

# NATIONAL REPORT

*for the*

## United Kingdom



### ***Qualifications of professionals in the Solid Waste Management Industry***

**Author:** Julie Peer MSc.

Scott Crossett MBE, MSc, CEnv, MCIWM, FSA Scot.

**Company:** Trust Waste Management Limited

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## Introduction

This report was compiled after a survey of the current vocational education & training (VET) situation within the waste management sector in the UK was carried out.

The report contains the findings of the national survey and information collated through research into the qualification frameworks and vocational training programmes available within the UK.

To gain a clear understanding of the system within the UK, four countries had to be individually assessed; Scotland, England, Wales and Northern Ireland. Each of the countries has their own approach to VET. Each system is very similar, with only a few minor differences.

Due to the fact that the UK has a fairly advanced system, and the fact there is a lot of information available on the current VET systems and frameworks within each of the countries, the information within the returned questionnaires served mainly as a supporting tool for the data obtained on the system which is already established.

## Information about distribution of questionnaires

- number distributed;

Over 600 questionnaires were distributed to:

- waste management facilities
- Associations
- Training providers

- methods of distribution (by e-mail, post, telephone, meeting, etc.)

The main method of distribution was by e-mail, with the relevant questionnaire attached. A number of these were chased up by phone if no response was received. A few questionnaires were distributed and obtained through meetings.

- number collected;

In total 50 questionnaires were collected. This is a very poor result, given how many questionnaires were distributed and the effort that went in to sending out over 600 questionnaires. This could be due to a number of reasons:

- Lack of interest
- Organisations failing to see how the questionnaire is relevant to them or their business
- Organisations having no interest due to the fact that it provides no benefit to them
- People have no time, therefore the questionnaires are not a priority
- Questionnaires may seem pointless because there is already a wealth of information available on a system that is already well established, so people may feel that their opinion is irrelevant.
- Being a smaller company, individuals or organisations are less likely to contribute to our activities.

- There is a level of disconnect between the UK and other member states.
- general information about respondents (types of facilities/ institutions; positions of respondents);

There was a fair distribution of respondents, covering different facilities, institutions and positions, despite the overall result being lower than expected.

## Brief description of other information sources

There are several publications and existing research collated for waste management qualifications, and labour market evaluations. Most of this information can be sourced on the internet, primarily through specific websites for waste management, e.g.

- WAMITAB
- CIWM
- EU skills
- European commission

## Information about the authors

**Scott Crossett** graduated with a B.Sc. in Biology from Paisley University, then Paisley College of Technology, in 1982 and later gained a post graduate diploma in waste management and the environment at Bell College in Hamilton.

Scott has been active within the waste management industry since 1995 and has had experience both internationally and domestically. He established the company SC Waste Management and has been working to develop the company for over 10 years. This small family run business has been involved in many waste management projects in the UK and around the world. He has recently gained his MSc in Waste and the Environment.

Scott is the Head of Centre and lead IV (Internal Verifier) for Trust Waste Management and is heavily involved in the assessment and verification of candidates.

**Julie Peer** graduated from University of West of Scotland in September 2008 with a BSc Forensic Science. She has been working part time with SC Waste Management Limited since 1st January 2006 and she was made a full time employee on 1st June 2008.

She returned to West of Scotland University in September 2009 where she has completed her Post-Graduate Diploma and is completed her Master of Science Degree in Waste Management and Environmental Management in 2010.

Since then, she has been employed as centre co-ordinator for Trust Waste Management Training. In this role, Julie is responsible for ensuring smooth day-to-day operations of the

centre as well as overseeing Quality Assurance processes. She also fulfils training and assessment duties as required on projects.

## **Description of the existing National Qualification Network**

### **National legislation**

#### **Education**

National priorities for further and higher education are determined by the UK and Scottish parliaments and the Welsh and Northern Ireland assemblies. Policy development, planning and implementation rest with the government departments responsible for each national education division – the Department for Business, Innovation and Skills (BIS) in England, the Department for Employment and Learning Northern Ireland (DELNI), the Scottish Government, and the Department for Children, Education, Lifelong Learning and Skills (DCELLS) in Wales.

In England, delivery of further education is subject to external audit and public reporting by the Office for Standards in Education, Children's Services and Schools (Ofsted). In Scotland, the Scottish Funding Council (SFC) has overall responsibility for planning, funding and quality assurance of further education through its work with Her Majesty's Inspectorate of Education (HMIE).

DCELLS is responsible for planning, funding and promotion of all post-school education in Wales. ESTYN (the Welsh-language acronym for Her Majesty's inspectorate for Education and Training in Wales) is the appointed authority for audit of the quality of provision and related areas.

The Department for Employment and Learning (DELNI) is responsible for planning and funding of further education provision in Northern Ireland. Inspection and audit are undertaken by the Education and Training Inspectorate on behalf of the Department.

#### **Waste Facilities**

In terms of the legal requirements for waste management facilities, the specific requirements differ in each country due to the different versions of legislation.

#### **Technical Competence**

In the UK, under legislation and waste permitting regulations, a waste manager or operator must be able to "demonstrate competence" and this is usually done through obtaining the relevant waste management National or Scottish Vocational Qualification (N/SVQ), and the candidate can then apply for a Certificate of Technical Competence (COTC). There are other means of demonstrating competence, but this is the most common route. The competence arrangements vary in each of the four countries, but the underlying theme is that waste operators/managers must be able to demonstrate competence.

An outline of the requirements is shown below.

#### **Scotland**

The Waste Management Licensing Regulations (Scotland) 2003 were revised in March 2011. The changes made affected the means of demonstrating technical competence; it is no longer a

legal requirement for a Technically Competent Person in Scotland to hold a COTC, however COTCs remain an appropriate qualification to demonstrate competence in Scotland. The SEPA regulatory officer will advise if there are other competence arrangements to be adhered to.

## **England & Wales**

On 6 April 2008 the Environmental Permitting Regulations 2007 regulations came into force. At the same time, the Waste Management Licensing Regulations (England and Wales) 2003, were abolished and this brought about changes in the way that the Technical Competence provision can be demonstrated by the relevant manager, or managers, at the 'Permitted' waste management facility.

Several schemes are now in place called "competence schemes" which address these issues of technical competence.

NVQs can still be used to demonstrate competence, however, this system differs from Scotland and N. Ireland as it is a "risk-based system". This means that the qualifications required to demonstrate competence and to satisfy legal requirements will differ depending on the type of waste facility. High risk facilities (e.g. thermal treatment of hazardous waste) will be required to undertake a qualification with more units, than a low risk facility (e.g. recycling facility).

## **Northern Ireland**

In Northern Ireland, the Certificate of Technical Competence (COTC) remains the primary means for managers of appropriate Waste management facilities to demonstrate their Technical Competence in accordance with the Waste Management Licensing Regulations (Northern Ireland) 2003.

## **Educational authorities**

### **Legal requirements/ standards for issuing institutions**

A degree of convergence does exist in the area of quality assurance of qualifications. England, Wales and Northern Ireland share a common qualifications system, and the regulators in each country (listed below) work together in regulating qualifications for use across the three countries. Scotland has a separate qualifications system, although there is close correlation across all four countries, particularly in the area of vocational qualifications. Individuals attending college will be school leavers, aged 15 or over.

The following four bodies are responsible for the accreditation and standards of external qualifications and for curriculum and assessment for schools and colleges:

- England – Ofqual (Office of the Qualifications and Examinations Regulator);
- Northern Ireland – Council for Curriculum, Examinations and Assessment (CCEA);
- Scotland – Scottish Qualifications Authority (SQA);
- Wales – Department for Children, Education, Lifelong Learning and Skills (DCELLS).

CCEA is also an Awarding Body for qualifications in Northern Ireland. SQA is also an Awarding Body that develops and validates SQA branded qualifications including National Qualifications

(Access, Intermediate, Higher and Advanced Higher Levels), Higher National Certificates and Diplomas, Scottish Vocational Qualifications and Scottish Professional Awards.

In higher education the responsibility for standards and quality rests with each institution. All institutions work with the independent Quality Assurance Agency for Higher Education (QAA) for England, Northern Ireland, Scotland and Wales. Institutional audits and subject-level reviews are undertaken by QAA.

In terms of vocational qualifications, all approved waste management vocational qualifications, developed in line with the National Occupational Standards, must be regulated by a designated body. Following the accreditation of a qualification, the regulators systematically monitor awarding bodies against the requirements set out in the statutory regulations. *The statutory regulation of external qualifications in England, Wales and Northern Ireland (2004)* sets out the requirements for regulation of awarding bodies for England, Wales and Northern Ireland.

In Scotland, the Scottish Qualifications Authority is both the regulatory and awarding body. According to the *Scottish Qualifications Act 2002*, ultimately the responsibility for regulating SQA's procedures lies with Scottish Ministers. The Act states that it confers 'power on the Scottish Ministers to regulate the procedures of the Authority'.

SQA is largely self-regulating in respect of how qualification and assessment standards are set, maintained, and monitored. Along with the Board of Management, there are two other advisory bodies that perform a crucial role in safeguarding qualification standards. These are:

- SQA's Advisory Council
- SQA's Qualifications Committee

SQA is also accredited to offer Ofqual-regulated qualifications. Therefore, in addition to SQA's own quality criteria and processes, these qualifications are subject to the NVQ code of practice and the QCF Regulatory Arrangements, as appropriate.

## **Accreditation bodies**

WAMITAB and CIWM are the main accreditation bodies for waste management courses which have been developed by professionals/companies/approved centres within the waste management industry. The courses may cover a wide range of waste and management topics including;

- Fundamentals of waste management
- Waste minimisation
- Health and Safety
- Waste prevention
- Environmental monitoring
- Recycling
- Pollution prevention
- Legal compliance
- Technology
- Policy
- Waste management planning/strategy

It is also possible to have a customised qualification accredited, in Scotland, through SQA. These awards will be mapped to the SCQF framework, which can be directly paralleled to the EQF.

### **Certification (Awarding) bodies**

There are various waste management courses available throughout the UK and, in order to establish the awarding body, the relevant qualification must be identified first. The educational bodies responsible for delivering qualifications in waste management include:

- Colleges
- Universities
- Trade Associations
- Approved centres

In order to have a qualification recognised in the UK and be able to transfer credits between learning courses, educational institutions and occupations, the qualification must be accredited through one of qualification awarding bodies in the UK. More than 160 institutions in the UK have the power to award qualifications. This includes colleges and universities. The main awarding bodies for waste management qualifications are:

- WAMITAB in England, Wales and N. Ireland.
- WAMITAB/SQA in Scotland

Additionally, there is the Joint Council for Qualifications (JCQ) which is a council representing the seven largest qualification providers in the UK (which offer GCSEs, GCEs, AEs, Scottish Highers, Vocational and vocationally related qualifications):

- AQA
- City & Guilds
- CCEA
- Edexcel
- OCR
- SQA
- WJEC

ASDAN, EDI plc. and NCFE are also large awarding bodies that deliver a range of environment related qualifications.

### **Schools and Colleges**

England, Wales and Northern Ireland have several exam boards, with schools and colleges able to freely choose between them on a subject-by-subject basis. Currently, there are seven exam boards available to state schools:

- AQA (Assessment and Qualifications Alliance)
- CIE (University of Cambridge International Examinations)
- CCEA (Council for the Curriculum, Examinations & Assessment)
- Edexcel (Pearson Edexcel as of April 2013)

- ICAAE (International Curriculum and Assessment Agency Examinations)
- OCR (Oxford, Cambridge and RSA Examinations)
- WJEC (Welsh Joint Education Committee)

This is unusual and, in contrast, with the exception of university degrees, all Scottish qualifications are regulated and awarded by SQA. Within the UK, most universities act as their own awarding body for the qualifications they deliver.

## **Other**

Certificates can be awarded after completion of a recognised/accredited training programme carried out by, for example, trade association. CIWM have a range of courses in which the individual will receive a certificate for at the end.

CIWEM provide some training courses (including online) for some environmental and waste related subjects.

## **Training organizations**

### **Requirements for institutions delivering training programmes**

All institutions delivering training programmes or qualifications are regulated by the awarding body – and the awarding bodies are regulated by external qualifications regulators. Depending on the institution, various regulatory/quality assurance procedures will be followed.

For the delivery of vocational qualifications, one of the key roles of the awarding body is to ensure that the approved centres, delivering their qualifications, are regulated. This is done through regular external verification visits by the awarding body, to the approved centre. There is set criteria for the external verification procedure. Should the centre fail to meet any of the criteria, the centre will be given a risk-based score. If the score is within the “high risk” category, then a hold will be placed upon the centre until the issues are resolved. For a “low risk” score, the awarding body will guide the centre in the right direction in order that they can make the necessary changes. Low risk scores are common, and do not result in a hold. It is important that approved centres aim to meet all of the requirements laid out by the awarding body/bodies.

### **Types and number of organisations providing training programmes**

In 2010, there were 115 universities, 165 higher education institutions and 419 further education colleges (of which 95 were sixth form colleges) registered in the UK. Of the universities, 89 are in England (including The Open University), 10 are in Wales, 14 are in Scotland and two are in Northern Ireland. Courses include those for first and second degrees, certain graduate-equivalent qualifications, and the examinations of the principal professional associations. These institutions also provide courses leading to important qualifications below degree level, such as Foundation degrees, Higher National Diplomas and Certificates, and Diplomas of Higher Education.

There are over 80 Approved Centres across the UK which delivers vocational qualifications to the waste management sector – this includes colleges which have the ability to deliver vocational waste management qualifications.

The main trade association for delivering waste management courses/training programmes is the Chartered Institute of Waste Management (CIWM). They may deliver these training courses as an institution, or they may use approved centres to deliver their courses/training programmes.

Some companies (waste contractors/service providers) also offer in-house training packages for waste management companies and businesses. These training packages may have been accredited by WAMITAB or CIWM. Similarly, equipment providers usually have an associated training packaged as part of the installation/commissioning of the plant/machinery.

## **Overview of registered training programmes**

### **Number of registered programmes**

It is difficult to determine the exact number of registered training programmes available, due to the fact that there are several institutions throughout the UK delivering waste management training (e.g. colleges, approved training centres, universities, etc.). WAMITAB has the most comprehensive range of waste management and recycling vocational qualifications which are delivered throughout the UK by WAMITAB approved centres. In Scotland, SQA is the joint awarding body for waste management qualifications. However, SQA only offer a small range of jointly awarded qualifications, but they also have additional awards which are not jointly awarded with WAMITAB. City and Guilds, EDEXEL, ASDAN, EDI, NCFE, OCR, WJEC and JCQ are other UK awarding bodies, also offer a range of vocational waste management qualifications. It is also worth noting that a candidate can be complete individual units from an award (including a single unit), and they candidate is not obliged to complete the full qualification. They would obviously not be awarded the full qualification – but they would receive the merit for the units completed.

Other associations have developed and deliver their own training courses for waste managers (e.g. CIWM has developed a range of courses for waste managers.). These training courses are not necessarily mapped to the qualifications framework, but they are registered and recognised training programmes within the waste industry. There are also university degrees available in waste/environmental management across the UK.

Aspects of waste management are usually covered in other sectors (e.g. healthcare, environmental, facilities management, resource management, water management, etc.). In particular, the environmental sector is closely related to the waste management sector and, as a result, many environmental qualifications cover areas of waste management; therefore these qualifications must be taken into account when evaluating training available for waste managers. For example, the Chartered Institute of Water and Environmental Management (CIWEM) offer an online course on Anaerobic Digestion.

In addition to fundamental waste management training, a waste facilities manager – or waste operators – must have additional skills and qualifications. For example, waste facilities are subject to the requirements of health and safety legislation, and are required to carry out certain functions (including training/qualifications) in order to satisfy the legislative necessities. Employers must also ensure that operators of plant/machinery are given adequate training in order that they are competent to operate the machinery they use. If all legal obligations of a facilities manager are taken into account then the number of training programmes, or qualifications, available to waste manager's increases exponentially. This will be increased

further if the solid waste management is broken down into individual sectors (e.g. recycling, composting, inert waste, municipal waste, etc.).

**Need and access to education programmes for waste management facilities managers and specialists in the country (from survey: sufficient/ insufficient)**

**Registered/ formal programmes**

There is no shortage of training programmes available to waste management professionals. The main restrictions are within the available Scottish and N. Irish waste management qualifications. The vocational qualifications appropriate to the countries are less diversified than those available in England and Wales. For example, the qualifications available for the treatment of non-hazardous waste:

N. IRELAND	SCOTLAND	ENGLAND & WALES
1. Level 4 in Waste Management Operations - Managing Treatment Non-Hazardous	1. Level 4 - Diploma in Waste Management Operations: Managing Physical and Chemical Treatment; Non-Hazardous Waste	1. Level 4 - Diploma in Waste Management Operations: Managing Physical and Chemical Treatment; Non-Hazardous Waste  2. Level 4 – Diploma in Waste Management Operations: Managing Biological Treatment; Non-Hazardous Waste  3. Level 4 – Diploma in Waste Management Operations: Managing Biological Treatment; Non-Hazardous Waste: Anaerobic Digestion  4. Level 4 Diploma in Waste Management Operations: Managing Thermal Treatment; Non-Hazardous Waste: Pyrolysis & Gasification  5. Level 4 Diploma in Waste Management Operations: Managing Thermal Treatment: Non-Hazardous Waste; Autoclaving

However, it is important to note that the qualifications available in England and Wales can still be delivered to individuals in Scotland and N. Ireland.

Universities and colleges offer a wider range of waste and environmental qualifications across the UK and the University of the West of Scotland has its own waste management department;

Centre for Environment and Waste Management (CEWM). CEWM provides accredited training courses, to businesses/companies, on specific subjects; waste auditing, management systems, H&S, etc.

Waste management companies – particularly those who provide a specific service – and equipment providers, often offer waste management courses. These courses may be accredited by trade associations e.g. CIWM.

### **Other (informal) programmes that cover topics of interest for waste management facility managers and specialists**

There are a substantial amount of training courses available through training centres, but there are also additional sources of training for waste managers. Topics include:

- Risk management
- Health and safety
- Management systems
- Auditing
- Employee legislation
- Resource management
- Environmental management
- Financial reporting
- Equipment/plant training
- Manual handling

In many cases, for less involved subjects (e.g. first aid, manual handling, risk assessments, etc.) in house training is provided by the company. For larger companies, in-house training is typically a requirement and is incorporated into company policy. In many cases, in-house training is delivered by designated person who is specifically employed to manage a particular aspect of the company (e.g. Health and Safety Officer, human resources manager). In-house training may also be carried out by external contractors, as some have their own accredited in-house training programmes available to deliver to companies. For smaller companies, in-house training may be relatively informal and may be carried out by the same person (e.g. plant manager). The internet has a vast array of information for employers/managers, and there are often training materials available. The Health and Safety Executive (HSE), for example, have published a large amount of documents, leaflets and other educational resources for use within companies, including waste facilities.

### **Availability of online training programmes**

Online training programmes have become more popular in recent years, and some approved centres have started to incorporate computer based learning (e-learning) into their delivery methods. There are some qualifications (not including vocational qualifications) which are 100% online. Open University courses now cover a broader range of subjects, including waste management. Some courses can be delivered online by trade associations (e.g. CIWEM).

## Overview of certification (awarding)

### Procedure

When a candidate is initially registered with a training provider (e.g. college, university or approved centre) they will also be registered with the awarding body by the training provider. It is the responsibility of the training provider to ensure that the awarding body is updated with any changes in details, including if a candidate passes or fails an aspect of the qualification (not relevant for vocational qualification as candidates cannot “fail” a qualification or unit, but they can be withdrawn from the unit/qualification). Once the candidate completes their qualification, and all internal and external verification checks have been completed, the candidate will be resulted with the awarding body. The awarding body will then issue the candidate with the corresponding certificate.

### Registration of certificates (awards), number of issued certificates (awards)

Until last year, the legislation governing each of the countries within the UK was fairly similar, in that technical competence was required to be demonstrated through the possession of a Certificate of Technical Competence (COTC). This certificate was obtained through completion of either a National Vocational Qualification (NVQ) in England, N. Ireland and Wales or a Scottish Vocational Qualification (SVQ) in Scotland. There were 21 of these qualifications – known as statutory qualifications – to choose from, depending on the type of facility, and the level required.

Since the initiation of the COTC scheme, around 12,000 have been issued for the whole of the UK, with an average of 30-40 new registrations per month and around 500 per year.

Between November 2009 and October 2010, 748 people were registered for the S/NVQs and in that year, there were 521 people certified. This equates to around 70% of registrations resulting in certification

Between November 2011 and October 2012, 395 people were registered and 382 people were certified. This equates to around 96% of registrations resulting in certification. This will inevitably vary from year to year, and in some instances certifications can be higher than registrations due to the fact that it normally takes around 18 months, or occasionally longer, to complete.

In England and Wales, there is a new competence scheme in place, due to a change in legislation, so the data for this scheme is relatively new and a reliable assessment can only be carried out once the scheme has been in place for a longer period of time.

In Scotland, the total number of registrations between 2000 and 2012 was 1,772 with 1,170 resulting in certifications, which is a certification rate of about 65%. This is the overall rate; however the rate varies on an annual basis.

### Positions in waste management facilities that are legally required to have certificates (awards)

**See section:** *Description of the existing National Qualification Network, National legislation – Educational authorities, Legal requirements/ standards for issuing institutions*

### Duration of certificate validity

In many cases, the validity of the certificate for a vocational qualification remains for an indefinite amount of time. This has caused some problems and, as a result, some changes have been made in the way that “technical competence” is monitored in the waste management industry.

In the past, a waste manager could have a 10-15 year old certificate that would still be deemed valid as a means of “demonstrating competence”. This has begun to change, particularly in England and Wales, where schemes have been established for waste managers who hold a waste qualification to undergo an assessment of their knowledge and skills every two years to ensure that they are still valid and relevant.

A system like this has yet to be established in Scotland and N. Ireland.

### Description of quality assurance system for vocational waste management training in the country

*See section: Description of the existing National Qualification Network, National legislation*

## Overview of the industrial waste management labour market

Within the UK, there is a wide range of waste management and recycling facilities. As such, core activities within the industry are:

- Waste collection and transport;
- Transfer stations and Household Waste
- Recycling Centres;
- Energy from waste (including thermal recovery processes and anaerobic digestion);
- Recycling, processing and specialist operations; and
- Landfill

The waste management sector can be broken down into different categories of businesses:

Employer Category	Employee Number (Estimates in 2010)
Private Sector – Large	41,400
Private Sector – SMEs	49,900
Public waste collection, disposal authorities and LAWDCs	46,650
Regulators	700
Third sector	3,600
Other – government, research institutes, etc.	300
<b>Total</b>	<b>142, 550</b>

## **Composition of waste management industry (e.g. public/ private sector)**

The industry mainly comprises of:

- Local authorities,
- a relatively small number of large private employers,
- a plethora of small to medium sized enterprises (SMEs) who often offer specialist services in local markets, and
- an active third sector of community and voluntary organisations.

### **Local Authorities**

Much of the collection and initial transport of municipal waste in the UK is carried out by local authorities, although some is contracted out to large private companies. While certain local authorities also manage their own treatment and disposal facilities, the majority of municipal waste treatment is undertaken by large private organisations.

Following privatisation of the industry, a number of Local Authority Waste Disposal Companies (LAWDCs) were set up by local authorities to manage their waste. Many of these have since been sold to large commercial waste management companies, with only a few remaining throughout the UK.

In Wales and Northern Ireland, a greater proportion of municipal waste collection is undertaken by local authorities than in England, although both local authorities and private sector organisations are involved in municipal waste collection throughout each devolved nation. In Scotland, municipal waste collection is wholly undertaken by local authorities but, as in other devolved nations, private sector organisations are commonly contracted to treat municipal waste in addition to the collection and treatment of industrial and commercial waste. In fact, relatively few treatment sites are operated by local authorities throughout the UK.

### **Large Private Employers**

Large private employers typically offer complete waste management services which include collection, transport, sorting and treatment of most waste streams, although some have a specialised focus on certain treatment and disposal methods. These organisations have a national and possibly international presence, although specific organisations are often concentrated or dominant within particular regions of the UK.

Large private organisations have greatest interest in securing and delivering large scale contracts for the collection and treatment of waste. These are primarily contracts for local authorities (including long term Private Finance Initiative (PFI) contracts) to deliver complete waste management services and develop infrastructure and larger businesses producing significant volumes of commercial and industrial waste. These large private organisations also develop and manage the majority of waste treatment facilities in the UK.

### **Small to Medium Sized Enterprises**

SMEs also have a significant presence in industry, numbering several thousand operators. SMEs typically deliver more localised services in the collection and, to some extent, treatment of waste. Relatively low overheads mean that they can often compete on price with larger companies in more localised markets. Therefore, larger SMEs can have a strong presence in specific geographical areas. However, SMEs do not generally have the capital to provide investment or the capacity to deliver large scale contracts for large commercial waste producers

or local authorities. Instead, they generally deliver contracts and ad-hoc services for small businesses and households which may be of less interest to the larger operators. They may also provide services treating specialist waste streams, such as waste electrical and electronic equipment (WEEE) and clinical waste, or offer innovative treatment and recycling solutions, including those which pioneer new technologies. Nevertheless, the majority of SMEs provide services for the collection and preliminary sorting of waste which they will contract larger operators to treat or dispose of.

### **The third Sector**

Third sector organisations often fill niche roles in the industry and have been instrumental in the adoption of new practices in the re-use and recycling of municipal and commercial waste. Their principal involvement is in delivering services for local authorities, sometimes on a long term contractual basis but often on short term contracts or through more informal memorandums of understanding. At present their role in some areas has diminished as services which they pioneered, such as kerbside collection of specific materials and recycling, have been taken over by larger companies. As these practices have become commercially viable or have come to be integrated parts of municipal waste collection contracts, third sector organisations have found it increasingly difficult to compete in these markets. However, they remain strong in niche areas such as furniture reuse and the recycling of bulky wastes where there is less commercial interest. In addition, they play a key role in promoting good practice among businesses and members of the public. The 2007 DEFRA report 'Benefits of Third Sector Involvement in Waste Management' estimated that there were between 800 and 1,200 third sector organisations (TSOs) in England which had waste as a core activity, with a best estimate of 1,000.

### **Other organisations**

Among organisations which may be considered as contributing to the supply chain are those directly involved in the lifecycle of waste and those involved in supporting industry organisations by providing products and services which are essential to their operations. Among those involved in the waste lifecycle supply chain are waste producers who supply waste for treatment and those with a requirement for materials generated as a result of waste management processes (e.g. those involved in the manufacture of products from recyclable materials). Activity aimed at developing the supply chain in relation to the waste lifecycle is undertaken by a number of third sector organisations and government initiatives directed by the Waste Resources Action Programme (WRAP) which seek to:

- Strengthen markets for recyclables;
- Promote the production of cleaner waste streams for treatment;
- Encourage the production of higher quality outputs of recyclables; and
- Link waste producers with waste management operators.

A range of other organisations support industry operators by providing products and services which are essential to their operations. Centrally, these organisations are involved in the construction, supply and maintenance of equipment and infrastructure. In addition, specialist advisors and consultants to the sector such as environmental and planning consultants may also be considered as integral to the industry supply chain. The supply chain for the industry may therefore be regarded as primarily consisting of the following types of organisations:

- Waste producers;
- Users of recyclables and products derived from waste treatment processes;

- Contractors building, refurbishing or remediating waste treatment and disposal infrastructure;
- Manufacturers and suppliers of plant and equipment;
- Maintenance contractors (e.g. for thermal recovery and energy from waste plants);
- Organisations assisting with the remediation of landfill; and
- Specialist advisors and consultants.

## **Waste management industry associations and networks**

A range of associations, networks and programmes are able to support employers and employees operating across the public, private and third sectors of the industry.

### **Industry Associations**

The Environmental Services Association (ESA) represents private employers within the waste management and recycling, secondary resource management and associated environmental services industries. The ESA works with government and lobbies on behalf of members to help develop the industry in the UK and to provide a source of support and advice for member organisations.

The Chartered Institute of Waste Management (CIWM) represents individuals within the industry throughout the UK (and internationally) and works to promote education, training and research. The CIWM is also active in the accreditation of awards, qualifications and training programmes. The Local Authorities Recycling Advisory Committee (LARAC) offers support, information and advice for local authorities on waste minimisation and recycling issues. Support for local authorities is also available from the Local Government Association (LGA) on issues relating to employment contracts, including pay and pensions.

In addition to these key bodies, a small number of other industry associations also exist and represent/ support organisations working within specific sub-sectors of the industry. These include the Association for Organics Recycling (AfOR, formerly the Composting Association), the British Metals Recycling Association, Anaerobic Digestion and Biogas Association (ABDA), The Renewable Energy Association (REA) and other industry related organisations such as the Road Haulage Association.

### **Networks**

EU Skills has set up the Waste Industry Skills Initiative (WISKI), to address the strategic skills issues across the industry, with a particular emphasis on the skills activities for medium (two - five years) and long term (five - 20 years) collaborative action. Membership of WISKI consists of representatives who hold strategic positions within their organisations, and are able to contribute to the debate on skills in the waste management and recycling industry. The latest WISKI action plan currently includes proposals to:

- Support the collation and analysis of industry skills intelligence;
- Introduce the waste management HS&E registration scheme with uptake industry-wide;
- Administer and oversee the Competence Management System and ensure it remains fit for purpose;
- Develop a Workforce Planning Model variation for the industry.

EU Skills also facilitates the Training Managers' Forum. It is attended by training managers or equivalent post holders in major large or SME private employers in order to address operational training and skills/competences issues by encouraging collaborative working. Another key

network which is active in the industry is the Waste Industry Safety and Health Forum (WISH). Health and safety remains a key issue within the waste management industry. In recent years, a greater emphasis has been put on H&S management within the waste industry.

WISH comprises representatives from trade associations, professional associations, trade unions, recycling organisations and national and local government bodies involved in waste management and recycling and has a remit to improve health and safety standards within the industry.

Several network and umbrella organisations are prominent in representing third sector and community waste management organisations throughout the UK, providing advice and support, promoting best practice and lobbying on behalf of members' interests. These include REalliance, Cylch, Community Recycling Network (CRN), Furniture Reuse Network (FRN), and the Community Composting Network (CCN).

The Remade Network (RNUK) also connects organisations and programmes working to find uses for waste as a resource and minimise its impact on the environment by identifying alternatives to landfill.

## **Programmes**

Numerous government sponsored resource efficiency programmes with a mission to improve waste management have been developed throughout the UK as a result of the development of government waste strategies.

For example, following a review of existing bodies responsible for developing DEFRA's policies in England in 2008-09, the Waste Resources Action Programme (WRAP) was established in 2010 and acts as a single delivery body providing DEFRA funded support on material resource efficiency to English based businesses and industry, government departments, local authorities and consumers incorporating the following existing programmes:

- Envirowise;
- National Industry Symbiosis Programme (NISP);
- Construction Resources and Waste Platform (CRWP);
- Centre for Remanufacturing and Reuse (CRR);
- Action Sustainability (AS);
- The Business Resource Efficiency and Waste Centre for Local Authorities (BREW Centre).

In Scotland, the Zero Waste Scotland Plan (including the Waste Prevention Programme and Love Food Hate Waste campaign) was established to increase awareness and promote better waste management practices. The Scottish government set up this plan with a view to change attitudes towards waste; waste should be seen as a resource, and that resource should be used and not sent to landfill.

In Wales, a similar "Towards Zero Waste" plan has been developed and implemented.

## **Skills Development Activity**

Several organisations play a role in shaping and delivering skills development for the UK waste management and recycling industry. EU Skills is the Sector Skills Council responsible for the

energy and utility sectors, which includes the waste management and recycling industry. Working in close collaboration with employers and a range of government departments throughout the UK, EU Skills has a remit to identify skills and training needs within the industry in order to improve the provision of qualifications, training and skills development in the workforce. The Waste Management Industry Training and Advisory Board (WAMITAB) is also a key player in qualification delivery. WAMITAB is the key awarding body for National Vocational Qualifications (NVQs), Scottish Vocational Qualifications (SVQs) and Vocational Related Qualifications (VRQs).

City and Guilds and NCFE also offer vocational waste management and recycling qualifications. Training programmes are also central to WRAP's activities. WRAP training is primarily aimed at local authority employees working within professional positions and training is developed to react to identified demands and shortages in skills. However, WRAP also engages in the training of operatives if specific needs are identified, programmes are also open to private and third sector organisations.

## Salary level in different waste management facilities

There is a wide variation in salary levels within the waste management industry and this is primarily due to the fact that the waste industry is so diverse and specialised roles are now more common. Generally, the roles within a waste facility fall into one of three categories:

- Manager
- Supervisor
- Operator

Additional roles may include engineer, health and safety officer, drivers, policy/strategy officers, etc.

For those specifically falling within the waste manager, supervisor or operator role, in general;

- Range of typical starting salaries: £21,900-£25,000
- Range of typical salaries at senior level or with several years' experience: £28,000-£45,000
- Operations managers or chartered waste managers can earn £45,000 or more

Although broadly similar, salaries in private companies usually start lower but give much more scope for pay increases. For those employed by local authorities, the salary structure varies depending on the grading of the post within the individual authority. Some London authorities may offer higher salaries.

1. Salary level of managers in respect to average salary in the country (*e.g. higher/compatible/lower*)

The salary level of managers, in respect to the average salary in the UK, is compatible.

2. Salary level of specialists in respect to average salary in the country (*e.g. higher/ equal/ lower*)

The salary level of managers, in respect to the average salary in the UK, is compatible.

3. Employee replacements (*e.g. average number/ year*) in waste management facilities

In general, the employee turn-over is low, particularly in recent years as jobs are scarce. In some facilities employee turn-over is unusually high. This can be due to the job role, which can be taxing and unpleasant in certain waste facilities. However, this is not the norm.

4. Qualitative assessment of working conditions (health and safety) in different waste management facilities *(based on opinions of survey respondents)*

It is very unusual for employees working conditions to be poor, due to the regulations which govern the way businesses manage employees. Some employees find the job role difficult as, depending on the facility, it can be a dirty and labour-intensive role. Generally, the employee turn-over rate is low – and on par with the national average.

5. Competition for employment *(based on questionnaire responses from waste management facilities)*

Competition for employment is high within the UK, because employee turn-over is low, and jobs within a particular sector are scarce. New investment and technologies are giving rise to the development of new waste facilities, which in turn creates new jobs. Jobs with local authorities are sought after, as they usually offer better benefits than the average waste management job - especially in comparison to small, family run facilities.

6. Interest/ willingness of SWF professionals to attend VET *(from survey)*

VET is often a necessity rather than a choice. However, the willingness to attend or participate in VET is often decided by the financial status of a business. SMEs have struggled in recent years due to the economic crisis and, although they may be interested in VET, they are not willing to pay the (often high) cost for VET, unless absolutely necessary.

7. Description of how importance of knowledge in particular areas of waste management facilities' managers and specialists is perceived by different stakeholders: waste management facilities, training organisations and authorities *(from survey)*

TOPICS	IMPORTANCE
National legal requirements concerning waste management	Medium to high importance – it is important for waste managers to be aware of their legal obligations as there can be serious consequences for poor waste management practices.
Waste management policy principles	Low to Medium – some respondents felt that policy and strategy were of low importance, however policies and planning form a large part of waste management
Environmental Impact Assessment principles	High importance – can be serious consequences for incorrect waste management practices
Integrated Pollution Prevention and Control (IPPC) principles, including procedure for IPPC permits	Med to high importance – regulatory bodies are strict regarding pollution control, so compliance is essential
Principles of waste classification	Med to high – waste classification is an fundamental skill required at waste facilities
Technical requirements for equipment and technologies of waste management facility / activity in concern	Low to high – opinions vary, however the majority would agree that having at least the basic knowledge and skills is important
State-of-the-art technologies in the area concerned	Low to medium – it is somewhat important, but there are many other topics that would take

	precedence over this one
National requirements for waste management procedures (licensing, waste accounting, reporting, etc.)	Medium – waste licensing/accounting/reporting isn't always carried out by the manager, however these are good skills to have
Principles of emergency preparedness and planning of preventive corrective actions	Med to high – emergency planning is directly related to health and safety which is usually of the utmost importance on waste management sites
Monitoring requirements	Med to high – monitoring activities are, for the most part, mandatory and should be assessed
Sustainable development concept	Med to high – the concept of sustainability is becoming more and more important with regards to waste management and will continue to increase in importance
Sustainable consumption and production principles	Med to high – the concept of sustainability is becoming more and more important with regards to waste management and will continue to increase in importance
Waste/ pollution prevention principles	High – waste and pollution prevention are key factors in waste management
Product life cycle principles	Low – many people did not think this was particularly important
Principles of Environmental Management	High – environmental protection is a high priority and strictly monitored by environment agencies in the UK
Principles of environmental management accounting	Medium – it is becoming more common for the activities of a waste site to be monitored electronically, as waste activities must be submitted electronically on a regular basis
Corporate social responsibility principles	Med to High – particularly useful for the management aspects of the job role.

8. Description of how importance of practical skill in particular areas of waste management facilities' managers and specialists is perceived by different stakeholders: waste management facilities, training organisations and authorities (from survey)

SKILL	IMPORTANCE
Waste management procedures in the area concerned	High – waste management procedures form a large part of waste management activities
Environmental management procedures	High – protection of the environment is important as it is strictly regulated and there is serious consequences for non-compliance
Health and safety procedures	Very high – Health and safety is a major issue in the waste management industry, therefore H&S for waste sites is a priority
Waste minimisation methodology	High – waste minimisation, being at the top of the waste hierarchy, is important to waste management activities
Life cycle assessment methodology	Low to med – less importance is placed on life cycle assessment
Environmental Impact Assessment methodology	High - protection of the environment is important as it is strictly regulated and there is serious consequences for non-compliance so having the skill set to actively monitor environmental damage is important
Development of IPPC permit application	Med – not always relevant, but a good skill to have

## Conclusions

The vocational qualification system is the most appropriate system for waste managers to gain knowledge and skills throughout their working life. University courses and degrees demand too much time from the working professional and are, therefore, unsuitable as a means of developing knowledge and skills while working. The waste management sector has benefitted from a good vocational and educational training system since its establishment over 10 years ago. However, the waste industry has come a long way since then, and there really has only been one major shift in the structure of vocational qualifications available. There needs to be more change and hopefully more unity across the four countries in the UK. Most large waste management companies operate across the UK, so by having a lack of standardisation across the UK, it is doing these large companies a disservice.

It is difficult to create a single qualification to incorporate all aspects of the role of the waste manager, as this role is often diverse and is governed by a range of regulations. It may be possible to create a suite of awards for the waste manager that deals with various aspects of the management role, with “waste management” being one of those topics. For example:

- Waste management operations
- Resource management (financial, human, etc.)
- Health and safety
- Management systems
- Reporting
- Legislative compliance
- Contract and supplier management
- Interfacing
- Leadership and team management
- Waste management strategy planning & policy development
- Improvement/development
- Risk management and auditing
- Environmental monitoring

Currently the waste management awards address the “waste” aspects, and less the “management” aspects. Having an award that encompasses both waste management and general management skills to a greater degree, would be attractive in the UK market for a few reasons;

1. It would reduce the need for multiple awards
2. It would teach management skills in a specific context (i.e. solid waste management)
3. It would reduce cost if the qualification was more comprehensive
4. It would be more useful to a waste manager, particularly on smaller sites where the management role falls solely on one person.

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## **Annexes**

1. Annex 1 - Example of questionnaire

1. Annex 1 - Example of questionnaire

**QUESTIONNAIRE FOR WASTE MANAGEMENT FACILITIES**

1. The type of facility you represent	Mark with an X
waste collection companies	
waste sorting facilities	
waste recycling facilities	
incineration facilities	
Landfills	
Other (if “other” please specify)	

2. Please indicate the current number of employees in your organisation	Mark with an X
< 50	
50 – 100	
>100	

3. Your opinion about the interest/ willingness of waste management facilities’ professionals to attend vocational training programmes:

Low	Medium	High

4. Please provide your opinion concerning availability of vocational training programmes for waste management facilities’ managers and operatives in the country

Type of programmes	Programmes for managers	Programmes for operators
Is there a sufficient amount of <i>formal</i> training programmes, which end up with a certificate or qualification for participants, available? (Y/N)		
Is there a sufficient amount of <i>informal</i> training programmes, which cover topics of interest for waste management facility managers and technicians, available? (Y/N)		
Is the availability of online training programmes sufficient (Y/N)		

5. Please provide your opinion on the importance of the following topics for waste management facilities/ professionals, the availability of these topics in existing vocational education & training (VET) programmes and current/ knowledge/ skills among waste management facilities’ professionals

Topic	Importance	Availability of VET	Current knowledge/ skills among waste management facilities’ professionals
National Legislation In The Waste Management Sector (1=Low, 2=Med, 3=High)			

Waste classification criteria <i>(1=Low, 2=Med, 3=High)</i>			
Waste management policy principles and planning <i>(1=Low, 2=Med, 3=High)</i>			
Management of specific solid waste streams <i>(1=Low, 2=Med, 3=High)</i>			
Environmental impacts of waste management facilities <i>(1=Low, 2=Med, 3=High)</i>			
Monitoring of environmental impacts in waste management facilities and activities <i>(1=Low, 2=Med, 3=High)</i>			
Processes and technologies applied in waste management facilities <i>(1=Low, 2=Med, 3=High)</i>			
Technical specification for equipment using in waste management facilities <i>(1=Low, 2=Med, 3=High)</i>			
National requirements for waste management procedures (licensing, waste accounting, reporting, etc.) <i>(1=Low, 2=Med, 3=High)</i>			
Principles of emergency planning and response measures <i>(1=Low, 2=Med, 3=High)</i>			
Procedures and principles of product's life-cycle assessment <i>(1=Low, 2=Med, 3=High)</i>			
Environmental management systems (EMAS and the EN ISO 14000 series) <i>(1=Low, 2=Med, 3=High)</i>			
Business administration principles <i>(1=Low, 2=Med, 3=High)</i>			
Health & Safety at work <i>(1=Low, 2=Med, 3=High)</i>			
<b>Topic:</b> Other (e.g. waste transport)	<b>Importance</b>	<b>Availability of VET</b>	<b>Current knowledge/ skills among waste management facilities' professionals</b>

6. Are there any competences that you feel are not adequately covered by the existing training programmes available in the country (e.g. waste processing, hazard identification, waste transport)?

Programmes for managers	Programmes for technicians

7. How would you evaluate quality of existing training programmes available in the country?

Quality indicator	Programmes for managers	Programmes for technicians
Scope/ contents <i>(1=Low, 2=Med, 3=High)</i>		
Integration of theoretical and practical training <i>(1=Low, 2=Med, 3=High)</i>		
Quality of training materials <i>(1=Low, 2=Med, 3=High)</i>		
Quality/Ability of trainers/assessors <i>(1=Low, 2=Med, 3=High)</i>		
Training facilities <i>(1=Low, 2=Med, 3=High)</i>		
Quality indicator <i>Other (e.g. availability of trainer/assessors)</i>	Programmes for managers	Programmes for technicians

8. What are the main problems/ obstacles related to vocational training for waste management facilities' managers?

9. What is your opinion concerning working conditions in waste management sectors

Waste management sector	Work conditions (on a scale 1-5)

Waste collection companies <i>(1=Excellent, 2= very good, 3=good, 4=satisfactory 5=Poor)</i>	
Waste sorting facilities <i>(1=Excellent, 2= very good, 3=good, 4=satisfactory 5=Poor)</i>	
Waste recycling facilities <i>(1=Excellent, 2= very good, 3=good, 4=satisfactory 5=Poor)</i>	
Incineration facilities <i>(1=Excellent, 2= very good, 3=good, 4=satisfactory 5=Poor)</i>	
Landfills <i>(1=Excellent, 2= very good, 3=good, 4=satisfactory 5=Poor)</i>	

**THANK YOU FOR TAKING THE TIME TO COMPLETE THIS!**

**PLEASE RETURN YOUR COMPLETED QUESTIONNAIRE TO  
[JULIE@TRUSTWASTE.COM](mailto:JULIE@TRUSTWASTE.COM) BY 02-07-12**