disposed of to landfill sites, and increase the quantity that is collected for recycling. This represents a sustainable future for the people of Orkney and Shetland, and will make an important contribution to the objectives of the National Waste Strategy: Scotland in years to come.

This Plan will not work without a programme of concerted action – now and in years to come. Annex 2 describes a detailed Action Plan that will form the principal mechanism to ensure the Plan is effectively implemented.

This document provides a framework for the next 20 years. It has been integrated with Scotland's ten other AWPs to provide a National Waste Plan for Scotland. For all these plans to work, and work they must, we have to ensure that the strategic direction proposed is sensible and workable. There is no option other than to change the way we deal with our waste. I would encourage everyone in Orkney and Shetland to play an active part.

Tom Anderson

Chair, Orkney and Shetland Waste Strategy Area Groups
Foreword by Scottish Executive

Foreword by Scottish Executive

Currently almost all of Scotland's household waste goes to landfill sites. This has been a cheap and – for most of us – convenient way of putting waste out of sight and out of mind. But disposing of unsorted refuse in this way is, quite literally, a waste of the world's resources. It is also a potent source of greenhouse gases and other emissions to the environment with waste management (mainly from landfills) contributing almost a quarter of the total amount of methane emitted in Scotland each year.

Moving to a position where we produce less waste, reuse and recycle more and recover value from as much as possible of what is left is at the heart of the Scottish Executive's approach to sustainable development. Nationally we have set a target of recycling or composting 25% of Scotland's waste by 2006, but we aim to move beyond that to achieve higher levels of recycling and composting and minimise our use of landfill. These are goals that are wholeheartedly supported by the Scottish people. In the recent Executive survey of public attitudes on the environment over two-thirds of people indicated that they were worried or very worried about waste management issues. Many already support recycling and composting initiatives by local authorities and the community sector. Opinion surveys show that more than 80% of people would participate in kerbside recycling if the necessary facilities were in place.

The change cannot be achieved overnight. It will need investment in new services and new facilities and in the development of markets for recycled materials. The Executive has allocated more than £230m over the next three years for these purposes. The change also needs a change of culture so that sorting our waste becomes a part of daily life for all of us. And crucially it must be based on thorough planning taking full account of local circumstances.

The preparation of this Area Waste Plan for Orkney and Shetland, along with 10 other area plans and the National Waste Plan, has been the essential first step on the path to change. The Plan is the product of intensive work by Orkney and Shetland Councils and the Scottish Environment Protection Agency to identify the best practicable environmental option for waste management in Orkney and Shetland. Its completion is a testament to the potential of partnership working across local authority, organisational and sectoral boundaries and all participants deserve credit for the parts they have played. The exercise has also generated extremely high interest amongst the general public in waste issues, partly as a result of the area groups organising many local meetings, exhibitions, leaflets and consultations.

The programme of change set out in this plan and its counterparts is a challenging one. But it is one, which by building on the partnerships that have been established at national and local level by the waste planning process, we can and must achieve.

Ross Finnie

Minister for Environment and Rural Development

Executive Summary

Introduction and Background

This Area Waste Plan (AWP) has been developed by the joint efforts of Orkney and Shetland Waste Strategy Area Groups (WSAG) to provide a strategic framework for improved waste management across the two local authority areas. The key aim of the plan is to:

'Contribute to the sustainable development of the Orkney and Shetland Area by developing waste management systems that will control waste generation, reduce the environmental impacts of waste production, improve resource efficiency, stimulate investment and maximise the economic opportunities arising from waste'.

The principle of sustainable development is now fully embedded at all levels of government thinking and policy-making. The Scottish Executive recognises that effective resource use is a crucial element of sustainable development and therefore set the following objective within the Spending Proposals for 2003-6:

'Ensure progress towards sustainable waste management of Scotland's waste and achievement of EU landfill reduction targets by 2010, 2013 and 2020'.

The Executive overall national target set to achieve this aims to:

- ➔ Increase the amount of waste collected by the local authorities that is recycled or composted to 25% by 2006.

This plan has five main parts:

Section 1 ➔ Sets out the background to the AWP in the context of the Orkney and Shetland area and details current waste management practices and infrastructure.

Section 2 ➔ Summarises the strategic framework and key drivers behind the development of the AWP and presents a summary of the methodology used to develop the Best Practical Environmental Option (BPEO) for municipal solid waste (MSW) in Orkney and Shetland.

Section 3 ➔ Presents details of BPEO for the management of MSW in Orkney and Shetland, which seeks to build on the existing range of waste management facilities and significantly increase the amount of waste that is reused, recycled or composted.

Section 4 ➔ Presents a framework for developing BPEO for non-MSW streams that are not, as yet, specifically covered by the Plan.

Section 5 ➔ Presents the essential elements to ensure the Plan is implemented effectively, including a detailed Action Plan, detailing future actions, timescales and responsibilities.

The plan primarily focuses on MSW – i.e. waste produced by households and commercial premises that is collected and managed by the local authorities. It sets out the strategy for implementing the BPEO for these wastes, as agreed by the two WSAGs in February 2002 and reported in the Orkney and Shetland Draft AWP, July 2002.

Information and data on non-MSW –- i.e. industrial and other waste – are currently insufficient to conduct a through analysis to identify BPEO(s). Moreover, as there is no single agency responsible for control of these wastes, developing and implementing BPEO is necessarily even more complex. However, a broad framework for developing BPEO(s) for non-MSW is presented in Section 4.3, and the Orkney and Shetland WSAGs will continue to identify areas where management of these wastes can be improved.

Orkney and Shetland BPEO for MSW – rationale and summary

Two extensive public consultation processes were carried out in each island group as part of the BPEO decision-making process. The first sought local views on a number of strategic options relevant to each area, and the second on the Draft AWP itself. The Draft plan was then formulated jointly by the two WSAGs. In Orkney, three strategic options were based on continued joint working through the energy recovery plant (status quo); continued joint working but with additional increased waste prevention and recycling; and development of a new local landfill for mixed waste (to avoid exporting waste to Shetland). The majority of respondents were in favour of the second option. In Shetland, the options proposed took the form of a range of potential waste prevention, recycling and composting measures that could operate in parallel with the existing energy recovery plant. There was strong support for all those measures that would prevent waste at source, and increase the proportion composted and recycled, without threatening the performance and viability of the existing district heating scheme. The consultation responses concurred well with the views of the two WSAGs.

The other key finding in both island groups, which again concurred with the views of the WSAGs, was the desire to recycle more, both through segregated kerbside collections and improved access to bring facilities in remote areas. This was particularly the case in Orkney, where there are additional economic benefits associated with reducing exports of waste.

The BPEO decision-making process was necessarily based on maintaining the existing energy recovery facility in Lerwick. Both WSAGs recognise that this facility has a very important and highly valued local socio-economic function. The outcomes of the BPEO process were therefore required to maintain this function, while maximising the prevention of waste and recycling as far as practicably possible and economically justifiable.

The geographical fragmentation and remoteness of the islands, and their highly dispersed human populations, were also critical factors in determining the BPEO. These factors mean that waste collection and transport, for kerbside recycling in particular, are inevitably less practicable and more costly than elsewhere, and it is difficult to justify such schemes in the most remote areas on either economic or environmental grounds. For this reason kerbside recycling collections have been targeted at the more densely populated areas.

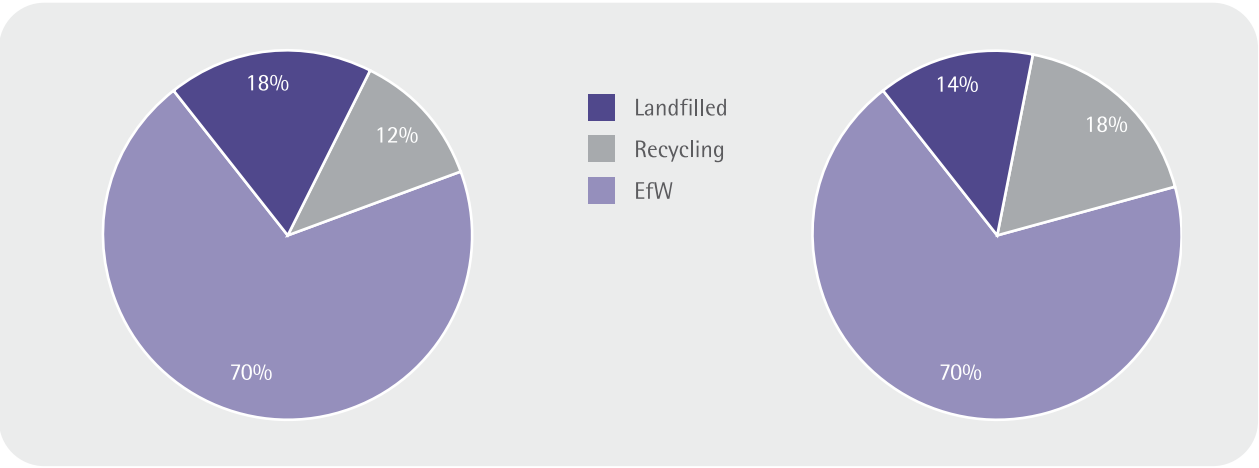
The Orkney and Shetland WSAGs have considered in detail SEPA's "Guidelines and approach to thermal treatment and energy from waste", and have agreed that source-segregation of recyclable wastes should form a key element of the BPEO. The islands have a strong track record of resource efficiency and the BPEO for MSW is intended to build on this. However, for the reasons outlined above, it is unrealistic to target similar levels of recycling as would be expected on the mainland.

The Orkney and Shetland BPEO for MSW requires the following main developments:

- Preventing MSW at source through education and awareness-raising, the provision of practical community support, and promoting home composting
- Introducing source-segregated kerbside recycling collections for the major towns in both island groups
- Expanding the provision of recycling bring facilities in remote areas
- Continuing to recover energy from the majority of the area's MSW via the existing Lerwick Energy-from-Waste plant
- In Shetland, reducing the amount of MSW sent to landfill, and increasing the amount recovered for energy
- In Orkney, reducing the amount of MSW exported to Shetland for energy recovery and increasing the amount recycled and composted locally
- Developing local reprocessing capacity and local recycled product markets for glass and paper and (in Orkney) green waste
- Disposing of reduced quantities of residual MSW to landfill.

The BPEO sets specific targets for waste prevention, energy recovery, materials recycling and landfill disposal of residual wastes. Delivery of these targets will result in an important shift from the current waste management mix – there will be less landfill disposal and more recycling of MSW in the area. The shift from the current position is illustrated in Exec. Summ. Figure 1 over.

Exec. Summ. Figure 1 - Orkney and Shetland % Targets – 2001/02 and 2020 (BPEO)



The quantity of waste produced in the isles is increasing, and the priority is therefore to prevent waste occurring at source. The BPEO targets assume the quantity of waste produced in the islands can be capped at current levels by 2020.

As Figure 1 illustrates, the main development proposed by the BPEO for MSW is a shift away from landfill and increased recycling. Most of this shift will be targeted at the household waste stream, and the percentage increase here will be even greater – from around 13% in 2001/02 to 18% in 2020. This is an ambitious target for such a remote and dispersed area that will require development of greater reprocessing capacity within the area. It is also a process that will require careful management to maintain the efficiency of the existing energy recovery plant.

Kerbside collections of glass and aluminium in Lerwick will require levels of public participation that will deliver at least 50% capture of the total quantities available, and in Orkney an additional 1000 tonnes of MSW will be recycled by various means (this target is based on current estimates of the extent to which imports of waste from Orkney for energy recovery can be reduced without adversely affecting the performance or efficiency of the existing plant).

All the targets in the BPEO for MSW will be reviewed on an on-going basis, and in particular in light of key research into the sensitivity of the existing energy recovery plant (e.g. it may be possible to recycle more MSW and substitute this diverted waste with other local non-MSW feedstocks).

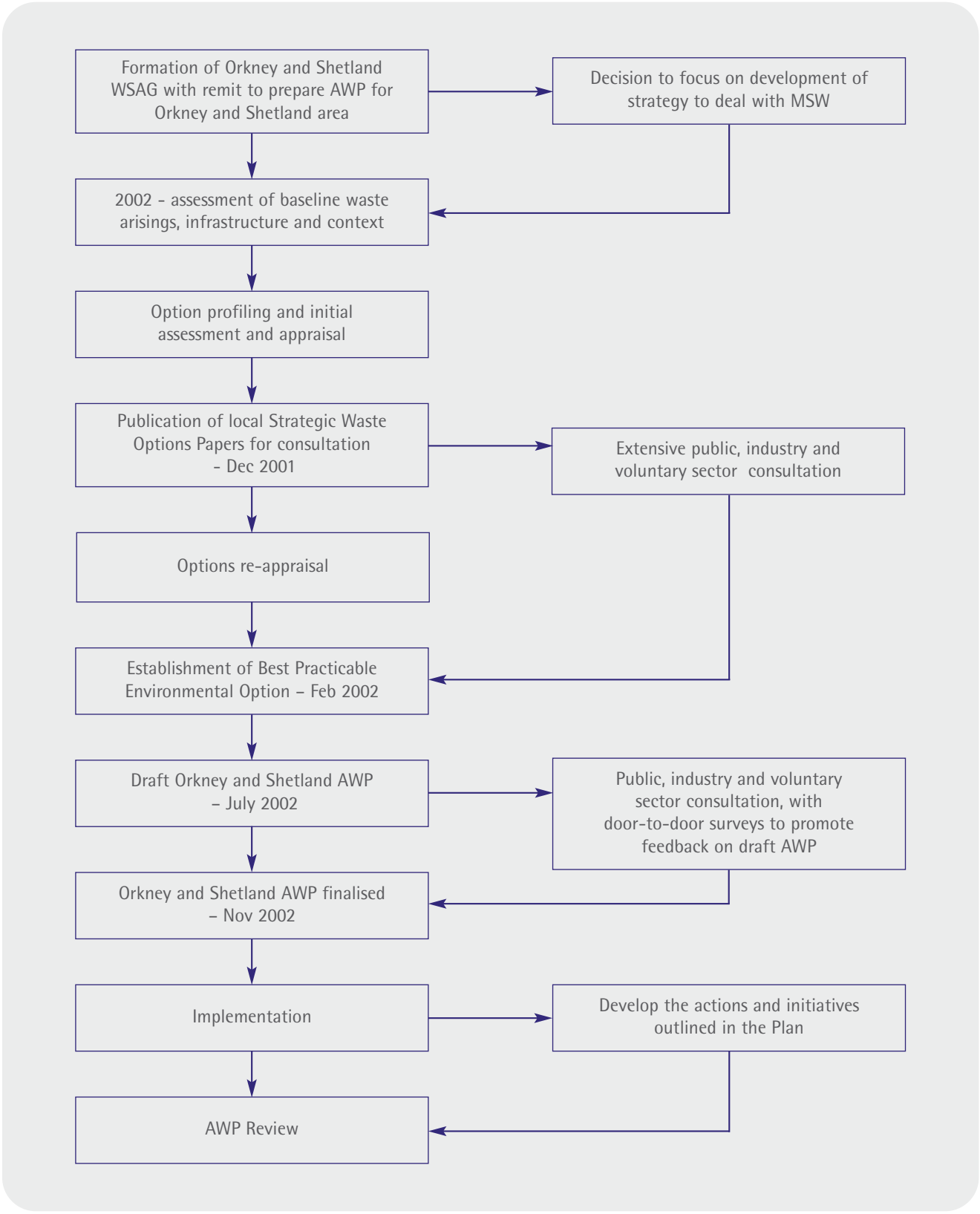
Implementing the Orkney and Shetland AWP

Taking forward the Orkney and Shetland AWP will require partnership working at a range of levels and with a number of stakeholders. Consequently, it is essential that commitment is given by all stakeholders to both the principles behind the plan and the range of actions promoted. Annex 2 describes a detailed Action Plan to ensure the AWP is implemented effectively. It is clear from this that implementation of the AWP may result in an increase in cost for some aspects of managing the area's waste. Increasing levels of funding will be required for local authorities, and waste producers will in some instances be required to pay more, particularly for waste that continues to go to landfill. The land use planning system must deliver the required planning permissions, and this will challenge officials and politicians alike. However, it is essential that the necessary funding is secured, suitable sites identified, and planning permissions granted.

A vital step in the process is the development of Implementation Plans for each of the two local authority areas. An integrated approach should be taken between the two WSAGs, working in partnership to ensure development of the AWP is coherent and prioritised, and that funding is allocated effectively.

It is the responsibility of everyone living and working in Orkney and Shetland to make this plan work. Some can make a bigger contribution than others, but every contribution will make a difference.

Orkney and Shetland AWP Process



Key Acronyms (terms, abbreviations and references most frequently used)

AWP – Area Waste Plan

Each of the 11 Waste Strategy Area Group's are responsible for producing a detailed Area Waste Plan for their area. The plans provide a strategic framework for the management of waste in each area based on National Waste Strategy: Scotland principles. The initial focus of the plans is MSW, with other wastes being addressed in more detail in subsequent years.

BMW – Biodegradable Municipal Waste

Solid waste collected by Local Authorities that is capable of undergoing anaerobic or aerobic decomposition, such as food or garden waste and paper and cardboard, i.e. waste that rots. This is generally accepted to be 60% of MSW.

BPEO – Best Practicable Environmental Option

BPEO is the outcome of a systematic and consultative decision-making procedure, which emphasises the protection, and conservation of the environment across land, air and water. The BPEO procedure establishes, for a given set of objectives, the optimal mix of waste management techniques that provides the most benefit and least damage to the environment, local communities and the economy, at acceptable cost, in the short and long term (20 years)

MSW – Municipal Solid Waste

Household waste and any other similar waste collected by the local authorities or agents acting on their behalf (for the purposes of this Plan, the definition excludes all industrial wastes, agricultural wastes, and construction and demolition wastes, as well as clinical and special wastes not managed by the local authority).

Non-MSW – Non-Municipal Solid Wastes

Other solid wastes subject to regulatory control but over which the local authority does not have statutory control (for the purposes of this plan this includes the industrial and construction and demolition wastes collected by the local authority, and other locally important wastes not yet subject to regulatory control, e.g. agricultural waste)

WSAG – Waste Strategy Area Group

A key component of the National Waste Strategy: Scotland was the establishment of 11 WSAGs across Scotland. The groups are designed to ensure cross-sector participation in local decision-making and are tasked with making the national strategy a reality at the local level. Membership of the Orkney and Shetland WSAGs is as follows:

Orkney Waste Strategy Area Group	Shetland Waste Strategy Area Group
Orkney Chamber of Commerce	60 Degrees North Recycling
Charities Aid Recycling Enterprise	Alexander Sandisons and Sons
Environmental Concern Orkney	B.P. Sullom Voe Terminal
Orkney Farming and Wildlife Advisory Group	Decocrete
Kingsdale Landfill	Kommunenes Internasjonale Miljo Organisasjon
North Isles Environmental Consultants	Lerwick Port Authority
Scottish Water	MES Business Equipment Limited
Orkney Islands Council	M.K. Les
Orkney Aggregates	Scottish Water
Orkney Cheese Co Ltd	Scottish Environment Protection Agency
Orkney Area National Farmers Union	Shetland Amenity Trust
Orkney Enterprise	Shetland Farming and Wildlife Advisory Group
Orkney Quality Food and Drinks Limited	Shetland Enterprise Company
Orkney Salmon Company	Shetland Fish Processors Association
Scottish Environment Protection Agency	Shetland Health Board
Stromness Community Business Forum	Shetland Oil Tools Ltd
Scottish Agricultural College	Shetland Island Council
Talisman Energy	Shetland Salmon Farmers Associations
Orkney Zero Waste Initiative	Total Waste Management Alliance

1 Introduction and Context

1.1 Background

Waste management in Scotland is facing a period of rapid and radical change. Driven by European legislation, the need for improved environmental protection and public expectation, we must find ways of reducing our current dependence on landfill and moving towards more sustainable methods of managing waste and resources. We must also seek to reduce the growth in waste arisings, minimise resource use, reduce the hazardous content of waste and find waste management solutions that do not compromise the future. This is in line with the principle of sustainable development. This will require a fundamental change in our current attitude to waste and an acceptance that each of us has a responsibility to reduce waste and not simply to pass the responsibility to others.

In order to tackle these issues the National Waste Strategy: Scotland described a regional process of area waste planning that included the formation of 11 Waste Strategy Area Groups (WSAGs). The strategy was adopted by the Scottish Executive as the principal mechanism to develop sustainable waste management across Scotland. WSAGs were set up in both Orkney and Shetland in the summer of 2000. The independent work of the two groups has been fully integrated to formulate this plan, and continued joint working will provide a basis for the plan's future monitoring and delivery.

The Orkney and Shetland area has already made considerable headway in moving towards an integrated, sustainable waste management system for municipal solid waste (MSW). The area currently has Scotland's highest rate of MSW recycling and recovery, and is well respected for a high level of self-sufficiency in the production of a range of consumer goods (e.g. food products, clothing, etc). The area waste planning process has helped considerably to build on this track record in resource efficiency and focus future developments. In future the process will continue to encourage the cross-fertilisation of ideas between the two island groups.

The two local authorities have made major investments in a highly efficient district-heating scheme in Lerwick, fired by MSW, and this facility forms the cornerstone of the Area Waste Plan (AWP). The focus of future initiatives will be around simultaneously maximising the efficiency of this facility whilst preventing waste at source and increasing MSW recycling as far as practicable.

The Northern Isles are different to mainland Scotland in many ways, not least in terms of the issues facing future management of the area's waste. The area is geographically remote, and has a highly dispersed population, which creates a number of difficult waste management issues. The most pressing of these is economics, e.g. the costs of collecting segregated waste and accessing national markets for recyclate are extremely high, and the logistics particularly complex.

Given Orkney and Shetland's isolated location, self-sufficient waste management solutions are preferable – to minimise the economic and environmental costs incurred by transporting waste to the mainland. This approach should also encourage economic development by promoting the development of local business opportunities in waste recovery.

1.2 Key Aims and Core Objectives

The key aim of the AWP is to:

'Contribute to the sustainable development of the Orkney and Shetland area by developing waste management systems that will control waste generation, reduce the environmental impacts of waste production, improve resource efficiency, stimulate investment and maximise the economic opportunities arising from waste'.

This aim is supported by the following objectives:

1. Set out in detail the existing waste management infrastructure and arrangements, develop the principles and plan for progress in waste management in the medium and long term to meet current and future legislative requirements and the objectives of the National Waste Strategy: Scotland.
2. Ensure that the waste management system developed is in accordance with Best Practicable Environmental Option (BPEO) and accords with the principles of sustainable development and integrated waste management, and makes the maximum possible contribution to reducing society's environmental impact at an acceptable cost.

3. Provide a clear framework for stakeholders to judge the future development of waste management services in the Orkney and Shetland area, and to guide both local authority Integrated Waste Management Plans and private investment decisions.
4. To ensure that Development Planning policy in Orkney and Shetland is consistent with, and contributes to, the overall aims of the National Waste Strategy and the Orkney and Shetland AWP.
5. To maximise the opportunities for Orkney and Shetland businesses arising from sustainable waste management, including the not-for-profit sector.
6. To provide all key stakeholders with the opportunity for input to the AWP process.
7. Ensure that the AWP process offers a clear, transparent and informative approach to local stakeholders.
8. To raise public awareness of the future challenges in implementing the AWP and promote active participation by all stakeholders in meeting the objectives.
9. To maintain regular review of the new waste management technologies to ensure the continued BPEO for the Orkney and Shetland area in the longer term

1.3 Developing an Integrated Plan

The AWP seeks to adopt an integrated approach which:

- ensures that all waste streams are considered together and the solutions chosen for individual waste streams are considered in the light of how they impact on the management of others
- considers Waste prevention, reuse, recycling, energy recovery, disposal, promotion and education and local market development in a coherent and planned way
- ensures consistency with adjoining areas and national integration of the plan within the National Waste Strategy: Scotland.

The Orkney and Shetland AWP currently focuses on the management of household and commercial waste. It has not been possible to take the fully integrated approach as suggested in SEPA's BPEO Decision Making Guidance. This is largely because of issues associated with data availability on the quantity, sources, and composition of local non-MSW streams, and independent approaches currently being developed by relevant local non-MSW producing sectors. These sectors (e.g. fish and oil-related) have been approached and consulted as part of process of developing the Orkney and Shetland BPEO, but no concrete proposals for new non-MSW initiatives have yet been developed. Development of a fully integrated plan for Orkney and Shetland that addresses non-MSW streams will require on-going dialogue with local non-MSW producers. A number of action points to take this forward are set out in this plan (see Section 4).

Action 1
Develop an AWP for Orkney and Shetland that fully integrates all waste streams.

When completed and integrated across Scotland, the 11 AWPs will require to collectively satisfy national legislative requirements. In order to achieve consistency of approach across the Waste Strategy Areas a broad methodology and guidance for determining BPEO for non-MSW (non-municipal solid waste) has been established through the following key documents: "Supporting Guidance for AWPs" and "BPEO Decision Making Guidance". An important element was to seek the involvement of all key stakeholders (waste industry, local authorities and the general public) at various stages of the process. Consistency between adjoining areas is also important. For Orkney and Shetland, this potentially means integration with the Highlands and North East areas in particular, although no specific development requirements have been identified within the current AWP timeframe.

This AWP must be seen not in isolation, but as part of a wider drive towards environmental and community awareness, and sustainable development objectives. The AWP will influence and in turn be influenced by a raft of other policy documents and initiatives, and has a key role in integrating the investment programmes and other plans, strategies and initiatives developed by central and local government, partner agencies and the waste industry generally. A list of potential linked documents is summarised in Annex 3.

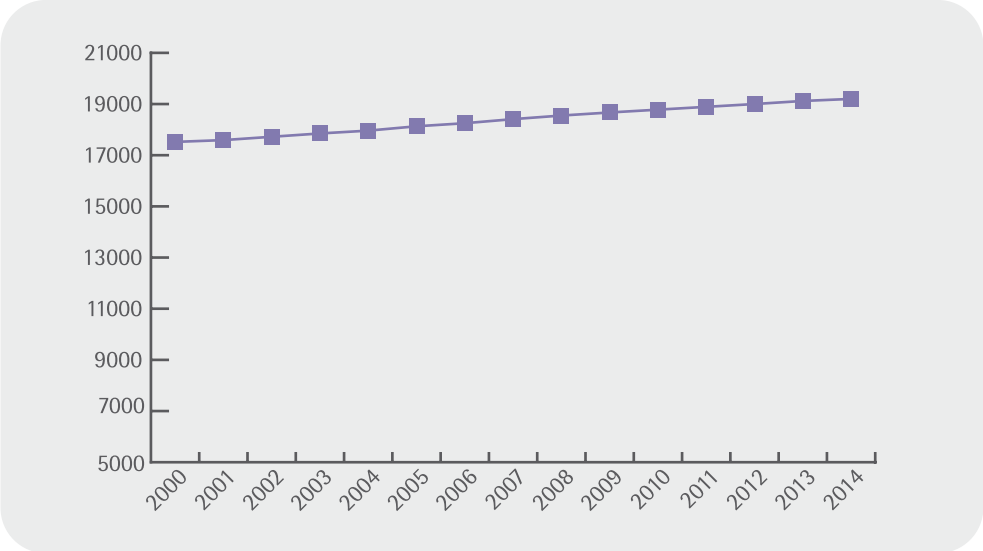
1.4 Area Description

The Orkney and Shetland islands are situated in the North Atlantic, approximately 7 and 100 miles north of the Scottish mainland respectively. The two island groups consist in total of 160 islands, of which 30 are inhabited. The character of each group is quite different, Shetland's landscape being dominated by peatland, heather moorland and montanemountain,while in contrast mainland Orkney is flatter and consists mostly of improved grass and arable land.

Agriculture and fishing are important employers in both island groups. Amongst the most important industries are food and drink, oil and gas, craft, aquaculture and knitwear manufacture. In summer, tourism is particularly important to both Orkney and Shetland, and generates in a large increase in population and economic turnover.

The current population of the area is 42,375 with the biggest conurbations being Kirkwall and Stromness in Orkney, and Lerwick and Scalloway in Shetland. Current projections indicate a likely decline in the area's population, but the number of households is projected to increase substantially by an estimated 9.5% by 2014 (see Figure 1.1 below). This has important implications for MSW management. However further work is required on how these changes will translate into impacts on the total waste arisings in the area.

Figure 1.1 – Estimated increase in number of households in Orkney and Shetland



Source: Scottish Statistical Bulletin 2002

Population levels, the level and type of economic activity, and therefore waste arisings, are notoriously volatile in the islands. The development (or decommissioning) of a major oil facility, for example, can have a dramatic, singular effect.

1.5 Current Waste Management Practice within Orkney and Shetland

Future plans for waste management should be based on sound understanding of waste sources, quantities and composition, and existing transport and management infrastructure. The Orkney and Shetland area has a relatively self-contained waste management system for household, commercial, and industrial wastes. However certain specific wastes such as scrap metals, special wastes and some industrial wastes are by necessity exported for specialist treatment and disposal.

Other than a small number of relatively small-scale private contractors (predominantly inert landfill operators), there is little private sector involvement in waste management in the islands. The provision of waste-management services is dominated by the area's two local authorities: Orkney Islands Council (OIC) and Shetland Islands Council (SIC). The majority of MSW collected by the two authorities is recovered as fuel for district heating via an incineration in Lerwick. In Shetland there is considerable non-local authority involvement in recycling activity, both in collection and reprocessing. A number of local industry sectors, e.g. oil services and breweries, operate their own waste-management systems in both island groups.

Unlike the rest of Scotland, where most waste is sent to landfill, the Orkney and Shetland Islands have made significant in-roads into waste recovery and recycling, particularly of MSW (although increasingly also non-MSW).

1.5.1 MSW Management

All the data in the following section were obtained from analysis of the 2001/02 SEPA Local Authority Waste Arisings Survey (LAWAS) results, past OIC and SIC landfill and recycling returns, and discussion amongst the WSAG members.

MSW Arisings, Composition and Trends

Total MSW arisings in Orkney and Shetland are currently 24 738 tonnes per annum – 13 241 tonnes of which arise in Shetland, and 11 497 in Orkney. Of the total arising in the area each year, an estimated 4948 tonnes are from commercial premises and 19 790 tonnes are from households.

A key aspect of any waste-management plan is determining precisely the composition of the waste stream that is to be managed – i.e. the relative proportions of the various component materials (e.g. metals, plastics, biodegradable materials, etc). However, there are currently no MSW compositional analyses available for either the Orkney and Shetland area or the UK as a whole. There is a national data set for the composition of household waste (see Figure 1.2 below) and a common assumption is that the composition of the overall MSW stream is approximately the same.

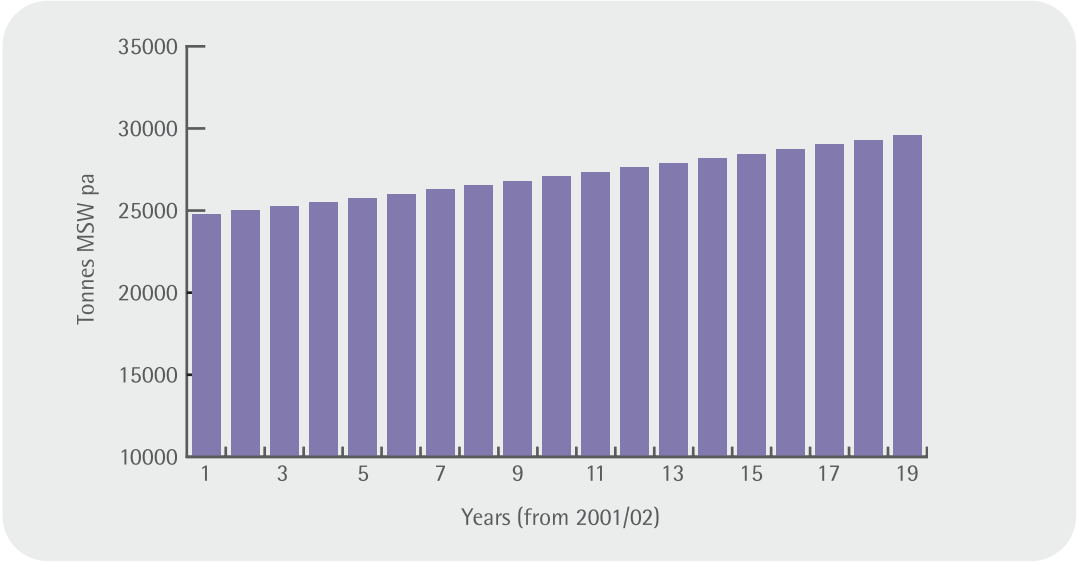
Figure 1.2 - Average UK household bin content

Source: EA, National Household Waste Analysis Project, 2000

A key important factor in delivering an effective waste-management system is predicting future waste growth, although in Orkney and Shetland this is extremely difficult. Waste growth is influenced by a number of complex inter-related variables, including changes in waste producer behaviour, demographics, the number of households and the type/level of economic activity in an area. The only thing for certain is that sustained waste growth will require the development of new waste-management facilities and will ultimately incur additional cost. In terms of MSW, one of the main determinants of waste growth is believed to be the number of households producing waste.

In Orkney and Shetland the number of households is currently forecasted to grow substantially over the next 14-year period (see previous Figure 1.2). However, a declining total population will inevitably offset this to some extent, and future developments in the oil and gas sector, and tourism in particular, will be an important influence. Future growth is very difficult to quantify. Figure 1.3 over illustrates the effect of an average MSW growth rate of 1% per annum in Orkney and Shetland over the period of this plan.

Figure 1.3 – Effect of 1% Annual Growth in MSW



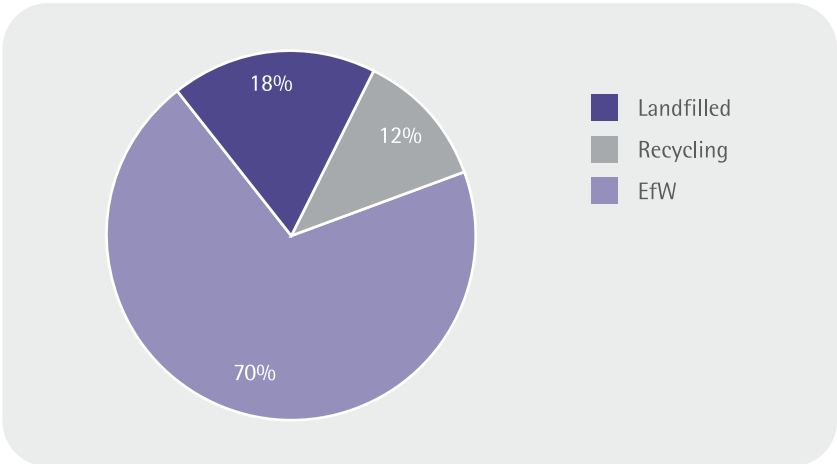
Such growth in MSW will clearly have an effect on development of the AWP, in particular the targets for waste recycling and recovery. It is the view of the two WSAGs that this level of sustained growth represents the 'worst case scenario' – it is therefore only assumed for the purposes of assessing current and future statutory targets (e.g. the EU Landfill Directive diversion targets for biodegradable waste). The BPEO includes a range of measures to prevent waste at source and mitigate any potential growth such as this.

Current MSW Recycling/Composting, Recovery and Landfill Rates

The two local authorities collect and dispose of all the area's MSW. The existing waste-management system is based around an energy recovery facility in Lerwick that provides district heating for up to 1000 homes. The facility has an estimated maximum annual throughput capacity of 22 000 tonnes and currently processes most of the area's MSW – around 70% or 17 500 tonnes per annum – as well as a smaller amount of offshore oil-related waste (around 3000 tonnes per annum).

The area has Scotland's highest MSW recycling rate at over 12% per annum (13% of household waste), with only around 18% of MSW disposed of to landfill. The current (2001/02) MSW management mix is summarised in Figure 1.4 below.

Figure 1.4 - Baseline MSW management mix - %



Source: SIC/OIC 2001; SEPA 2002

Table 1.1 – Baseline (2001/02) MSW management mix (tonnes per annum)

	Shetland	Orkney	Area 1
Recycling and Composting	1322	1545	2867
Energy Recovery	9167	8323	17 490
Landfill	2752	1629	4381
Totals	**13 241**	**11 497**	**24 738**

MSW Collection Systems

Existing MSW collection systems are a combination of bring and kerbside, operated by the two local authorities and their partner organisations. SIC provides a weekly kerbside collection for the uplift of unsegregated domestic and commercial wastes. In Lerwick bulky items are also uplifted by a special collection service twice weekly, and a civic amenity site at Rova Head operates seven days a week. In addition, all island areas in Shetland are provided with community skips with almost 1000 issued annually. OIC also operates a weekly kerbside collection for unsegregated domestic and commercial wastes – the unsegregated MSW is collected in black bags, and commercial waste on the mainland and south isles from specially designated "eurobin" containers. On the mainland and linked south isles a weekly special collection service operates for bulky household waste, and such items are collected from remaining island areas on prescribed dates. Commercial waste from remaining outlying areas in Orkney is collected in beige refuse sacks.

SIC operate collection banks for engine oils at Brae and Lerwick, and cooking oils and scallop shells (which is strictly speaking non-MSW) are also collected for recycling at Rova Head. A local charitable organisation, the Shetland Amenity Trust (SAT) operates a number of different recycling collections in partnership with SIC. These include aluminium drink cans (via local collections by community groups whereby the SAT sell the cans on behalf of these groups and pass back the proceeds to them) scrap vehicles (via a free special collection and a transfer station at Yell); and agricultural plastics (via a free special collection). Glass collection in Shetland is contracted out (on a not-for-profit basis) to a local private sector reprocessor, Decocrete, based in Cunningsborough, who currently maintain 22 recycling banks throughout Shetland, and operate a kerbside collection for 22 commercial premises. SIC also maintain 30 battery box collection points, as well as a number of mobile phone collection points.

OIC operates two recycling collections – one for garden waste and one for paper and card. Garden waste is collected via a kerbside collection service on seven dates throughout the summer in Kirkwall and Stromness only. Paper and card is also collected from the kerbside – this service is contracted out and operates once a month for households in Kirkwall and Stromness, and once every second month for rural areas on the mainland and linked south isles. OIC maintains mini recycling centres on 10 of the Orkney Islands, and bring sites for both garden waste and paper and card are located at the three OIC civic amenity sites (Bossack, St Margaret's Hope and Stromness). OIC also collect scrap cars for a charge. Finally, Charities Aid Recycling Enterprise (CARE) operate a kerbside collection for aluminium drink cans in Orkney from pubs, schools and OIC offices, as well as a number of small can banks (which are maintained by OIC).

Current Reuse Initiatives

Textiles in both island areas are reused on a voluntary basis through a local network of charity shops. In Shetland reuse of waste is also facilitated through a 'materials exchange' scheme, the local paper, a scrap store located in Lerwick, and a charity organisation, the Shetland Community Bike Project, who reclaim old bicycles for community reuse. In Orkney, a materials exchange scheme also operates through a local radio station and newspaper. There are currently no formal reuse or refurbishment schemes for non-MSW, other than a commercial service for waste metal operated by 60 North Recycling in Lerwick.

Current Reprocessing and Composting capacity

The aluminium cans, scrap cars and other metals, agricultural plastic, mobile phones and batteries collected in Shetland are exported to the mainland for reprocessing. Metal and other valuable scrap is reclaimed on a commercial basis by a private sector company 60 North Recycling under contract with SIC, and this operation is based in Lerwick. Most of the reclaimed material is exported to the mainland for reprocessing.

Scallop shells collected at Rova Head are crushed and used locally as harling in construction. Decocrete reprocess waste glass collected in Shetland into sand (for shot-blasting) and a range of other construction aggregates. This operation is based in Cunningsborough.

Garden waste collected in Orkney is taken to Bossack for grinding and use in landscaping and landfill cover by the local authority, and a proportion of the islands' paper and card waste is currently being shredded for compostable animal bedding by a local farmer (it was until recently all exported to Shetland for energy recovery). Aluminium cans collected by CARE, black plastic farm wastes, and scrap cars in Orkney are all transferred to the mainland for reprocessing.

Other Recovery

The Lerwick district heating facility operates a 'moving grate' system at around 80% efficiency, and provides district heating for up to 1000 homes in the vicinity. There is remaining capacity to increase this by a further 600 homes or equivalent. The plant has a maximum throughput capacity of 22 000 tonnes MSW per annum. Most of the material leaving the plant is technically industrial waste, although around 300 tonnes of metals per annum are recovered for recycling.

For guidelines on the role of other recovery technologies as part of integrated waste-management systems, refer to SEPA's "Guidelines and approach to thermal treatment and energy from waste" available on the www.sepa.org.uk.

Disposal

Rova Head landfill site is licensed to take mixed waste and has an annual licensed capacity of 36 000 tonnes. This site, which currently caters for more than half of Shetland's waste disposal requirements, is expected to reach capacity in November 2005. There are a further three operational inert sites in Shetland, each with an expected lifespan of at least 10 years. The largest of these is at Staney Hill, which has a life of 25 years and capacity to take up to 1 million tonnes of waste.

Orkney has 10 landfill sites, all of them inert, seven operated by OIC and three privately owned. There is currently a total annual licensed landfill capacity in Orkney of 112, 875 tonnes.

1.5.2 Non-MSW Management

In the Orkney and Shetland these wastes include industrial wastes (oil, fish, food and craft-related), construction and demolition wastes, agricultural wastes, clinical wastes, special wastes and relatively small quantities of other important wastes (e.g. oils, abandoned vehicles, fridges, etc).

Industrial Wastes

It is difficult to provide a reliable estimate of industrial waste arisings in the area as only a limited amount of work has been carried out in the area to investigate these wastes, and this has, to date, been largely qualitative. The overall figure is believed currently to lie somewhere in the region of 40–50 000 tonnes per annum. This does not include a number of significant sources, such as sewage treatment and distilling wastes (sewage is managed by a dedicated system, and the bulk of distilling wastes are spread to land).

Important local sources of industrial waste include fishing, fish processing and aquaculture wastes, oil-related wastes, agricultural waste, ports and harbours waste, craft wastes and waste imported from offshore. The latter in particular is increasingly predominant in Shetland, with around 25 000 tonnes of drill cuttings imported to the islands for treatment each year. Bottom ash from the Lerwick district heating plant (around 5000 tonnes per annum) is used for cover material at Rova Head landfill, and the remaining (fly ash and sludge) waste is exported for treatment and disposal on the Scottish mainland.

Much of the area's industrial waste is either landfilled locally or exported elsewhere for recovery or disposal. Considerable amounts of industrial oils and scrap metal are exported for recycling, and there are a number of relatively recent local initiatives to recover industrial wastes – e.g. scallop shells, as a construction medium, and as a high-quality fertiliser material.

Trends in industrial waste arisings are difficult to predict. These wastes may increase substantially in the short to medium (10 year) term, particularly in Shetland, through growth in imported wastes from the offshore industry. More work is required to identify and quantify these trends and the implications for AWP development.

Construction and Demolition Wastes

There is also a substantial quantity of construction and demolition waste arising annually in the area. A recent national SEPA research project into this type of waste estimated that some 9367 tonnes arise annually in Orkney and Shetland of which the majority is exempt from waste-management licensing. Of the remainder, roughly half is reused or recycled and the other half is landfilled. This figure is, however, believed to be much lower than the actual tonnage arising, which may in fact be as much as two or three times greater, around 25–30 000 tonnes. The extent of these wastes however varies considerably from year to year as a result of changes in the level of development activity.

Agricultural Waste

A small amount of agricultural waste is disposed of at local landfill sites. A more substantial quantity is disposed of to land on the many smallholdings and crofts throughout the isles. There is an annual collection of black plastic sheeting organised by local Orkney farmers.

The non-natural component of agricultural waste is soon to be brought under the waste regulatory regime – in 2004 – and this has important implications for the farming industry (including crofters) in the island areas. Current expectations are that initially only 'non-natural' farm wastes will be included in the first instance (e.g. plastics, metals, pesticide residues), although sludges/slurries may also be covered if these wastes are transported for disposal off farm. Developments in this area will have a major impact on the non-MSW component of this plan.

Special Wastes

Special wastes require more controlled disposal due to their potential toxicological and other environmental effects. The two local authorities are believed to handle around 400 tonnes per annum, much of which is fly ash for the district heating facility and exported to the Scottish mainland.

Other Wastes

In both island groups, clinical wastes are collected predominantly outwith the local authority systems (small amounts of category E clinical wastes go to the district heating facility). In Orkney the local NHS board has an incinerator for disposal of the islands clinical waste; in Shetland a private contractor – Shetland Janitorial Services – collects and exports the majority of the islands' clinical waste. Old fridges in both island groups are currently stored then exported for safe disposal. In Shetland, End of Life Vehicles (ELVs) are collected by the Shetland Amenity Trust and disposed of by a private sector third party; in Orkney the local authority collects ELVs for disposal via a third party private operator.

Non-MSW Trends

Predicting trends in non-MSW arisings is highly complex. As the islands undergo a shift away from the traditional industries towards new areas of economic activity, such as the development of renewable energy capacity, the mix of non-MSW streams will change. New challenges and opportunities will arise as a result. Identifying and quantifying the current baseline and future trends in industrial and other non-MSW streams will need to be addressed as part of the ongoing development of the AWP. What is clear is that regulatory controls will tighten, and a number of current practices may change with major implications for the Isles. The most important developments in the short term will be the amendment to waste management regulations that brings agricultural wastes within the regulatory regime, and a possible increase in the import of drill cuttings to Shetland.

1.5.3 Existing Waste-Management Facilities

Table 1.2 summarises the location, type and capacity of existing waste management facilities in Orkney and Shetland.

Table 1.2 – Existing Waste-Management Facilities

Name	Type of Facility	Type of Waste Accepted	Licensed Annual Capacity (tonnes)	Operator
Rova Head, Shetland	Landfill and Civic Amenity	Domestic, Inert, Commercial, Industrial and Special	< 36000	Shetland Islands Council
Kingsdale, Orkney	Landfill	Inert	25000	E.W.G Dickey & Co
Bossack Quarry, Orkney	Landfill	Inert	5000	Orkney Islands Council
South House, Orkney	Landfill	Inert	5000	Mr & Mrs J Mackie
West Stanley Hill, Shetland	Landfill	Inert, Commercial	2500–7500	M K Leslie
Chinglebraes Quarry, Orkney	Landfill	Inert	1500	Orkney Islands Council
Golta, Orkney	Landfill	Inert	1000	Talisman Energy
Westside Rd, Orkney	Landfill	Inert	100	Orkney Islands Council
Hagdale Quarry, Shetland	Landfill	Inert	50-2500	Alexander Sandison and Sons Ltd
Gallow Tuag Quarry, Orkney	Landfill	Inert	30	Orkney Islands Council
Peat Road, Orkney	Landfill	Inert	15	Orkney Islands Council
Chinglebraes WTS, Orkney	Transfer Station	Domestic	6500	Orkney Islands Council
Colvister Quarry, Shetland	Transfer Station (& glass crushing)	Inert, Commercial	2500– 7500	Shetland Amenity Trust

Name	Type of Facility	Type of Waste Accepted	Licensed Annual Capacity (tonnes)	Operator
Bossack T.A, Orkney	Transfer Station	Unknown	200	Orkney Islands Council
Michell's Quarry, Orkney	Transfer and Landfill	Inert	150	Orkney Islands Council
Blossom Quarry, Orkney	Transfer and Landfill	Inert	130	Orkney Islands Council
Rova Head, Shetland	Treatment and	Inert, Commercial, Industrial and Special	10000	Shetland Offshore Environmental Services
Workwell Quarry, Orkney	Transfer Treatment	Unknown	1500	Orkney Islands Council
Bossack C.A, Orkney	Civic Amenity	Domestic	1000	Orkney Islands Council
Stromness C.A, Orkney	Civic Amenity	Domestic	1000	Orkney Islands Council
St. Mgt's Hope C.A., Orkney	Civic Amenity	Domestic	750	Orkney Islands Council
Flotta incinerator, Orkney	Storage	Inert	500	Talisman Energy
60 North Recycling, MRF	Transfer and Treatment	Commercial & Industrial, Scrap, Batteries	4500	60 North Recycling
Shetland Amenity Trust	Treatment, refurbishment	Construction & Demolition, Aluminium, other wastes	Exempt	Shetland Amenity Trust
Rossmyre	Paper reprocessing	Waste Paper	Exempt	Orkney Paper Products

2 Strategic Framework and Drivers for Change

2.1 Introduction

This section summarises key drivers and influences that set the context for the Area Waste Plan (AWP) and will impact on future waste planning and management in Orkney and Shetland. Figure 2.1 summarises the most significant partner organisations, drivers and influences. The most significant drivers are then described in detail. Annex 3 provides further detail on the key mechanisms.

2.2 Definition of Waste

The definition of waste given in Council Directive 75/442/EEC (Waste Framework) as amended by Council Directive 91/156/EEC is any substance or object in the categories set out in Annex 1 which the holder discards or intends or is required to discard. The Directive excludes from its scope gaseous effluents emitted into the atmosphere and, where they are already covered by other legislation radioactive waste; waste resulting from prospecting, extraction, treatment and storage of mineral resources and the working of quarries; animal carcasses and the following agricultural wastes – faecal matter and other natural non-dangerous substances used in farming, waste waters with the exception of waste in liquid form and decommissioned explosives.

2.3 Sustainable Waste Management

It is Scottish Executive policy to move towards more sustainable waste management systems with increased recycling and composting (25% of Scotland's MSW by 2006) and less reliance on landfill disposal. The Strategic Waste Fund has been established to assist local authorities with the additional costs of implementing the National Waste Strategy.

2.4 The EU Landfill Directive

The EU Landfill Directive is one of the key drivers behind the National Waste Strategy: Scotland. The Directive imposes environmental and engineering standards for landfills across Europe and will ban the landfilling of many substances that are disposed of in this way at present.

The Directive also requires a progressive reduction in the landfilling of Biodegradable Municipal Waste (BMW) and the pre-treatment of wastes before landfilling, to both reduce waste volume and minimise the environmental impact of disposal. This will assist in the reduction of landfill gases, such as methane, which are significant contributors to global warming.

2.4.1 Diversion of Biodegradable Municipal Solid Waste (BMW)

The Landfill Directive establishes national targets and timescales for the diversion of BMW from landfill. Where member states are particularly dependent on landfill they will be allowed to defer the implementation of the target dates by up to 4 years, and the UK will take advantage of this derogation. The UK has to report to the European Commission by July 2003 giving details of how the targets will be met and a decision on whether to extend the target dates will be taken then.

From a baseline of 1995, the amount of BMW allowed to landfill will be (assuming the four year delay is used) as follows:

- 75% of 1995 levels by 2010
- 50% of 1995 levels by 2013
- 35% of 1995 levels by 2020.

Using actual 1998 annual municipal solid waste (MSW) arisings as the baseline, and assuming an average annual growth rate in MSW arisings of 1% across the area, Table 2.1 on page 24 shows predicted total MSW arisings, BMW arisings, permitted BMW to landfill, and BMW diversion requirements for each of the Directive's 3 target years. For comparative purposes, the bottom line provides an estimate of current BMW diversion from landfill via the Lerwick energy recovery facility, composting and recycling.

Figure 2.1 - Key Drivers, Partner Organisations and Mechanisms

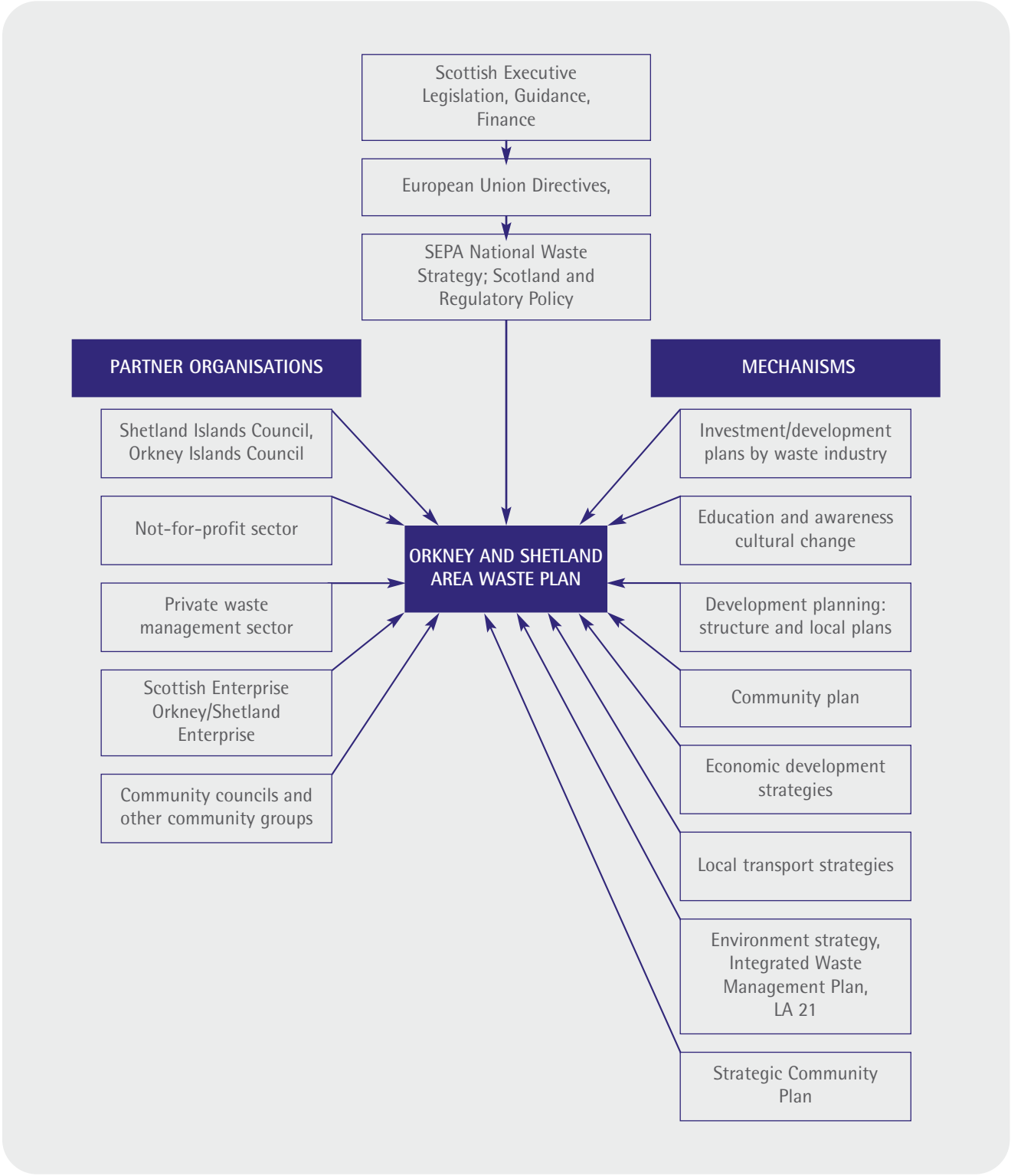


Table 2.1 clearly illustrates the potential effect of substantial and uncontrolled growth in MSW on compliance with the Landfill Directive. However it should be noted that by 2020 Orkney and Shetland will, in any case, be required to address future compliance requirements, as the existing Lerwick energy recovery plant will be near the end of its intended life.

Table 2.1 – BMW Diversion Required at 1% annual growth in MSW (tonnes per annum)

	By 2010	By 2013	By 2020
MSW arisings	26 788	27 326	29 590
BMW arisings	16 073	16 560	17 750
Permitted BMW to landfill[2]	8317	5545	3881
BMW diversion required	7756	11 016	13 873
Current BMW diversion	11 272	11 272	11 272

[1]All figures assume BMW = 60% MSW

[2]Estimated by splitting 2.8 million tonnes for Scotland proportionally amongst the Local Authorities using Waste Arisings 1998 as to allocate each authorities proportion. Scottish Executive still to advise on method of calculation, which could significantly alter amount of waste to be diverted.

The two WSAGs will carefully monitor MSW growth and review the AWP in light of any developments that suggest weakness in any of the assumptions made. The BPEO for MSW outlined by this plan is intended to have a significant positive impact on compliance – not only by increasing diversion of BMW through recycling and composting, but by preventing future waste growth. The impact of BPEO on compliance with the Directive is dealt with in more detail in Section 3.4.

2.4.2 Landfill Permits

A key mechanism in controlling the amount of BMW each local authority will be allowed to landfill in future will be a system of Landfill Permits. The Scottish Executive will decide if local authorities will be able to trade their allowances. This would allow Local Authorities in areas where the additional costs of BMW diversion from landfill are disproportionately high or where landfilling is the agreed BPEO, to 'buy permits' from other Local Authorities which are exceeding their individual BMW landfill diversion target. It is the responsibility of each local authority in the Waste Strategy Area Group (WSAG) to determine how to use the permits allocated to them by the Scottish Executive. Until the working detail of the 'tradable permit system' is known and the 1995 baseline figures allocated to each local authority, the precise impact on Orkney and Shetland cannot be determined. The Orkney and Shetland BPEO is, in any case, intended to deliver area compliance with the Directive's requirements (i.e. self-sufficiency), and the area may well ultimately be in a 'credit' position with regard to tradable Landfill Permits.

2.4.3 Other Technical Requirements

The Landfill Directive also has a number of other requirements, which will have an impact on the ability of landfill sites to accept certain waste types. This will have a knock-on effect on the cost of landfill and could potentially shorten the life of some sites. Until a full assessment of the Orkney and Shetland landfill sites against the Landfill Directive criteria has been made, the full impact of the Directive will not be fully understood. The main requirements of the Directive are as follows:

- Pre-treatment of wastes prior to landfilling
- Classification of sites to certain standards or acceptance of certain waste types
- Specific wastes banned from landfill, including liquids and tyres
- Increased technical and engineering standards
- Waste requires to be treated prior to acceptance into landfill in order to reduce its volume or hazardous nature, facilitate its handling or enhance recovery.

2.5 Landfill Tax

The Landfill tax encourages efforts to minimise the amount of waste generated and to develop more sustainable waste-management techniques by making landfill a less economically attractive option.

The current landfill tax escalator, introduced in 1999, commits the government to raise the standard rate of tax for active waste by £1 per tonne each year until 2004/5, by which time it will have reached a rate of £15 per tonne. There is a strong case for increasing the tax significantly in future years to provide incentives for diversion of waste from landfill towards recovery treatments. The UK government announced in the November 2002 pre-budget statement their intention to consult on a revenue neutral proposal to increase the tax escalator to £3 per tonne from 2005/6 on the way to a medium to long-term rate of £35 per tonne.

As an integral part of Landfill Taxation a Landfill Tax Credit Scheme (LTCS) has been returning some of the revenue from Landfill Tax to the community to improve environmental quality and local participation in waste projects.

The government has announced a reform the LTCS from 1 April 2003. The level of funding for the replacement schemes will be capped at the value of the tax which would have been forgone in 2002/3 if all the available tax credits had been claimed by landfill operators. Approximately one-third of the funding will continue to be made available through a reformed tax credit scheme for spending on local community environmental projects, ensuring that the current level of support for these types of projects is maintained. The remainder will be allocated to public spending to encourage sustainable waste management.

2.6 National Waste Strategy Principles

The National Waste Strategy: Scotland (NWSS) establishes key principles, which need to be taken into account in establishing a sustainable future for waste management. A number of these have influenced the development of the Orkney and Shetland AWP. These are:

- The Waste Hierarchy
- The proximity principle and self sufficiency
- Best Practicable Environmental Option.

How these principles will affect the development of waste-management systems and methods in Orkney and Shetland is described below.

2.6.1 The Waste Hierarchy

The waste hierarchy provides a framework within which waste-management options are prioritised. The objective of the Hierarchy is firstly to prevent and minimise the production of waste and thereafter increase the percentage of waste that is reused, recycled and recovered (in that order of preference). Ultimately the percentage of waste being disposed of to landfill should continue to reduce.

Waste Prevention

The need has never been greater to prevent waste occurring and, wherever possible, minimise and reuse waste. Waste prevention, therefore, forms a key element of the National Waste Strategy: Scotland. Waste prevention can be achieved at a number of stages including pre-product design stage, changes to management and production processes and the development of clean or 'wasteless' technologies.

Waste prevention initiatives must address two distinct waste streams:

- household waste
- commercial and industrial waste.

Household waste is by far the greatest proportion of MSW. The prevention – i.e. avoidance, minimisation and reuse – of household waste will save money in the transport and subsequent management of waste throughout the islands; this money could used for other purposes. Waste prevention can be achieved by households and businesses through customer decisions about what to buy and how much packaging to accept, and householders choices about how efficiently to use the products they buy and what to do with the products when they are finished – bin them, pass them on to someone who can use them, use them again or use them for something different.

For commercial and industrial wastes there is a great deal of evidence, which demonstrates that waste can be significantly minimised at various stages of manufacturing processes providing both a financial benefit to the company as well as reducing the environmental impact of waste. Local companies in the Orkney and Shetland could become more efficient and therefore more competitive by addressing waste prevention in a systematic way.

In recent years there has been a decline in the reuse and refurbishment of consumer durables as the cost of replacing them has fallen in relation to the cost of repair. However, as well as removing items from the waste stream, reuse and refurbishment are linked to job creation and economic improvement. There are already reuse and refurbishment schemes in operation in Orkney and Shetland ranging from the reuse of old clothing through to the repair and subsequent reuse of old bicycles. However, there remains considerable potential for future expansion and opportunity for stimulating this type activity in Orkney and Shetland.

Recycling, Composting and Anaerobic Digestion

Recycling is the separation of a material for processing, followed by preparation and sale onto a market to replace an existing virgin material. The most commonly recycled materials include newspaper, cardboard and glass. As such there are often numerous environmental benefits, such as reduced air emissions, reduced impacts of extraction, energy savings, lower disposal impacts and more efficient use of raw materials. There are often other benefits such as encouraging producers to take responsibility for their wastes and economic benefits such as improved competitiveness or greater employment opportunities.

The collection of wastes as separate material fractions reduces contamination and the need for additional separation processes. This retains the quality and value of the waste materials.

Composting is the aerobic decomposition of organic material to produce a stable material containing organic matter and plant nutrients. There are often benefits in applying this material to land, including nutrient addition, improved soil structure and improved water retention. These benefits are often only realised through the use of source segregated uncontaminated compostable wastes.

Anaerobic digestion is a similar process to that of composting, except the micro-organisms degrading the waste operate in an oxygen-free environment – i.e. where composting processes focus on enhancing conditions for micro-organisms that thrive in the presence of oxygen, anaerobic digestion targets those that thrive without. The potential advantage of anaerobic digestion systems is that methane gas is produced as a by-product of the anaerobic process, and this can be used not only to fuel the operation of the plant, but typically also to power other processes in the vicinity of the digestion plant.

The BPEO for MSW put forward by this plan will increase the amount of this type of waste that is recycled and composted. Future development of the AWP to address BPEO(s) for non-MSW streams will seek to provide cross-sector solutions and increase the proportion of total waste arising that is recovered by these various routes.

Other Recovery

Energy recovery involves recovering part of the energy value from waste, for example by burning or thermally treating the waste directly (for example incineration) or by burning a fuel produced by the waste (as with Refuse Derived Fuel or landfill gas). The energy conversion efficiency of the plant will depend on the specific design, e.g. recovery of energy through combined heat and power.

The recovery process at the existing Lerwick facility utilises the energy contained in MSW by direct combustion to provide district heating for up to around 1000 houses in the vicinity of the plant. The plant is highly efficient, with an overall energy recovery rate of 80%, which is comparable to the most efficient combined and heat and power systems.

For further guidance on energy recovery from wastes, reference should be made to SEPA's "Guidelines and Approach to Thermal Treatment and Energy From Waste" available at www.sepa.org.uk/nws.

Waste Disposal

Landfill disposal sits at the base of the waste hierarchy for the following reasons:

- potential pollution to land, air and water
- it is a waste of resources and is considered to be unsustainable.

Landfill will, however, continue to form part of an integrated waste-management system of treatment and disposal options for the foreseeable future.

2.6.2 The Proximity Principle and Self-Sufficiency

This means waste should be disposed of as near as possible to the point at which it arises. Most of the waste originating in Orkney and Shetland is managed within the area, with the exception of wastes requiring specialist treatment, such as hazardous wastes, and wastes being sent to the mainland for recycling, e.g. scrap metal. This waste is often then subsequently transported as far as the south of England. Although this is likely to continue to be the case to some extent, as greater quantities of material for recycling are collected then greater efforts should be made to exploit local opportunities for the development of commercial reprocessing operations and product markets in Orkney and Shetland.

Due to the isolation of the islands, and the associated exceptional high cost of waste transport, the principles of proximity and self-sufficiency are key drivers in developing the area's BPEO.

2.6.3 The Best Practicable Environmental Option (BPEO)

BPEO is the outcome of a systematic and consultative decision-making procedure, which emphasises the protection, and conservation of the environment across land, air and water. The BPEO procedure establishes, for a given set of objectives, the option that provides the most benefits or the least damage to the environment as a whole, at acceptable cost, in the long term as well as in the short term. In the way this has been applied within the NWS framework this includes balancing social, economic and environmental costs and benefits. The Orkney and Shetland AWP describes the BPEO for MSWs and sets out the process by which the BPEO will be determined and implemented for all other wastes. The process of assessing the Orkney and Shetland BPEO for MSW placed particular emphasis on proximity and self-sufficiency, and the need to recover as much value from waste locally, to provide social and economic benefits. This same emphasis will be applied in developing non-MSW BPEO(s).

3 Orkney and Shetland Best Practicable Environmental Option (BPEO) for Municipal Solid Waste (MSW) – The Strategy for Change

3.1 Introduction

Public Consultation

Two extensive public consultation processes were carried out in each island group as part of the BPEO decision-making process. The first sought local views on a number of strategic options relevant to each area, and the second on the Draft Area Waste Plan (AWP) itself. The Draft plan was formulated jointly by the two Waste Strategy Area Groups (WSAG). In Orkney, three strategic options were based on continued joint working through the energy recovery plant; continued joint working but with additional increased waste prevention and recycling; and development of a new local landfill for mixed waste (to avoid exporting waste to Shetland). The great majority of respondents were in favour of the second option. In Shetland, the options proposed took the form of a range of potential waste prevention, recycling and composting measures that could operate in parallel with the existing energy recovery plant. There was strong support for all those measures that would prevent waste at source, and increase the proportion composted and recycled, without threatening the performance and viability of the district-heating scheme. This concurred with the views of some WSAGs.

The other key finding in both island groups, which again concurred with the views of the WSAGs, was the desire to recycle more, both through segregated kerbside collections and improved access to facilities in remote areas. This was particularly the case in Orkney, where there are additional economic benefits associated with the reduced export of waste.

Other Key Local Considerations

The BPEO decision-making process was necessarily focused around the existing energy recovery facility in Lerwick. Both WSAGs recognised at an early stage in the process that this facility has a very important and highly valued local socio-economic function. The outcomes of the BPEO process were therefore required to maintain this function, while maximising the prevention of waste and recycling as far as practicably possible and economically justifiable.

The geographical fragmentation and remoteness of the islands, and their highly dispersed human populations, were also critical factors in determining the BPEO. These factors mean that waste collection and transport, for kerbside recycling in particular, are inevitably less practicable and more costly than elsewhere, and it is difficult to justify such schemes in the most remote areas on either economic or environmental grounds. For this reason kerbside recycling collections have been targeted at the more densely populated areas.

The Orkney and Shetland WSAGs were required to consider in detail SEPA's "Guidelines and approach to thermal treatment and energy from waste", and on this basis have agreed that source-segregation of recyclable wastes should form a key element of the BPEO. The islands have a strong track record of resource efficiency and the BPEO for MSW is intended to build on this. However, for the reasons outlined above it is unrealistic to target similar levels of recycling as would be expected on the mainland.

Full details of the key stages and criteria used in determining this BPEO are detailed in the Draft Orkney and Shetland Area Waste Plan 2002 (to obtain a copy refer to Annex 4). A summary of the BPEO process is on page 9.

3.2 The BPEO for MSW - detailed targets and actions

The BPEO Targets throughout this section are strategic targets for the Waste Strategy Area. Local Implementation Plans will set out the detail of the localised delivery systems based on each of the local authority's ability to achieve a proportion of the overall BPEO.

The Orkney and Shetland BPEO for MSW requires the following main developments:

- Preventing MSW at source through education and awareness-raising, the provision of practical community support, and promoting home composting
- Introducing source-segregated kerbside recycling collections for the major towns in both island groups
- Expanding the provision of recycling bring facilities in remote areas
- Continuing to recover energy from the majority of the area's MSW via the existing Lerwick Energy-from-Waste plant
- In Shetland, reducing the amount of MSW sent to landfill, and increasing the amount recovered for energy
- In Orkney, reducing the amount of MSW exported to Shetland for energy recovery and increasing the amount recycled and composted locally
- Developing local reprocessing capacity and local recycled product markets for glass and paper and (in Orkney) green waste
- Disposing of reduced quantities of residual MSW to local landfill sites.

Figure 3.1 – Orkney and Shetland BPEO for MSW (2020) Schematic

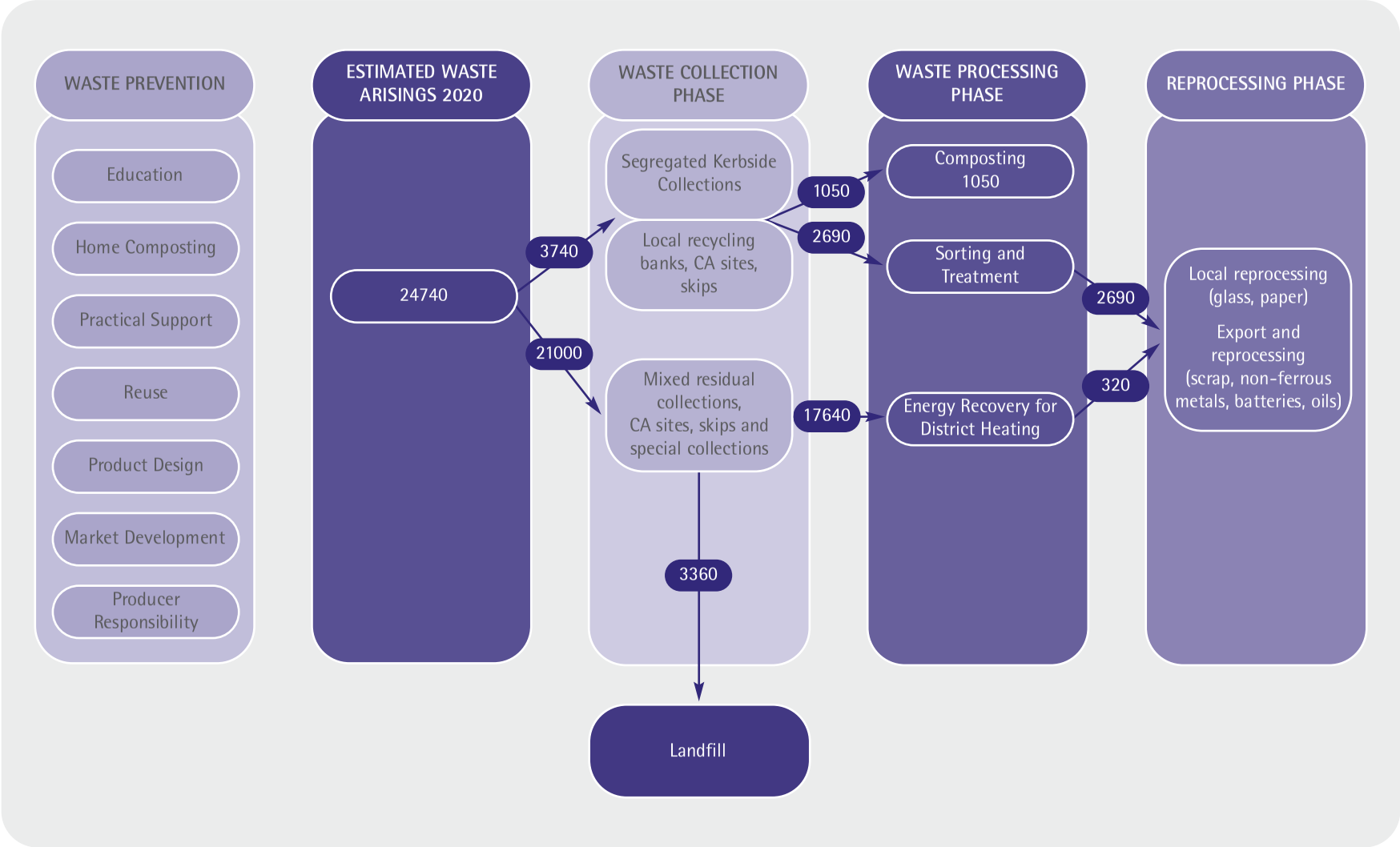


Table 3.1 provides indicative BPEO targets for the tonnage of MSW to be collected for energy recovery, recycling and composting and landfill disposal by 2020 and hence the Landfill Diversion Targets. These targets are indicative only; they are dependent on a number of variables – e.g. changes in waste composition, waste growth rates, etc. Figure 3.1 provides a detailed schematic illustration of the 2020 BPEO waste management system.

Table 3.1 – 2020 BPEO targets for MSW (tonnes per annum)

	Method	Orkney	Shetland	Area
Baseline	Energy Recovery	8300	9200	17 500
	Recycling and Composting	1600	1300	2900
	Landfill	1600	2800	4400
By 2020	Energy Recovery	7300	10 000	17 300
	Recycling and Composting	2600	1500	4100
	Landfill	1600	1800	3400

[1]All figures rounded to nearest 100 tonnes and refers to the quantity of waste collected for subsequent management by each method.

The following paragraphs (3.2.1 to 3.12) describe in detail the specific actions required to deliver the above BPEO, and the targets and methods used to monitor progress towards its effective delivery.

3.2.1 Waste Prevention

Prevention of MSW at source encompasses avoiding, minimising and re-using or refurbishing waste. These measures stop materials from entering the waste stream and therefore form a key element of the Orkney and Shetland BPEO. Due to the forecasted increase in the number of households in both island groups, without concerted action the area's annual production of MSW will most probably rise. Sustained annual growth in MSW arisings will incur substantial additional cost, particularly in Orkney and may affect compliance with the Landfill Directive. Failure to control growth in MSW arisings will undermine the BPEO targets.

There is, therefore, a pressing need to ensure the environmental and cost-burden of MSW does not increase during the period of the plan – i.e to prevent MSW production rising above current levels. This will not only deliver environmental benefits by reducing the pollution and energy use associated with waste, it will also generate substantial savings and ensure compliance with the Landfill Directive.

While a specific target to reduce the quantity of MSW generated in the area has not been set, it is the intention of the WSAG that as a minimum MSW arisings in the area will be capped at current levels by 2020. The BPEO targets for recycling and composting, energy recovery and landfill are based on this assumption.

Waste prevention in Orkney and Shetland is currently promoted through schools, community road shows, country shows and public events, and by the provision of advice and information directly to householders. The two local authorities carry out these activities in partnership with a number of community environmental organisations (e.g. Shetland Amenity Trust).

The remoteness of the Orkney and Shetland means that a proactive 'outreach' approach is required to deliver waste prevention effectively. Additional human resources are necessary to facilitate community involvement and participation, to sustain development, and to ensure long-term local support. Public consultation on the AWP showed a high level of local community support for waste reduction activities.

Several projects elsewhere in the UK have demonstrated that with ongoing and accessible practical support, information and advice, based within the community, local householders and businesses, significant in-roads can be made in preventing waste at source and reducing the amount of waste generated. Such projects have important financial as well as environmental benefits, and can help to raise awareness of waste issues across the wider community. It is important that any additional human resources have a strong community (including local business) focus.

Action 2
Develop and seek funding for dedicated human resources to support Waste Prevention activity in each of the Orkney and Shetland island groups.

In working with the National Resource and Waste Forum (NRWF), SEPA is developing a national framework to guide the work of the waste strategy groups and other key players on MSW Prevention. This will include research into best practice both within the UK and abroad. The outputs from this research will be twofold:

- ➔ Practical guidance to WSAGs on how to develop their own local Waste Prevention Plan, and a selection of various tools and techniques with which to do this
- ➔ National recommendations to policy makers and others on instruments which have been demonstrated as successful in preventing waste.

The Orkney and Shetland WSAG will draw together the results of this work and, in consultation with local stakeholders, develop a detailed Orkney and Shetland Area Waste Prevention plan. This plan will set targets, identify actions to be undertaken locally and will tie in to national initiatives on education, promotion and emerging policy instruments.

Action 3
Produce a detailed Orkney and Shetland Waste Prevention Plan, informed by SEPA's national framework.

The public sector (central and local government, health etc.) is one of the largest employers in the area, and through its diverse activities generates large quantities of waste. A range of actions, from procurement activities through proper separation of wastes to promoting waste prevention in through staff training can make a contribution. The Orkney and Shetland WSAG has yet to tackle these wide-ranging issues, but members of the group have agreed to take a lead in examining their own activities through preparing and implementing waste-prevention programmes. In the short term, members will develop a range of actions to ensure their respective organisations reduce the amounts of waste they each produce.

Action 4
WSAG members to initiate/develop internal programmes to prevent and minimise waste within their respective organisations.

Home composting is now recognised as a potentially important and cost-effective means of reducing the household component of MSW. This may be particularly relevant in very remote island areas where collection and transportation costs mitigate against segregated kerbside collection.

Home composters are currently subsidised for householders in Shetland by SIC, and in Orkney 'Green Cones' (home digestors) are provided free by OIC to households in remote islands not linked to the mainland. There is, however, considered to be some scope for expanding home composting in both island groups.

Action 5
Carry out study in Orkney to determine efficiency and impact of Green Cones with a view to extending provision to the Mainland.

Action 6
Extend provision of subsidies for home composters in Shetland to less remote areas.

There are a number of existing reuse initiatives in Orkney and Shetland that divert a substantial amount of unwanted goods from landfill or incineration. These are currently operated on a voluntary basis by organisations and partnerships based within the local community. Examples include various charity shops such as Cancer Research, Save The Children, Red Cross and Salvation Army, aid agencies such as Shetland Aid Trust and other local community-led charity shops such as those in Brae, Whalsay and Aith in Shetland. There also materials exchange schemes that utilise local media – e.g. the Shetland material exchange, which advertises on local radio, has a throughput of around 200 items a year.

In both Orkney and Shetland, there is believed to be considerable scope for increasing participation in reuse and refurbishment schemes and it was clear from the AWP consultation processes carried out in both island groups that their is strong community support to develop this. However, any investment in development of such schemes depends ultimately on there being sufficient demand amongst the wider community.

In Shetland, developments in reuse and refurbishment will be carried forward largely through the Shetland Amenity Trust, whereas in Orkney the local authority will lead developments through adaptation of its existing civic amenity sites.

Action 7
Provide waste segregation and reclamation facilities for the public at OIC civic amenity sites.

Action 8
Develop and expand existing Shetland 'scrap store' facility.

Action 9
Introduce Shetland community re-paint scheme.

Action 10
Investigate feasibility of new centralised architectural salvage schemes in Orkney and Shetland.

3.2.2 Recycling and Composting

Orkney and Shetland currently has Scotland's highest household recycling rate, and substantial quantities of commercial waste are also collected every year. However, the Orkney and Shetland BPEO nonetheless requires a significant increase in the quantities of materials collected for recycling and composting including glass and metals in Shetland, and glass, metals, paper and green waste (for composting) in Orkney.

By 2020, an 8.7% increase in the rate of recycling and composting in Orkney will be offset by a 7.7% increase in the rate of energy recovery in Shetland. Shetland will also increase its current rate of MSW recycling by 1.4%. The Orkney and Shetland BPEO for 2020 targets an overall increase in recycling in the area of 40% on current levels.

The principal means of achieving the BPEO recycling targets will be the introduction of segregated kerbside collection systems for households in major towns, and an expansion in the provision of bring facilities in the more remote island areas.

The AWP consultation process demonstrated strong support for recycling and composting, although a number of issues were commonly raised relating to barriers to participation in existing schemes. The WSAG has identified a number of developments required to overcome these barriers, most notably the introduction of household kerbside collections and an expansion of the provision of facilities in more remote areas.

In Shetland, the local authority has developed a number of recycling partnerships with community-based organisations, such as the Shetland Amenity Trust and Decocrete (a private company). These organisations will play a key role in implementing and developing the AWP. In contrast, in Orkney most of the current recycling activity is local authority-led.

Development of large-scale composting in Shetland is thought to be limited by a lack of suitable feedstock, although scope for smaller scale (e.g. community) composting schemes is believed to exist. In Orkney, while a substantial quantity of compostable material (garden waste) from households is currently segregated and collected separately for composting, there is considerable scope to improve the quality and value of the compost for local use. There is good potential for community composting in Orkney as well.

Due to the isolation of the island areas and the need to transport wastes long distances for reprocessing, the benefits of traditional, centralised recycling are limited – most major reprocessing centres are on the mainland, and this incurs excessive costs. However, where value and utility in waste can be exploited locally, the benefits can be substantial. Most of the current recycling and composting in the area can be attributed to local reprocessing activity, and future developments will rely heavily on successfully increasing local reprocessing capacity and developing local end markets.

Action 11
Develop and implement household kerbside collection systems for recyclables in Orkney.

Action 12
Develop and implement household kerbside collection for glass and aluminium in Scalloway and Lerwick, with an initial review after one year.

Action 13
Implement in-vessel technology to compost segregated green waste in Orkney.

Action 14
Introduce aluminium can banks to existing recycling centres in Shetland.

Action 15
Review and expand the provision of recycling centres in remote parts of Orkney and Shetland.

Action 16
Introduce centralised inkjet cartridge recycling schemes in Orkney and Shetland.

Action 17
Develop aluminium sorting and baling facility in Shetland.

3.2.3 Other Recovery

The principal means of diverting MSW from landfill in the Orkney and Shetland will continue to be energy recovery for district heating at the existing plant in Lerwick. This facility will continue to recover value from 70% of the area's overall annual MSW arisings.

While both the Orkney and Shetland WSAGs have acknowledged the key role of the existing facilities in delivering BPEO, the groups also recognise the potential benefits of maximising waste prevention, and increasing recycling and composting throughout the area. A key aspect of developing the area's BPEO will, therefore, be to determine the potential for diverting different elements of the MSW stream from the plant without compromising its performance, and/or for substituting these elements with other wastes currently sent to landfill. This work underpins future development and implementation of the AWP. It also has value and implications outwith the Orkney and Shetland area, as many other AWPs are likely to incorporate some level of energy recovery as part of their future development.

Action 18
Carry out research to determine the sensitivity of the Lerwick district heating facility to diverting different elements of MSW, and the scope for substitution of these elements with other wastes currently sent to landfill in the area.

In Shetland, the local authority is participant in a European project investigating and developing islands-based Waste to Energy technology solutions. This should be used as an opportunity to benefit from experience and best practice developments elsewhere in Europe.

3.2.4 Disposal to Landfill

Despite the fact that by 2020 over 80% of the area's annual MSW arisings will be recovered in some way, the provision of sufficient forward landfill capacity for MSW is still a vital part of the BPEO. Without development of this capacity waste will need to be exported at considerable economic and environmental cost. The WSAGs recognise that short- to medium-term (10 year) provision of non-hazardous landfill capacity is important for the effective future management of other, non-MSW streams.

The area's largest landfill site at Rova Head on Shetland is nearing capacity – it is expected to close in 2004/5. There is a pressing need to secure alternative arrangements that provide sufficient forward capacity, and mitigate the disbenefits of transporting waste long distances for disposal elsewhere.

As previously noted, the EU Landfill Directive will require increasingly stringent controls on disposal to existing and new landfill sites, requiring pre-treatment of all landfilled wastes and prohibiting the landfill disposal of certain waste types. Of major concern throughout Orkney and Shetland is the potential impact of the Directive on the area's many smaller, private inert sites. It is possible that future controls on disposal of what are currently considered 'inert' wastes will increase the cost of disposal to levels that will marginalize small operators. It is crucial that these developments are fully assessed to determine the implications for disposal facilities and forward capacity in the area.

Action 19
Assess the implications of the Landfill Directive for privately owned inert landfill sites within Orkney and Shetland.

The planning system has a key role to play in identifying and developing sufficient forward landfill capacity in Orkney and Shetland and must take a proactive approach, in partnership with the two WSAGs (see Section 5.6.2 Context for Development Planning, Action 34).

3.3 Household Hazardous Wastes

Household hazardous wastes, such as batteries, pesticides, solvents etc., contain chemicals that are potentially toxic. If these wastes are not removed from the waste stream they can adversely affect the environmental performance of the waste-management techniques employed to manage MSW.

It is highly unlikely that the quantity of hazardous wastes present in the MSW stream in Orkney and Shetland are sufficient to justify separate kerbside collection from households. In this case, a 'bring' system is likely to be more appropriate. In order to limit the impact of household hazardous wastes, the Orkney and Shetland WSAG will investigate alternative household hazardous waste collection systems.

A national partnership project is being delivered to investigate the options available to local authorities in Scotland for collecting household hazardous waste separately from the domestic waste stream. Once an initial study has taken place to review the current situation on household hazardous waste recovery in the UK and Europe, and what future legislation will mean for local authorities, pilot collection trials will be implemented to accurately determine the logistical and economic realities of separate household hazardous waste collections. The project will also investigate current public awareness of the issues to develop effective education campaigns.

Action 20
Investigate alternative methods for the collection of household hazardous wastes in Orkney and Shetland.

3.4 Performance Targets

In order to achieve the overall targets set out in Table 3.1, CNES will require as a minimum to meet the specific targets set out in Figures 3.2, 3.3 and 3.4 and Table 3.2 below. These targets refer to the percentage of the total MSW stream collected for subsequent management by each method. It should be noted that they are dependent on a number of variables, in particular future changes in waste growth and composition. A small fraction of waste entering each process will inevitably require final disposal (e.g. rejects from recycling).

Kerbside collections of glass and aluminium in Lerwick are assumed to deliver at least 50% capture of the total quantities available, and in Orkney an additional 1000 tonnes of MSW will be recycled by various means (this target is based on current estimates of the extent to which imports of waste from Orkney for energy recovery can be reduced without adversely affecting the performance or efficiency of the existing plant). A full list of key assumptions underlying the BPEO targets is provided in Annex 6.

Figure 3.2 – Orkney BPEO % Targets

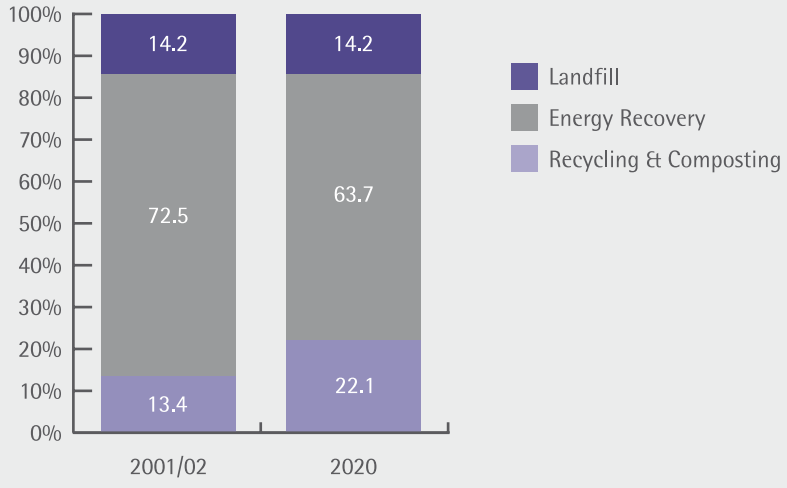


Figure 3.3 – Shetland BPEO % Targets

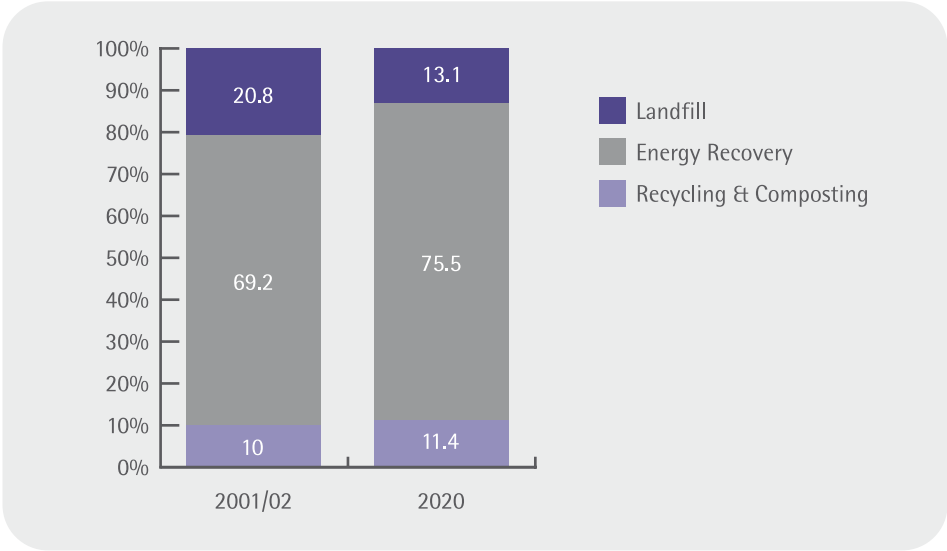


Figure 3.4 – Overall Orkney and Shetland BPEO % Targets

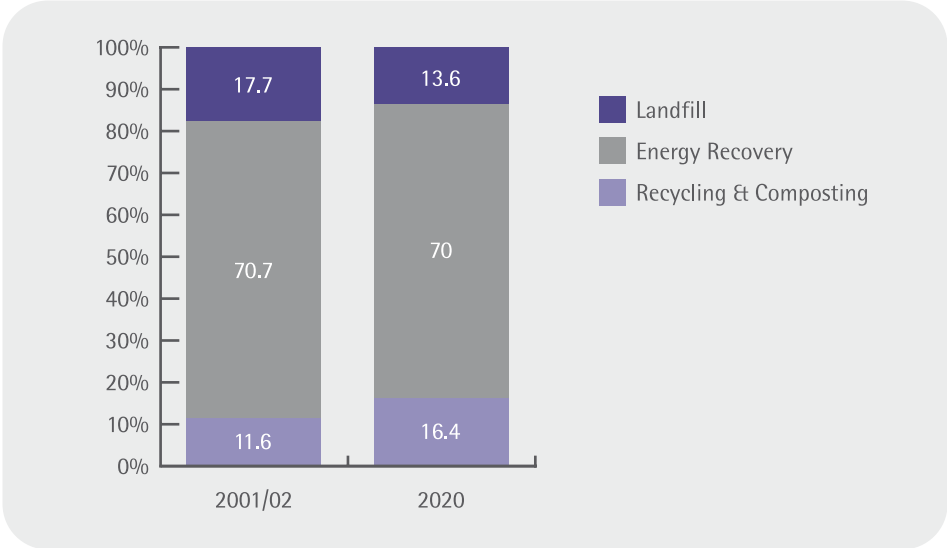


Table 3.2 – Orkney and Shetland 2020 BPEO – % Household Waste Recycling Targets[1]

Area	Current % HHW Recycling	2020 % Target
Orkney Islands	13.4	22.7
Shetland Islands	12	13.7
Orkney and Shetland Islands	12.7	17.8

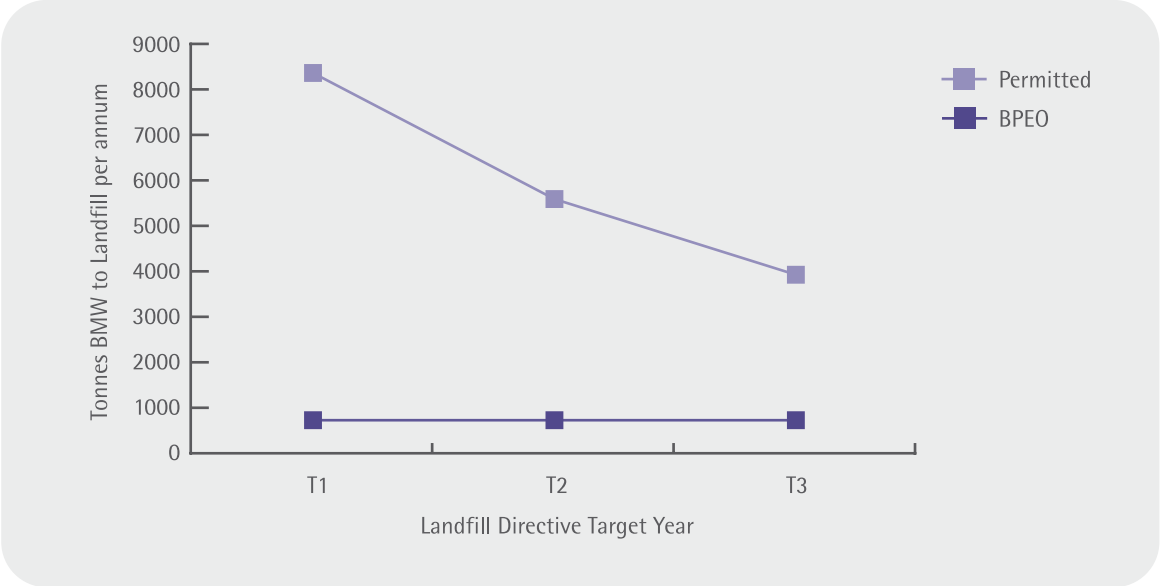
[1]Figures are estimates only, dependent on a number of variables – e.g. sufficient secondary material markets; future household waste composition and growth proportion of rejects from recycling.

These targets, together with those arising from the BPEO decisions of the ten other AWPs, will inform the development of national waste targets for Scotland and contribute to the Scottish Executives national 25% recycling and composting target by 2006.

Landfill Directive compliance

The Landfill Directive requirements to divert BMW from landfill must be met. It is likely that the Orkney and Shetland area will be diverting enough biodegradable material through current energy recovery, recycling and composting initiatives to meet the 2010 and 2013 targets. The only factor that could threaten this self-sufficiency is sustained growth in waste arisings, although current forecasts suggest that even if waste-prevention measures fail this will not occur until near 2020. If achieved, the BPEO target of capping the area's MSW arisings at current levels will in itself be sufficient in itself to ensure the 2020 diversion target is met. Successful achievement of the BPEO targets to increase recycling and composting will divert further biodegradable material and support this end. Assuming early (2010) implementation of BPEO targets, Figure 3.5 below compares the levels of BMW to landfill required by the Directive with those expected to be delivered through the BPEO.

Figure 3.5 – BMW to Landfill: Landfill Directive vs. BPEO targets



It is important to note that by 2020 the existing energy recovery facility will be near the end of its intended life. The area will therefore in any case need to address compliance beyond that date, by planning for and developing appropriate new waste-management facilities.

The Orkney and Shetland BPEO targets will be reviewed on a minimum five yearly basis against monitoring information (i.e. changes in annual MSW arisings, recycling and composting rates), to ensure the area remains compliant with the Landfill Directive requirements.

3.5 Implementing the BPEO for MSW

Taking forward the implementation of BPEO will require an ongoing partnership approach between the two local authorities and other local stakeholders to achieve the targets set out by the area's BPEO. The crucial next step is to work up detailed Implementation Plans that will flesh out the detail of new facilities required, the associated costs, and a detailed timetable for their delivery.

Table 3.3 – Indicative Key facilities required to deliver BPEO

Requirements	Capacity[1]	Timescale	Notes
Non-hazardous landfill (Shetland)	tbc – existing site 36,000	By 2005	Capacity required depends largely on non-MSW arisings requiring disposal (depends in turn on outcome of non-MSW BPEO assessment/s
Expanded network of recycling bring sites in both island groups	Circa. 2800 by 2010	Phased, 2002 – 2010	Requires close Community consultation.
In-vessel composting facility (Orkney)	1000 by 2005	By end 2005	May require specific site May be modular or single vessel depending on implementation plan.

[1]All figures in tonnes per annum. Exact capacities required will be dependant on several variables including waste composition, waste growth, participation rates in recycling schemes, and success of waste prevention schemes. Capacities are only for MSW, these capacities will increase if other wastes are managed at these facilities.

Action 21
Develop detailed AWP Implementation Plans for each of the Orkney and Shetland Island groups.

In taking forward this BPEO there will be significant linkage with the land use planning system to secure approval for appropriate sites and projects. A number of 'pilot projects' are also likely to be introduced to investigate the efficacy of alternative waste-collection methods. This will allow evaluation of a number of options before firming up on specific techniques. Table 3.3 sets out a preliminary indication of the key facilities identified at this stage that are required to meet the BPEO and which will have land use planning implications.

3.6 Costs and Funding of the BPEO for MSW

Implementation of the BPEO may result in the cost of MSW management increasing. New waste management facilities (e.g. bring sites, composting equipment) will require capital investment, and the introduction of more complex collection systems will incur additional revenue costs. Extra finance is required to assist local authorities in delivering new infrastructure, and fund the promotional campaigns required to change behaviour patterns in support of new schemes.

There is a range of potential funding sources, and a number of different ways in which the new infrastructure and services could operate. The onus will however inevitably fall on the local authorities to take forward the required developments in the long term.

The Scottish Executive has allocated £230 million for the financial years 2003/04, 2004/05, 2005/06 through the Strategic Waste Fund that Local Authorities have been invited to bid into in order to fund implementation of their part of the AWPs. Partnership working with non-profit making organisations may to some extent compliment this, but any major outstanding balance will need to come largely from other public sources. Aside from the Scottish Executive an increasing number of such sources exist including:

- Highlands & Islands Partnership Programme (HIPP)
- New Opportunities Fund
- Landfill Tax Credits
- Waste Resources Action Programme (WRAP).

The successful implementation of the BPEO is wholly reliant on sufficient additional levels of funding being secured.

In light the results from integrating the eleven draft AWPs published in spring 2002, the Executive has calculated that an interim overall national target of recycling and composting of 25% of waste collected by local authorities is achievable by 2006 by implementation of AWPs, and has allocated funding adequate to achieve that target. Detailed costs for each of the two local authorities will be set out in their Implementation Plans for the Strategic Waste Fund bid. Further information on national costings is provided in the NWP (2003). Authorities will be expected to seek grant support from the Strategic Waste Fund to assist with the additional costs of implementing the AWPs and will be expected to ensure that delivery of the plans will contribute to the 2006 targets by early implementation of recycling and composting systems.

3.7 Recycling Market Development

It is clear that if Scotland is to make better progress in recycling, significant effort must be made to develop both national and local markets using recycled materials. Progress can also be made in improving the logistics of supply to markets outside Scotland. Two major initiatives have been established to promote sustainable waste management through the creation of stable markets for recycled materials and products and by removing barriers to waste prevention, reuse and recycling.

The ReMaDe Scotland (Recycling Market Development www.remade.org.uk) programme was established in 1999 to identify potential markets and uses for recovered materials in Scotland. It is the key focal point for recycling market development in Scotland and is seeking to increase recovery of waste, create jobs, support the Area Waste Plan and local recycling businesses through encouraging investment, supporting local partnerships and engaging wider awareness in uses of recovered materials.

WRAP (Waste and Resource Action Programme www.wrap.org.uk) is a £40m UK-wide programme funded for 3 years (established 2001) to change attitudes to waste minimisation and recycling through the creation of stable and efficient markets for recycled materials and products. The programme is looking at material specific research and development projects, compost standards, delivering training programmes, and government procurement. WRAP is working closely with ReMaDe and other organisations, addressing barriers to recycling including market development, supply chain issues, investment packages to reduce business risk in new technologies and processes, and supporting the development of recycling infrastructure.

The successful development of local reprocessing capacity and end-markets is a key element of Orkney and Shetland BPEO. A number of development projects are underway, including a glass reprocessing project (for aggregate replacement) and the use of paper waste as animal bedding. The Orkney and Shetland WSAG will continue to work in partnership with local reprocessors and national initiatives to identify and exploit further opportunities for local market development.

3.8 Education and Awareness Raising

The National Waste Strategy: Scotland makes it clear that there needs to be a fundamental shift in the attitudes and behaviour of all waste producers in Scotland.

The Scottish Waste Awareness Group (SWAG) will plan and deliver public awareness campaigns on domestic waste management throughout Scotland. Each campaign will focus on a specific waste management issue (e.g. kerbside campaign, recycling point campaign etc.) and will be run concurrently with the implementation of the Waste Strategy area plans within selected areas. Each campaign will comprise of three basic stages:

(i) Before survey – to assess attitudes and behaviour towards the identified waste prevention issue prior to the intervention strategy.

(ii) Campaign – intensive localised intervention strategy run initially for a six-month period working in partnership with the WSAG co-ordinator, the local authority, the local community and voluntary groups, retailers', private waste industry etc.

(iii) After Survey – to assess attitudes and behaviour towards the identified waste prevention issue after the intervention strategy, and to appraise the effectiveness of the different campaigning methods employed.

This format will allow SWAG to monitor progress towards more sustainable public waste management behaviour, and to develop models of good practice and Best Value for changing public attitudes to reduction, reuse and recycling. A rolling programme of Waste Aware Campaigns in conjunction with AWP time-scales will be implemented across Scotland.

SWAG have already carried out over 100 door-to-door interview surveys throughout the Orkney and Shetland area to establish a baseline against which progress can be monitored as new BPEO infrastructure is developed. The WSAG will continue to work jointly with SWAG to develop campaigns targeting specific infrastructure developments.

These campaigns will provide stakeholders with an understanding of the problem, suggest optimal solutions and provide a means for taking action. One of the key components will be to match the campaigns with 'real' infrastructure – encouragement to make changes that can be supported and enhanced. Concurrently public perception values and needs will be considered. This ensures stakeholder participation and involvement and guides stakeholders towards making their own decisions within their local area. All of which is geared to producing greater participation within local schemes.

It is essential that there is continuity of approach and terminology in the delivery mechanism to change public attitudes towards domestic waste throughout Scotland. The development of the 'Waste Aware Scotland' campaigning programme provides a framework to allow an integrated partnership approach, providing a national campaigning identity that is deliverable at the local level via the waste strategy area plans.

Action 22
In partnership with SWAG, develop education and awareness strategies in each of the Orkney and Shetland Island groups to accompany the introduction of new collection systems and waste-management infrastructure.

It is also critical, as a first step towards creating the necessary awareness for high levels of householder, community and business participation,that efforts are made to promote the objectives and detail of the AWP itself. Again, due to the dispersed and remote nature of the islands, a highly proactive approach will be necessary in this respect.

Action 23
Promote and raise awareness of the Orkney and Shetland AWP throughout all sectors of the community.

3.9 Community Sector Involvement

The community sector can have a significant involvement in methods and solutions for managing wastes in a more sustainable manner. There is a strong history of community action projects in Orkney and Shetland. Locally operated and managed community projects also bring social benefits through creation of employment and social inclusion. The success of such projects will be a key determinant in delivering BPEO.

The Recycling Advisory Group Scotland (RAGS) is currently putting in place measures to support the development of a Scottish Community Recycling Network. The Orkney and Shetland WSAG welcomes these measures and recognises their strategic importance.

Action 24
Support development of community recycling and composting initiatives in Orkney and Shetland and promote links with the new RAGS Scottish Community Recycling Network.

3.10 Integrating the BPEO for MSW into the National context

While the 11 AWPs and their BPEOs have set out a response to the management of wastes locally, each AWP will contribute to the overall National Waste Strategy for Scotland. This in turn will contribute to the UK government's response to the requirements of the EU framework directive and sustainable development.

Although each AWP establishes an Action Plan, there may be opportunities for partnership working across waste strategy area boundaries delivering more cost-effective and robust solutions. In order to identify these opportunities the 11 BPEOs were evaluated as part of an integration process. The main conclusions from this process are as follows:

- Large-scale facilities do not necessarily bring significant economies of scale and this scale of facility can be more difficult to deliver and a loss of flexibility can result
- Composting should be undertaken on a waste strategy area basis or smaller scale
- The Orkney and Shetland WSAG should communicate with neighbouring WSAGs when planning new waste-management facilities
- There are benefits in terms of access to markets and price commanded in accumulating as large a mass as possible of the highest possible quality of recyclate.

These conclusions will be taken into account when carrying out the detailed implementation planning of the MSW BPEO for Orkney and Shetland.

3.11 Risk to AWP Implementation

There are a variety of risks which, if realised, could compromise the successful and timely implementation of the BPEO. It is important that these risks are identified and managed. Examples of such risks include: failure to identify sustainable markets for recyclate or failure to secure adequate funding. The Orkney and Shetland WSAG will review such risks on a regular basis.

3.12 Future Development and Specific Proposals

The BPEO for MSW in Orkney and Shetland has been chosen with regard to a given set of assumptions and with currently available methods and technologies. It is accepted that changes in legislation, technology or knowledge may mean the chosen BPEO could be superseded. To allow for future developments or proposals not included in the plan, BPEO will be kept under review and may be superseded by valid proposals that can be shown to provide a better (or equivalent) BPEO. The WSAG will consider evaluating relevant waste-management proposals for an improved BPEO as they arise.

The options included in the BPEO evaluation were generic and for the most part, not site-specific. Hence site-specific development proposals that arise both inside and outside the borders of the Waste Strategy Area are valid and may satisfy or improve the agreed BPEO.

Regional- or national-scale waste facilities may be proposed by developers at a scale designed to attract waste from outside the Waste Strategy Area in which they are located. As part of the planning application process, the developer may be required to demonstrate that the proposals satisfy or exceed the BPEO of the Waste Strategy Areas from which the waste will be obtained. The results of this BPEO evaluation will be a material consideration in the planning process for such developments.

Where existing or proposed regional- or national–scale facilities will result in waste movement between Waste Strategy Areas, then consideration of the proposed waste exports and imports must be included in the BPEO process, as described in the following sections.

The 'Export or Import' of waste should be considered as part of the BPEO process, for both the importing and exporting areas, where it is proposed as an original or developing option. Any subsequent review of the BPEOs should also take this into consideration. Approval of the proposed waste-management facilities in the importing area is a matter for consideration by the planning and licensing authorities.

4 Managing Non-Municipal Solid Waste (Non-MSW)

4.1 Introduction

Due to the lack of complete and robust data for local non-MSW, the development of BPEO for the Orkney and Shetland has so far focused primarily on municipal solid waste (MSW). MSW represents only around a quarter the area's total waste arisings. Although the local authorities (particularly in Shetland) handle substantial quantities of non-MSW, large quantities are managed outwith local authority systems. Further work is required to identify and fill data gaps, and provide more detailed information on non-MSW composition, thereby facilitating the assessment of the alternative options for non-MSW.

At the national level, a framework to address the development of Best Practicable Environmental Option (BPEO) for non-MSW has been developed through a partnership between representatives from SEPA, Scottish Executive, the Enterprise community and the waste-management industry. Non-MSW will be a major focus for the future development of the National Waste Strategy: Scotland and the local AWPs.

The partnership approach that is at the heart of the NWSS development has been a success and should continue. For this reason a multi-stakeholder group was brought together to obtain preliminary views and input into a management approach for non-MSWs.

The key issues for the non-MSW framework are:

- Waste Arisings Data – the lack of requirement to record and report waste arisings data has contributed to the absence of sufficiently detailed data required to make a BPEO decision.
- Producer Behaviour – tools that are currently available and those that need to be developed further to influence the behaviour of commercial and industrial waste producers to ensure the adoption of the BPEO.
- Non-MSW Plan - provision of a detailed plan to ensure that the NWSS and local AWPs deal with all controlled wastes and do not just focus on MSW.

The Orkney and Shetland Waste Strategy Area Group (WSAG) will work to ensure the above framework is applied to assess future options for local non-MSW streams.

4.2 Specific Waste Streams

Using the Consolidated European Waste Catalogue (August 2002) all listed wastes have been grouped into compatible industry sectors. These groupings will form the basis of future work on non-MSW. Any links with the current Priority Waste Stream programme and existing Technical Guidance, Best Practice etc., have been made along with possible links to current BPEO technology options for MSW as set out in the AWP. The waste groupings are detailed in Table 4.1 below

Table 4.1 – Waste Groupings

Waste Grouping	
A	Exploration, Mining, Quarrying and Physical/Chemical Treatment of Minerals
B	Animal/Fish Wastes (Agriculture, Aquaculture, Hunting, Fishing, Food Preparation/Processing)
C	Plant Wastes (Agriculture, Aquaculture, Hunting, Fishing, Food Preparation/Processing, Forestry)
D	Leather, Fur and Textile Industries
E	Petroleum Refining, Natural Gas Purification and Coal Pyrolysis
F	Wastes from Inorganic Chemical Processes
G	Wastes from Organic Chemical Processes
H	Wastes from Thermal Processes
I	Wastes from Surface Treatments/Coatings (Metals and Other Materials)
J	Waste Organic Solvents, Refrigerants and Propellants
K	Waste Packaging (Absorbents, Wiping Cloths, Filter Materials and Protective Clothing)
L	Wastes not otherwise specified
M	Construction and Demolition Wastes (Soil from Contaminated Sites)
N	Human and Animal Healthcare Wastes (Research Wastes/Excluding Kitchen Wastes)
O	Water Industry Wastes (Water/Sewage Treatment Wastes)
P	Other Waste Industry Wastes

4.2.1 Prioritisation of Projects

A decision matrix has been developed to classify non-MSW into high, medium and low priority projects. This has been based on the following considerations:

- Links to current MSW BPEO proposals
- Hazardous content
- Recovery/recycling value
- Sectoral Importance (to the Scottish economy)
- Infrastructure shortfall in Scotland
- Quantity
- Finite resource use
- Legislative/regulatory priority.

These projects will be managed at either the local or the national level depending on the geographical distribution of arisings. Section 4.3 details how this AWP will contribute to the outputs of these projects.

Technical groups consisting of the key waste producers, waste managers and other stakeholders specific to each of the sector groupings will be formed to drive the range of projects forward. The membership of these groups is very important to ensure ownership and credibility of the project outputs by those sectors that produce and manage these wastes for the future. The groups will undertake and commission work that will seek to provide the following recommended outputs:

- Establish reliable baseline data and existing regulatory controls
- Report on current practices to deal with waste
- List current facilities and technologies
- Identify emerging technologies and processes
- Recommend good practice and links to existing best practice guidance
- Provide guidance on identifying local BPEO and life-cycle analysis
- Produce user guides
- Identify problematic wastes that may require further research
- Identify waste prevention tools
- Identify skills gaps and training opportunities
- Identify barriers to achieving BPEO and recommendations to overcome
- Describe benefits and opportunities to implementing BPEO
- Identify necessary regulatory controls and other drivers
- Identify any necessary economic and regulatory impact assessments
- Identify enterprise opportunities and social benefits.

4.2.2 Self-Assessment Guidance for BPEO Decision Making

Not all wastes can be addressed as a high priority and the timetabling of BPEO projects will be over the longer term. There are opportunities to encourage the widespread use of the BPEO decision-making processes that consider environmental, economic and social aspects when dealing with these wastes. The development of generic "Self-Assessment BPEO Guidance for Industry and Commerce" will provide a valuable and consistent process for waste producers, waste industry and waste regulators alike, when making localised assessments on the most sustainable options available and the use of life-cycle assessment. In order to achieve widespread industry ownership and acceptability of the guidance, it shall be developed in an inclusive manner with consultation involving key stakeholders and will be undertaken at a national level.

4.3 Local Non-MSW Framework

4.3.1 Non-MSW Data

Although the lack of data (i.e. waste types and quantities) is not as acute in the Orkney and Shetland area as it is elsewhere, the data set is far from complete. A substantial amount of non-MSW is handled privately, including some industrial wastes (e.g. fish wastes, some oil-related wastes), clinical wastes, construction and demolition wastes and agricultural waste. In order to plan effectively for the management of these waste streams an appropriate data set needs to be gathered.

The recent introduction by SEPA's waste data team of quarterly surveys of licensed waste management facilities will, in time, deliver a data set of all wastes managed at licensed sites in Scotland. In addition the Orkney and Shetland WSAG will undertake to fill this data gap locally as part of the national framework.

Action 25
Collate non-MSW data and determine quantities and composition of non-MSW streams for which gaps exist.

Following review of a comprehensive data set, and the type/capacities of existing facilities, further consultations with local industry sectors will be carried out to investigate and assess local options for non-MSW streams. It is even more pressing in an area as isolated as Orkney and Shetland to maintain sufficient forward capacity and an adequate network of suitable facilities for industry to thrive.

4.4 Specific Local Waste Streams

Strategic Priorities

The framework described above will be ultimately be applied nationally and locally to develop plans and best practice for dealing with all non-MSW wastes in Orkney and Shetland. However, there are certain specific wastes that are likely to be particularly strategically important. These include the following:

- Oil and gas industry wastes
- Fish wastes
- Agricultural wastes.

Oil and gas industry-related wastes form one of the biggest single industrial waste streams, and agricultural wastes (e.g. pesticide residues) are soon to be brought under the regulatory control regime. This latter development will have a major impact on crofters and agricultural holdings throughout the island areas. Substantial quantities of fish-related wastes arise in all the island areas and the local framework will build on the on-going work being carried out by research organisations to develop best practice for these wastes.

It is crucial that the WSAG develops the AWP ahead of regulatory changes in such a way as to take proactive measures to prevent, minimise and recover these wastes, and ensure their safe, cost-effective disposal in the long term.

Action 26
Apply national guidance on BPEO assessment for non-MSW, with short-term priority on oil/gas-industry related, fish and agricultural wastes.

Action 27
Consult with the agricultural sector in Orkney and Shetland to identify key strategic waste management issues

The Islands Waste Strategy Co-ordinator has been appointed to lead development of a future Priority Waste Stream Project on agricultural wastes. This will provide a direct link between these local consultations and developing national best practice and other areas,e.g. policy issues.

Commercial and Industrial Wastes

Table 4.2 below provides an overview of the various sources of industrial waste in Orkney and Shetland, and some of the issues related to their sustainable management, as identified by the Waste Strategy Area Groups.

Table 4.2 – Sources of Industrial Waste in Orkney and Shetland

Industry Sector	Waste Issues	Comments
Aquaculture	Feed bags	Now being replaced with bulk feed systems that reduce plastic waste
	Packaging	Increasing requirement for shipping and marketing. Producer responsibility implications
	Mortalities	Can be in relatively large numbers over short time period with no notice
	Planned culls	May be due to disease or pollutants. Ensilaging and export are common disposal routes
	Net cleaning and disposal	Special waste disposal facility required

Industry Sector	Waste Issues	Comments
Crofting/Farming	Used veterinary products	Special waste disposal facilities required
	Herbicides and pesticides	Special waste disposal facilities
	Spent dips	Can be special waste, Promotion of environmentally friendly chemicals to minimise waste issue
	Plastic	Recycling opportunity, scheme involving SAT
	Fencing and wire	Difficult to handle and bulky, generally landfilled
	Mortalities	Require local burial Agricultural sector preference for animal cremator
	Planned culls	May require export or mass burial/cremation facilities
Decommissioning	Combustible components	Waste to energy facility, if suitable or potential special waste disposal facility required
	Inert components	Local landfill facility required or recycling
	Mechanical components	May have potential for refurbishment and reuse Possible contaminants Scrap metal recycling
	Metal structural components	May be utilised in civil engineering works after dismantling/inspection. Dismantled for scrap metal recycling
	Concrete structures	Possible recycling for construction purposes Possible contaminants Landfill facilities required
	LSA scale	Transfer to suitable disposal facility
	Chemical components	Special waste holding facility pending shipment Special waste disposal facility required
	Topsides	Potential for refurbishment and upgrading of sections for reuse
Energy production	Redundant equipment	Local scrap metal recycling Likely to be special waste components for local disposal or export
	Oil sludges	Local incineration or recycling Special waste disposal facility required
Fish catching	Landed ships waste	Generally dealt with as commercial waste Need for adequate handling facilities
	Discarded nets and ropes	Local landfill required Novel recycling opportunities
	Decommissioning of vessels	Local landfill required Scrap metal recycling
	Engine and transmission oils	Incineration/recycling or special waste disposal facility required
	Surplus or unmarketable fish	Local recycling to fish meal/oil Possible ensilaging
Fish processing	Packaging materials	Producer responsibility implications
	Fish waste	Recycling to fish meal/oil Disposal to landfill
	Klondike fleet	Generally on the decline Implications for increased waste arisings Opportunities for novel recycling

Industry Sector	Waste Issues	Comments
Clinical wastes	Certain wastes from hospitals, nursing homes and domestic properties	Hazardous exported to mainland for safe disposal with lower levels sent to Waste to Energy plant
Knitwear/textiles		Generally dealt with locally as commercial waste
Offshore support	Drill cuttings	Reuse of base oil for drilling Recycling of base oil as fuel Recycling of civil engineering material Special or inert landfill facility required
	"Domestic " waste	May be delivered as part of logistics package Waste to energy facility
	Contaminated bulk materials, cement, barite, and bentonite.	May be classed as special wastes, transfer, treatment or disposal facility required
	Process chemicals/wax	Generally special waste transfer, treatment or disposal facility required
	Cable bobbins and containers	Scrap metal recycling or refurbishment
	Construction/demolition waste	May be inert, combustible or special requiring disposal via waste to energy or landfill
Oil processing	General wastes	May require local landfill to supplement SVT site facilities
	Landed ships wastes to jetties	Waste to energy or landfill requirements Special wastes may be present
	Waxes and oil wastes	Special waste transfer, treatment or disposal facilities required
	Civil engineering wastes	Inert waste to landfill. Scrap metal recycling Special waste transfer, treatment or disposal
Ports and Harbours	Dredging and other navigational improvements	May be used for land infill and reclamation May require landfill facility
	Landed ships wastes	"Household" to waste to energy Others as for fish catching
	Dry dock and ship repair wastes	Scrap metal recycling Some special and red list products
	Civil engineering wastes	Inert waste to landfill. Scrap metal recycling Special waste transfer, treatment or disposal required
Tourism	Landed ships wastes	As per fish catching
	Population effects	Seasonal increase in waste management
Cheesemaking	Creamery Waste (Whey)	Pumped into sea via new dedicated outfall
Milk/Ice cream	Spills/washings	Collected and spread on land under SEPA licence
Meat Processing	Blood/Offal from abattoir (also butchers' waste)	Blood currently by sewer to sea (to be exported in future?)/Offal to Kintore for rendering
Brewery	Solid Wastes (hops, etc.)	Reused as animal feed
	Liquid Waste, washings, etc.	Treated on-site via reed beds
Distilleries	Distillery Wastes	Formerly discharged to sea but currently spread on land Anaerobic digestion being considered
	Scrap metal	To local scrapyard

Industry Sector	Waste Issues	Comments
Manufacturing – Jewellery	Jewellery – waste chemicals	Some exported to Aberdeen for specialist disposal (Shanks & McEwan). Others discharged to sewers under SEPA consent
	– recovered gold/silver dust	Exported to Birmingham for refining
Manufacturing – Other	Knitwear.textiles, etc.	Generally dealt with as trade waste
	Marine/General Engineering wastes	Inert waste to landfill. Scrap metal recycling Special waste transfer, treatment or disposal required
	Glass fibre off-cuts/chemicals	Trade waste
Ports/Harbours	Ship wastes	Generally dealt with locally as trade waste
	Certain wastes from hospitals, nursing homes and domestic properties.	Hazardous exported to mainland for safe disposal with lower levels sent to Waste to Energy plant
Retail/Wholesale	Packaging materials/plastics	Some local re-cycling. Others via local authority trade waste schemes. Some national retail chains return to H.Q. for centralised re-cycling operation.
	Redundant shopping trolleys	Scrapyard
Garages	Scrap metal/tyres /batteries	Some reuse of tyres on farms/boats, etc. Remainder to local scrap merchant for export/re-cycling
	Waste oils	To local waste oil burners or exported
Offices/Public Sector, etc.	Paper, card etc.	Reuse/re-cycling as animal bedding
	Used computer ink cartridges	Sent for re-cycling either direct to manufacturer of via local charity

The Orkney and Shetland WSAGs have agreed to take forward an integrated local framework for commercial and industrial wastes on the basis of the priorities and issues identified by industry sectors themselves. This will require further dialogue between the WSAG members and industry representatives.

Action 28
Establish Working Groups in Orkney and Shetland to investigate and develop BPEO for non-MSW.

In addition to the above locally important wastes, there are a number of other wastes on which we have better data and information. These data and information have come from specific SEPA-initiated 'priority waste stream projects' (PWSPs).

4.4.1 Priority Waste Stream Projects (PWSPs)

Waste streams of national significance, which may require national solutions, will be subject to a priority waste stream project. This initially involves data and information collection that is then reported. Of the 13 identified PWSPs for Scotland, construction and demolition wastes, tyres, newsprint, and end-of-life vehicles have now reported. The conclusions of these initial reports are summarised below. Reference should be made to the full reports for the full set of conclusions.

4.4.2 Construction and Demolition (C&D) Waste

The C&D priority waste stream study identified that nationally around 37% of the landfilled C&D Waste could be recycled. Realising some of this potential locally would create further aggregate materials that could replace virgin aggregate currently used for construction in Orkney and Shetland. Information on the current infrastructure for this waste stream can be found within the SEPA Priority Waste Stream Report (availability in Annex 3) or can be located on the CIRIA Internet Register of Recycling Sites (http://www.ciria.org.uk).

Through improved resource management of the construction industry, preventing or reducing the production of waste will have the maximum positive environmental impact, through reduced resource use, lower emissions and energy consumption. A full set of recommendations is detailed in the Construction and Demolition Priority Waste Stream Project Report – Data, Best Practice and Recommendations (see Annex 3 for availability). It is expected that fiscal measures such as landfill tax and aggregates tax will provide further incentive to increase the reuse and recycling of this waste stream and reduce the quantities being landfilled.

4.4.3 Tyres

The national data study on tyres collected data from the companies making up the tyre industry in Scotland (see appendix 4 of the study). Nationally, around 3% of tyres are reused, 13 % recycled (via retreading and silage clamps/landfill engineering), and 49% landfilled. It should be noted, however, that since 1999 the situation has become less bleak in that very few tyres arising in Scotland are now being landfilled direct.

Implementation of the Landfill Directive will see a ban on whole tyres to landfill by July 2003 and shredded tyres by 2006.

4.4.4 Newsprint

Newsprint is a significant component of municipal and commercial waste streams, this project examined newsprint in the context of its suitability for recycling, its quantity and potential to stimulate large-scale industrial investment in Scotland, through the manufacture of newsprint from recovered materials.

The total newsprint waste arisings in Scotland in 1999 is estimated to have been approximately 240 000 tonnes – 6% printers waste, 11% over issue to sales outlets and 83% post consumer (based on sales data). Recovery of newsprint is estimated at 75% printers waste, 100% of over issues and 14% of post consumer newsprint arisings for the whole of Scotland.

4.4.5 End-of Life-Vehicles (ELVs)

There are two different categories of this waste stream:

- Premature ELVs – processed by insurance companies, end of life determined by damage as a result of an accident, fire, flood or theft.
- Old ELVs – processed by local authorities and private owners/vehicle retailers, determined when a vehicle comes naturally to the end of its life, when it is between 10 and14 years old.

The report identifies Best Practice under the requirements of the End-of-Life Vehicle Directive that includes:

- Design of vehicles
- Recycling/recovering component parts before shredding
- Recycling/recovering material from shredder residue.

4.5 Waste Prevention

In order to realise significant levels of non-MSW prevention a co-ordinated effort with government, government agencies and industry is fundamental. There will be a requirement for further regulatory and economic instruments, increased education and awareness and other measures to stimulate waste prevention activity.

Due to the exceptionally high costs of transporting and disposing of waste in the Orkney and Shetland area, the potential adverse economic impact of increasing non-MSW arisings is disproportionately high. Conversely, the benefits of waste prevention are of particular importance and value to such a remote area with a fragile economy.

Tools including pre-product design, changes to management and production processes and the development of clean or wasteless technologies will require to be undertaken at national and company level.

There is significant opportunity to get value from waste materials through reuse and refurbishment. Successful reuse and refurbishment schemes can also provide employment opportunities. Barriers to facilitating reuse and refurbishment opportunities exist, the most common being the difficulty in making the connection between the waste producer and any potential users of the waste. 'Waste Exchange' is a system where the waste of one individual can be considered the resource of another. Schemes of this type make connections between waste producers and potential users of the waste. While there are examples of waste exchanges operating in the UK, there are none currently in the Orkney and Shetland area at present. It may be possible to establish a local service or link into a nationally developed service.

The commercial and industrial and agricultural sectors in Orkney and Shetland are already engaged in a variety of reuse practices including the following:

- Extensive reuse of pallets and boxes/containers
- Reuse of waste wood as a source of fuel
- Reuse of food wastes as animal feed.

There is clearly scope for promoting and increasing this type of activity. A possible mechanism for achieving this is the development of some form of 'commercial civic amenity site' (similar in many ways to a waste exchange). This was raised by a number of companies consulted in Orkney.

As noted previously, the two WSAGs have already made strong links with industry sectors and this process will be continued. A specific link has been established with SEPA's Waste prevention in Industry (WAMI) project with a view to setting up Business Waste prevention Clubs in both island groups. Initial discussions have been extremely positive and part funding has been secured through the regional 'Business Waste Minimisation in the North of Scotland' (Business WINS) project. There is great potential to use the new local projects as a future focus for developing the commercial and industrial aspects of the AWP.

Action 29
Establish independent Orkney and Shetland Business Waste Prevention projects in partnership with Business WINS.

Future work in this area will incorporate other non-MSW producing sectors, most notably the agriculture and crofting sectors. The Steering Groups established to take forward the local Business WINS projects will subsequently be used as a basis for developing industry working groups to address wider BPEO issues.

4.6 Recycling and Composting

As the cost of traditional methods of disposal increases, the commercial appeal of recycling will increase, and it is crucial that any commercial benefits are harnessed within the local economy.

Furthermore, aside from initiatives led by the local authority there may also be potential for new commercial opportunities in local waste reprocessing. As legislation tightens and the disposal of an ever broader range of waste materials is subject to greater regulation and control, so these opportunities may be expected to arise more frequently.

The commercial and industrial and agricultural sectors in the islands are again already engaged in this type of activity including the following:

- Recycling (drying and crushing) of scallop shells for horticultural applications
- Paper shredding for packaging and animal bedding
- Collection of agricultural plastic films for recycling.

As with reuse and refurbishment of non-MSW, there seems to be demand, certainly in Orkney, for a centralised service to support this type of activity amongst local non-MSW producers. As many of the companies in the islands are SMEs (small to medium-sized enterprises) there is considered to be greater potential where companies can work collaboratively together. In such instances the quantities of waste collected are made more significant and schemes likely to become more economically viable.

4.7 Other Recovery

As with recycling, there may be important local commercial opportunities for recovery of non-MSW, particularly as the cost of more traditional waste disposal methods increase.

In Shetland, there may be scope for recovery of energy from non-MSW through the existing Lerwick plant (around 3000 tonnes of offshore waste is already recovered annually in this way).

Energy recovery through combustion has the advantage that it can effectively treat certain hazardous wastes. If biomass derived wastes are combusted the energy generated has the advantage of being generated from a renewable source. It should be noted that the actual wastes treated would depend on their nature, the technology of the plant chosen and the economics of managing the wastes.

There may also be potential for collaborative non-MSW recovery projects, such as composting schemes in the food production sector and/or anaerobic digestion in the fish-related industries. Such initiatives will require further investigation by the two local-industry working groups.

4.8 Disposal

Significant quantities of non-MSW are landfilled in Orkney and Shetland. The majority of these wastes are construction and demolition or oil-related. The Landfill Directive may require engineering improvements that threaten the viability of some of the smaller existing inert sites. Actions 19 and 34 are intended to address the provision of sufficient forward landfill capacity for non-hazardous and inert wastes as required. There could be wastes currently disposed of to landfill which the landfill directive will ban from landfill in future years. The Orkney and Shetland WSAG will ensure work is initiated to identify these wastes, and understand future infrastructure requirements.

4.9 Recycling Market Development

A key aspect of the Orkney and Shetland BPEO for MSW is the development of sufficient local waste reprocessing capacity, especially for glass. Developing the local market for the secondary materials – e.g. aggregate replacements, filtration media – may require partnerships with non-MSW producing sectors.

Any successful commercial recycling enterprises in the Orkney and Shetland should be based on a highly specified, quality product for which there is adequate local demand. This requires extensive product development and market research.

4.10 Education and Awareness Raising

The cultural shift that is required to change attitudes and behaviour is not only targeted at local householders. As key waste producers, local business and industry must also be involved in future education and awareness programmes. There is already a great deal of useful information available to businesses on waste and environmental issues, and, where required, complimentary information will be further developed and disseminated widely. The promotion of information will be targeted wherever possible through existing business networks.

4.11 Waste-Producer and Industry Involvement

It is crucial that waste producers are actively engaged in the process of implementing and developing the Orkney and Shetland AWP, and the Action Plan in Annex 2 takes account of this. It is also possible that the private sector waste industry will be involved with implementation of the AWP, as that sector harbours considerable expertise in the management of wastes. Local businesses and industry sectors must have their waste-management needs addressed to ensure that the local and Scottish economies are supported by the national waste strategy, and that good practice is promoted to all waste producers. To ensure the effective input of the waste-management industry and waste producers local forums will need to be established in future – to identify local needs, and utilise and share local knowledge and expertise as widely as possible.

5 Developing and Implementing the AWP

5.1 Introduction

The Orkney and Shetland AWP provides a framework for taking forward waste-management in Orkney and Shetland. However, it is recognised that to implement the various short- and longer-term actions will involve a partnership with public agencies, the waste industry, private and voluntary organisations, and our communities. The AWP will also provide a framework for investment and for other plans and initiatives involving our partner agencies and organisations. Key tasks include:

- defining the future role and membership of the WSAG and local forums
- securing funds to deliver the AWP
- implementing the AWP
- monitoring the AWP
- supporting and responding to the National Waste Plan.

5.2 Future Role and Membership of the WSAG

The independent Orkney and Shetland WSAGs will be maintained as the focal point for the development of Orkney and Shetland AWP. In addition, a joint Orkney and Shetland Area Waste Planning Group will meet annually to review progress in the two island groups. In this way we can ensure that the Orkney and Shetland AWP makes good progress. The partnerships developed through the group will provide a long-term development resource and a way of embedding expertise on a wide range of issues relating to the development of the National Waste Strategy: Scotland. An Islands Waste Strategy Area Co-ordinator will also be maintained by SEPA to provide ongoing facilitation and co-ordination, and to ensure that the range of national projects identified in the National Waste Plan are integrated into the AWPs. Waste Strategy Area Co-ordinators will be responsible for co-ordinating the WSAG and for supporting and reporting on the annual progress of AWP development. Other partners also have significant roles to fulfil.

5.3 Action Plan

The Actions arising in this AWP are presented in a format that provides further detail on the objective of each action and how they will be delivered and measured. This framework will provide a consistent and transparent format for monitoring and reporting on AWP progress. Resources will be identified and reported on in annual reviews. The full Action Plan – with detailed objectives, targets, indicators and timescales – is in Annex 2.

5.4 Funding the Area Waste Plan

Considerable resources, both capital and revenue, will be required to implement the AWP Action Plan, and provide the required waste-management infrastructure to deliver BPEO in Orkney and Shetland.

Funding of the necessary investment for new waste-management infrastructure and operations may be obtained in a number of different ways, including private finance, through a PPP or PFI arrangement (refer to Annex 3), or traditional direct funding by the local authority. The Scottish Executive has established the Strategic Waste Fund (SWF) to allow specific grants to be paid to local authorities to assist with additional costs to meet the requirements of the Area Waste Plan (refer to SWF Guidance available from the Scottish Executive, contact details in Annex 5). Additional funding may also be available in some cases from other sources, e.g. landfill tax credits, New Opportunities Fund "Transforming Waste", EU structural funds and the sale of packaging waste recovery notes (PRNs).

Further information is available on the web site: http://www.sepa.org.uk/nws/funding/index.htm

The development of AWPs will inevitably result in an increase in the cost of waste management in Scotland. These costs will ultimately have to be borne by the producers of waste (the "polluter pays" principle). This poses a number of challenges as to how these costs are met and will require further detailed consideration over the next few years.

5.5 Monitoring Progress and Performance

Monitoring and review of the AWP performance will be an important element in measuring the influence and success of the plan. This will ensure that the plan continues to be effective and deliver the improvement in waste management in Orkney and Shetland and Scotland as a whole.

An annual AWP progress report will be provided to the Scottish Executive, and made available on the internet, with a summary of the annual forward development plans. This will ensure that the AWP remains current. It will highlight progress on implementation and flag up any key issues that need to be addressed by future reviews.

The BPEO process for MSW was a rigorous and consensual process, involving both local authorities and a range of other key stakeholder bodies. It has been proposed that the aggregated outputs from Scotland's 11 AWPs should form the basis for future national MSW recycling and recovery targets.

5.5.1 Application of MSW Targets

Responsibility to meet the AWP targets for MSW lies with Orkney and Shetland Islands Councils. Section 3.2 clearly identifies how the overall BPEO targets are apportioned between the two local authority areas.

5.5.2 Indicators

To ensure that the Orkney and Shetland AWP becomes a reality, the monitoring and reporting of its implementation is essential.

A wide range of stakeholders have key roles to play, not only in the implementation of the Action Plan but in the monitoring and communicating the progress made, and sustaining the partnership that has been at the heart of developments to date.

Table 5.1 sets out the proposed indicators that will form a National Monitoring Framework, along with identified sources of information that can be utilised to gather annual data for reporting requirements.

Table 5.1 – Performance Indicators

	Indicator	Type (National/ WSA/LA Area)	Relevance	Measure	Information Source
1	Waste Production National	WSA	Waste levels must be known for effective forward planning (disposals and treated wastes)	Waste arisings in millions of tonnes, and categorised as per the requirements of the Waste Data Strategy.	SEPA: Local Authority Waste Arising Survey, Industry Trend Survey
2	Treatment of MSW	National WSA LA	Monitor waste treatment against indicative levels set out in National Waste Plan and AWPs	Tonnage of MSW (expressed as a percentage of total tonnage) treated by: ➔ Recycling and composting ➔ Energy recovery ➔ Landfilling	SEPA: Local Authority Waste Arising Survey Community Recycling Network

	Indicator	Type (National/ WSA/LA Area)	Relevance	Measure	Information Source
3	Treatment of non-MSW	National WSA LA	Monitor waste treatment against baseline levels established as part of the non-MWS technical assessment groups	Tonnage of non-MSW (expressed as a percentage of total tonnage) treated by: – Recycling and composting – Energy recovery – Landfilling	SEPA: Industry trend surveys SESA Private Waste Management Companys
4	Collection of MSW	National WSA LA	Monitor public access to recycling collection services	Percentage of MSW collected from: segregated kerbside collections survival bag collections number of mini recycling points per 100 households (by LA area)	SEPA: Local Authority Waste Arising survey Local Authorities Community Recycling Network
5	Landfilling of BMW	National WSA LA	Monitor compliance with Landfill Directive Note: this indicator can be derived from Treatment of MSW indicator	Tonnes of BMW expressed as a percentage of BMW produced in 1995	Local Authority Waste Arising Survey SEPA data returns
6	Waste Prevention	National WSA	Stabilisation and reduction of waste growth is essential for successful resource management and to prevent further environmental degradation	Production of MSW per household per year (further guidance on how to measure prevention will be produced by the Waste Prevention Working Group: SEPA)	SEPA: Local Authority Waste Arising Survey LA: No of Households
7	Public Awareness	National WSA LA	Determine effectiveness of environmental awareness campaigns	Shifts in public behaviour: % aware of and actually participating in recycling and waste prevention	Waste Aware Campaign Surveys SWAG Baseline surveys
8	Employment in the waste management sector	National Local	The traditional waste management sector has diversified to include community groups and social inclusion programmes. The total size of the sector is not known	Number of employees including environmental taskforce placements within the waste management sector	SESA Scottish Enterprise SEPA Local Authorities Community Recycling Network

Action 30
Relevant lead organisations to report annually on progress against individual action points.

Action 31
Provide a written annual summary report on progress against the Action Plan.

Action 32
Develop a set of detailed key performance indicators and interim targets clearly linked to AWP delivery, as part of the two local authority Implementation Plans.

5.6 Linking to Land Use Planning

5.6.1 Need for Positive Planning

It is clear that in planning to meet the landfill diversion targets, new infrastructure will be required in the coming years. Development planning – structure and local plans – has an important role to play in this by planning positively for the necessary waste-management infrastructure needed to implement the AWP. Development planning should assist in ensuring that there is an integrated network of waste-management facilities in Orkney and Shetland which meet the objectives of the AWP. Planning Authorities when considering development proposals will ensure they are fully assessed against the AWP and accord with the chosen strategy. The planning system will also assist in ensuring that protection is given to the natural, built and historic environment and assist in moving towards a more sustainable form of development.

Both the current Shetland and Orkney Islands Local Plans refer to the National Waste Strategy: Scotland, the emerging Area Waste Plan and of the need to make provision to meet the targets in it.

5.6.2 Context for Development Planning

The following publications will be used to assist in the development of structure and local plan policies and when considering planning applications for waste-management or treatment facilities in Orkney and Shetland.

1. NPPG 10, Planning and Waste Management sets out the role and responsibility of planning authorities in developing policy and identifying sites for waste-management facilities. *"Planning authorities have a duty to provide policies for suitable waste disposal sites or installations in order to supply the land necessary for waste treatment and disposal to take place."* (page 6, para 2)
2. PAN 63 Waste Management Planning provides best practice on a range of issues associated with waste management facilities and encourages a more proactive approach to waste management policy in development plans
3. Orkney and Shetland AWP is a material consideration for the land use planning system. As far as is practicable the AWP provides a clear framework for the development of waste management facilities to meet landfill diversion targets together with indicative infrastructure requirements to be incorporated into development plan policy as soon as is practicable.

Technical Support

SEPA has agreed, subject to available resources, that it will provide expert technical assistance to Planning Authorities in defining the technologies that accord with the MSW BPEO decision (and future BPEO decisions). This could include commenting on the degree to which planning applications accord with the AWP, reviewing life-cycle assessment models where necessary and offering to appear as expert witnesses at public inquiries as required. Further assistance in the interpretation of the Landfill Directive and calculation of remaining landfill capacities, including the provision of waste data, will also be provided where required. SEPA will also provide technical assistance in identifying and assessing the suitability of sites or areas of search for landfill.

Action 33
The objectives, targets and facilities required to implement the AWP will continue to be taken fully into account in the development of Structure and Local Plan policy.

Action 34
Development Plans will identify suitable sites for waste-management facilities required to deliver the Orkney and Shetland BPEO.

5.7 Linking to the National Plan

The Area Waste Plans describe the activities, key infrastructure needs and targets for each of the eleven Waste Strategy Areas in Scotland. The National Waste Plan for Scotland (NWP) presents the aggregation of these eleven Area Waste Plans and describes the necessary activities to ensure waste arising in Scotland is managed in a sustainable manner. The National Waste Plan also sets out how Scotland will achieve the objectives of the Landfill Directive (99/31/EC). The future development of both the National Waste Plan and Area Waste Plans are linked with actions being undertaken at both an area level and, where appropriate, at a national level. Together they provide the development programme to take forward the National Waste Strategy: Scotland at both a national and an area level.

Annex 1 – Glossary

Aerobic A process taking place in the presence of air.

Anaerobic A process taking place in the absence of air.

Anaerobic digestion The anaerobic decomposition of biodegradable waste under controlled conditions by the action of micro-organisms in order to produce methane in the form of biogas and, as residue, a fiber fraction (digestate) and a liquid fraction (liquor).

Avoidance Strict Avoidance involves the complete prevention of waste generation by virtual elimination of hazardous substances or by reducing material or energy intensity in production, consumption and distribution, as defined by Organisation for Economic Co-operation and Development – Strategic Waste Prevention 2000. See Waste Prevention

Best Value Places a duty on local authorities to deliver services (including waste collection and waste disposal management) to clear standards – covering both cost and quality – by the most effective, economic and efficient means available.

Biological treatment The stabilisation of residual municipal waste, unsorted waste or any other biodegradable waste in order to reduce the fermentability and volume of the waste.

Central composting Large-scale schemes that process biodegradable material from the surrounding area in a centralised location.

Commercial waste Waste arising from premises which are used wholly or mainly for trade, business, sport, recreation or entertainment, excluding household and industrial waste. (As defined in Environmental Protection Act 1990 Section 75)

Community sector Including charities, campaign organisations and not-for-profit companies.

Composting The controlled biological decomposition and stabilisation of biodegradable materials (such as organic garden and kitchen wastes) under predominantly aerobic (oxygen-rich) conditions to produce a humus rich, sanitised and stabilised product that can be beneficial to soil.

Controlled waste Household, industrial and commercial waste or any such waste which require a waste management licence for treatment, transfer or disposal. (As defined by Environmental Protection Act 1990 Section 75)

EC Directive A European Community legal instruction which is binding on all Member States and must be implemented through the legislation of national governments within a prescribed timescale.

Energy from waste The recovery of energy value from waste by burning the waste directly, or by burning a fuel produced by the waste, such as refuse-derived fuel (gaseous or solid) or landfill gas.

Gasification Heating waste in a low-oxygen atmosphere at temperatures typically of 800–1400°C to give off a fuel gas. This technology was used to produce gas from coal, although it is relatively new process in its application to waste treatment

Home composting Compost can be made at home using a traditional compost heap, a purpose designed container or a wormery.

Household waste Includes waste from domestic properties including caravans, residential homes and premises forming part of an educational establishment and part of a hospital or nursing home.

Incineration A combustion treatment process involving waste. This includes the incineration by thermal oxidation of wastes, as well as other processes such as gasification and pyrolysis in as far as the substances resulting from the treatment are subsequently incinerated. (Definition is taken from the Waste Incineration Directive)

Industrial waste Waste from a factory (within the meaning of the Factories Act 1961) or from any premises used for or in connection with:

- Provision of public transport
- Public supply of gas, water, electricity or sewerage services
- Provision to the public of postal or communication services

Inert waste Means 'waste that does not undergo any significant physical, chemical or biological transformations' as defined by the Landfill Directive (99/31/EEC).

Integrated waste management Involves a number of key elements, including: recognising each step in the waste-management process as part of a whole; involving all key players in the decision-making process; and utilising a mixture of waste-management options within the locally determined sustainable waste-management system.

In-vessel composting The composting of biodegradable material in a closed reactor where the composting process is accelerated by an optimised air exchange, water content and temperature control.

Kerbside collection Any regular collection of recyclables from premises, including collections from commercial or industrial premises as well as from households. Excludes collection services delivered on demand.

Land use planning The Town and Country Planning system regulates development and use of land in the public interest and has an important role to play in achieving sustainable waste management.

Landfill Directive A key European Directive agreed in April 1999, aims to prevent or reduce as far as possible the negative effects of landfilling on the environment and human health. The main requirements of the directive include treatment of most wastes before landfilling; banning the co-disposal of hazardous and non-hazardous waste; banning certain wastes from landfill completely; and targets for the reduction of biodegradable municipal waste to landfill.

Landfill sites Areas of land in which waste is deposited.

Materials recovery facility (MRF) A facility to process wastes for the purpose of recovering useful materials. The waste is transported along conveyor belts and items such as cans, glass, paper and plastic are sorted by type before reprocessing. A clean MRF deals only with source segregated waste whilst a dirty MRF recovers materials from a non-segregated waste stream.

Mixed waste processing facility Includes a number of established and emerging technologies such as mechanical sorting for recycling, biological composting and digestion to recover value from the production of refuse-derived fuels or fibre-based materials and to reduce the quantity of waste for disposal.

Packaging waste Comprises waste arising from "all products made of any materials of any nature to be used for the containment, protection, handling, delivery and presentation of goods, from raw materials to processed goods, from the producer to the user or the consumer...."

Pyrolysis In this treatment, organic waste is heated in the absence of air at temperatures typically of 400 – 800 °C. This produces a predominantly gaseous phase, occasionally some liquid phase and a solid inert residue (mainly carbon). Pyrolysis can take different waste streams but generally requires a consistent feedstock. Pyrolysis does enable energy to be recovered from the waste.

Recovery Generating value from wastes from a wide variety of activities, such as recycling, composting and energy from waste plants.

Recycling Using waste materials in manufacturing other products of an identical or similar nature, as defined by Organisation for Economic Co-operation and Development – Strategic Waste Prevention 2000.

Reduction at Source Minimising use of toxic or harmful substances and/or minimising material or energy consumption, as defined by Organisation for Economic Co-operation and Development – Strategic Waste Prevention 2000. See Waste Prevention.

Reuse Involves the multiple use of a product in its original form, for its original purpose or for an alternative, with or without reconditioning, as defined by Organisation for Economic Co-operation and Development – Strategic Waste Prevention 2000. See Waste Prevention.

Source separated green waste 'Green and wood waste' means vegetable waste from gardens and parks, tree cuttings, branches, grass, leaves (with the exception of street sweepings), sawdust, wood chips and other wood waste not treated with heavy metals or organic compounds.

Source separated recyclables Recyclable materials (e.g. paper, cans, glass, textiles, household organics, plastic, steel, etc.) that have been separated at the point of origin. The separation either takes place within the household (or business/institution) through the use of different containers, or parts of containers for individual materials or at street level.

Sustainable development Development which meets the needs of the present without compromising the ability of future generations to meet their own needs. This definition can be expanded to include waste and resources, i.e. development that recognises the need to limit the use of resources and production of waste to levels which do not damage the ability of natural ecosystems to remain stable and healthy. This will involve efficient use of resources including the reuse and recycling of wastes and a move from resources whose supply is finite to renewable.

Thermal treatment A broad generic term covering all incineration processes, for example, gasification, incineration and pyrolysis.

Waste Means any substance or object in the categories set out in Annex 1 of the Waste Framework directive (91/156/EEC) which the holder discards, or intends or is required to discard.

Waste arisings The amount of waste generated in a given locality over a given period of time.

Waste hierarchy Seeks to capture the desirability of different waste management options in descending order of preference, from Avoidance, Reduction and re-using waste, through recycling and composting, energy recovery and finally disposal. The concept is meant as a guide to thinking rather than a rigid rulebook.

Waste minimisation Preventing and/or reducing the generation of waste at the source: improving the quality of waste generated, such as reducing the hazard, and encouraging reuse, recycling and recovery, as defined by Organisation for Economic Co-operation and Development – Strategic Waste Prevention 2000.

Waste prevention Includes in descending order of preference: strict avoidance, reduction at source and product reuse, as defined by Organisation for Economic Co-operation and Development – Strategic Waste Prevention 2000. These terms are defined under the relevant headings.

Waste transfer station A site to which waste is delivered for sorting and/or bulking prior to transfer to another place for recycling, treatment or disposal.

Windrow composting An open-air method of composting in which biodegradable materials are placed in long piles, which are turned periodically to aid the composting process. The term originates from the farming practice of piling hay in rows so that it will dry out in the wind.

Annex 2 – SMART Action Plan

Interpreting the SMART Action Matrix

This framework has been developed to set out the actions and targets in a consistent format for all Area Waste Plans. This matrix will also form the basis of the annual reporting format on the actions proposed in each Plan.

Title	Notes
No.	Action number: Relates to action number within the main body of the AWP.
Description	What do you want to do? This is the main "doing" element of the action.
Objective	Link to Objectives of the AWP: All actions are related back to key objectives that underpin the content of the Area Waste Plan. Actions may relate to more than one objective.
Target	Where do you want to be? The end point of what the action sets out to achieve. The point at which it can be said the action has been completed.
Indicator/ Measurable	What to measure, how to measure it and how to measure progress: in order to ensure national consistency in how actions are measured, the matrix provides some suggested measures for general action headings.
Deadline	Completion Date or Cycle: date at which the target will be reached and action completed. Timescales can be revised at the annual review stage of the action plan. If an action is no longer applicable and/or the target cannot be met, clear reasoning and steps to resolve must be given.
Lead Org	Who is going to undertake the action? Clear responsibility must be allocated to all actions for undertaking and monitoring progress. If this is not specified, actions are unlikely to be progressed.
Resources	Staff and financial resources required to undertake action and source of resources: it may be that resources to fund an action are to be further investigated. Potential funding sources may also be identified.

	Action	Key Objec-tive	Target	Indicator	Deadline	Lead Body	Resources
1	Develop an AWP for Orkney and Shetland that fully integrates all waste streams.	2	Production of fully integrated Orkney and Shetland AWP	➔ Non-MSW BPEO appraisals completed ➔ Revised Orkney and Shetland AWP produced	End 2004	SEPA	Existing resources Research funds could be needed for specific waste streams
2	Develop and seek funding for dedicated human resources in each of Orkney and Shetland to support waste prevention activity amongst local communities and businesses.	2,5,6,8	Employment of dedicated local Waste Prevention and Recycling staff in each island group	➔ Identification of roles and responsibilities ➔ No. of funded posts	End 2004	OIC/ SIC	Specific additional funding required (possibly local support – e.g. in kind)
3	Develop a detailed Orkney and Shetland Waste Prevention Plan, informed by SEPA's national framework.	2	Production of detailed Orkney and Shetland Waste Prevention Plan	➔ SEPA national guidance produced ➔ Orkney and Shetland local plan completed	End 2004	WSAG	Existing resources Additional human resources required to develop detailed local Plan (see Action 3)
4	WSAG members to initiate/develop internal programmes to prevent and minimise waste within their respective organisations.	2,8	WSAG members to implement ongoing internal Waste Prevention programmes	➔ No. of WSAG members with internal Action Plans (documented) ➔ Recorded evidence of internal improvements	End 2004 /ongoing	WSAG	Existing resources
5	Carry out study in Orkney to determine impact of Green Cones	2	Assessment of potential impact of Green Cones on household waste stream in Orkney	➔ Completed study report	End 2003	OIC	Existing resources May require additional funds
6	Extend provision of subsidies for home composters in Shetland to less remote areas.		Increased uptake of home composting – rate tbc	➔ Total subsidy provided ➔ No. of bins distributed	End 2004/ on-going	SIC	Existing resources Requires funds to provide subsidy
7	Provide waste segregation and reclamation facilities for the public at OIC civic amenity sites.		Increased reuse of MSW – target tonnage tbc	➔ No. of upgraded sites ➔ Tonnage MSW reused per annum	End 2004	OIC	Existing resources Requires specific additional funds

	Action	Key Objec-tive	Target	Indicator	Deadline	Lead Body	Resources
8	Develop and expand the existing Shetland 'scrap store' facility.		Increased reuse of MSW – target tonnage tbc	➔ Tonnage MSW reused per annum	End 2004	SAT	Existing resources Requires specific additional funding
9	Develop a Shetland Community Re-paint scheme.	2,5,8	Establish a Shetland Community Re-paint project	➔ Identify premises ➔ Secure funding ➔ Quantity of paint reused per annum	End 2004	SAT	Requires specific additional funding Offers savings to users
10	Investigate the feasibility of new centralised architectural salvage schemes in Orkney and Shetland.		Feasibility assessment of centralised architectural salvage in both island groups	➔ Completed feasibility reports	End-2004	OIC/ SAT	Existing resources May require additional funds Actual projects would require specific additional funding
11	Implement household kerbside collection system for recyclables in Orkney.		22.7% household waste recycling in Orkney by 2020	➔ No. of participating households ➔ Tonnage of hhw recycled per annum	End 2005	OIC	Requires specific additional funding (e.g. for trials and additional new collections)
12	Implement household kerbside collection system for glass and aluminium in Scalloway and Lerwick.		13.7% household waste recycling in Shetland by 2020	➔ No. of participating households ➔ Tonnage of hhw recycled per annum	End 2005	SIC	Requires specific additional funding (e.g. for trials and additional new collections)
13	Implement in-vessel system for composting green waste in Orkney.		1000 tonnes hhw composted per annum in Orkney by 2020	➔ Site identified ➔ Planning permission (if appropriate) ➔ Tonnes hhw composted per annum	End 2004	OIC	Requires specific additional funding (e.g. site preparation, vessel etc.)
14	Introduce aluminium can banks to all existing recycling centres in Shetland.		13.7% hhw recycling in Shetland by 2020	➔ No. of aluminium can banks provided ➔ Tonnage aluminium recycled per annum	End 2005	SAT	Existing resources Requires specific additional funding

	Action	Key Objec-tive	Target	Indicator	Deadline	Lead Body	Resources
15	Expand the provision of recycling bring facilities to cover remote parts of Orkney and Shetland.		17.8% hhw recycling in Orkney and Shetland by 2020 Target density – tbc	→ No. of sites per household → Tonnage hhw recycled per annum	End 2005	OIC/ SIC/ SAT	Requires specific additional funding
16	Introduce centralised inkjet cartridge recycling schemes in Orkney and Shetland.		Established centralised inkjet cartridge recycling projects	→ No. of collection points → No. of cartridges recycled	End 2003	OIC/ SAT	Requires specific additional funding
17	Develop aluminium sorting and baling facility in Shetland.		13.7% hhw recycling in Shetland by 2020	→ Provision of sorting and baling facility → Tonnes aluminium recycled per annum	End 2003	SAT	Requires specific additional funding
18	Carry out research to determine the sensitivity of the Lerwick district-heating facility to diverting different elements of MSW, and the scope for substitution of these elements with non-MSW currently going to landfill.		Assess scope to increase MSW recycling targets	→ Research specifications drawn up → Funding secured → Report completed	End 2004	SIC/ SEPA	May be some existing resources but likely to require specific additional funding
19	Assess the implications of the Landfill Directive for privately owned inert landfill sites in Orkney and Shetland.		Provision of 10 year forward capacity of inert landfill in the area	→ Identify threatened sites/site conditioning requirements → Identify problem wastes → Report to WSAG	March 2003	SEPA	Existing resources
20	Investigate alternative methods for collection of household hazardous waste in Orkney and Shetland.		Establish most appropriate hazardous household waste collection methods	→ Identification of alternatives → Report to WSAG	End 2004	OIC/ SIC	Existing resources
21	Develop detailed AWP Implementation Plans for each of the Orkney and Shetland Island groups.		Delivery of BPEO	→ WSAG consultations (Minutes) → Production of Implementation Plans	End 2003	OIC/ SIC	Existing resources Will require input and support from WSAG members

	Action	Key Objec-tive	Target	Indicator	Deadline	Lead Body	Resources
22	In partnership with SWAG, develop education and awareness campaigns in each of the Orkney and Shetland island groups to accompany the introduction of new collections systems and waste-management infrastructure.		Production of detailed campaign strategies for each area	➔ SWAG Baseline survey reports for each area	End 2004	OIC/ SIC/ SWAG	Existing resources Requires specific additional funding for implementing the campaigns
23	Promote and raise awareness of the Orkney and Shetland AWP throughout all sectors of the local community.		Local understanding of AWP objectives and actions	➔ No. of local presentations ➔ Press coverage ➔ Future SWAG survey findings	End 2003/ on-going	SEPA	Existing resources
24	Support development of community recycling and composting initiatives in Orkney and Shetland and promote links with the new RAGS Scottish Community Recycling Network.		Increased participation in community recycling and composting	➔ No. of local community projects ➔ Tonnage per annum recycling through local community-led projects ➔ Local membership of RAGS CRN	On-going	WSAG	Existing resources Additional human resources and funding support may be required to develop specific projects
25	Collate non-MSW data and determine quantities and composition of non-MSW for which gaps exist.	2,5,8	Complete baseline non-MSW dataset	➔ Production of baseline non-MSW report	End 2004	SEPA	Existing resources
26	Apply national guidance on BPEO assessment for non-MSW streams, with short-term priority on oil-industry related, fish and agricultural wastes.		Identification of BPEO(s) for non-MSW streams	➔ Production of national non-MSW framework ➔ Production of baseline non-MSW report ➔ Local options appraisals where appropriate	End 2005	WSAG	Existing resources Additional funds may be required – e.g. for research into technology options
27	Consult with the agricultural sector in Orkney and Shetland to identify key strategic waste-management issues.		Identification of key issues	➔ No. of agricultural sector consultations	End 2003	LECs	Existing resources May require additional funds – e.g. sector surveys, workshops, etc

	Action	Key Objec-tive	Target	Indicator	Deadline	Lead Body	Resources
28	Establish working groups in Orkney and Shetland to investigate and develop BPEO for local commercial and industrial wastes.		Establish BPEO for local commercial and industrial wastes	➔ Working groups established	End 2003	WSAG	Existing resources May require co-option of additional group members
29	Establish independent Orkney and Shetland Business Waste prevention projects in partnership with Business WINS.		Increased local business involvement in Waste prevention activity	➔ Steering Group formed ➔ Funding secured ➔ Local WINS projects established ➔ Waste arisings/costs for participating companies	End 2003	Scottish Water	Existing resources Part funding already secured Requires specific additional funding
30	Relevant lead organisations to report annually on progress against individual action points.		Production of comprehensive annual Progress Report	➔ Completed individual reports	Annual	WSAG	Existing resources
31	Provide a written annual summary report on progress against the Action Plan .	2	Effective Area Waste Plan monitoring and review	➔ Completed Annual Progress Report	Annual	SEPA	Existing resources
32	Develop a set of detailed key performance indicators, clearly linked to Area Waste Plan delivery, as part of the two local authority Implementation Plans.	2	Effective Area Waste Plan implementation	➔ Identification of KPIs ➔ Production of Implementation Plans	March 2003	OIC/ SIC	Existing resources Will require input and support from WSAG members
33	The objectives, targets and facilities required to implement the AWP will continue to be taken fully into account in the development of Structure and Local Plan policy.	4	Effective delivery of BPEO	➔ Site identification ➔ Explicit reference to Area Waste Plan objectives	End 2003	OIC/ SIC	Existing resources
34	Development Plans will identify suitable sites for waste management facilities required to deliver the Orkney and Shetland BPEO.	2,4	Provision of sufficient forward landfill capacity	➔ Site identification (if appropriate)	On-going	OIC/ SIC	Existing resources

Annex 3 – Links to Other Policies, Legislation and Initiatives

The Area Waste Plans are being developed in an environment where other areas of policy development, legislation and initiatives are likely to influence, or be influenced by, the National Waste Plan. During its implementation the National Waste Strategy: Scotland seeks to integrate its activities with the policies, legislation and initiatives described in the following sections. These fall under three categories, namely:

1. Waste Management related Policies, Legislation and Initiatives
2. General Policies, Legislation and Initiatives – of direct relevance to waste management
3. Other Policies, Legislation and Initiatives – of indirect relevance to waste management.

1 Waste Management related Policies, Legislation and Initiatives

Awareness, Education and Cultural Change Programme

The Waste Aware Scotland Team (WAST) was established by SEPA to create a more positive waste culture in Scotland, using a waste education and awareness programme based on best practice from Scotland and around the world. Its specific aims are to establish a strategic framework for education and awareness initiatives in support of the National Waste Strategy: Scotland and where appropriate to support, facilitate and assist in the implementation of these education and awareness initiatives. The team is chaired by a representative from SEPA and draws its members from local authorities, commerce and industry, the waste-management industry and consumer interests.

The process focus of the team will be on formal education, informal learning, professional education and training, public campaigns and information or advice services. The strategic behavioural and cultural change objectives of WAST will be achieved through a number of initiatives which will address all wastes including household, commercial and industrial. Initiatives already underway include the Scottish Waste Awareness Group (SWAG), which will plan and deliver a series of public awareness campaigns across Scotland as part of their Waste Aware Scotland programme to change public attitudes towards reduction, reuse and recycling.

Working closely with SEPA and WAST, SWAG is a resource for local authorities and the National Waste Strategy: Scotland to deliver local and national campaigns to the public through the Waste Strategy Area groups. SWAG has cross sector support from SEPA, local authorities, NGOs, recycling groups, consumer interests, private waste industry, Keep Scotland Beautiful, the media and the Scottish Executive, in particular their 'Do a Little change a Lot' campaign.

SEPA's Regulatory Policy

SEPA's Regulatory Policy is aimed at meeting Objective 1 of Schedule 12 of the Environment Act 1995 and ensuring that waste is recovered or disposed of without endangering human health and without using processes or methods that could harm the environment. SEPA's Regulatory Policy therefore recognises the importance of ensuring that its regulatory functions are in line with the objectives of the National Waste Strategy process, and equally, that the Area Waste Plans are realistic concerning the contribution that regulation can make. There is also a need to ensure that each plan addresses forthcoming regulatory issues sufficiently. A full statement of SEPA's Regulatory Policies will be prepared for inclusion in the National Plan.

SEPA's Waste Minimisation Programme

SEPA's Waste Minimisation Programme was launched in 1998 and became a permanent function in 2001. The overall aim is to demonstrate the benefits of waste minimisation to SEPA staff, commerce and industry. The programme works in partnership with external organisations to increase the amount of waste minimisation activity in Scotland by developing sector-based or geographical projects and links to SEPA's own internal environmental policy and the National Waste Strategy Scotland. It also contributes to the promotion of domestic waste minimisation to householders through working alongside the Scottish Waste Awareness Group,

To date SEPA has helped over 500 companies to reduce their waste through low-cost measures through the external partnership network. This now equates to an across-the-board cost saving amongst Scottish Businesses of at least £6 million through reductions in water use and emissions to land and air.

The programme seeks to provide a focal point for the dissemination of best practice in waste minimisation. A website (www.sepa.org.uk/wastemin) contains useful information on the benefits of waste minimisation, how to establish a waste minimisation programme, useful contacts and sources of help and listing of all the initiatives throughout Scotland. A practical video and leaflet is also available free of charge.

2 General Policies, Legislation and Initiatives (of direct relevance to waste management)

Best Value

A duty of Best Value has been introduced to Scottish local government through the Local Government in Scotland Bill (introduced on 16 May 2002). Best Value means that local authorities will have to secure continuous improvement in the performance of all their functions. This improvement should be achieved while maintaining an appropriate balance between the quality of service delivered and cost of delivering the service. The intention is to embed a culture of quality and improvement in local government service delivery. Best Value is intended to focus local authorities on outcomes as well as the process, which may force them to ask themselves difficult questions – how should a service be delivered? How well do we deliver it? How well could others do it? How do we compare to others? This process requires a commitment to ongoing review and that an effective dialogue between local authorities, their staff and service users be created and maintained.

Whilst Best Value is a principle that can be applied widely across public sector services there are specific objectives in its application to waste management. These include aspects of collection, treatment and disposal of waste. The final structure and the necessary legislation for its application in Scotland are awaited. The services developed by local authorities as a result of the Area Waste Plans will be developed and managed as part of the Best Value regime.

Contaminated Land Issues

Area Waste Plans will address the management of contaminated soil arisings as part of the strategy for the management of non-municipal solid wastes. The majority of contaminated land issues will be addressed either through the Planning and Development Control procedures, Part IIA of the EPA 1990 (Local Authorities), or the Control of Pollution Act 1974 (enforced by SEPA).

Development Planning

The planning system guides the future development and use of land in the long-term public interest. The aim is to ensure that development and changes in land use occur in suitable locations and are sustainable. The statutory development plan for an area consists of the structure and local plan:

- The structure plan provides a long-term vision as part of an overview of an area's development requirements. It should identify the overall supply of land to meet the requirements of development, and reflect and identify the priorities for the provision of infrastructure.
- Local plans set out the detailed policies and specific proposals for development and the use of land that guide day-to-day planning decisions.
- Additionally, where applicable, any development proposals or waste-management proposals will need to take account of the planning framework prepared for each National Park, namely a National Park Plan and a local plan or plans, as required by the National Parks (Scotland) Act 2000. The National Park Plan will set the overall strategic vision and management context within which the local plans will set out detailed policies and proposals for the development and use of land within a National Park.

Local Agenda 21 and Environmental Strategies

Whilst these plans are non-statutory, many local authorities will produce one or both. Local Agenda 21 strategies (LA21) arose out of the 1992 Rio Earth Summit and can be thought of as local plans for sustainable development. The government challenged all authorities to produce such a statement by December 2000. Community plans and LA21s are very similar in nature. Thus many LA21 strategies have been combined with community plans or are seen as complementary processes. However, LA21 plans tend to be longer term, more global-to-local in approach and more radical than community plans.

Since the World Summit on Sustainable Development (WSSD), fresh impetus has been given to the LA21 process, which is now been termed 'Local Action 21' with a renewed focus on action.

Environmental strategies simply draw together local authority actions on environmental issues, from transport to purchasing, from waste management to environmental education and, subsequently, the Area Waste Plans form a key component of the Local Authorities sustainable development strategy.

Local Government Bill

The forthcoming Local Government Bill aims to provide a framework for the delivery of better, more responsive public services, giving councils more flexibility and responsibility to act within a sensible framework and to work in partnership with communities and other agencies.

The proposals fall into three main areas:

- ➔ Giving councils a general power to promote and improve the well-being of their area.
- ➔ Providing a statutory underpinning for community planning through a duty on councils and key community-planning partners.
- ➔ Introducing a statutory duty of best value for local authorities.

The new powers will enable councils to act more flexibly and innovatively in promoting and improving the well-being of their area in partnership with communities and other agencies.

Councils will be required to facilitate a community planning process in their area and to consult and engage communities in that process. Other key public bodies, such as the NHS, local enterprise companies and police are under a statutory duty to participate in the community planning process. This is designed to promote more effective joint working between agencies in seeking to deliver the services people want. The emphasis should be on the needs of service users and the effective engagement of communities in the decisions that affect them.

A statutory duty of Best Value is to be placed on local authorities to pursue continuous improvement in performance in a way that maintains an appropriate balance between quality and cost.

The Bill will also be used as a vehicle for progressing a small number of miscellaneous provisions that relate to the role of local authorities, including a duty to prepare Integrated Waste Management plans to replace the current recycling plans. Integrated Waste Management Plans will include targets for individual local authorities to achieve as their contribution to their Area Waste Plan and the National Waste Plan.

Public Private Partnership (PPP)

One aim of government policy is to promote constructive working partnerships between the public and private sectors.

Using private capital and expertise in the provision of public infrastructure is not new. Joint working between the public and private sectors, in fields such as housing, economic development and regeneration, transport and municipal enterprises, has achieved a great deal over the years. The government is keen to build on this success, by extending successful approaches to delivering good value for money, and by developing new ones and PPP is one route by which Local Authorities may procure and fund the long-term integrated waste management required to meet the Area Waste Plan objectives.

Private Finance Initiative (PFI)

PPPs are about establishing arrangements, often using a legally binding contract that will bring benefits to both sectors. Such arrangements can include contractual relationships, management buy outs, externalisation of operational management and use of the Private Finance Initiative (PFI). The PFI is a mechanism for improving value for money in partnership with the private sector and is often applied to large capital projects such as roads, hospitals, schools and prisons. The PFI has also been applied to a range of waste-management facilities.

The costs of the various waste-management options for municipal solid waste highlighted elsewhere in the plan indicate that there may be a need to explore PPPs to deliver certain aspects of the infrastructure and services required. It will be for individual councils to decide on the form that these arrangements take. The Scottish Executive have made clear that to secure any funding from the Strategic Waste Fund, all projects must accord with the local Area Waste Plan, irrespective of whether they are financed using PPP, PFI or other traditional methods of financing.

Renewables Obligation (Scotland)

The Scottish Executive has set out a policy on renewable energy, which aims to stimulate further the development of the renewable energy industry in Scotland. The Scottish Executive's objective is that by 2010 18% of electricity supplied in Scotland should be renewable energy, in other words generated from a renewable resource. The policy has five key aims:

- To assist the UK to meet national and international targets for the reduction of emissions, including greenhouse gases
- To help provide secure, diverse, sustainable and competitive energy supplies
- To stimulate development of new technologies needed for growth of the contribution from renewables in the longer term
- To assist the UK renewables industry to become competitive in home and export markets and in doing so to provide employment
- To make a contribution to rural development.

In line with the objective and aims, Renewables Obligation (Scotland) (ROS) obliges all licensed electricity suppliers in Scotland to demonstrate that they have supplied a specified proportion of electricity from renewable sources. This specified proportion will increase each year to help achieve the objective of 18% of electricity supplied from renewable sources by 2010.

The key renewable energy technologies include wind and wave power, solar energy, bio-mass production and energy from waste. The specific approach that the ROS takes on energy from waste as a renewable energy source is as follows:

Electricity generation from waste treatment is eligible under 2 categories, providing minimal content of fossil-fuel-derived waste.

(a) Generation from biomass

Electricity that is generated directly from treatment of biomass is eligible under the order. Biomass, defined as above, must be verified to be contaminant free to at least 98% of its energy content as measured by monthly sampling.

(b) Mixed -waste generation

Electricity generation from mixed waste treatment is not directly eligible under the 2002 order. However, electricity that is generated from the liquid or gaseous product/s of an advanced conversion technology, where it is applied to mixed waste, is eligible under the order. The order defines an advanced conversion technology as "Gasification, pyrolysis or anaerobic digestion, or any combination thereof"

Community Planning

This arose from the perception that public sector planning was fragmented and poorly co-ordinated at a local level, leading to duplication, waste and confusion. Hence since 1999, with councils taking a lead, organisations as diverse as Health Boards, LECs, Scottish Homes, SEPA, the police authority and Scottish Natural Heritage have come together to plan the future of the local area. These community plans are being finalised and should contain: a vision for the future of the area, an analysis of the main issues, an audit of current activities, an action plan for change, and a review mechanism. Community plans can cover strategic issues and also be subdivided to tackle very local issues such as traffic, noise, graffiti and green space. As such, community plans offer an important means to have policies endorsed by a very wide range of actors and stakeholders. The completed Area Waste Plans will provide useful input to local authority community plans.

Corporate Plans (Strategic Plans)

Most local authorities produce a corporate plan to cover either following year or three years. These are key documents as they translate the manifestos of the parties into policies and set out commitments on emerging government initiatives. Corporate plans usually present an analysis of the Council position (with respect to demographics, economy, social issues, environmental issues, etc.) and the key policies and actions it intends to undertake. It may also contain an explanation of the internal processes of the council that are intended to implement the corporate plan. It is likely that local authority Corporate Plans will make reference to the agreed Area Waste Plan.

Economic Development Strategies

Most local authorities have economic development teams and will therefore produce strategies and action plans setting out what these teams intend to achieve. This will often be in addition to any Local Enterprise Company (LEC) Economic Development Strategy they are supporting. Typical issues covered include company support, trade development, company development, training and New Deal programs, physical enhancement, infrastructure improvements, tourism, links to social inclusion work, and, in some cases, environmental issues. The completed Area Waste Plans, as agreed, may be used to inform the development of local authority economic development strategies.

Education Department Plans

A wide variety of plans are required in Education Departments, including curriculum development plans and school development plans. A recent innovation is the need to produce Community Learning Strategies and Community Learning plans to support the new Community Plans. Community learning seeks to involve the Community Education function and other key learning institutions in meeting key learning needs arising from other strategies. For example, the economic development strategy might identify a need for greater IT skills, which the Community Learning Strategy might try to address. Some education departments may also have environmental education plans. Area Waste Plans typically have a significant public education and awareness component and the implementation of this may influence the development of local Community Learning Plans.

Housing Plans and Housing Management Plans

These are statements by Housing Department of the range and type of housing required for their area over a 3- or 5-year period, and the investment required to meet that need. Housing types cover both standard (council) housing and special needs housing. Housing Management Plans cover the service provided by the local authority: repairs and maintenance, estate management, tenant participation etc. Housing Management Plans may influence the nature of any future changes to the current household waste collection systems, required by the Area Waste Plan.

Local Air Quality Plans

The Environment Act 1995 requires local authorities to review their area and determine possible breaches that may occur to the National Air Quality strategy objectives for key pollutants. Local authorities that identify areas likely to breach these standards must produce a strategy to return the area to compliance, using mechanisms such as controls on development, low emission zones, traffic restrictions etc. Future waste-management facilities and arrangements proposed by the completed Area Waste Plans may have an impact on local air quality and the Area Waste Plan proposals should be taken into account as part of the local air-quality plans.

Local Biodiversity Action Plans

Another plan to arise from the 1992 Rio Earth Summit, these plans seek to implement at a local level the UK government's national Biodiversity Action Plans. Typically, a Local Biodiversity Action Plan (LBAP) will follow a defined process: an audit of existing flora, fauna and habitats, a prioritisation of these against key international, national and local criteria, followed by the development of action plans for the key species. Where they exist, LBAPs may inform the site location considerations for specific facilities required by the Area Waste Plan.

Local Transport Strategies

Local transport strategies are designed to bring together all the transport issues for the local authority area. They combine the statutory requirements of the Road Traffic Reduction Act and Road Safety Plans with analysis of the existing pattern of transport and traffic. They usually include plans for new roads and road improvements, bus, cycling, walking and rail projects and are a useful source of transport statistics. They may, and should, be linked to local air-quality and planning strategies. The completed Area Waste Plans may be used to inform the development of local transport strategies, particularly where new centralised waste-processing facilities are planned.

Other Local Authority Corporate Policies

Local authority Chief Executives or Corporate Services Departments typically produce a wide range of other policies. These cover plans for both urban regeneration, closely linked to social inclusion, and rural regeneration, sometimes called Rural Development. Typically these plans use ring-fenced government money, together with Structural Funds, to promote community social and economic programmes such as training, community transport, credit unions, physical enhancements etc. Elements of the agreed Area Waste Plans may be of relevance for inclusion in these Corporate Plans, where they impact regeneration and social inclusion.

Annex 4 – Associated Reports

Report	Description	Availability
National Waste Strategy: Scotland 1999	Presents the national framework	Contact Orkney and Shetland Waste strategy Area Coordinator at guy.robertson@sepa.org.uk, or on 01349 860 364
Supporting Guidance For AWPs Sept 2000	Describes the AWP process.	SEPA web site at www.sepa.org.uk/nws, or contact Orkney and Shetland Waste Strategy Area Coordinator at guy.robertson@sepa.org.uk, or on 01349 860 364
Best Practicable Environmental Option Decision Making Guidance Sept 2000	Describes the process of determining the Best Practicable Environmental Option for waste streams.	SEPA web site at www.sepa.org.uk/nws, or contact Orkney and Shetland Waste Strategy Area Coordinator at guy.robertson@sepa.org.uk, or on 01349 860 364
Orkney and Shetland Strategic Waste Options Papers – Dec 2001	Describe the shortlisted strategic options for dealing with MSW	SEPA web site at www.sepa.org.uk/nws, or contact Orkney and Shetland Waste Strategy Area Coordinator at guy.robertson@sepa.org.uk, or on 01349 860 364
Orkney and Shetland Draft AWP – July 2002	The draft version of this plan which also contains more detail on the process of determining BPEO	SEPA web site at www.sepa.org.uk/nws, or contact Orkney and Shetland Waste Strategy Area Coordinator at guy.robertson@sepa.org.uk, or on 01349 860 364
The National Plan for Scotland – Dec 2002	Presents the national framework.	SEPA web site at www.sepa.org.uk/nws, or contact Orkney and Shetland Waste Strategy Area Coordinator at guy.robertson@sepa.org.uk, or on 01349 860 364
Orkney and Shetland Strategic Waste Options Consultation Reports - Feb 2002	Presents the results of the consultations in each island group on the shortlisted Strategic Waste Options	SEPA web site at www.sepa.org.uk/nws, or contact Orkney & Shetland Waste strategy Area Coordinator at guy.robertson@sepa.org.uk, or on 01349 860 364
Orkney and Shetland Draft Area Waste Plan Consultation Report – Sept 2002	Presents the results of the consultations on the Orkney and Shetland Draft Area Waste Plan.	SEPA web site at www.sepa.org.uk/nws, or contact Orkney and Shetland Waste strategy Area Coordinator at guy.robertson@sepa.org.uk, or on 01349 860 364

Annex 5 – Contact Organisations and Links

National Organisations

For enquiries and information on the National Waste Strategy: Scotland:

- visit: www.sepa.org.uk/nws
- email:wasteaction@sepa.org.uk
- call the Waste Action information request line on: 0800 389 5270

Scottish Environment Protection Agency (SEPA)
Erskine Court
Castle Business Park
Stirling
FK9 4TR
Tel: 01786 457700
Fax: 01786 446885
www.sepa.org.uk

SEPA Waste Minimisation Project (WaMI)
Clearwater House
Heriot Watt Research Park
Avenue North
Riccarton
Edinburgh
EH14 4AP
Tel: 0131 449 7296
Fax: 0131 449 7277
www.sepa.org.uk/wastemin

Scottish Executive
Waste Strategy Team
SEPA Sponsorship and Waste Unit
Area 1- J (North) Victoria Quay
Edinburgh
EH6 6QQ
Tel: 0131 244 0243
Fax: 0131 244 0245
www.scotland.gov.uk

Convention of Scottish Local Authorities (CoSLA)
Rosebery House
9 Haymarket Terrace
Edinburgh
EH12 5XZ
Tel: 0131 474 9200
Fax: 0131 474 9292

Recycling Advisory Group Scotland (RAGS)
233 Cowgate
Edinburgh
EH1 1NQ
Tel: 0131 226 6666
Fax: 0131 220 2263
ragsdesk@rags. org.uk
events@rags.org.uk

ReMaDe Scotland
Caledonian Shanks Centre for
Waste Management
Glasgow Caledonian University
3rd Floor Drummond House
1 Hill Street
Glasgow
G3 6RN
Tel: 0141 582 0450
Fax: 0141 582 0451
www.remade.org.uk

Scottish and Northern Ireland Forum for Environmental Research (SNIFFER)
11/13 Cumberland Street
Edinburgh
EH3 6RT
Tel: 0131 557 2140
Fax: 0131 652 3615

Scottish Environmental Services Association (SESA) c/o Shanks
A8 Edinburgh Road
Coatbridge
Lanarkshire
ML5 4UG
Shanks Switchboard
Tel: 01236 433671
martin.king@shanks.co.uk

Scottish Institute of Sustainable Technology Ltd (SiSTech)
Heriot-Watt University
Riccarton
Edinburgh
EH14 4AS
Tel: 0131 4518162
Fax: 0131 4518150

Scottish Waste Awareness Group (SWAG)
7 Melville Terrace
Stirling
FK8 2ND
Tel: 01786 471333
www.wascot.org.uk

Waste and Resources Action Programme (WRAP)
The Old Academy
21 Horse Fair
Banbury
Oxon
OX16 OAH
Tel: 0808 100 2040
Fax: 01295 819911
www.wrap.org.uk

WRAP Scottish Liaison Officer
Tel: 0131 244 7953

Local Organisations

Orkney Islands Council
School Place
Kirkwall
Orkney KW15 1NY
Tel: 01856 873535
Fax: 01856 872379

Shetland Islands Council
Town Hall
Lerwick
Shetland
ZE1 0HB
Tel: 01595 693535
Fax: 01595 695590

Orkney Chamber of Commerce
PO Box 6202
Kirkwall
Orkney

Shetland Countryside Farming & Wildlife Advisory Group (SCFWAG)
Shetland Agricultural Centre
Staneyhill
LERWICK

Stromness Community Business Forum
c/o Norton
Stenness
Orkney
KW16 3AH

Shetland Amenity Trust
Garthspool,
Lerwick,
Shetland ZE 0NY
Tel: 01595 694688

Orkney Area NFU
60 Junction Road
Kirkwall
Orkney
KW15 1AG

Shetland Enterprise
Toll Clock Centre
Nort Road
LERWICK
Tel: 01595 693177
Fax: 01595 693208

Community Aid Recycling Enterprise (CARE)
Anchor Buildings
6 Bridge Street
KIRKWALL
KW15 1HR

Shetland Fish Processors Association
Shetland Seafood Centre
Stewart Building
The Esplanade
LERWICK
Tel: 01595 693644
Fax: 01595 696126

Orkney Enterprise
14 Queen Street
KIRKWALL
Orkney
Tel: 01856 874638

Highlands and Islands Enterprise
Cowan House
Inverness Retail and Business Park
Inverness IV2 7GF
Tel: 01463 234171
Fax: 01463 244469

Environmental Concern Orkney
C/o Manse Bay
Eastside
South Ronaldsay
Orkney
KW17 2TJ

Shetland Shellfish Farmers Association (SSFA)
Shetland Seafood Centre
Stuart Building
Lerwick
SHETLAND
ZE1 0LL
Tel: 01595 695579
Fax: 01595 694494

Annex 6 – Detailed BPEO Targets and Assumptions

Detailed Orkney Baseline and BPEO Recycling Targets (tonnes per annum MSW)

Baseline			
Material	Reprocessing		
	Exported	Local	Total
Green waste		671	671
Paper/card		5	5
Glass	215		215
Plastics			
Steel cans	46		46
Alu. cans			
Oils	84		84
Batteries	7		7
CFCs	0.04		0.04
Scrap/w.goods	517		517
Totals	**869.04**	**676**	**1545**

2020 targets			
Material	Reprocessing		
	Exported	Local	Total
Green waste		1000	1000
Paper/card		155	155
Glass		395	395
Plastics			
Steel cans	46		46
Alu cans	10		10
Oils	84		84
Batteries	7		7
CFC's	0.04		0.04
Scrap/w.goods	848		848
Totals	**995.04**	**1550**	**2545**

Assumptions

1. Glass collected via existing bring and additional kerbside; kerbside achieves 50% waste capture in Kirkwall and Stromness by 2020; all material reprocessed locally
2. Paper/card collected via existing kerbside and new bring sites; additional 9 tonnes by 2020; all material reprocessed locally
3. Additional 5 tonnes of aluminium by 2020 through bring/community schemes
4. Scrap/white goods collected via existing and new bring sites; increase of 331 tonnes by 2020; all exported for reuse/reprocessing

5 All calculations use NHWAP waste composition data

6. MSW arisings are capped at 2001/02 levels by 2020

Detailed Shetland Baseline and BPEO Recycling Targets (tonnes per annum MSW)

Baseline			
Material	Reprocessing		
	Exported	Local	Total
Green waste		3	3
Paper/card		2	2
Glass		271	271
Plastics	1		1
Steel cans			
Alu. cans	2.2		2.2
Oils	13.5		13.5
Batteries			
CFCs	1		1
Scrap/w.goods	1027		1027
Totals	**1044.7**	**276**	**1321**

2020 targets			
Material	Reprocessing		
	Exported	Local	Total
Green waste		50	50
Paper/card		10	10
Glass		396	396
Plastics	1		1
Steel cans			
Alu cans	8.8		8.8
Oils	19		19
Batteries			
CFC's	1		1
Scrap/w.goods	1027		1027
Totals	**1056.8**	**456**	**1513**

Assumptions

1. Glass collected via existing bring and additional kerbside; kerbside achieves 50% waste capture in Lerwick and Scalloway by 2020; all material reprocessed locally
2. Paper/card collected via existing and additional bring sites; additional 8 tonnes by 2020; all material reprocessed locally
3. Aluminium collected via existing and additional bring sites and additional kerbside collection; kerbside achieves 50% waste capture in Lerwick & Scalloway by 2020;
4. All calculations use NHWAP waste composition data
5. MSW arisings are capped at 2001/02 levels by 2020

1 Orkney and Shetland
2 Western Isles
3 Highland
4 Moray, City of Aberdeen and Aberdeenshire
5 City of Dundee, Angus and Perth and Kinross
6 City of Stirling, Clackmananshire and Falkirk
7 Fife
8 City of Edinburgh, West Lothian, Midlothian
East Lothian and The Scottish Borders
9 North Ayrshire, East Ayrshire, South Ayrshire
and Dumfries and Galloway
10 Inverclyde, Renfrewshire, East Renfrewshire,
City of Glasgow, South Lanarkshire, North Lanarkshire,
East Dunbartonshire and West Dunbartonshire
11 Argyll and Bute

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