CONSULTATION ON A WASTE DATA STRATEGY FOR SCOTLAND

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Contents

Purpose of this consultation

Annex A to Scotland's Zero Waste Plan, published on 9 June 2010, sets out the waste data requirements that will underpin delivery of Zero Waste Plan aims and objectives. One of the requirements is the production of a revised Waste Data Strategy.

The strategy was written by the Scottish Environment Protection Agency (SEPA) and Zero Waste Scotland (ZWS) in consultation with a Stakeholder Steering Group[1].

The strategy:

- Sets the aims, vision and scope for waste data in Scotland
- Presents the waste data requirements
- Identifies the issues and prioritises the outcomes required to improve waste data;
- Sets out the timescales, actions and organisations that should be involved to bring about change; and
- Presents proposals for improving the management and reporting of the data collected by all organisations in Scotland.

This consultation seeks your views on the overall aims and scope of the strategy, the issues, outcomes and timescales identified and the way in which we propose to improve the management and reporting of the data collected by all organisations in Scotland.

Consultation arrangements

It would help us if you could send your responses using the online survey provided at:
http://www.surveymonkey.com/s/Consultation_on_the_Waste_Data_Strategy_for_Scotland

Alternatively, email your responses to waste.data@sepa.org.uk using the Respondent Information Form and Consultation Questionnaire provided at:
http://www.sepa.org.uk/waste/waste_data.aspx

If you prefer you can send a paper copy of the questionnaire or write to:

Waste Data Team
Scottish Environment Protection Agency
Corporate Office
Erskine Court
Castle Business Park
Stirling
FK9 4TR

If you have any queries please telephone us on 01738 448179.

Responses should be returned to us by **2 May 2011.**

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[1] Steering group members: SEPA, ZWS, Scottish Government, CoSLA, SESA, Scottish Enterprise, CRNS, Caledonian Environment Centre.

1. Purpose of the waste data strategy

1.1. The proposed strategy aims to improve the information available on waste and deliver the following benefits:

- Give an improved understanding of what waste is produced and how it is managed;
- Provide information to support the development of new business opportunities including the development of new waste management infrastructure;
- Allow businesses and local authorities to benchmark their waste management performance;
- Aid policy development and support the successful implementation of Scotland's Zero Waste Plan;
- Monitor the progress towards domestic and European targets; and
- Raise public awareness of waste management issues.

2. Background to the Waste Data Strategy

2.1. SEPA implemented the first Waste Data Strategy in 2000 to provide a framework for SEPA's work on the collection, validation, recording and reporting of waste data for Scotland.

2.2. In 2008 a review of the strategy was carried out at the request of the Scottish Government (SG) following the publication of the Zero Waste Scotland vision. The aim of the review was to ensure that Scottish, UK and European waste information requirements were met for the foreseeable future.

2.3. The Scottish Government published its Zero Waste Plan in 2010 following the publication of the revised Waste Framework Directive and the Climate Change (Scotland) Act. The Plan specified the requirement to produce a revised Waste Data Strategy to take account of the needs of the Zero Waste Plan, and in particular the data requirements detailed in Annex A to the Plan.

2.4. Figure 1 illustrates the timeline for key events that have led to the development of the current Waste Data Strategy.

Figure 1. Timeline for key events that have led to the development of the Waste Data Strategy for Scotland

Year	Event
1999	• National Waste Strategy for Scotland
2000	• SEPA's Waste Data Strategy
2003	• National Waste Plan
2008	• Zero Waste Scotland vision
2008	• Review of SEPA's Waste Data Strategy
2008	• Revised Waste Framework Directive
2009	• Climate Change Act
2010	• Zero Waste Plan
2011	• Waste Data Strategy for Scotland

2.5.   Considerable progress has been made since 2000 in improving the way waste is managed in Scotland. There has been a:
- 58% reduction in the total amount of waste sent to landfill; and
- An increase from 5% to 37% in the amount of local authority collected municipal waste recycled/composted.

2.6.   In 2008 the total controlled waste arisings in Scotland were 19.5 million tonnes. Of this, 10.8 million tonnes were classified as industrial waste which includes construction and demolition (C&D) waste, 5.8 million tonnes were commercial waste and 2.9 million tonnes were household waste. Figure 2 shows the percentage of controlled waste arisings associated with each source.

Figure 2. Percentage of controlled waste arisings by waste source
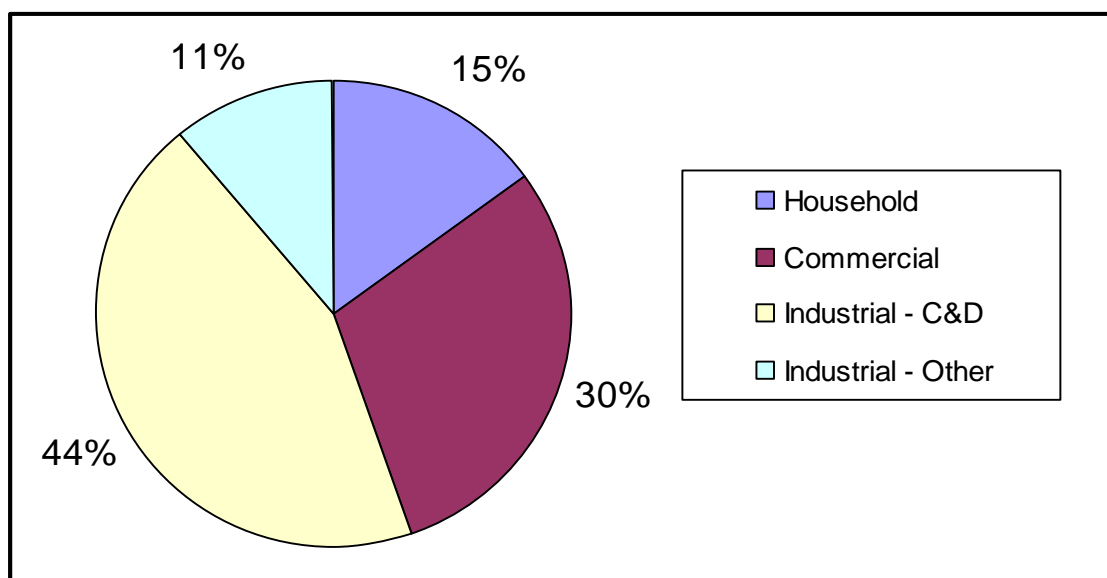
2.7. In Scotland, waste data is collected primarily by SEPA, as part of its regulatory duties. SEPA collects information from local authorities, waste management sites and some industrial sites on a range of wastes. Other organisations such as Zero Waste Scotland and Scottish Water collect data on specific waste streams. Once Scottish waste leaves Scotland for management elsewhere there is limited data available.

3. Vision for the future

3.1. To produce high quality, robust waste data that will help Scotland to change the way society uses and disposes of resources.

3.2. Implementation of the Waste Data Strategy for Scotland will deliver a substantial improvement in our understanding of what waste is produced and how it is managed. It will provide the information-base upon which waste producers, the resource management sector, the Scottish Government and regulators can work towards delivering the objectives of the Zero Waste Plan.

3.3. This strategy focuses on collecting data where there is a clearly defined requirement. It prioritises data requirements so that appropriate resources can be focused upon the collection and reporting of the most important data. It will also ensure that the administrative burden is both minimised and proportionate to the amount and nature of the waste produced.

3.4. The work of organisations that collect and interpret waste data will be coordinated by the strategy, ensuring that data is collected and interpreted in an efficient manner and that the information requirements of key data users are met.

3.5. The strategy will ensure that we make the most of the waste data that we have by presenting information in a form which allows it to be easily used by both key data users and the wider public. Importantly it will also promote the key messages for the general public to influence society's attitude to acquiring, using and disposing of resources.

Scope of Waste Data Strategy

3.6. The strategy will identify the waste data requirements over the period until 2025. It is intended to cover the work of the organisations in Scotland with responsibilities for managing waste data and influence those organisations within England, Wales and Northern Ireland who provide data on Scottish waste.

3.7. The strategy is forward looking, recognising that future progress will be directed by the waste hierarchy from disposal through recycling onto reuse and prevention. This will allow Scotland to make the most efficient use of resources by minimising its demand on primary resources, and maximising reuse, recycling and recovery.

3.8. The strategy aims to track how resources flow through society and in particular what happens to those resources once they are disposed of. The ultimate objective is to be able to produce a mass balance and hence know where and how all of the waste produced is managed and transformed into a resource that is placed back into the production, distribution and consumption markets. Figure 3 shows a resource flow diagram.

Figure 3. Resource flow diagram

Figure 3. Resource flow diagram
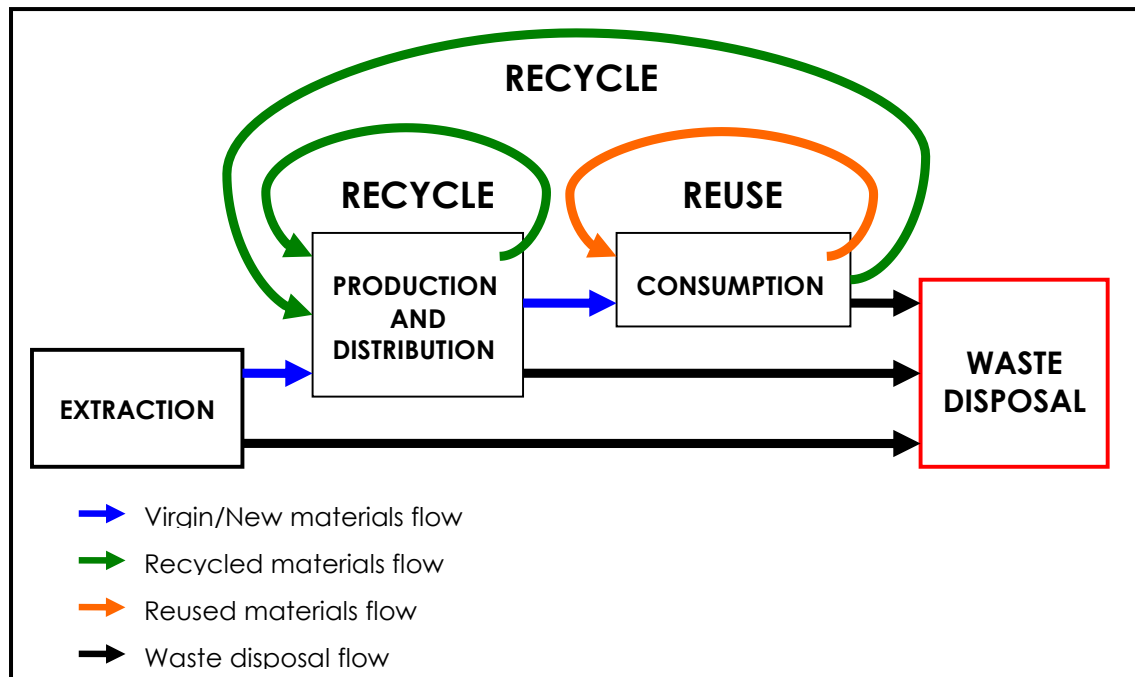
Question 1: Do you agree with the overall aims and scope of the strategy?

4. Waste data requirements

4.1. The main drivers for the collection and reporting of waste data are:
- Statutory waste data reporting requirements;
- Obligations defined by the Zero Waste Plan; and
- Waste data needs of key data users.

Statutory requirements

4.2. Statutory waste data reporting obligations for Scotland are identified in European, UK and Scottish legislation (Figure 4). The main statutory waste data reporting requirements are:
- Waste arisings and management tonnages broken down by waste source and waste type/material;
- Recycling rates for specific waste source and waste type/material;
- Tonnage of biodegradable waste landfilled;
- Waste management capacity; and
- Waste transfers from relevant sites.

Zero Waste Plan requirements

4.3. The Zero Waste Plan identifies the waste data requirements that will underpin delivery of the Zero Waste Plan aims and objectives (Figure 4). The main data requirements are:
- Scottish waste arisings and waste management method split by waste from households, commercial and industrial (C&I), and construction and demolition;
- Biodegradable municipal waste (BMW) landfilled in Scotland, split by waste from households and commercial and industrial;
- Special waste produced in Scotland;
- Waste imports and exports, split by management method; and
- Additional waste management capacity requirements.

Requirements of key data users

4.4. The key waste data users include SEPA, the Scottish Government, the waste management industry, local authorities, campaign and lobbying groups, educational and research establishments and members of the public. Figure 4 shows the main waste data required by key data users.

4.5. These organisations require good quality waste data to inform waste management and environmental policy decisions and investment in waste management infrastructure. Current waste data requirements of key data users are summarised in Figure 4. The main data requirements are:
- Waste prevention initiatives and data;
- Scottish waste arisings and management data;
- Regional waste management capacity; and
- Waste material flows.

Question 2: Have all the statutory requirements been captured or are there additional requirements that are not specified?

Question 3: Have all the Zero Waste Plan requirements been captured or are there additional requirements that are not specified?

Question 4: Have all the requirements of key data users been captured or are there additional requirements that are not specified?

Figure 4. Main waste data strategy drivers

Statutory Reporting Requirements	Scotland's Zero Waste Plan Requirements	Key Data Users Requirements
• Waste Framework Directive 2008 (Including all relevant domestic legislation e.g. Environment Protection Act 1990 , Waste Management Licensing (Scotland) Regulations 1996, Pollution Prevention and Control (Scotland) Regulations 2000, Special Waste Amendment (Scotland) Regulations 2004) • Waste Statistics Regulation 2002 • EU Landfill Directive 1999 • European Pollutant Release and Transfer Register (E-PRTR) Regulation 2006 • Climate Change (Scotland) Act 2009 • The Transfrontier Shipment of Waste Regulations 2007 • The Producer Responsibility Obligations (Packaging Waste) Regulations. 2007 • The Waste Electrical & Electronic Equipment Regulations 2006 • The Waste Batteries and Accumulators Regulations 2009 • Local Government Act 1992	• Total Scottish waste arisings • Waste from household arising, split by waste management method and local authority, and by local authority expressed in kg/capita/year • Scottish waste arisings and management method split by household, C&I and C&D • Scottish C&D waste arisings by management method • Scottish recycling and composting, split by waste from households, C&I and C&D • Household recycling and composting rates, split by local authority - measured both in terms of tonnage and carbon • Scottish waste incineration, split by waste from households, C&I and C&D • Scottish waste landfilled, split by waste from households, C&I and C&D • Biodegradable Municipal Waste (new definition) landfilled in Scotland, split by waste from households and commercial and industrial • Special waste produced in Scotland • Waste imports/exports by management method • Scottish packaging waste arisings • Household recycling collection numbers and methods, split by local authority • Waste compositional analysis • Individual material streams flows • Waste flows through the waste management system • Infrastructure maps • Regional waste management capacity • Additional waste management capacity requirements	• Waste prevention initiatives and data • Scottish waste arisings and management data • Waste managed in Scotland • Local authority collected waste arisings and management data • Commercial and industrial waste arisings and management data • Progress towards domestic/ European targets and performance indicators • Waste infrastructure maps • National waste management capacity • Geographical waste arisings and management flows • Waste material flows/market reports • Waste compositional analysis • Fly-tipping data • Sewage sludge data • Offshore waste data • Audit Scotland's performance indicators • Information on waste management planning decisions

5. Waste data – current availability and gaps

5.1. This section describes the current data availability and flows of waste through the waste management system. It also identifies the points at which waste data is currently captured and also highlights any existing data gaps.

5.2. Figure 5 gives a simple overview of how waste currently flows through the waste management system from the waste producer, via intermediate treatment if any, to its final destination.

Figure 5. Waste management flows
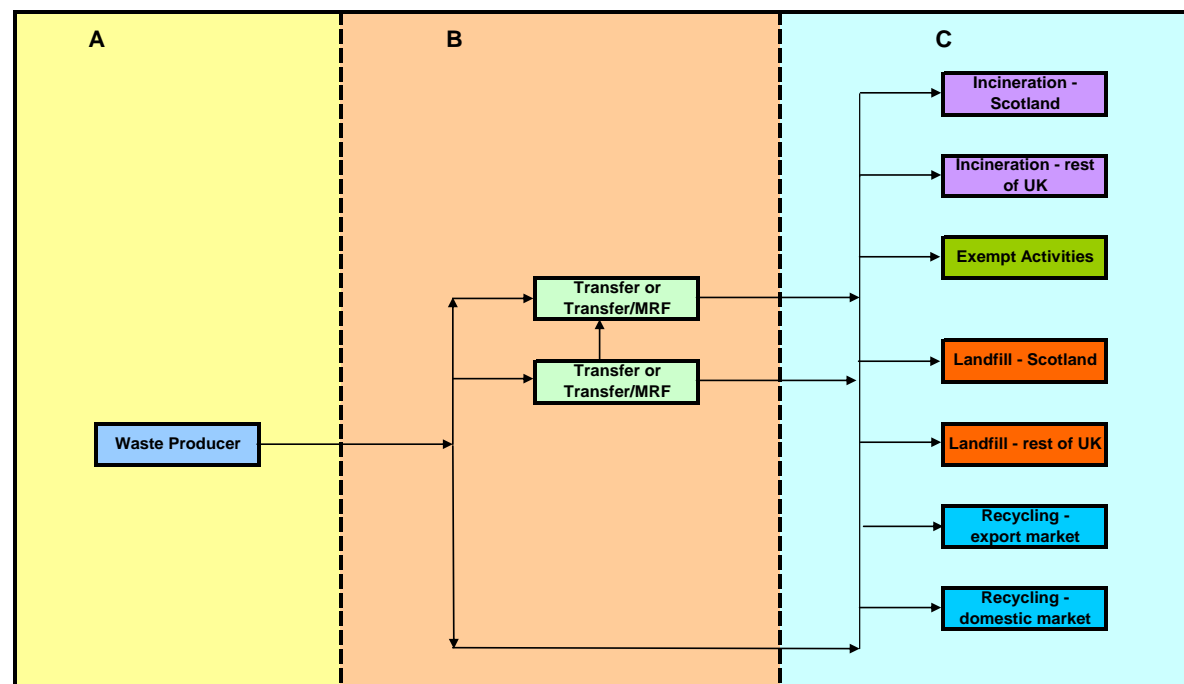
5.3. In reality however it is a much more complex picture as waste may pass through a number of different facilities or be mixed with other waste streams before reaching its final destination. These waste flows are illustrated in Figure 6 which also shows the points at which data is currently measured and identifies where data is not currently available. The remainder of this section should be read in conjunction with Figure 6.

5.4. There are three main sources of waste: households, commerce and industry. Waste from industry includes waste from the construction and demolition sector.

5.5. Scottish local authorities report data on waste collected from households and commercial premises by or on behalf of the local authority using WasteDataFlow. In addition data on fly-tipping is collated by Keep Scotland Beautiful.

5.6.   Data on waste produced by the commercial and industrial sector is collected directly from businesses by SEPA using voluntary waste surveys. This data is supplemented by data from other sources including:
- Estimates of waste produced by the agriculture, fishing and forestry sectors that are obtained by modelling;
- Sewage sludge arisings that are reported to Scottish Water;
- Data on offshore waste from the oil and gas industry that is reported to the Department of Energy and Climate Change (DECC);
- Off-site waste transfers from a number of industrial premises that are reported to SEPA for SPRI/E-PRTR[2] reporting; and
- Data on waste produced by the construction and demolition sector is obtained from statutory returns.

5.7.   When non-hazardous waste is transported it is accompanied by a Duty of Care[3] waste transfer note but the data held on the note is not reported directly to SEPA. When hazardous waste is transported it is accompanied by a special waste consignment note and this data is submitted to SEPA. In 2009 around 100,000 consignment notes were issued and used in Scotland.

5.8.   A large proportion of waste that arises in Scotland passes through around 1,100 licensed or permitted waste management sites in Scotland which are regulated by SEPA. These sites submit largely paper-based statutory returns to SEPA which provide information on the types and quantities of waste handled by these facilities. However the data does not currently provide adequate information on the economic origin of the waste, for example, by business sector, particularly if the waste is mixed with waste from other sources at the point of collection or at a transfer station. In addition, the statutory returns do not contain information on the waste that is transformed on site to a final product. This makes the identification of waste recycled difficult.

5.9.   A number of licensed/permitted sites are authorised to carry out more than one waste management activity. This causes difficulty when reporting data on the amount of waste handled by each activity.

5.10. Waste may also be used in some industrial processes that are not classed as waste management sites. With the exception of co-incineration processes and accredited reprocessors, data is not currently available from the majority of these sites.

5.11. Waste is also handled on sites that are undertaking activities that are exempt from Waste Management Licensing. In 2008, around 9,000 sites were registered under either a complex or simple exemption. Statutory annual waste data returns are required from sites with complex exemptions which handled approximately 5.5 million tonnes of waste in 2008. However, there is no requirement for simple exemptions to report on the waste they handle. This is a data gap that particularly affects the reporting of waste that is recycled.

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[2] Scottish Pollutant Release Inventory (SPRI)/European Pollutant Release and Transfer Register. (E-PRTR). http://www.sepa.org.uk/air/process_industry_regulation/pollutant_release_inventory.aspx
[3] http://www.netregs.gov.uk/netregs/63197.aspx

5.12. Once waste leaves Scotland it is difficult to track. Some data is available from SEPA statutory returns on waste that is exported to the rest of the UK or abroad from a waste management site in Scotland. Data on waste landfilled in the UK is generally good but information on waste recycled or incinerated in the rest of the UK is very limited. No data is currently available on green list waste[4] sent to developed countries, although some of this waste will be reported in SEPA statutory returns from waste management sites.

5.13. Information on waste management capacity for licensed or permitted waste management sites in Scotland is available from the relevant licence/permit. However, generally it only indicates whether the site operates within certain capacity thresholds and the actual site capacity is not provided. In addition, information on capacity for individual activities within a multi-activity site is not provided.

5.14. SEPA is not able to report on waste activities using commonly known terms for site types, such as composting site and transfer station, due to a lack of standard definitions for waste management activities.

5.15.   The aim of this document is to improve the usefulness of waste data collected and reported by all organisations in Scotland. The consultation process is an opportunity to identify any data sources which may have been missed.

Question 5: Have all organisations that collect and report waste data been included in the strategy?

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[4] Green list waste is non-hazardous waste which can be exported under a lower level of control to EU/OECD countries and some non-OECD countries for recycling.
http://www.sepa.org.uk/waste/waste_regulation/transfrontier_shipment.aspx

Figure 6. Waste management flows and reporting

1,100 licensed or permitted waste management sites in Scotland
9,000 sites registered under WML exemption - Complex exempt. handled 5.5mt

Final products used ✗

PPC- 5.2
Statutory waste returns ✓

PPC- 5.1
Statutory monitoring returns ✓

✗
Final
Products
✗

Household 2.9mt(15%)	Industrial C&D: 8.6mt(44%) Other: 2.2mt (11%)
Commercial 5.8mt(30%)	

Waste transfer notes ✗

Non Haz. Waste

Landfill

Incineration

Treatment
→ Final treatment
→ Treatment 1 + 2 +...+ Final treatment
→ Treatment 1 + 2 +...

C&I waste surveys ?
SPRI/E-PRTR off-site waste transfers ✓
Sewage sludge arisings ✓
Offshore oil and gas waste ✓
Fly-tipping waste data ?

Special Waste

Consignment notes ✓
100,000 notes used

Transfer station

✓ WML/PPC - 5: Statutory waste returns
? PPC - Other: Statutory monitoring returns
✓ Exempt - Complex: Statutory waste returns
✗ Exempt - Simple
✗ Other

Exported UK

Exported Abroad

WML/PPC- 5
Statutory waste returns ✓

SEPA Statutory waste returns ?
EA/NIEA Statutory waste returns ?

✓ Notifiable waste
✓ Green list waste - Non OECD countries
✗ Green list waste - OECD countries
? SEPA Statutory waste returns

Local Authority

WasteDataFlow reporting ✓
3.3mt(15%)

Multiactivity site

Multiple activities under one permit/licence ?

KEY

✓ Data is available
? Data is available but is incomplete or of poor quality
✗ Data is not available
▢ Waste producers and resource demand
▢ Waste management
▢ Final products
→ Non-hazardous waste flow
→ Special waste flow
→ Non-hazardous and special waste flow
→ Final products flow

6.   Waste data – issues

6.1.   This section describes the main issues associated with the collection and reporting of accurate waste data and includes further information on the data gaps identified in Section 5.

Commercial and industrial waste arisings

6.2.   Accurate data on commercial and industrial waste is essential to:
- Enable businesses to benchmark their waste activities against others in their sector and thereby assist them to deliver the objectives of the Zero Waste Plan;
- Support the identification of business opportunities to prevent, reuse and recycle waste by highlighting the potential resource value of commercial and industrial waste arisings;
- Inform the waste management industry and ensure effective planning of new waste management facilities; and
- Inform the development and monitoring of Government policies as well as providing a sound basis for statutory reporting.

6.3.   Data on the type, quantity and management method of commercial and industrial waste produced by economic sector is needed for statutory reporting and to support the needs of the Zero Waste Plan.

6.4.   Current data is based on estimates derived from 3,231 businesses[5] who responded to a survey carried out by SEPA in 2006.   This data has subsequently been used to produce estimates of waste arisings annually from 2006 to 2009 and will also be used to produce 2010 data.   Confidence in these annual estimates is therefore low.

6.5.   Data on waste produced by the agriculture, forestry and fishing sectors is currently obtained from models.   The quality of this data is in need of improvement.

6.6.   Data collected quarterly from waste management sites provides good information on how waste is managed. However there is very limited information on the type of business that produced the waste and thus the data cannot be used to provide information on commercial and industrial waste produced by economic sector.

6.7.   A new way of collecting data is therefore needed that will provide more accurate information.   To help achieve this, the Scottish Government introduced regulations[6] under the Climate Change (Scotland) Act 2009 that give SEPA powers to request data directly from businesses.

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[5] This represents about 2% of the estimated number of waste producers
[6] http://www.legislation.gov.uk/sdsi/2010/9780111010662/contents

Household waste arisings

6.8. Currently the reporting on household waste arisings and management includes not only waste originating from households but also waste from other commercial premises such as campsites and charity shops, in line with the UK definition of household waste. This way of reporting has to be changed to waste originating from households only, in line with the revised Waste Framework Directive and the Zero Waste Plan aims and objectives.

Recycling data

6.9. Data on the amount of waste recycled in Scotland (regardless of origin) is important for statutory reporting. In addition, the amount of Scottish waste recycled (regardless of where this occurs) is a data requirement of the Zero Waste Plan.

6.10. Currently it is difficult to identify waste management sites where waste is recycled to a final product because only waste materials are reported to SEPA on site returns. In addition, some industrial processes use waste materials to produce a product, but because these processes are not permitted as waste activities, they cannot be identified unless they are registered with SEPA as accredited reprocessors.

6.11. In addition, a significant amount of waste may be recycled by activities that are registered as simple exemptions and there is currently no reporting requirement for these activities.

6.12. The reporting of data from WasteDataFlow on waste sent for recycling by local authorities is important for monitoring domestic and European household waste recycling targets. The quality of waste data relating to the final destination of this waste needs to be improved as this affects the accuracy of the recycling rate.

6.13. The Zero Waste Plan requires an additional way of reporting the recycling of Scottish waste based on a resource displacement carbon metric as well as tonnes of waste recycled.

Statutory returns

6.14. The correct use of the European Waste Catalogue to describe waste is essential for the accurate reporting of waste data. There is not always a consistent approach to the coding of waste by waste management operators and businesses on statutory returns. This can be improved by the development of guidance and training for relevant sectors.

6.15. The quality and/or lack of information provided on special waste consignment notes is an area for concern. In addition, the use of one annual consignment note for waste collected throughout the year by some organisations, coupled with the current limitations of SEPA's database, means that it is not possible to capture detailed data on some movements of special waste.

6.16. Scottish Pollutant Release Inventory/European Pollutant Release and Transfer Register (SPRI/E-PRTR) data on off-site transfers of waste is important to identify the amount of waste produced from industrial activities. Not all sites that are required to report do so and SEPA is not able to identify missing sites in all cases. Sites that do report lack an understanding of what needs to be reported despite the development of SEPA guidance.

Capacity data

6.17. There is a statutory requirement for Scotland to report to Europe on the capacity of recovery and disposal facilities. The quality of the permitted capacity data needs to be improved, particularly for sites that recycle waste to a final product. Where reportable activities form part of a multi-activity site it is not possible to separate out the individual capacities for these activities. In order to plan more effectively for waste infrastructure it is also important to have information on the actual operational capacity of facilities, not just their permitted capacity.

Exports of waste

6.18. The recycling of Scottish waste often takes place outside Scotland, either in the rest of the UK or abroad. As a result accurate data is not always available. There is currently a data gap for waste exported abroad for recycling in developed countries (OECD[7] countries) as this information is not presently reported to SEPA.

Site types

6.19. The waste management licensing regulations designate activities at waste management sites as keeping, treating and disposal, meaning, that SEPA is unable to provide data based on terms commonly used in the waste management industry, such as composting site and transfer station. Standard site definitions for activities need to be developed which will enable SEPA to produce data that is meaningful to key data users. This issue has an effect on the accuracy of the waste infrastructure maps and the capacity reports published by SEPA as the site types used have not been derived from standard definitions.

Biodegradable waste landfilled

6.20. Currently the identification of the amount of Biodegradable Waste (BW) and BMW sent to landfill in Scotland is based on multiplying the tonnage of each waste type landfilled (classified using EWC code) by a biodegradability factor associated with each of the EWC codes. In order to improve the accuracy of this data, the accuracy of the biodegradability factor associated with the EWC codes needs to be improved or a different methodology based on biodegradability tests needs to be developed.

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[7] Organisation for Economic Co-operation and Development (OECD)

6.21.   In addition, the split of the BMW landfilled data between household, commercial and industrial sources is required under the Zero Waste Plan.

Producer responsibility data

6.22.   Actual data on the arisings of waste packaging, batteries and WEEE in Scotland or the UK is not currently available. Estimates, based on the quantity of these materials placed on the market, are used as a surrogate for waste arisings and as the basis for monitoring and reporting European recycling targets.

Fly-tipping

6.23.   Local authorities collect data on the amount of fly-tipped waste they deal with but not all authorities report this data in the national Flycapture database.

Waste composition

6.24.   Knowing the composition of mixed waste that is sent to landfill is important to monitor Zero Waste Plan policies on landfill bans and to highlight the need to view waste as a resource. Having sector-specific information on the composition of mixed commercial and industrial waste will help the Scottish Government target initiatives to drive change. Whilst some data is available on the composition of mixed household waste there is none available on mixed commercial and industrial or construction and demolition waste and obtaining regular data on all mixed waste streams would support the development of business opportunities.

Materials streams

6.25.   Information on individual material streams, particularly paper, metal, plastics and glass, is required to monitor Zero Waste Plan aims and objectives as well as ensuring that Waste Framework Directive requirements are fulfilled. Although SEPA holds data on waste types by EWC code, reporting waste flows by material type is a new area of work and may be challenging.

Data quality

6.26.   The quality of all waste data that is collected and reported needs to be continually assessed and improved. This includes the introduction of electronic data collection systems that will also increase efficiency.

Reuse and preparing for reuse

6.27.   Currently, preparing for reuse counts towards Scottish recycling and composting targets and the Zero Waste Plan consultation discussed the need for a specific target for preparing for reuse. Therefore, as further progress is

made up the waste hierarchy then having the capability to measure 'preparing for reuse' and related data will become more important. An example of this is understanding the quantities of reusable items that are currently sent for recycling from Household Waste Recycling Centres.

Question 6: Does the strategy take into account all current and future waste data issues?

Table 1 summarises the waste data issues and associated drivers for improvement.

Table 1. Waste data issues and associated drivers for improvement

Type of issue	Detailed data availability and quality Issues	Drivers*
C&I waste arisings	Accuracy of total C&I waste arisings by economic sector	Statutory/ZWP/KDU
Household waste arisings	Change in household waste reporting definition	Statutory/ZWP/KDU
Recycling data	Completeness of data on C&I waste recycled in Scotland	Statutory/ZWP/KDU
	No clear definition of recycling	Statutory/ZWP/KDU
	Carbon metric	Statutory/ZWP/KDU
	Reporting of final destination of local authority collected waste in WasteDataFlow	Statutory/ZWP/KDU
Statutory returns	Correct/consistent use of EWC codes in waste data returns	ZWP/KDU
	Raw data quality for special waste produced and managed in Scotland	ZWP/KDU
	Data gaps for off-site transfers of waste	ZWP/KDU
Capacity	Completeness and accuracy of waste recycling capacity	Statutory/ZWP/KDU
	Lack of accurate operational capacity for waste management sites	Statutory/KDU
	Quality of incineration capacity	ZWP/KDU
Imports/Exports	Completeness of data on C&I waste managed outside Scotland	Statutory/ZWP/KDU
Site type	Lack of definition for waste management site types	Statutory/ZWP/KDU
	Completeness of waste infrastructure information	ZWP/KDU
Biodegradable Waste (BW) landfilled	Identification of BW landfilled	Statutory/KDU
	BMW landfilled data split by household and C&I sources	Statutory/ZWP/KDU
Producer Responsibility data	Arisings data based on estimates on UK WEEE/batteries placed on the market	ZWP/KDU
	Arisings data based on estimates on UK packaging placed on the market	ZWP/KDU
Fly-tipping	Incomplete fly-tipping data reported in Flycapture as not all local authorities take part	Statutory /KDU
Waste composition	Lack of C&I waste compositional analysis data	Statutory /KDU
Material streams	No previous reporting requirement for individual material streams	KDU
	No previous reporting requirement for data on waste flows	ZWP
Data quality	Need to review data quality assurance systems	Statutory/ZWP/KDU

*KDU: Key Data Users, ZWP: Zero Waste Plan

7. Waste data - outcomes

7.1. The Waste Data Strategy is for all of Scotland's waste data. It sets out a vision to produce high quality, robust waste data that will help society get a better understanding of how it manages its waste and resources. To achieve this vision, the strategy prioritises the improvements in data required and describes these as outcomes. Section 8 then considers the actions which need to be taken to meet the priority outcomes.

7.2. The outcomes have been prioritised as high, medium and low using criteria based upon the drivers for improvement and the scale of the improvements in waste data which will be achieved. Annex A explains the methodology used to prioritise the outcomes.

7.3. Table 2 lists the high priority outcomes and the main organisations that need to be involved in order to achieve these. The most critical issues to be resolved by the high priority outcomes are:
- Accuracy of commercial and industrial waste arisings data;
- Change in the current household waste reporting definition in line with the European Waste Framework Directive definition; and
- Completeness of the Scottish waste recycling tonnage and capacity.

7.4. Table 3 identifies the medium priority outcomes. The main issues to be resolved by these outcomes are:
- Accuracy of waste management capacity data, particularly incineration capacity data;
- Accuracy of special waste data; and
- The identification of all sites that use waste as a feedstock for their processes.

7.5. The lower priority outcomes relate to waste data requirements that have less critical issues and require or allow a longer time to be improved. Table 4 identifies these outcomes.

7.6. Tables 2, 3 and 4 include two columns which indicate the delivery date for the outcomes and the timeframe over which the continuous improvement will occur. The delivery date indicates the date by which improvements to the system will have been implemented. Once the improved system has been implemented based on SEPA's experience it may take a few cycles (usually annual cycles) for both the quantity and quality of the data to reach a level whereby the confidence in the data is high.

7.7. Further information on each outcome (the main drivers, data availability, quality issues, indicative detailed actions and organisations involved) are given in Annex B.

7.8. Annex C prioritises the outcomes in terms of need, drivers, data improvement, score, resources and difficulty and, in each case, identifies the timescales for the implementation and improvement phases and the organisations involved.

Table 2. High priority outcomes

High Priority Outcomes	Organisations involved	Delivery date	Continuous improvement until
An improvement in the quality, quantity and detail of C&I waste arisings by economic sector	SEPA/SG/ZWS/Waste Management Industry/Businesses/ DECC/Oil & Gas UK/Scottish Water/Forestry Commission/MCA	2012	2020
The reporting of household waste arisings and management is in line with the WFD and ZWP	SEPA/Scottish Local Authorities/SG	2012	2020
An improvement in the quality, quantity and detail of C&I waste recycled in Scotland	SEPA/Waste Management Industry/Businesses	2013	2020
The development of recycling guidance in line with the WFD and ZWP	SEPA/SG	2011	
The implementation of reporting on individual material streams	SEPA/Scottish Enterprise/ZWS/Waste Management Industry	2013	2020
An improvement in the quality, quantity and detail of all wastes imported to and exported from Scotland, including that exported for recycling	SEPA/ZWS/EA/SG	2015	2020
An improvement in the consistency and accuracy in the use of EWC codes in waste management returns	SEPA/Waste Management Industry/ZWS/Businesses	2013	2020
An improvement in the data quality assurance systems	SEPA/EA/SG/ZWS/Data Providers	2015	2020
The development and implementation of a standard set of definitions for waste management activity types	SEPA	2013	
The development of a resource displacement carbon metric for all waste recycled in Scotland	SG/ZWS/SEPA/CIWM/Scottish Local Authorities	2013	2020
An improvement in the reporting of final destination for recycled materials in WasteDataFlow	SEPA/Scottish Local Authorities/SG/EA/Waste Management Industry	2013	2020
An increase in the quantity and accuracy of data on recycling capacity in Scotland	SEPA/Waste Management Industry	2013	2020

Table 3. Medium priority outcomes

Medium Priority Outcomes	Organisations involved	Delivery date	Continuous improvement until
An improvement in the accuracy of special waste produced and managed in Scotland	SEPA/Waste Management Industry/Special Waste Producers	2013	2020
The identification of all sites that use waste as a feedstock for their processes	SEPA/Relevant PPC sites	2013	
An improvement in the quality, quantity and detail of the biodegradable element of waste sent to landfill	SEPA/ZWS/defra	2013	2020
An improvement in the quality, quantity and detail on the operational capacity of waste management sites	SEPA/Waste Management Industry	2015	2020
An improvement in the quality, quantity and detail of off-site transfers of waste for SPRI/E-PRTR reporting	SEPA/Industry	2013	2020
The identification of how C&I waste data can be supplemented by C&I waste compositional analysis	SG/ZWS/Businesses/ Waste Management Industry	2011	2020
The development of waste data products that provide a much better understanding of the flow of materials through the waste management system	SEPA/Scottish Enterprise/ZWS	2013	2020
An improvement in the quality of waste incineration capacity	SEPA	2012	
An improvement in the quantity of data reported on fly-tipping	ZWS/Local Authorities/SG	2013	

Table 4. Lower priority outcomes

Lower Priority Outcomes	Organisations involved	Delivery date	Continuous improvement until
The identification of Scottish packaging waste arisings	SEPA/relevant stakeholders	2015	2020
The identification of WEEE and battery waste arisings	SEPA/relevant stakeholders	2015	2020
An estimate of the amount of BMW landfilled in Scotland split by household and C&I sources	SEPA/SG/Local Authorities	2015	2020

Question 7: Do you agree with the priority of the outcomes?

Question 8: Can you suggest additional outcomes?

Question 9: Which outcomes are most relevant to you or your organisation?

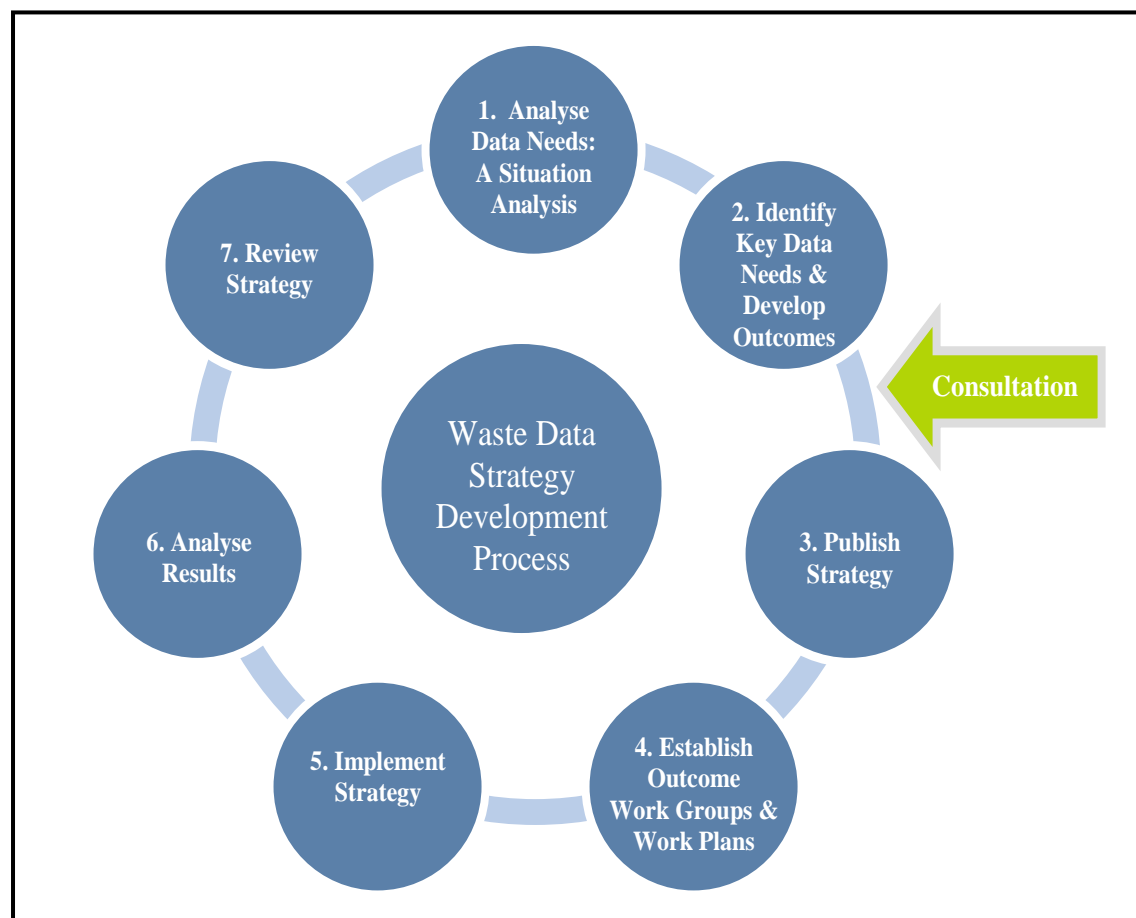*Question 10: Have the most suitable organisations been identified to achieve the outcomes?*

8. Next steps

Overview

8.1.   The development and maintenance of a Waste Data Strategy for Scotland will be a continuous process of analysis and review. An outline of the process is illustrated in Figure 7.

Figure 7: Waste Data Strategy development process

8.2.   Work began in late 2010 to assess the effectiveness of current data collection and reporting and identify future data needs. This work forms the basis of this consultation document.

8.3.   Once feedback from the consultation has been taken into account then the Waste Data Strategy will be published. Many of the issues identified by the strategy will be handled by SEPA and ZWS as part of their regular work. Stakeholder working groups will be set up to address the more complex issues so as to achieve the required outcomes. After implementation the final stages of the process will include assessing the progress of the outcomes before entering the review stage and beginning the whole process again.

8.4.   In order to illustrate the process associated with the delivery of one of the more complex outcomes a proposed approach for improving commercial and industrial waste arisings data has been used as an example. This process is explained in detail in the following section.

Example of the process to achieve the commercial and industrial waste arisings data outcome

8.5.   Improvement in the quality and detail of commercial and industrial waste arisings data by economic sector is highlighted as a high priority outcome for the Waste Data Strategy. Ultimately the waste management industry, businesses and other stakeholders will all contribute to the provision of better data but the detail of how this will happen will be developed by the project working group. As the method for collecting improved data on commercial and industrial waste has yet to be developed the following outline process is described in general terms.

Table 6. Outline process and indicative timetable for reporting commercial and industrial waste arisings

Indicative Timetable	SEPA	Stakeholders (waste management industry, businesses and others)
June 2011	Set up project working group	Representatives join the project working group (WG)
June to December 2011	Develop project workplan and communication plan	Contribute to project workplan and communication plan (WG)
	Produce a methodology for collecting C&I data	Contribute to methodology for collecting C&I data (WG)
	Develop new web-based data collection system or adapt existing systems	Contribute to data collection system development (WG). Volunteer stakeholders test system
	Produce data reporting guidance for relevant stakeholders	Review SEPA guidance (WG)
	Inform stakeholders of data reporting requirements	Collect relevant data
Early 2012	Collate and verify submitted data.	Report 2011 data to SEPA
Mid 2012	Publish high-level C&I data for 2011	Improve the quality of the data reported to SEPA
Late 2012	Publish more detailed data on C&I waste produced in 2011.	Contribute to data reviews
2013 onwards	Review data gathering and reporting systems. On-going work to improve the quality of data submitted.	

Question 11: Do you agree with the overall waste data strategy development process identified in Figure 7?

9. How will data quality be managed?

9.1. This Waste Data Strategy has been developed with direction from a Stakeholder Steering Group. The views of this group have been taken into account in developing the strategy. This document is intended to extend consultation to a wider group of data users and providers. Although this process should ensure that we produce the agreed priority waste data products we also want to make sure that the strategy meets expectations when it is produced.

9.2. It is proposed to create a permanent Technical Advisory Group (TAG) which will review the waste data products resulting from this strategy. This Group will provide the forum for stakeholders to raise concerns and issues, and to suggest improvements in the process of collecting and delivering waste data. It is proposed that this group should meet once or twice a year. Creating this more formal mechanism to provide feedback on waste data products will ensure the continued improvement of the service.

Question 12: What role do you see for the Technical Advisory Group?

Question 13: Please indicate which organisations should be represented on the Technical Advisory Group.

10. How will waste data be published?

10.1. Waste data will be published on-line wherever possible.

10.2. The Scottish Government is developing a website which will bring together a wide range of information on the environment. It is proposed to develop a section of the forthcoming Scotland's Environment Website as the forum for publishing waste data. This means that all waste data will be accessible from a single high-profile location. The types of data that will be included are set out in Figure 4.

11. Review of Waste Data Strategy

11.1. This strategy will be reviewed as circumstances require. There will be a planned review in 2015 which will assess progress and identify any revisions required.

Question 14: How often should the waste data strategy be reviewed?

Question 15: Do consultees have any additional comments?

12. Consultation process and questions

12.1. The key steps in the consultation process are illustrated in Figure 8. We aim to publish the final Waste Data Strategy by June 2011.

Figure 8: Waste Data Strategy implementation timeline

Mar 11	• Consultation opens
Apr 11	• Consultation closes
May 11	• Response analysis & strategy revision
Jun 11	• Waste Data Strategy published
Jul 11	• Implementation of strategy

12.2. The new Waste Data Strategy will be developed upon a good understanding of the strengths and weaknesses of the current data and an agreed understanding of potential for improvement. Your responses to the consultation will help us ensure that.

12.3. The consultation questions are summarised in Table 7.

12.4. Consultation responses should be made, where possible, using the on-line survey which can be accessed here:
http://www.surveymonkey.com/s/Consultation_on_the_Waste_Data_Strategy_for_Scotland

12.5. A Respondent Information Form and Consultation Questionnaire (in MS Word format) can are also found on the SEPA website at:
http://www.sepa.org.uk/waste/waste_data.aspx

Table 7. Consolidated list of consultation questions

Q1	Do you agree with the overall aims and scope of the strategy?
Q2	Have all the statutory requirements been captured or are there additional requirements that are not specified?
Q3	Have all the ZWP requirements been captured or are there additional requirements that are not specified?
Q4	Have all the requirements of key data users been captured or are there additional requirements that are not specified?
Q5	Have all organisations that collect and report waste data been included in the strategy?
Q6	Does the strategy take into account all current and future waste data issues?
Q7	Do you agree with the priority of the outcomes?
Q8	Can you suggest additional outcomes?
Q9	Which outcomes are most relevant to you or your organisation?
Q10	Have the most suitable organisations been identified to achieve the outcomes?
Q11	Do you agree with the overall waste data strategy development process identified in Figure 7?
Q12	What role do you see for the Technical Advisory Group?
Q13	Please indicate which organisations should be represented on the Technical Advisory Group.
Q14	How often should the waste data strategy be reviewed?
Q15	Do consultees have any additional comments?

Annexes

Annex A - Methodology for prioritising outcomes

A.1   The outcomes identified in section 7 were prioritised according to two sets of criteria: main drivers and data improvement. The criteria and scoring values used are identified in Tables A.1 and A.2.

Table A.1. Main drivers criteria

Description	Tag	Value
Statutory	Statutory	1
Zero Waste Plan	ZWP	1
Key Data Users	KDU	1

Table A.2. Data improvement criteria

Description	Tag	Value
Low improvement in data	Low	1
Medium improvement in data	Med	2
High improvement in data	High	3

A.2   Based on the values identified in the Tables A.1 and A.2, the outcomes with an overall score of 2 were assigned low priority, the outcomes with a score of 3 to 4 were assigned medium priority and the outcomes with a score of 5 to 6 were assigned high priority.

A.3   The results of this exercise were discussed with the Stakeholder Steering Group and as a result the priorities of some of the outcomes were changed. Three outcomes initially scored as high priority were changed to medium priority and two outcomes initially scored as medium priority were changed to low priority.

A.4   Additional criteria were taken into account when identifying delivery timescales. These criteria considered the amount of resource needed and the difficulty of achieving the outcomes.

Annex B - Drivers - Issues - Outcomes - Indicative detailed actions - Organisations involved

Driver	Data availability and quality Issues	Desired outcome	Indicative detailed actions	Organisations involved

Statutory ZWP Key data users	Accuracy of total C&I waste arisings by economic sector	An improvement in the quality, quantity and detail of C&I waste arisings by economic sector	• Develop project to collect data on C&I waste
			  • Set up project working group and develop workplan
			  • Produce a methodology for collecting C&I data
			  • Develop web-based data collection system or adapt existing systems
			  • Produce data reporting guidance
			  • Communicate data reporting requirements to relevant stakeholders
			  • Collate and verify submitted data
			  • Publish C&I data for 2011
			  • Review procedures and improve quality of data
			
			• Develop and implement procedures to ensure other relevant data is available for reporting including:
			  • Data from the agriculture, fishing and forestry sectors
			  • Sewage sludge arisings data
			  • Offshore waste data
				SEPA/SG/ZWS/ Waste Management Industry/ Businesses/ DECC/Oil & Gas UK/ Scottish Water/Forestry Commission/ MCA

Statutory ZWP Key data users	Change in household waste reporting definition	The reporting of household waste arisings and management is in line with the WFD and ZWP	• Development and implementation of reporting guidance for local authorities • Identification of options for local authorities to identify the breakdown between household and commercial waste from mixed household/commercial collections	SEPA/Scottish Local Authorities/SG

Driver	Data availability and quality Issues	Desired outcome	Indicative detailed actions	Organisations involved
Statutory ZWP Key data users	Completeness of data on C&I waste recycled in Scotland	An improvement in the quality, quantity and detail of C&I waste recycled in Scotland	• Site returns to include information on material outputs that are no longer waste • Improve recycling data from simple exemptions • Identification of industrial processes that input and recycle waste as part of their processes and require them to provide SEPA with waste data returns • Improve data collection systems for complex exemptions	SEPA/Waste Management Industry/ Businesses
Statutory ZWP Key data users	No clear definition of recycling	The development of recycling guidance in line with the WFD and ZWP	• Development of recycling guidance in line with Waste Framework Directive and ZWP • Implementation of recycling guidance	SEPA/SG
Statutory ZWP Key data users	No previous reporting requirement for individual material streams	The implementation of reporting on individual material streams	• Development and implementation of methodologies for analysing and reporting information on individual material streams	SEPA/Scottish Enterprise/ZWS /Waste Management Industry

Driver	Data availability and quality Issues	Desired outcome	Indicative detailed actions	Organisations involved
Statutory ZWP Key data users	Completeness of data on C&I waste managed outside Scotland	An improvement in the quality, quantity and detail of all wastes imported to and exported from Scotland, including that exported for recycling	• Identification of waste from Scottish waste management sites recycled outside Scotland (rest of UK and abroad) and production of a methodology for reporting this • Set up information protocols with the EA • Identification of waste sent for recycling from Scotland directly to sites in the rest of UK and abroad • Review options for collecting data on green list waste exports • Support the development of an electronic data collection system for Annex VII export data	SEPA/ZWS/EA/ SG
Statutory ZWP Key data users	Correct/consistent use of EWC codes in waste data returns	An improvement in the consistency and accuracy in the use of EWC codes in waste management returns	• Development and implementation of EWC coding guidance • Provide training for operators and businesses • Enable the use of electronic waste data returns • Improve the design of the licensed/permitted site return form	SEPA/Waste Management Industry/ZWS/ Businesses
ZWP Key data users	Need to review data quality assurance systems	An improvement in the data quality assurance systems	• Review current data quality assurance systems • Identify methods for improvement of data quality assurance systems • Introduce electronic data collection systems • Implementation of new proposed methods	SEPA/EA/SG/ ZWS/Data Providers

Driver	Data availability and quality Issues	Desired outcome	Indicative detailed actions	Organisations involved
ZWP Key data users	Lack of definitions for waste management site types	The development and implementation of a standard set of definitions for waste management activity types	• Agree a set of standard definitions for waste management activities • Classify all sites according to the definitions • Incorporate them in relevant SEPA systems • Include WFD Recovery and Disposal codes on permits and licences issued by SEPA • Report standard site types in waste infrastructure maps and capacity reports	SEPA
ZWP Key data users	Carbon metric	The development of a resource displacement carbon metric for all waste recycled in Scotland	• Identify weighing factors for the carbon metric • Application of factors and reporting	SG/ZWS/SEPA/ CIWM/Local Authorities
Statutory ZWP Key data users	Reporting of final destination of local authority collected waste in WasteDataFlow	An improvement in the reporting of final destination for recycled materials in WasteDataFlow	• Assessment of information currently reported • Development and implementation of reporting guidance for local authorities	SEPA/Scottish Local Authorities/SG/ EA/Waste Management Industry
Statutory Key data users	Completeness and accuracy of waste recycling capacity	An increase in the quantity and accuracy of data on recycling capacity in Scotland	• Development and implementation of a methodology for the identification of recycling capacity for different sites (e.g. based on recycling throughput for multi-activity sites)	SEPA/Waste Management Industry

Driver	Data availability and quality Issues	Desired outcome	Indicative detailed actions	Organisations involved
ZWP Key data users	Raw data quality for special waste produced and managed in Scotland	An improvement in the accuracy of special waste produced and managed in Scotland	• Assessment of information currently reported • Development and implementation of methodology to improve quality of the data • Development and implementation of reporting guidance for the relevant waste management operators	SEPA/Waste Management Industry/Special Waste Producers
Statutory ZWP Key data users	Completeness of waste infrastructure information	The identification of all sites that use waste as a feedstock for their processes	• Identification of industrial sites that input waste as part of their processes • Collect and report data on the waste that they handle	SEPA/Relevant PPC sites
Statutory ZWP Key data users	Identification of BW landfilled	An improvement in the quality, quantity and detail of the biodegradable element of waste sent to landfill	• Improve the quality of the data on biodegradable fraction associated with waste types landfilled by EWC code • Undertake waste composition analysis of waste streams landfilled • Assessment of methodology options for the identification of BW/BMW landfilled • Implementation of preferred option	SEPA/ZWS/ defra
ZWP Key data users	Lack of accurate operational capacity for waste management sites	An improvement in the quality, quantity and detail on the operational capacity of waste management sites	• Develop a methodology for identification of operational capacity • Implement methodology	SEPA/Waste Management Industry
Statutory Key data users	Data gaps for off-site transfers of waste	An improvement in the quality, quantity and detail of off-site transfers of waste for SPRI/E-PRTR reporting	• Work with relevant industry sectors to improve this data • Identify sites that are not reporting • Improve current guidance • Provide sector specific training	SEPA/Industry

Driver	Data availability and quality Issues	Desired outcome	Indicative detailed actions	Organisations involved
ZWP Key data users	Lack of C&I waste compositional analysis data	The identification of how C&I waste data can be supplemented by C&I waste compositional analysis	• Undertake waste composition studies of mixed waste from selected commercial/industrial sectors	SG/ZWS/ Businesses/ Waste Management Industry
ZWP Key data users	No previous reporting requirement for data on waste flows	The development of waste data products that provide a much better understanding of the flow of materials through the waste management system	• Review methodology used for Area Waste Management Reports • Development of relevant reports	SEPA/Scottish Enterprise/ZWS
Statutory Key data users	Quality of incineration capacity	An improvement in the quality of waste incineration capacity	• Relevant SEPA inspectors to review the data reported on incineration capacity on an annual basis	SEPA
Key data users	Incomplete fly-tipping data reported in Flycapture as not all local authorities take part	An improvement in the quantity of data reported on fly-tipping	• Encourage local authorities to take part • Use EWC codes to describe the waste	ZWS/Scottish Local Authorities/SG
Statutory ZWP Key data users	Arisings data based on estimates on UK packaging placed on the market	The identification of Scottish packaging waste arisings	• Consult with relevant stakeholders on alternative methods of estimating packaging waste arisings	SEPA/relevant stakeholders

Driver	Data availability and quality Issues	Desired outcome	Indicative detailed actions	Organisations involved
Statutory Key data users	Arisings data based on estimates on UK WEEE/batteries placed on the market	The identification of WEEE and battery waste arisings	• Consult with relevant stakeholders on alternative methods of estimating WEEE and battery waste arisings	SEPA/relevant stakeholders
ZWP	BMW landfilled data split by household and C&I sources	An estimate of the amount of BMW landfilled in Scotland split by household and C&I sources	• Development and implementation of a methodology to split BMW to landfill between household and commercial and industrial sources	SEPA/SG/ Scottish Local Authorities

Annex C - Prioritisation of outcomes and timescales

Desired outcome	Priority	Statutory	ZWP	KDU	Data Improvement	Score	Resources Needed	Difficulty	SEPA
An improvement in the quality, quantity and detail of C&I waste arisings by economic sector	HIGH	Yes	Yes	Yes	HIGH	6	HIGH	HIGH	
The reporting of household waste arisings and management is in line with the WFD and ZWP	HIGH	Yes	Yes	Yes	HIGH	6	MED	MED	Lead
An improvement in the quality, quantity and detail of C&I waste recycled in Scotland	HIGH	Yes	Yes	Yes	HIGH	6	MED	HIGH	
The development of recycling guidance in line with the WFD and ZWP	HIGH	Yes	Yes	Yes	HIGH	6	MED	LOW	
The implementation of reporting on individual material streams	HIGH	Yes	Yes	Yes	HIGH	6	MED	LOW	
An improvement in the quality, quantity and detail of all wastes imported to and exported from Scotland, including that exported for recycling	HIGH		Yes	Yes	HIGH	5	HIGH	HIGH	
An improvement in the consistency and accuracy in the use of EWC codes in waste management returns	HIGH	Yes	Yes	Yes	MED	5	MED	MED	
An improvement in the data quality assurance systems	HIGH		Yes	Yes	HIGH	5	MED	MED	Lead
The development and implementation of a standard set of definitions for waste management activity types	HIGH		Yes	Yes	HIGH	5	MED	LOW	Lead
The development of a resource displacement carbon metric for all waste recycled in Scotland	HIGH		Yes	Yes	HIGH	5	HIGH	HIGH	
An improvement in the reporting of final destination for recycled materials in WasteDataFlow	HIGH	Yes	Yes	Yes	MED	5	MED	MED	
An increase in the quantity and accuracy of data on recycling capacity in Scotland	HIGH	Yes		Yes	HIGH	5	MED	MED	Lead
An improvement in the accuracy of special waste produced and managed in Scotland	MED	Yes	Yes	Yes	MED	5	HIGH	HIGH	
The identification of all sites that use waste as a feedstock for their processes	MED	Yes	Yes	Yes	MED	5	MED	LOW	Lead
An improvement in the quality, quantity and detail of the biodegradable element of waste sent to landfill	MED	Yes	Yes	Yes	MED	5	HIGH	HIGH	
An improvement in the quality, quantity and detail on the operational capacity of waste management sites	MED		Yes	Yes	MED	4	MED	MED	
An improvement in the quality, quantity and detail of off-site transfers of waste for SPRI/E-PRTR reporting	MED	Yes		Yes	MED	4	MED	MED	
The identification of how C&I waste data can be supplemented by C&I waste compositional analysis	MED		Yes	Yes	MED	4	HIGH	HIGH	
The development of waste data products that provide a much better understanding of the flow of materials through the waste management system	MED		Yes	Yes	MED	4	MED	MED	
An improvement in the quality of waste incineration capacity	MED	Yes		Yes	LOW	3	LOW	LOW	Lead
An improvement in the quantity of data reported on flytipping	MED			Yes	MED	3	MED	MED	
The identification of Scottish packaging waste arisings	LOW	Yes	Yes	Yes	LOW	4	HIGH	HIGH	Lead
The identification of WEEE and battery waste arisings	LOW	Yes		Yes	LOW	3	HIGH	HIGH	Lead
An estimate of the amount of BMW landfilled in Scotland split by household and C&I sources	LOW		Yes		LOW	2	MED	MED	Lead

TIMESCALES columns (2011–2020) and ORGANISATIONS columns (SEPA, ZWS, SG, WASTE IND, Business, LAs, OTHER) are indicated by colour coding in the original.

Key: ▉ Delivery phase ▉ Ongoing improvement

Acronyms and Abbreviations

BMW	Biodegradable Municipal Waste
BW	Biodegradable Waste
C&D	Construction and Demolition
C&I	Commercial and Industrial
CIWM	Chartered Institute of Wastes Management
CoSLA	Convention of Scottish Local Authorities
CRNS	Community Resources Network Scotland
DECC	Department of Energy and Climate Change
Defra	Department of the Environment Food and Rural Affairs
EA	Environment Agency (England & Wales)
E-PRTR	European Pollutant Release and Transfer Register
EU	European Union
EWC	European Waste Catalogue
KDU	Key Data Users
LA	Local Authority
LACMSW	Local Authority Collected Municipal Solid Waste
MCA	Maritime and Coastguard Agency
MRF	Material Recovery Facility
NIEA	Northern Ireland Environment Agency
OECD	Organisation for Economic Co-operation and Development
PPC	Pollution Prevention and Control
SEPA	Scottish Environment Protection Agency
SESA	Scottish Environmental Services Association
SG	Scottish Government
SPRI	Scottish Pollutant Release Inventory
UK	United Kingdom
WEEE	Waste Electrical and Electronic Equipment
WFD	Waste Framework Directive
WML	Waste Management Licence/Licensing
WG	Working Group
ZWP	Zero Waste Plan
ZWS	Zero Waste Scotland