

Municipal Waste Data Monitoring and Reporting: Interim Guidelines

March 2003



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ABBREVIATIONS

BATNEEC	Best Available Technology Not Entailing Excessive Cost
BMW	Biodegradable Municipal Waste
BPEO	Best Practicable Environmental Option
BVPI	Best Value Performance Indicator
C&I	Commercial and Industrial
DC	District Council
DEFRA	Department of the Environment, Food and Rural Affairs
DOE	Department of the Environment
DRD	Department of Regional Development
DSD	Department of Social Development
EHS	Environment and Heritage Service
ELV	End of Life Vehicles
ERM	Environmental Resources Management
EWC	European Waste Catalogue
IDBR	Inter Departmental Business Register
IPPC	Integrated Pollution Prevention and Control
KPI	Key Performance Indicators
MRF	Material Recycling/Recovery Facility
NGO	Non Governmental Organisation
OECD	Organisation for Economic Co-operation and Development
OJEC	Official Journal of the European Communities
PCB	Polychlorinated Biphenyls
SIC	Standard Industrial Classification
SWaT	Special Waste Tracking Database
WEEE	Waste Electrical and Electronic Equipment
WET Bill	Waste and Emissions Trading Bill
WMP	Waste Management Plan
WMS	Waste Management Strategy
WRAP	Waste and Resources Action Programme
WSR	Waste Statistics Regulation

1 INTRODUCTION

1.1 BACKGROUND

The Environment and Heritage Service of the Department of the Environment has prepared guidance on municipal waste data reporting for use by District Councils and the sub-regional waste management planning groups (Waste Management Groups) in their regular monitoring and annual performance reviews, to which they have committed in the final *Waste Management Plans* (WMPs).

1.2 OBJECTIVES

The objectives of the monitoring and reporting guidelines are:

- To identify appropriate key performance indicators that need to be measured to assess progress towards achieving the Waste Strategy Targets;
- To enable compliance with the reporting requirements of EU Directives, the Department and other UK legislation;
- To ensure uniform and consistent measurement and presentation of the key performance indicators across the whole of Northern Ireland (NI).

1.3 PHASED IMPLEMENTATION

The implementation of the guidelines has been split into three stages:

Stage 1 involved the development of an outline list of primary key performance indicators (KPIs) for waste management for inclusion in the adopted WMP. These indicators are listed in *Annex A*.

Stage 2 entails the development of *Interim Guidelines*. These provide details of the methodology to be adopted in reporting waste data in the annual review to be carried out by the regional Waste Management Groups in March/April 2003. They will also be used for measuring and reporting waste data throughout 2003. This stage has also involved further development of the primary indicators outlined in Stage 1 and the definition of secondary indicators, as appropriate – see *Annex A*

Stage 3 will involve the production of formal *Reporting Guidelines*. These guidelines will be produced prior to the annual review of the WMPs in March 2004. This phase of the project will include consultation with the District Councils by October 2003, and finalisation and issue of the Guidelines by 31 December 2003. It is the Department's intention to make the final guidelines statutory in due course.

The benefits of this staged approach are that a functional methodology can be quickly developed to achieve the March 2003 milestone. In addition, by delaying the finalisation of the guidelines until December 2003, the methodologies developed in Stages 1 and 2 can be further refined, based on the results of their implementation in the first round of annual performance reviews in March/April 2003, and of any further pilot testing considered necessary. Furthermore, any reporting requirements of EU Directives yet to be confirmed (e.g. the Landfill Directive and the Waste Statistics Regulation) can be incorporated into the final version of the guidelines.

1.4

WASTE DATA MONITORING AND REPORTING TASKFORCE

The *Interim Guidelines* outlined in this report have been developed by the Department, in conjunction with the Data Monitoring and Reporting Taskforce. The Taskforce consists of representatives from: the three Waste Management Groups, the Department (Waste and Contaminated Land Unit), DRD (Central Statistics and Research Branch) and ERM (Consultants to the Department).

EHS REQUIREMENTS

The Department has a statutory duty to make and deliver policy to meet UK and EU obligations. *The Waste Management Strategy (WMS)* and *Waste Management Plans (WMPs)* are the key elements of that policy and the performance of Northern Ireland (NI) as a whole will be measured against the promises and commitments of both the WMS and WMPs. The Department, therefore, has a need for information on a regular basis to carry out its functions under the Waste and Contaminated Land (NI) Order 1997. This includes, for instance, information to:

- Demonstrate implementation of waste policy
- Identify potential problems with meeting targets and enable effective and timely response to these, working in conjunction with the Waste Management Groups and individual District Councils as appropriate.
- Demonstrate accountability of public funds allocated for the implementation of WMPs.
- Inform new policy and policy reviews e.g. biodegradable waste strategy, WMS review, policy on packaging waste, hazardous waste, End of Life Vehicles (ELVs) and Waste Electrical and Electronic Equipment (WEEE) etc.

The timetables for these and implications for NI if targets are not met are such that reliance on the current District Council annual returns over the next few years will not be sufficient. More frequent reporting of interim data will be essential to guide policy decisions and meet statutory reporting requirements in a number of critical areas.

In addition to data reporting on a sub-regional waste management planning Group basis, it is important that District Council level information is made available to the Department. Waste management is currently organised and implemented at the District Council level as a statutory function under the Waste and Contaminated Land (NI) Order 1997. It is therefore appropriate, initially, to compare best practice and performance at this level. Furthermore, the Department is accountable for grants allocated to District Councils and is unable to rely solely on aggregated responses when reviewing performance.

Future decisions on the Best Practicable Environmental Option for waste management on a NI-wide basis need to be informed by the component parts, as well as the 3 Waste Management Groups as a whole. It is possible that the current groupings may not be the most appropriate arrangements for long-term targets, especially when considering the need and location of major recovery facilities by 2005.

As the Waste Management Groups become established as entities and the NI base data more comprehensive and reliable, the Department will review

reporting frequencies and the need for District Council level reporting. However, in the interim over the next few years, the Department will need to build baseline datasets and this will be most effective by establishing a regular reporting structure.

2.2 *LEGAL REQUIREMENTS*

The legal requirements for reporting stem from EU and UK law. European environmental law is continually evolving and a significant number of enacted or impending Directives require reporting on waste management. *Annex B* provides a summary overview of the main existing waste Directives. Detailed analysis of all the reporting requirements of these Directives is outside the scope of these *Interim Guidelines*. However, these will be addressed in the final *Reporting Guidelines*. In December 2002, the EU issued the Waste Statistics Regulation which contains detailed reporting requirements for Member States. As part of the UK, NI will be required to report various waste data in a specified format for aggregation by DEFRA into UK figures.

2.2.1 *Waste Statistics Regulation*

[Regulation (EC) No. 2150/2002 of 25 November 2002 on Waste Statistics]

The purpose of the Regulation is to provide a legal basis for a complete statistical data collection on "generation" and "treatment" of waste from businesses and private households in the European Community. The data are to be collected on a regular basis and will provide comparable statistics on trends in waste generation and waste management, and enable monitoring of compliance with the European Community waste policies. In the European Commission's five-year statistical programme, the implementation of this Regulation is seen as a priority task within the European Statistical System.

When fully applied, the Regulation will comprise the total picture of waste generation and waste treatment and is intended to enable better monitoring of waste prevention, and to allow linkages to be made between waste generation and resource use.

The final version of the Regulation was published in the Official Journal of the European Communities (OJEC) on 9 December 2002 and took effect on 29 December 2002. Under the rules, which are directly binding in all EU Member States, statistics will have to be collected from 2004 (the first reference year) and every 2 years thereafter. Governments must submit a report a maximum of 18 months after the end of each reporting year. The first report to be produced will be for the second reference year (2006) – i.e. Member states will be required to furnish data for 2006, by June 2008.

The timescales quoted in OJEC relate directly to the provision of data by member states. These will in turn impact directly on the provision of data by the relevant regional and national bodies. In the UK, waste data are likely to be collated centrally by DEFRA, and the information from the territories will therefore be required prior to the EU milestone dates. A more precise reporting timetable relating to the UK is expected during 2003.

The information required by the Waste Statistics Regulation will include data on:

- waste generation – details of waste arising from various sources (including households), classified into waste types aggregated from the European Waste Catalogue (EWC);
- waste recovery and disposal facilities – details of facilities split into groups (including incineration, recovery without energy recovery, disposal); and
- coverage and quality of statistics presented – i.e. a Quality Report indicating the degree of precision of the collected data.

2.2.2 *Waste and Emissions Trading Bill*

The Waste and Emissions Trading Bill contains the statutory framework for a Landfill Allowances Scheme which will help the UK to meet, in the most cost effective and efficient way, its obligations under Articles 5(1) and 5(2) of the Landfill Directive 1999/31/EC, beginning 17 July 2004.

In addition to the Landfill Directive target dates (16 July 2010, 2013 and 2020), the Bill also provides for DEFRA to set annual statutory targets for local authorities in NI, to be reported shortly after the end of each year. DEFRA have advised that they will measure attainment of the 16 July targets by reference to data as at the previous 30 June.

The detailed reporting requirements of the WS Regulations and WET Bill and the implications for the UK have not yet been fully assessed. Further guidance is expected from DEFRA and the Department on the implementation of these pieces of legislation in due course. It is proposed that the NI *Reporting Guidelines*, to be produced by 31 December 2003, will incorporate these requirements.

3.1 TERMINOLOGY

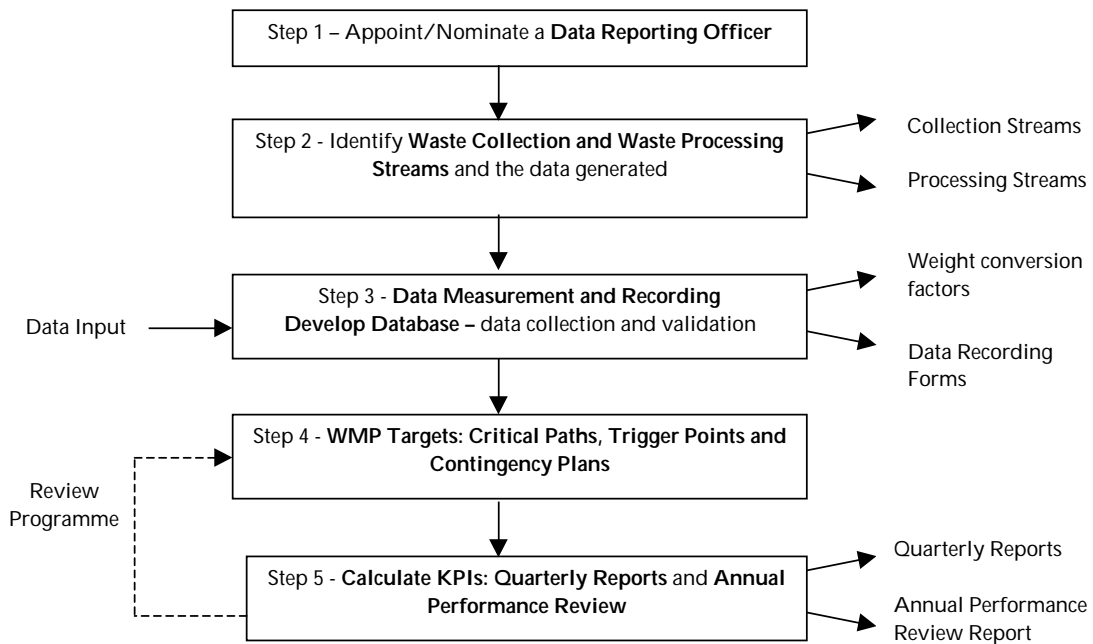
A wide variety of definitions and terminologies are used in the waste industry and quite often the same term has more than one definition depending on the context in which it is used. *Annex C* provides a list of the waste management terminologies that are relevant to this project.

The definitions that govern the determination of the KPIs and the formulae for calculating the values are described in *Annex D*.

3.2 METHODOLOGY

This section of the report provides a step-by-step guide to the development of Data Monitoring and Reporting procedures. The methodology is summarised in Figure 3.1 below.

Figure 3.1 Flowchart for waste data monitoring and reporting



3.3 *APPOINT A DATA REPORTING OFFICER (STEP 1)*

The first step that District Councils should take in the development of a Data Monitoring and Reporting Structure is to appoint a *Data Reporting Officer*.

The *Data Reporting Officer* will be the primary point of contact at the District Council for all issues relating to waste management data, and will thus be required to take ownership of the data generated and the KPIs derived from the data. The Officer will also be responsible for developing a data collection and performance management culture within their Council.

The role of the *Data Reporting Officer* is very crucial to the development and management of an effective reporting structure. The *Data Reporting Officer* should be a permanent member of staff, at a sufficiently high level to have the authority required to implement a formal data monitoring and reporting structure, and to be responsible for the management of the system that is developed.

3.4 *IDENTIFY WASTE COLLECTION AND WASTE PROCESSING STREAMS (STEP 2)*

The next step is the identification of all the Council's municipal waste collection and processing (treatment / disposal) streams – (i.e. refuse collections, litter, landscaping, kerbside collections, schools, businesses, civic amenity sites, landfills, composting facilities, MRFs, etc.) and all the data generated by each stream, particularly those relating to the calculation of KPIs. This should be clearly documented and include data on all the waste collection and processing centres and contractors.

A thorough review of the existing or proposed waste management systems from cradle to grave (i.e. from the point each waste type is produced or collected to its final disposal point) will enable the Council to assess all the waste data generated (or could potentially be generated) in the course of their operations and to determine the usefulness of the datasets. This review should seek to answer questions such as:

- what type of waste is collected?
- how is waste collected, who collects it and how often is it collected?
- if there is a contract, how does it operate?
- where does the waste go and how is it treated / processed?
- at what stage is the quantity (of waste collected) determined?

District Councils should consider the specific datasets required for determining each KPI in implementing the process described above. The Council should however not limit itself to just the data needed for calculating KPIs. Any other data that would be useful for monitoring and managing its overall municipal waste management performance should also be identified.

3.5 DATA MEASUREMENT, RECORDING & DEVELOPMENT OF A DATABASE (STEP 3)

Having identified all the data relevant to the calculation of KPIs and performance management and the ways by which the data are generated, the next step is to develop methodologies for: (i) obtaining the data in the required format, and (ii) storing the data in an electronic format.

3.5.1 Data Measurement

The majority of waste data necessary for performance management are required in weight format – i.e. tonnes.

In view of the significance of the issue of accurate weights, for auditability and consistency of measurement, the Department intends to introduce the mandatory use of weighbridges after a transition period. The timing and transition arrangements for this policy will be subject to consultation with District Councils and industry.

In cases where the data are not generated in this format, District Councils should adopt standard weight conversion factors and also document the procedures for generating the data (i.e. conversion procedure), for ease of reference for all the staff who may be involved in gathering the data. Wherever possible, the collection and processing streams should be arranged such that waste collection vehicles are routed via weighbridges or other facility that can produce an accurate record of the weight of waste being collected or transported.

Annex E provides a selection of standard weight conversion factors for used where weighing is not currently practicable and HM Customs & Excise methods for calculating weights at landfill sites where weighbridges are not available. District Councils are required to adopt the factors listed in Annex E, as far as is practicable. This list is not exhaustive, and as a result any other conversion mechanisms adopted by District Councils should be clearly documented within the reporting structure.

The Department is aware difficulties may arise with regard to timing and completeness of data provided by waste contractors. However, the Department would remind District Councils of the provisions of Article 44 of the Waste and Contaminated Land (NI) Order 1997, which provides a mechanism for enforcement of data collection for both the Department and the District Councils.

3.5.2 Data Recording

In order to maintain the consistency of data collection, standard data recording forms should be used by operations staff and contractors. Examples of *Data Recording Forms / Proformas* are shown in *Annex F* as a guide. These may be adapted by District Councils to suit their operations.

Where data are not gathered on a frequent regular basis (i.e. daily or weekly), District Councils should determine an appropriate collection / sampling

frequency that will meet the requirements of the KPIs. The methodology / frequency should be clearly documented and transparent.

3.5.3 *Develop a Database*

An important factor for the collation of waste statistics is that they are readily available and intelligible.

Having defined how data are to be measured and recorded, the next step is to develop a database for storing the data and calculating KPIs. The best format for this is a computer database. This computer database should be capable of:

- interrogation for regular reporting cycles; and
- interrogation to provide other information that may not be linked to the reporting cycle.

A well-designed computer database will also allow different users to obtain the specific information they need. It will also further improve the efficiency of data systems by enabling quick and accurate importing, processing and reporting of data.

The format of the database should be compatible with the Department's software systems (i.e. Microsoft Office™ Excel). The database should be designed to facilitate the regular recording of data and also enhance the calculation of KPIs. Microsoft Excel worksheets for input of relevant waste data have been developed for use by the District Councils and Waste Management Groups (see Section 3.7 below).

In conformance with UK – wide reporting proposals, the Department intends to introduce the mandatory use of electronic reporting of data after a transition period. The timing and transition arrangements for this policy will be subject to consultation with District Councils and industry.

3.5.4 *Data collection and validation*

Once the procedures described above have been implemented, the next step is the actual operation of the monitoring and reporting system.

As data are collected and fed into the database, they should be validated and checked for accuracy. Validation should involve crosschecking the data with previous figures to check for consistency, making sure that the figures being generated are realistic and relate to the appropriate activity. This validation exercise should also include random spot checks on the entries into data recording forms.

In accordance with statutory reporting requirements in due course, the Department will commission and undertake independent audits of reported data from District Councils.

3.6 **WASTE MANAGEMENT PLAN TARGETS – CRITICAL PATHS, TRIGGER POINTS & CONTINGENCY PLANS (STEP 4)**

The procedures described in the first three steps outlined above all relate to activities at the District Council level. The next two steps outlined below are to be implemented at the Group level.

Regular monitoring and measurement of progress towards achieving the *Waste Strategy Targets* is fundamental to the success of the *Waste Management Plans*. In view of this, the Waste Management Groups will need to identify the WMP Targets that relate to their waste collection and processing streams, and the relevant KPIs and datasets for these streams.

After breaking down the targets into various streams, the Waste Management Groups should then develop a monitoring programme incorporating the following key components:

- Critical Paths – setting out the timescales by which key activities necessary for the achievement of the WMP Targets should be completed;
- Trigger Points – these should be clearly defined parameters or values (e.g. recycling rate for a particular waste stream or site) for critical KPIs, and should be set at such a level that will alert the Group (or an individual District Council, as appropriate), where performance falls short of the WMP targets;
- Contingency Plans – corrective actions that can be taken to bring the programme back on track, once a trigger point is reached (i.e. performance is falling significantly behind the planned levels).

3.7 **KPIs, MONITORING AND REPORTING (STEP 5)**

The formulae for calculating the KPIs (as shown in *Annex D*) have been entered into Microsoft Excel worksheets, which are provided on floppy disc at the back of this document. Instructions for use are outlined in *Annex G*. The worksheets describe the data required for determining each KPI and are based on the same format used by the Department for the Annual Municipal Waste Surveys. Regular collection and validation of data will enhance the quick and efficient calculation of KPIs.

Two categories of reports are required, as follows:

3.7.1 **Quarterly Reports**

The KPIs listed in *Annex A* should be calculated every quarter for each District Council and then amalgamated for each sub-regional waste management planning group. Concurrently, the Waste Management Groups (and individual District Councils) should check and review their performances against planned levels and identify and initiate corrective action as appropriate, where required.

The data should be produced in a format which shows the overall performance of each sub-regional waste management planning group and the individual District Councils within the group. These quarterly reports should initially be forwarded to the Department not later than 8 weeks after the end of each quarter – i.e. the report for January to March should be sent to EHS before the end of May. However, due to reporting requirements of the Waste and Emissions Trading Bill and the Waste Statistics Regulations to be confirmed, reporting return deadlines for certain KPIs may be considerably shorter than this. Further details will be included in the final Reporting Guidelines.

The quarterly reports can be limited to KPI data. However, in cases where there is a significant deviation from planned levels, the report should include a statement describing the steps being taken by the Regional Group and /or Council(s) to bring the programme back on track.

3.7.2 Annual Performance Review Report

The results of the first three quarterly reports and the fourth quarter reporting should be amalgamated into an annual report for each calendar year. In addition to collating the individual District Council results, the Waste Management Groups should also carry out quality assurance checks on the data provided by District Councils. Any adjustments to previously submitted quarterly data should be clearly documented. The annual report should present the KPIs for the sub-regional Group and District Councils for the reporting year, along with a detailed assessment of progress towards meeting all of the WMP targets.

The performance appraisal should include, but not be limited to:

- a review of data on quantities and nature of waste arisings;
- a review of the implementation of the actions and measures set out in the WMP;
- a review of the impact and success of new schemes and pilot trials;
- details of capital expenditure on new facilities or improvements to existing facilities and revenue costs for the reporting period;
- assessment of the effect of corrective actions that have been taken during the year (i.e. contingency plans); and
- a description of further actions to be taken to ensure achievement of the targets.

The annual performance appraisal should also incorporate a review of the effectiveness of the critical paths, trigger points and contingency plans. These should be adjusted where necessary to ensure that the parameters set and action plans continue to be relevant and effective. It should also incorporate a detailed Implementation Action Plan for the following year.

The annual performance review report should be forwarded to the Department by the end of the February following the reporting calendar year

– i.e. by 28 February 2004 for the reporting period 1 January – 31 December 2003.

Waste data and KPIs for 2002 should be provided in the form of the electronic worksheet provided and forwarded to the Department no later than 30 May 2003. It is expected that the annual reports will provide substantial baseline data that will inform the formal reviews of the WMPs in 2004 and meet WS Reporting requirements.

Waste data and KPIs for January – June 2003 should be reported together by 29th August 2003. Thereafter, data reporting should fall into quarterly reporting cycle.

4 *DATA QUALITY REQUIREMENTS*

4.1 *DATA QUALITY*

In addition to the consideration of what waste statistics are required, the issue of data quality is equally vital. The main data quality requirements are:

- consistency;
- auditability / traceability / integrity;
- timeliness; and
- minimal paperwork.

These criteria are discussed briefly below.

4.1.1 *Consistency*

The value of undertaking an extensive data collection process is limited if the data collected are not collated in a consistent manner. It is vital to ensure that common rules apply to all data gathering activities. Small variations in the methodology adopted for gathering and recording data can make significant differences to the figures presented, so it is crucial that data are collected on a consistent basis across each authority (i.e. all District Council operations) to enable meaningful comparisons and trend tracking. District Councils should thus ensure that the procedures developed for data monitoring are fully adopted and maintained. This issue further reinforces the need for a *Data Reporting Officer* (as described in Section 3.3) with sufficient authority to implement and enforce adequate monitoring and reporting systems.

4.1.2 *Auditability / traceability / integrity*

An auditable data recording and monitoring system is essential to demonstrate the authenticity of the data and KPIs calculated from the datasets. The most practical way of achieving this is to document the procedures that are adopted in data gathering and to ensure that the documented procedures are deployed in the actual data gathering and collation processes. The use of simple step-by-step procedures will provide an auditable trail of data and also enhance the identification and resolution of data errors whenever they occur.

In particular, it is essential that District Councils are able to provide demonstrable evidence of the quantities and fate of materials collected for recycled and composting. District Councils will be required to verify and document the recycling / composting / reprocessing activities of their operators and recycling merchants and thus ascertain the actual percentages of input waste that is recycled/composted/reprocessed/disposed of and their end markets.

4.1.3 *Timeliness*

Once a database has been developed for storing data, it is important that the required data input is carried out in a timely manner. Data from daily/ weekly / monthly operations should be fed into the database as soon as the information is generated, to keep the database up to date. Reporting outputs generated from the database can only be as current as the information that has been fed into the system, and late data entries will inevitably result in inaccurate reporting.

4.1.4 *Minimal Paperwork*

District Councils are required to report data for several activities. These reporting tasks can be quite burdensome and as such the objective should be to keep paperwork down to a minimum.

The issue of paperwork is also linked to the consideration of consistency, which is likely to suffer when the same data is collected more than once. Internal recording and monitoring systems developed by the District Councils should thus be designed to not only minimise paperwork, but also to enable the production of reports from a common database as far as practicable.

The *Interim Guidelines* presented in this report have been developed in conjunction with the *Data Monitoring and Reporting Taskforce*.

The *Interim Guidelines* describe the key primary and secondary waste management KPIs that have been developed and the methodology for determining them. The report also contains step-by-step guidelines for the development of a waste data monitoring and reporting system and further provides details of the methodology to be adopted by the Waste Management Groups in reporting waste data for the annual review to be carried out in March/April 2003.

A Performance Indicators Working Group, involving the DOE Local Government Branch and representatives from the District Councils, is reviewing the list of Best Value Performance Indicators (BVPIs) currently used by District Councils to demonstrate best value. The Department are keen to standardise waste management performance indicators to minimise unnecessary reporting workloads for District Councils and employment of appropriate indicators of performance. The Performance Indicators Working Group are considering the list of KPIs for incorporation into BVPIs.

The Department acknowledge that implementation of these guidelines and development of procedures to govern the collection, recording and monitoring will take time and that gaps will exist in waste data reports initially. The *Interim Guidelines* provide an opportunity for the Waste Management Groups and District Councils to put in place the necessary systems for gathering data and to identify potential difficulties in obtaining information essential to meet minimum reporting requirements. These minimum requirements will be confirmed in the final *Reporting Guidelines* to be issued in December 2003.

ANNEXES

- Annex A – Waste Management Primary and Secondary Key Performance Indicators
- Annex B – European Union Waste Management Directives
- Annex C – Definitions of Waste Management Terms
- Annex D – KPI Definitions
- Annex E - Weight Conversion Factors
Calculating Weight without Weighbridges
- Annex F – Typical Examples of Data Recording Forms
- Annex G – Worksheets for Calculating KPIs: Instructions for use

Annex A

Waste Management
Primary and Secondary Key
Performance Indicators

WASTE MANAGEMENT KEY PERFORMANCE INDICATORS

(as included in the Adopted Waste Management Plans – January 2003)

Part 1 – Primary Indicators for municipal waste management

- a. household waste recycled and composted as a % of arisings (i.e of total household waste collected)
- b. household waste landfilled
- c. commercial & industrial waste (collected by district councils) recycled and composted as a % of arisings
- d. commercial & industrial waste (collected by district councils) landfilled
- e. municipal waste recycled and composted as a % of total arisings
- f. municipal waste landfilled
- g. biodegradable municipal waste (BMW) landfilled
- h. total household waste collected per household (from which waste growth rates are also calculated)
- i. cost of waste collection per household (including recycling)
- j. cost of waste treatment and disposal per tonne for municipal waste

Part 2 – Indicators to be measured for kerbside collection schemes

- k. number of households served
- l. participation rates
- m. capture rates

Reporting Period: January - December 2002
Waste Management Secondary Key Performance Indicators

Category	Type of Facility	Waste Type	Number of Facilities	Installed Capacity (Tonnes)	Quantity processed in reporting period (Tonnes)
Recycling / Recovery	Materials Recycling Facility (MRF)	Dry Recyclables			
	Household Waste Recycling (Civic Amenity) Sites				
	"Bring" recycling collection sites	Paper, Glass, Textiles			
	Composting	Green (garden) waste			
	Incineration (without energy recovery)				
	Treatment with energy recovery				
Treatment	Mechanical / Biological treatment				
	Landfill				

Total number of Home Composting Containers provided to householders in reporting period:

Total number of Education and Awareness Programmes implemented in reporting period:

Annex B

European Union Waste Management Directives

B1 **EUROPEAN UNION WASTE MANAGEMENT LEGISLATION**

This Annex provides an overview of the main EU Waste Directives. The Directives have varying data reporting requirements and these will be considered in more detail in the *Reporting Guidelines*.

B1.1 **WASTE FRAMEWORK DIRECTIVE**

[Council Directive 91/156/EEC, amending Directive 75/442/EEC on Waste,]

The 1975 Framework Directive on Waste, as amended, provides a basic framework for the management of waste within the EC. It establishes such principles as the waste hierarchy and BATNEEC, and puts in place a range of requirements, including the development of waste plans and the provision of various permits. In the UK a series of statutory instruments was enacted to adopt the various sections of the Framework Directive.

Member States are required to report triennially on the 'measures taken to implement the Directive'. Some of the data reporting requirements include:

- Total waste produced requiring disposal
- Total amount of waste disposed
- Volumes of waste (as domestic, hazardous, other) that is:
 - Produced
 - Recycled
 - Incinerated
 - Incinerated with energy recovery
 - Landfilled
 - Others

B1.2 **SHIPMENT OF WASTE REGULATION, AND BASEL CONVENTION**

[Council Regulation (EEC) No 259/93 (as amended) on the supervision and control of shipments of waste within, into and out of the European Community]

The Basel Convention, implemented by the Shipment of Waste Regulation No. 259/93, lays down reporting requirements on the import and export of waste.

The movement of waste between countries has been a subject of significant attention by the Commission. The aforementioned Regulation has been amended several times, and implements the Basel Convention, which has itself been subject to a number of modifications. The UK adopted the legislation under the Transfrontier Shipment of Hazardous Waste Regulations 1988 (SI 1988 No. 1562).

Article 13 of Basel states, *inter alia*, that countries must annually provide information regarding transboundary movements of hazardous wastes or other wastes in which they have been involved, including:

- (i) the amount of hazardous wastes and other wastes exported, their category, characteristics, destination, any transit country and disposal method as stated on the response to notification; and
- (ii) the amount of hazardous wastes and other wastes imported, their category, characteristics, origin, and disposal methods.

It also requires information on disposal options operated within the area of national jurisdiction.

It is expected that the reporting requirements of this Regulation will be harmonised with the Waste Statistics Regulation.

B1.3 ***LANDFILL DIRECTIVE***

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

The Landfill Directive stipulates a fair degree of reporting from Member States. One requirement is to provide data to support the targets for the reduction of biodegradable municipal solid waste, using a baseline of 1995.

The Directive landfill sites are split into four categories - hazardous, non-hazardous, inert and other - and, for each, the required waste data include:

- Total number of existing sites;
- Number complying with the Directive;
- Number of landfills closed (final waste input) since 16 July 2001;
- Number of landfills re-equipped; and
- Remaining void space / tonnes.

B1.4 ***HAZARDOUS WASTE DIRECTIVE***

[Council Directive 94/31/EC amending Directive 91/689/EEC on Hazardous Waste]

The Hazardous Waste Directive was translated into UK law by the 1996 Special Waste Regulations. The majority of the information required for reporting purposes is already provided by the Special Waste Tracking Database (SWaT) database. The exception is that it does not currently record details of the treatment methods.

The SWaT database records waste types according to the European Waste Catalogue (EWC), so aggregation for the purposes of reporting to the WSR requirements should be relatively straightforward, once the question of treatment methods has been addressed.

B1.5 *PACKAGING DIRECTIVE*

[European Parliament and Council Directive 94/62/EC on Packaging and Packaging Waste]

Member States are required by the packaging directive to report as follows:

For primary, secondary and tertiary packaging:

- quantities, for each broad category of material, of packaging consumed within the country (produced + imported - exported); and
- quantities reused.

For household and non-household packaging waste:

- quantities for each broad category of material, recovered and disposed of within the country (produced + imported - exported); and
- quantities recycled and quantities recovered for each broad category of material.

In the UK, the Producer Responsibility Obligations (Packaging Waste) Regulations (SI 1997 No. 648) oblige all companies to report on the packaging waste they have generated in the previous calendar year, provided that they have a turnover above £2M and generate in excess of 50 tonnes of packaging waste. These companies are set separate targets for the total packaging waste that must be recovered and also individual recycling targets for the key material streams.

The European Directive is currently being reviewed and the revision will set new targets for the recovery and recycling of packaging waste for either 2006 or 2008.

B1.6 *WASTE OILS DIRECTIVE*

[Council Directive 87/101/EEC amending Directive 75/439/EEC on the disposal of Waste Oils]

The Waste Oils Directive stipulates how waste mineral oils must be handled. Any establishment producing, collecting and/or disposing of a certain amount of waste oils per year must keep records of the quantity, quality, origin and location of such oils and of their despatch and receipt, including the dates of the latter, and there are also auditing and permitting requirements.

The Waste Oils Directive requires companies generating waste mineral oil to report arisings triennially.

B1.7 *END-OF-LIFE VEHICLES DIRECTIVE*

[Directive 2000/53/EC of the European Parliament and of the Council on End-of Life Vehicles (ELVs)]

The ELV Directive sets minimum levels of recovery, re-use and recycling for ELVs. Since the obligations fall upon the receiving company, and, through them, the original producer, the only businesses affected are those that produce new vehicles and those that receive ELVs. Their obligations are to publish information on the following:

- the design of vehicles and their components with a view to their recoverability and recyclability;
- the environmentally sound treatment of end-of life vehicles, in particular the removal of all fluids and dismantling;
- the development and optimisation of ways to reuse, recycle and recover end-of life vehicles and their components; and
- the progress achieved with regard to recovery and recycling to reduce the waste to be disposed of and to increase the recovery and recycling rates.

Member States are obliged to send triennial reports to the European Commission on the implementation of the Directive, and will thus require data from the producers and receivers. In particular, the ELV receivers will need to generate data on the levels of 'waste' they have handled and processed.

The relationship between the WSR and the ELV Directive is very similar to that between the WSR and the WEEE Directive (see below) in its current draft form. In both product Directives, there is no apparent obligation to report the various sources separately. It is therefore probable that arisings from domestic, commercial and industrial origins will all be rolled up into total figures for reporting by Member States.

However, if the government collects statistics on these products on a company-by-company basis, these can be aggregated by Standard Industrial Classification (SIC) (using the Inter Departmental Business Register, IDBR) for the purposes of reporting for the WSR, and totalled, together with domestic arisings, for the ELV and WEEE Directives. This then satisfies the reporting needs of all three pieces of legislation without repeating the surveys.

B1.8 *WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT DIRECTIVE*

[A Directive 2002/96/EC of the European Parliament and of the Council on Waste Electrical and Electronic Equipment (WEEE)]

The text of a Directive on Waste Electrical and Electronic Equipment was agreed in October 2002. The Directive is likely to be published in the OJEC in February 2003 and the UK Government will have 18 months to implement its requirements.

As well as householders, the Directive will cover all generators of WEEE, including commercial and industrial businesses. However, the burden of financing and reporting the WEEE recovery will most probably fall on the original producers, not the users.

The Directive states that, 'Member States shall provide to the Commission information, including substantiated estimates, on an annual basis on the quantities and categories of electrical and electronic equipment put on their market, collected and reused, recycled and recovered within the Member States, both by weight and, if need be, by numbers.'

B1.9

INTEGRATED POLLUTION PREVENTION AND CONTROL DIRECTIVE

[Directive 96/61/EC on Integrated Pollution and Prevention and Control (IPPC)]

The IPPC Directive lays down measures designed to prevent or, where that is not practicable, to reduce emissions in the air, water and land from certain listed activities. The Pollution Prevention and Control Regulations (Northern Ireland) 2003, which comes into operation on 31 March 2003, implements the IPPC Directive in Northern Ireland.

Under the Directive, specified waste management activities which includes most landfill sites and certain types of hazardous waste treatment will require permits. Permits will include site-specific monitoring requirements, specifying the measurement methodology and frequency and the evaluation procedure, and ensuring that the operator supplies the data required to check compliance with the permit.

B1.10

OTHER DIRECTIVES

The following Directives are not judged to be directly relevant to the scope of this report:

- Batteries Directive
- PCB Directive
- Waste Incineration Directive;
- Titanium Dioxide Directive;
- Sewage Sludge in Agriculture Directive;
- Urban Wastewater Directive; and
- Groundwater Directive.

Annex C

Definitions of Waste Management Terms

This Annex contains a list of the waste management terms that have been used in this report.

BIODEGRADABLE MUNICIPAL WASTE Any municipal waste that is capable of undergoing anaerobic or aerobic decomposition, such as food and garden waste, and paper and paperboard.

Council Directive 1999/31/EEC of 26 April 1999 on the landfill of waste

BRING RECYCLING SCHEMES Facilities where members of the public can bring dry recyclable materials (e.g. paper, glass, cans, textiles, shoes, etc.) at supermarkets or other locations, but not civic amenity sites operated by District Councils.

BULKY HOUSEHOLD WASTE Waste too large and cumbersome to be included in ordinary waste collection. Collected either free of charge or for a small fee.

CAPTURE RATE For kerbside recycling of dry recyclables;

the proportion of a particular material that has been recycled (i.e. diverted away from disposal routes) as a direct result of the introduction of a collection scheme, in a particular area. It is a measure of the efficiency with which householders separate recyclable materials from their waste. In other words, the percentage of the available material in the waste that people participating in a recycling scheme separate for kerbside collection. For example if there is 10Kg of paper in the waste stream and 5Kg are separated for recycling, this represented a 50% capture rate.

CIVIC AMENITY SITES Sites provided and operated by District Councils for the public and in some cases businesses to bring waste for recycling and disposal.

COMMERCIAL WASTE Waste from premises used wholly or mainly for the purposes of a trade or business or the purposes of sport, recreation or entertainment, excluding household waste, industrial waste, waste from any mine or quarry and waste from premises used for agriculture".

COMPOSTED The controlled biological decomposition and stabilization of organic or organic substrates, under conditions that are predominantly aerobic and that allow the development of thermophilic temperatures as a result of biologically produced heat. It results in a final product ('compost') that has been sanitized and stabilized, is high in humic substances and can be used as a soil improver, as an ingredient in growing media, or blended to produce a topsoil that will meet British Standard BS 3882, incorporating amendment No. 1.

DETR Guidance on Municipal Waste Management Strategies – 2001

COMPOSTING

The autothermic and thermophilic biological decomposition of separately collected biodegradable waste in the presence of oxygen and under controlled conditions by the action of micro- and macro-organisms in order to produce compost;

There are also sub-categories of composting as follows:

Windrow composting

The composting of biodegradable placed in elongated heaps which are periodically turned by mechanical means in order to increase the porosity of the heap and increase the homogeneity of the waste;

In-vessel composting

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

Home composting

The composting of the biodegradable as well as the use of the compost in a garden belonging to a private household;

On-site composting

The composting of the biodegradable where it is generated.

Community composting

The composting of biodegradable by a group of people in a locality with the aim at composting their own and other people's biodegradable in order to manage the supplied biodegradable as close as possible to the point at which it was produced.

(For the purposes of these Interim Guidelines, "Home Composting" shall be excluded from the determination of KPIs).

CONTROLLED WASTE

Household, industrial and commercial waste or any such waste.

DISPOSAL

Any waste management operation serving or carrying out the final treatment and disposal of waste. It covers the following main operations:

Final treatment: Incineration without energy recovery (on land; at sea); Biological, physical, chemical treatment resulting in products or residues that are discarded, i.e. going to final disposal.

Final disposal: Deposit into or onto land (e.g. landfill), including specially engineered landfill; deep injection; surface impoundment; release into water bodies; permanent storage
OECD-Eurostat Joint Questionnaire on waste

FLY TIPPED WASTE CLEARANCE

Any type of waste material fly tipped or dumped illegally on premises or in locations for which the District Council has responsibility.

GARDEN WASTE (NOT FOR COMPOSTING)	Waste from householders maintaining their gardens that is not suitable for composting e.g. rubble, fencing etc.
HAZARDOUS WASTE	Hazardous waste refers to the categories of waste to be controlled according to the Basel Convention on the control of transboundary movements of hazardous waste and their disposal (Article 1 and Annex I). <i>OECD/Eurostat Joint Questionnaire on waste</i>
HOUSEHOLD WASTE	Waste arising from a domestic property (i.e. a building or self-contained part of a building which is used wholly for the purposes of living accommodation), caravan, residential home, premises forming part of a university or school or other educational establishment and premises forming part of a hospital or nursing home;
HOUSEHOLD HAZARDOUS WASTE	Waste arising within the household waste stream that is classified as Hazardous under EC Directive 91/689/EEC (7).
HOUSEHOLD CLINICAL WASTE	Waste arising within the household waste stream that falls within the definition of clinical waste under The Controlled Waste Regulations (Northern Ireland) 2002 para.2.
HOUSEHOLD (REFUSE) COLLECTION SERVICE	Waste collected by district councils from domestic premises or other premises within the definition of household waste.
HOUSEHOLDS SERVED	The households provided with recycling facilities such as containers, for the collection of segregated kerbside recyclables.
INCINERATION	Shall mean thermal treatment of waste in an incineration plant as defined in Article 3(4) or a co-incineration plant as defined in Article 3(5) of Directive 2000/76/EC of the European Parliament and of the Council of 4 December 2000 on the incineration of waste.
INDUSTRIAL WASTE	is from a factory (within the meaning of the Factories Act (Northern Ireland) 1965) and from premises used in connection with the supply of public facilities. <i>Regulation (EC) No. 2150/2002 of the European Parliament and of the Council of 25 November 2002 on Waste Statistics, Article 2 (i)</i>
KERBSIDE COLLECTION	Mixed dry recyclables and source segregated door to door collection services.
KERBSIDE COLLECTION OF COMPOSTABLES	Door to door collection of source separated organic wastes for composting.

LANDFILL	<p>A waste disposal site for the deposit of waste onto or into land (i.e. underground) including: internal waste disposal sites (i.e. landfill where a producer of waste is carrying out its own waste disposal at the place of production); and a permanent site (i.e. more than one year) which is used for temporary storage of waste;</p> <p>but excluding: facilities where waste is unloaded in order to permit its preparation for further transport for recovery, treatment or disposal elsewhere, and storage of waste prior to recovery or treatment for a period less than three years as a general rule, or storage of waste prior to disposal for a period less than one year.</p> <p><i>Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste</i></p>
MUNICIPAL PARKS AND GARDENS WASTE	<p>Waste arising from maintenance of District Councils managed parks and gardens.</p>
MUNICIPAL WASTE	<p>Waste from households, as well as other waste, which because of its nature of composition, is similar to waste from households. <i>Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste</i></p> <p>For the purpose of these Interim Guidelines, municipal solid waste shall mean household waste and any other waste under the control of district councils or their agents acting on their behalf.</p>
NON-HAZARDOUS WASTE	<p>Waste which is not covered by Article 1(4) of Council Directive 91/689/EEC on hazardous waste] <i>Council Directive 1999/31/EC on the landfill of waste, Article 2 (d)</i></p>
PARTICIPATION RATE	<p>For kerbside recycling schemes:</p> <p>the number of households who participate in the programme at least once in a four-week period as a percentage of the total number of households served by the programme in the same four-week period. It is an indicative measure of the number of households that regularly take part in a recycling scheme.</p>
RECOVERY	<p>Any waste management operation that diverts a waste material from the waste stream and which results in a certain product with a potential economic or ecological benefit. Recovery mainly refers to the following operations:</p> <ul style="list-style-type: none"> - material recovery, i.e. recycling (see below); - energy recovery, i.e. re-use a fuel; - biological recovery, e.g. composting; - re-use. <p>Direct recycling or reuse within industrial plants at the place of generation is excluded.</p> <p><i>OECD-Eurostat Joint Questionnaire on waste</i></p>
RECYCLING	<p>Recycling shall mean the reprocessing in a production process of waste materials for the original purpose or for other purposes, but excluding organic recycling and energy recovery.</p>

STREET CLEANSING AND
LITTER (STREET SWEEPINGS)

All waste collected from street cleansing operations including leaves and litter prior to any pre-treatment such as composting or dewatering.

THIRD PARTIES /
VOLUNTARY GROUPS

NGOs, community groups, etc. that undertake recycling collection and sorting schemes.

WASTE

Any substance or object in the categories set out in Annex I which the holder discards or intends or is required to discard.

*Council Directive of 15 July 1975 on waste
Waste Framework Directive*

Annex D

KPI Definitions

Key Performance Indicators (KPIs)	Equivalent DEFRA BVPI	Definition & Calculation	Additional Information
<p>a Waste Indicators</p> <p>Household waste recycled and composted as a % of arisings</p>	<p>BV 82a & BV 82b</p>	<p>Definition of recycling & composting (Annex C)</p> <p>Definition of household waste (Annex C)</p> <p><u>Calculation of household recycling rate</u></p> <p>X/Y x 100 where:</p> <p>X = Tonnage of household waste collected which is sent for recycling and composting (including private/voluntary collections of household waste for recycling and composting and Civic Amenity Sites)</p> <p>Y = Total tonnage of household waste collected (including private/voluntary collections of household waste for recycling and composting and Civic Amenity Sites)</p>	<p>The following should be excluded from numerator X:</p> <ul style="list-style-type: none"> rubble; home composted waste; clearance of fly-tipped wastes; abandoned vehicles; re-used waste material <p>Estimation of C&I waste in co-mingled collections from surveys</p> <p>Standard Estimation procedure plus weighbridges where/when available (Annex E)</p>
<p>b Household waste landfilled as a % of arisings</p>	<p>BV 82d</p>	<p>Definition of landfill (Annex C)</p> <p><u>Calculation of proportion of household waste landfilled</u></p> <p>X/Y x 100 where:</p> <p>X = Tonnage of household waste collected and disposed of in landfill</p> <p>Y = Total tonnage of household waste collected (including private/voluntary collections of household waste for recycling and composting & Civic Amenity Sites)</p>	<p>Methods for calculating waste tonnage at sites without a weighbridge as set out by HM Customs & Excise (Annex E)</p>

Key Performance Indicators (KPIs)	Equivalent DEFRA BVPI	Definition & Calculation	Additional Information
<p>c Commercial and industrial waste (collected by district councils) recycled and composted as a % of total arisings</p>		<p>Definition of commercial & industrial waste (Annex C)</p> <p><u>Calculation of C&I recycling rate</u></p> <p>X/Y x 100 where:</p> <p>X = Tonnage of C&I waste collected which is sent for recycling and composting (including private/voluntary collections of C&I waste for recycling and composting and Civic Amenity Sites accepting C&I waste)</p> <p>Y = Total tonnage of C&I waste collected (including private/voluntary collections of C&I waste for recycling and composting and Civic Amenity Sites accepting C&I waste)</p>	<p>Estimation of C&I waste in co-mingled collections by annual surveys</p>
<p>d Commercial and industrial waste (collected by district councils) landfilled as a % of arisings</p>		<p><u>Calculation of proportion of C&I waste landfilled</u></p> <p>X/Y x 100 where:</p> <p>X = Tonnage of C&I waste collected and disposed of in landfill</p> <p>Y = Total tonnage of C&I waste collected (including private/voluntary collections of C&I waste for recycling and composting and Civic Amenity Sites)</p>	

Key Performance Indicators (KPIs)	Equivalent DEFRA BVPI	Definition & Calculation	Additional Information
<p>e Municipal waste recycled and composted as a % of total municipal waste arisings</p>		<p>Definition of municipal waste (Annex C)</p> <p><u>Calculation of municipal waste recycling rate</u></p> <p>X/Y x 100 where:</p> <p>X = Tonnage of municipal waste collected which is sent for recycling and composting (including private/voluntary collections of municipal waste for recycling and composting and Civic Amenity Sites)</p> <p>Y = Total tonnage of municipal waste collected (including private/voluntary collections of municipal waste for recycling and composting and Civic Amenity Sites)</p>	
<p>f Municipal waste landfilled as a % of total municipal waste arisings</p>		<p><u>Calculation of proportion of municipal waste landfilled</u></p> <p>X/Y x 100 where:</p> <p>X = Tonnage of municipal waste collected and disposed of in landfill</p> <p>Y = Total tonnage of municipal waste collected (including private/voluntary collections of household waste for recycling and composting and Civic Amenity Sites)</p>	

Key Performance Indicators (KPIs)	Equivalent DEFRA BVPI	Definition & Calculation	Additional Information
g Biodegradable municipal waste (BMW) landfilled		<p>Definition of BMW (Annex C)</p> <p><u>Calculation of proportion of BMW landfilled</u></p> <p>X*Y where:</p> <p>X = Tonnage of municipal waste disposed of in landfill</p> <p>Y = Biodegradability Factor</p>	<p>Annual waste characterisation study to be commissioned by the Department to determine appropriate biodegradability factor for NI. 71% to be used in the interim.</p>
h Total household waste collected per household (from which waste growth rates are also calculated)	BV 84 (per head)	<p><u>Calculation of household waste generation rate</u></p> <p>XY, where:</p> <p>X = Total tonnage of household waste collected (including private/voluntary collections of household waste for recycling and at Civic Amenity Sites)</p> <p>Y = Total no. of households in District Council / Group area</p>	<p>Household numbers per District Council to be provided by Dept of Social Development (DSD) annually from Sept/Oct 2003 on DSD website at www.dsdni.gov.uk/statistics-research/housing-statistics.asp</p> <p>Current housing figures per District Council in Annex E.</p>
i Cost of waste collection per household (including recycling)	BV 86	<p><u>Calculation of net cost of collection (including capital charges</u></p> <p>A/B where:</p> <p>A = Net Expenditure before income from Rates and General Grant</p> <p>B = Total no. of households in District Council / Group area</p>	<p>Include service support costs based on Service Level Agreements or allocations and apportionments. Exclude other corporate and democratic core costs.</p> <p>Household numbers as for KPI(h)</p>

Key Performance Indicators (KPIs)	Equivalent DEFRA BVPI	Definition & Calculation	Additional Information
<p>j Cost of waste treatment and disposal per tonne for municipal waste</p>	<p>BV 87</p>	<p><u>Calculation of net cost of waste management</u> (A + B)/C where: A = Net Cost of municipal waste treatment B = Net Cost of municipal waste disposal C = Total tonnage of municipal waste collected (including private/voluntary collections of household waste for recycling and composting and Civic Amenity Sites)</p>	
<p>k Number of households served by a kerbside collection of recoverables</p>	<p>BV 91</p>	<p>Definition of kerbside collection (Annex C) Definition of recoverables (Annex C)</p>	
<p>l Participation rates</p>		<p>Definition of participation rate (Annex C) <u>Calculation of participation rate</u> X/Y x 100, where: X = No. of households participating in kerbside collection at least once in a four week period Y = Total number of households served by kerbside collection in same four-week period (WRAP)</p>	<p>Regular sampling of participation by District Council.</p>

m	Capture rates		<p>Definition of capture rates (Annex C)</p> <p><u>Calculation of capture rate</u></p> <p>$X/Y \times 100$, where:</p> <p>X = Amount of a targeted material collected per household participating in kerbside collection</p> <p>Y = Total amount of the targeted material available per participating household</p>	Regular characterisation study to be carried out to determine amount of target materials available per household.
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Annex E

Waste Conversion Factors

Calculating weight without
weighbridges

(HM Customs & Excise Guidance)

E1 Typical Container Weights and Waste Conversion Factors

Table E1: Typical Skip Weights for Mixed Commercial and Industrial Waste

Type of skip 1	Contents 2	Volume in cubic metres 3	X	Conversion Factor 4	Tonnes of waste per skip (3x4)
Single life (usually over 20 cubic metres)	Commercial		X	0.288	
	Industrial		X	0.322	
Multi-lift	Commercial		X	0.058	
	Industrial		X	0.069	
Other	Industrial		X	0.311	

[Data supplied by the Environment Agency]

Table E2: Typical Weights for Other Containers

Container	Contents	Tonnes of waste Per container
Wheelie bin	Office waste	0.11
	Laboratory waste	0.11
	Screenings	0.55
	Grit/screenings	0.70
	Unspecified	0.10
Front end loader	Unspecified	0.5
Rear end loader	Unspecified	1.0 – 2.0
Bulk loader	Unspecified – uncompacted	8.0 – 10.0
	Unspecified – compacted	10.0 – 15.0

[Data supplied by Anglian Water and Biffa]

Table E3: Waste Conversion Factors

Unit of measurement	Nature of Waste	Factor to convert units to weight in tonnes
Cubic metres in skip	Office waste	0.10
	Laboratory waste	0.10
	Metals (mixed)	0.22
	Plastics (mixed)	0.22
	Oils (sludges and oil water mix)	0.51
	Paints	0.35
	Tyres	0.54
	Paper and card	0.21
	Sub-soils	1.28
	Concrete and mortar	1.11
	Plasterboard	0.31
	Construction/demolition waste	0.55
	Wood	0.21
	Electronic Equipment	0.21
	Cable and wire	0.10
	Rubber	0.32
	Glass	0.35
	Vegetable food	0.15
	Waste food (animal or mixed)	0.16
	Animals (whole or part)	0.86
	Animal fats, oils, waxes etc	0.39
	Screenings	0.50
	Grit/Screenings	0.50
Grit	0.65	
Water treatment sludge 30% moisture	1.10	
1000 Gallons	Water treatment sludge 30% moisture	4.50
1000 Litres	Water treatment sludge 30% moisture	1.00

[Data supplied by the Environment Agency, Anglian Water and Biffa]

Table E4: Civic Amenity Site Banks

Container	Bank Capacity (when full)	Weight when full
Glass Bank	2.5m ²	700 kg
Paper Banks		1000 kg
Can Banks	2.5m ²	110 kg
Plastic Banks (all grades)	2.5m ²	60 kg

[Data supplied by Newry & Mourne District Council – weights taken as an average of a number of samples]

E2 HM Customs and Excise Notice LFT1

A general guide to landfill tax

February 2000

4 Calculating the weight of waste

4.1 Sites with a weighbridge

The basic method of calculating the weight of waste is by weighing it at the time of disposal. If there is a weighbridge at your landfill site, we would expect you to use it. Weighbridges used at landfill sites to calculate weight for the purposes of the landfill tax must comply with the relevant Weights and Measures legislation.

You can ask your local landfill tax officer to agree an alternative method of calculating the weight if:

- using the weighbridge would involve a costly change to your current practices (for example because the waste does not normally pass near the weighbridge); or
- your weighbridge has broken down.

4.2 Sites without a weighbridge

If there is no weighbridge at your site, you can use one or a mixture of three specified methods of calculating the weight of waste. Details of the specified methods can be found in paragraph 4.3 below.

If you cannot operate a specified method you can propose another method (a "bespoke method") to your local landfill tax officer. You must be able to satisfy the officer that this will produce a fair and reasonable calculation of weight. Once satisfied the officer will agree in writing and normally this agreement will run for 12 months. You must notify us of any changes to your business practices which will affect the reliability of this method. You must also notify us if you wish to change from a bespoke method to weighing the waste. On occasions we may wish to have an independent check (for example by test weighing loads) on the accuracy of the method used. In addition you must, of course satisfy the Weights and Measures legislation.

4.3 Specified methods for sites without weighbridges

The legal basis for specified methods is contained in regulation 43 of the Landfill Tax Regulations 1996. The conditions specified in this notice have the force of law under those Regulations and remain in force until withdrawn by a further notice. If you wish use any of the specified methods below you must abide by all the conditions specified under each method.

You can use the specified methods without the agreement of your local landfill tax officer. You do not need to notify us that you have started to use a specified method unless you wish to:

- change from a bespoke method prior to the expiry of the current agreement; or
- agree a bespoke method as well.

However, once you have started to use a specified method you will not normally be allowed to change it except at the end of any complete year of operating it,

reckoned from the beginning of the tax period in which you first start to use a specified method.

You can use a mixture of specified methods for different waste streams or for different customers but you must be consistent, that is, when you have started using a method for a particular waste stream or customer you must continue to do so.

Method 1 - Maximum permitted weight of container

This involves recording the maximum weight that a lorry, skip, rail wagon, etc. is permitted to carry and applying the appropriate rate of tax. To calculate the weight of the waste, you should use the gross plated weight of the vehicle/container less its tare weight. Any vehicles that are partially filled must be treated as full for your tax calculation purposes. Appendix B of this Notice (see below) details how to apply the maximum weight method.

To operate this method you must record all waste brought onto your site(s), showing the identifying number and type of vehicle/container, a description of the waste carried, and the date disposed at your site. You must also establish an audit trail or register which records the gross weight, net tare weight and maximum carrying weight for each vehicle/container using your site(s) for waste disposal.

Method 2 - Volume to weight conversion

To operate this method you will need to know the cubic capacity of the vehicles (lorry, skip, rail wagon, barge, etc.) that deliver waste to your site and these should be used with the categories of waste and the conversion factors in Appendix C (see below). To comply with Weights and Measures legislation the maximum cubic capacity of the container must be a multiple of 0.1 cubic metres. Measurement can only go to one decimal place. If the calculation results in a tonnage which is greater than the legal carrying capacity of the vehicle, it is to your benefit to use the maximum permitted weight of the container method. Your tax calculations must be based on all containers and vehicles being full.

You must record all waste brought onto your site(s), showing the identifying number and type of vehicle/container, a description of the waste carried, and the date disposed at your site. The volume of the vehicle/container must be recorded and evidenced with whatever documentation is available from the haulier.

Method 3 - Weighing the waste prior to receipt at the site

You may accept waste that is weighed away from your landfill site. If there is a clear audit trail including a record of weights for each vehicle, container, wagon, etc. and they go directly to the site, then this scheme can be used to calculate landfill tax.

To operate this method you must record all waste brought onto your site(s), showing where the waste was weighed, the identifying number and type of vehicle/container, a description of the waste, and the date disposed at your site. You must also record and retain the weighbridge tickets

4.4 Discounting water

In certain circumstances, you can apply to discount the water content of waste (but only where it is not present naturally) when calculating the taxable weight of the waste. You will need to obtain an application form from the Landfill Tax Helpdesk. If we are satisfied that your application qualifies for a scheme for discounting

water, we will send written approval to the waste producer and the nominated landfill site operator(s). The qualifying circumstances are where the water:

- has been added to allow transportation for disposal; or
- has been used for the extraction of minerals; or
- has arisen or been added or both, in the course of an industrial process.

However, water must be 25 per cent or more of the waste, by weight.

For effluent or sewage sludge from waste water treatment works/sewage disposal works, you can apply to discount the water content, but:

- water which is present naturally cannot be discounted;
- any water which has been extracted prior to disposal is treated as added water in preference to water present naturally in the material.

You will not be able to discount water where:

- it is present naturally in the waste (although you may agree a scheme to discount water up to, but not beyond, the amount present naturally);
- it is present because of rain or snow; or
- it was added to waste to damp it down to prevent it blowing away and the added water is less than 25 per cent of the waste, by weight; or
- any of the water is capable of escaping from the landfill site by leaching. (This restriction does not apply if the only water that can escape is pure water or if the leachate is collected on site and treated in order to eliminate any potential it has to cause harm).

Waste producers may propose schemes to quantify the water content of their waste, based, for example, on their production records. However, we will not approve such schemes unless the waste producers have the prior agreement of their landfill site operators.

Appendix B

(referred to in paragraph 4.3 - Method 1)

MAXIMUM CARRYING CAPACITY OF LORRIES AND LIGHT GOODS VEHICLES

You can apply either the maximum plated weight that the vehicle can carry or apply the following weights.

4 axle lorry = 20 tonnes

3 axle lorry = 15 tonnes

2 axle lorry = 10 tonnes

Lorries with cranes and buckets

If a crane or bucket is fitted to a vehicle the maximum weight that can be carried is reduced by 2 tonnes.

4 axle lorry with grab = 18 tonnes

3 axle lorry with grab = 13 tonnes

2 axle lorry with grab = 8 tonnes

Light goods vehicles/vans/cars

All light goods vehicles have a manufacturer's plate, usually in the passenger door well, which shows the maximum gross weight. For other cars/vans, the vehicle handbook will show the maximum gross vehicle weight of the vehicle. Deduct from this the unladen weight shown in the vehicle handbook will give you the weight that can be carried by the vehicle. You must apply these weights.

Appendix C

(referred to in paragraphs 4.3 - Method 2)

VOLUME TO WEIGHT CONVERSION FACTORS

Note: If the waste falls into more than one category, the higher conversion factor applies to all of the waste.

Waste category	Typical waste types	Cubic metres to tonnes - multiply by:	Cubic yards to tonnes - multiply by:
Inactive or inert waste	Largely water insoluble and non or very slowly biodegradable: e.g. sand, subsoil, concrete, bricks, mineral fibres, fibreglass etc.	1.5	1.15
General industrial waste - non-special, not compacted. (As compaction can significantly increase the density of this category of waste, if you accept compacted wastes you will need to uplift the conversion factor accordingly)	Paper and plastics. Card, pallets, plasterboard, canteen waste, sawdust, textiles, leather. Timber, building and construction wastes, factory waste and sweepings, etc. Foundry sands, slags, pulverised fuel ash, ashes from waste incineration.	0.15 0.4 0.6 1.5	0.11 0.3 0.46 1.15
Household waste - not compacted	Non-special, non-inert wastes from domestic premises, including collected household waste.	0.2	0.15
Household waste - compacted (includes all bulk disposals)	Non-special, non-inert wastes from domestic premises, including collected household waste.	0.4	0.30
Commercial waste - not compacted. (As compaction can significantly increase the density of this category of waste, if you accept compacted wastes you will need to uplift the conversion factor accordingly)	Non-special, non-inert wastes from shops, hospitals, leisure centres, offices, etc., including civic amenity waste, parks and gardens waste, street litter, supermarket, shop and restaurant waste, general office waste.	0.2	0.15
Special waste	Defined by environmental regulations - broadly equivalent to hazardous waste.	1.0	0.76

Annex F

Typical Examples of Data Recording Forms

Table F1 Civic Amenity Site – Monthly Return Form

SITE NAME:

MONTH:

Material	Quantity (Tonnes)
Glass	
Paper (not mixed)	
Card (not mixed)	
Mixed Paper and Card	
Steel Cans	
Aluminium Cans	
Mixed Cans	
Plastics	
Textiles	
Wood	
Oil	
Scrap metal and white goods	
Co-mingled	
Other	
Sub-Total	
Compostable materials	
Sub-Total	
Total	0

Prepared by:

Date:

Checked by:

Date:

Table F3: Civic Amenity Site - MATERIALS COLLECTED – JANUARY 2003

Materials	Date	Amt	Date	Amt	Date	Amt	Date	Amt	Date	Amt	Date	Amt	Date	Amt	Totals
Green Glass															
Clear Glass															
Brown Glass															
Tins & Cans															
Plastics															
Oils															
Electrical & White Goods															
Green Waste															
Timber															
Fluorescent Tubes															
Furniture															
Textiles															

Please indicate number of containers serviced and volume of materials within each container per visit ie

F = Full	3/4	1/2	1/4
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[Tables F2 and F3 supplied by Derry City Council]

Annex G

Worksheets for Calculating Key
Performance Indicators:
Instructions for use

G Worksheets for calculating Key Performance Indicators: Instructions for use

The worksheet for calculating KPIs, provided on floppy disc at the back of this document, should be completed with reference to *Annex D*. The worksheet contains three tables:

Table G1: Data for Calculation of Waste Management Primary Key Performance Indicators (Recycling & Composting)

Waste data relating to recycling and composting activities, including data from kerbside collection schemes and bring facilities, and materials collected, should be entered in this table (RHS of Table G2). These figures are totalled automatically and used to calculate key data for Table G2, required to calculate the KPIs.

Table G2: Data for Calculation of Waste Management Primary Key Performance Indicators (Treatment & Disposal Methods)

Table G2 is based largely on the familiar Municipal Waste Survey questionnaire used by District Council to submit municipal waste figures to the Department. Waste data should be input by waste category/source and waste treatment. The coloured cells represent data calculated from Table G1. Refer to Annex D regarding information on the number of households per District Council and the Biodegradable Factor.

Table G3: Calculated Primary KPIs

Key Performance Indicators *a-j* are calculated directly from data calculated in Table G2 and do not require further input. However, KPIs *k-m* are based on information collated and updated regularly by District Councils, including regular surveys of participation rates (*l*) and capture rates (*m*) and should be entered in these cells.

Each Waste Management Group has been provided with customised Microsoft Excel workbooks to enable easy transfer and aggregation of waste data from their constituent District Councils. Waste data worksheets from each of the District Councils can be copied into their particular worksheet within the overall Group workbook. The front worksheet will then automatically calculate overall Group figures.