



# **Know your waste: EAUC training**

**November 2009**



# Session 1

## Introduction

- About the trainer
- About ECUS.



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# Housekeeping

- Breaks
- Lunch
- Timings
- Fire alarms and exits
- Mobile phones
- Smoking
- Handouts/slides
- Join in!

# Course programme

Session	Time
Session 1: Introduction	09.30am
Session 2: The impact of waste	09.45am
Exercise 1: Drivers, benefits and barriers to successful waste management	10.30am
Break	11.00am
Session 3: It's the law!	11.15am
Exercise 2: Duty of care exercise	12.15pm
Lunch	12.45pm
Session 4: Waste management	13.30pm
Session 5: Waste auditing	14.15pm
Exercise 3: Virtual waste audit	14.45pm
Break	15.30pm
Session 5: Implementing a waste management action plan	15.45pm
Exercise 4: Action planning	16.00pm
Session 7: Summary	16.30pm
Close	16.45pm

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# Housekeeping

- Format

- Key actions



- Tools/tips

✗

- Detail
- Critique of waste disposal options
- Consultancy on specifics

✓

- Interesting
- Fast-paced
- Principles and concepts
- Share best practice
- Thought provoking

# Who are you?

Please introduce yourself and let us know:

- Who you are
- Where you work
- Your role
- Expectations from the day.

**a) New  
to waste**

**b) Seeking  
reassurance**

**c) Best  
practice**

**1) Initial  
stages**

**2) Intermediate  
stages**

**3) Advanced  
stages**





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# Course aims & objectives

- To provide an introduction to the impact of waste globally, nationally and in the HEFE sector
- To understand the key requirements of waste legislation in England & Wales
- To gain a comprehensive understanding of the practicalities of waste management
- To be able to carry out a waste audit
- To implement a waste action plan.



## Session 2

# The impact of waste

In pairs define 3 of the biggest impacts of waste in relation to:

- the environment
- society
- the economy

You have 5 minutes!

## Environment:

- Landfill sites
- Loss of resources
- Greenhouse Gases

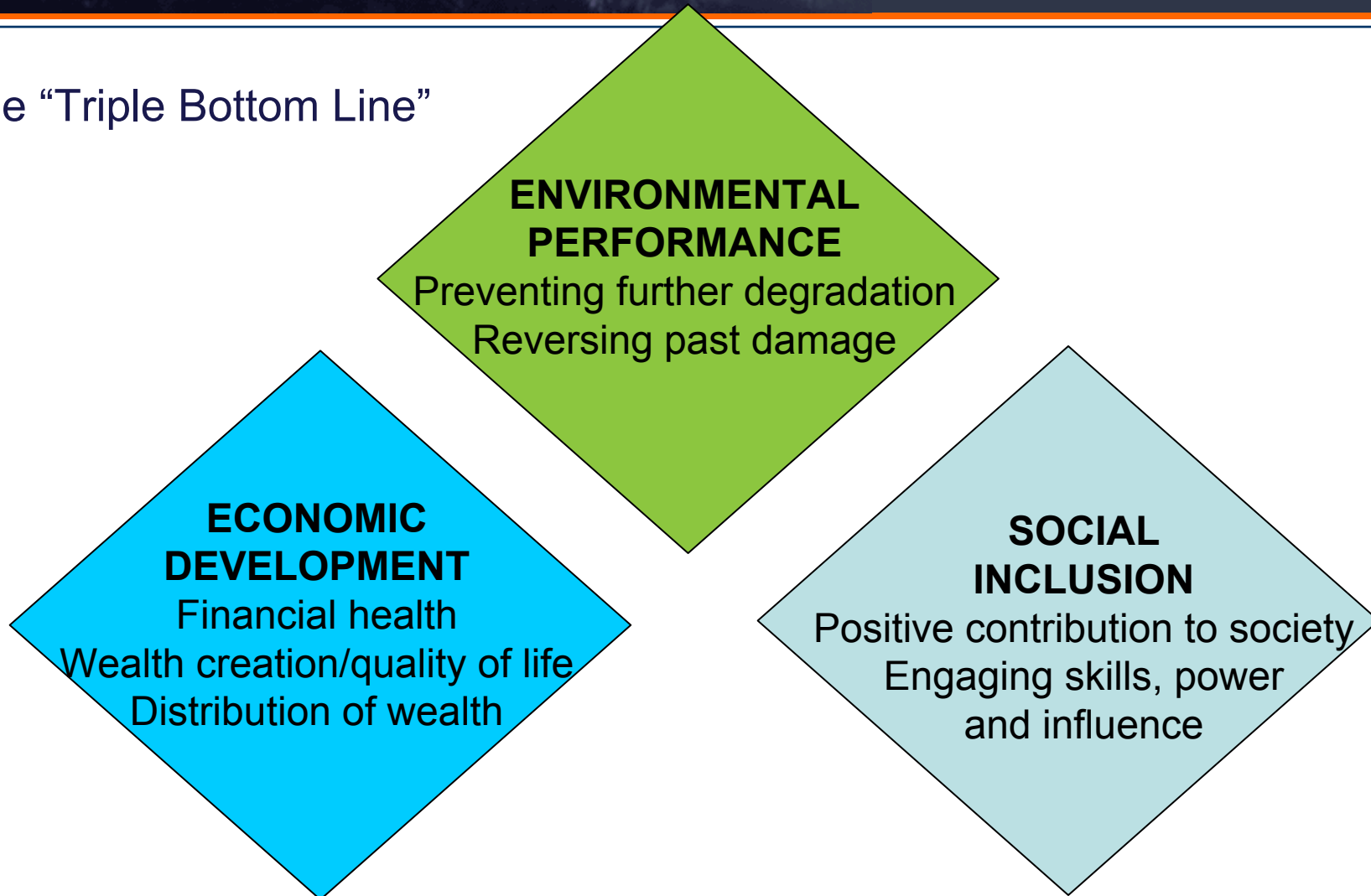
## Society:

- Loss of land
- Pollution/air quality
- Resource inefficiencies

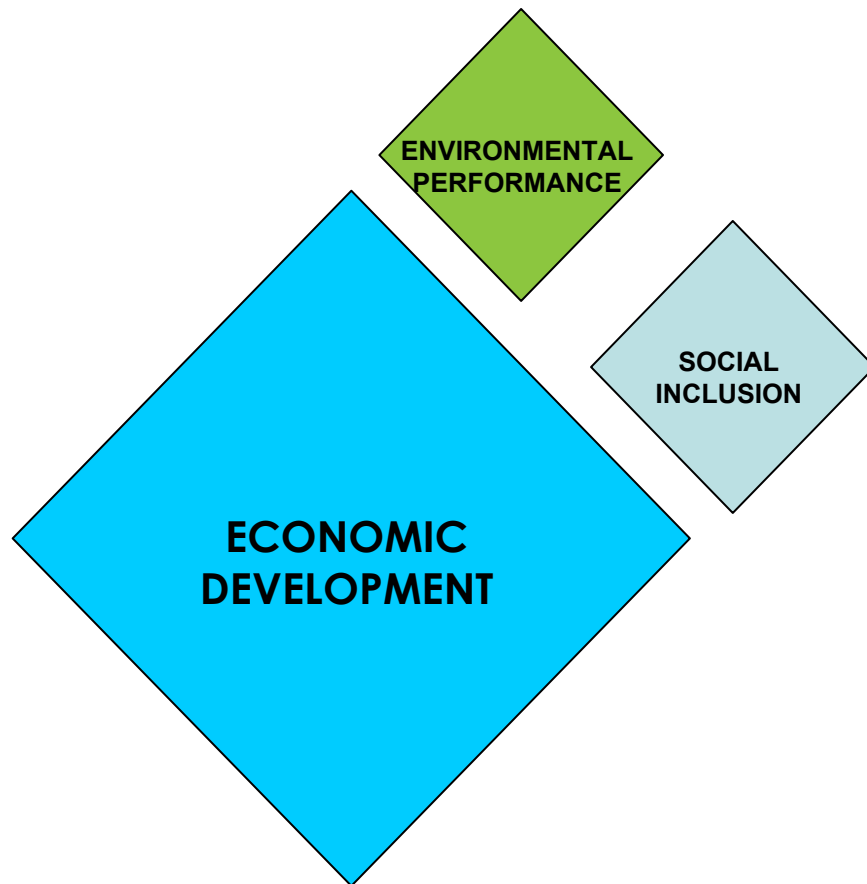
## Economy:

- Costly
- Inefficient
- Taxation.

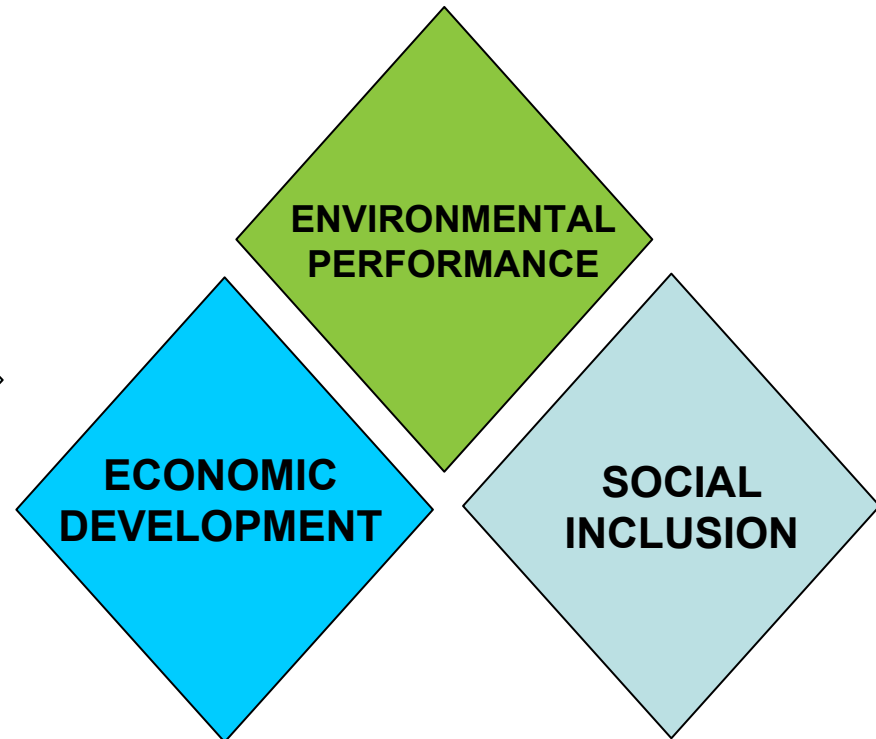
## The “Triple Bottom Line”



Current scenario:  
weak sustainability



Ideal scenario:  
strong sustainability



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# Sustainability

- If everyone in the world lived as we do in the UK, we would need three worlds to support the population.



# Waste: the issue

Vermin

Landfill space

Polluting

Cost

GHG  
emissions

Littering

Odour

Noise

Disposal  
impacts

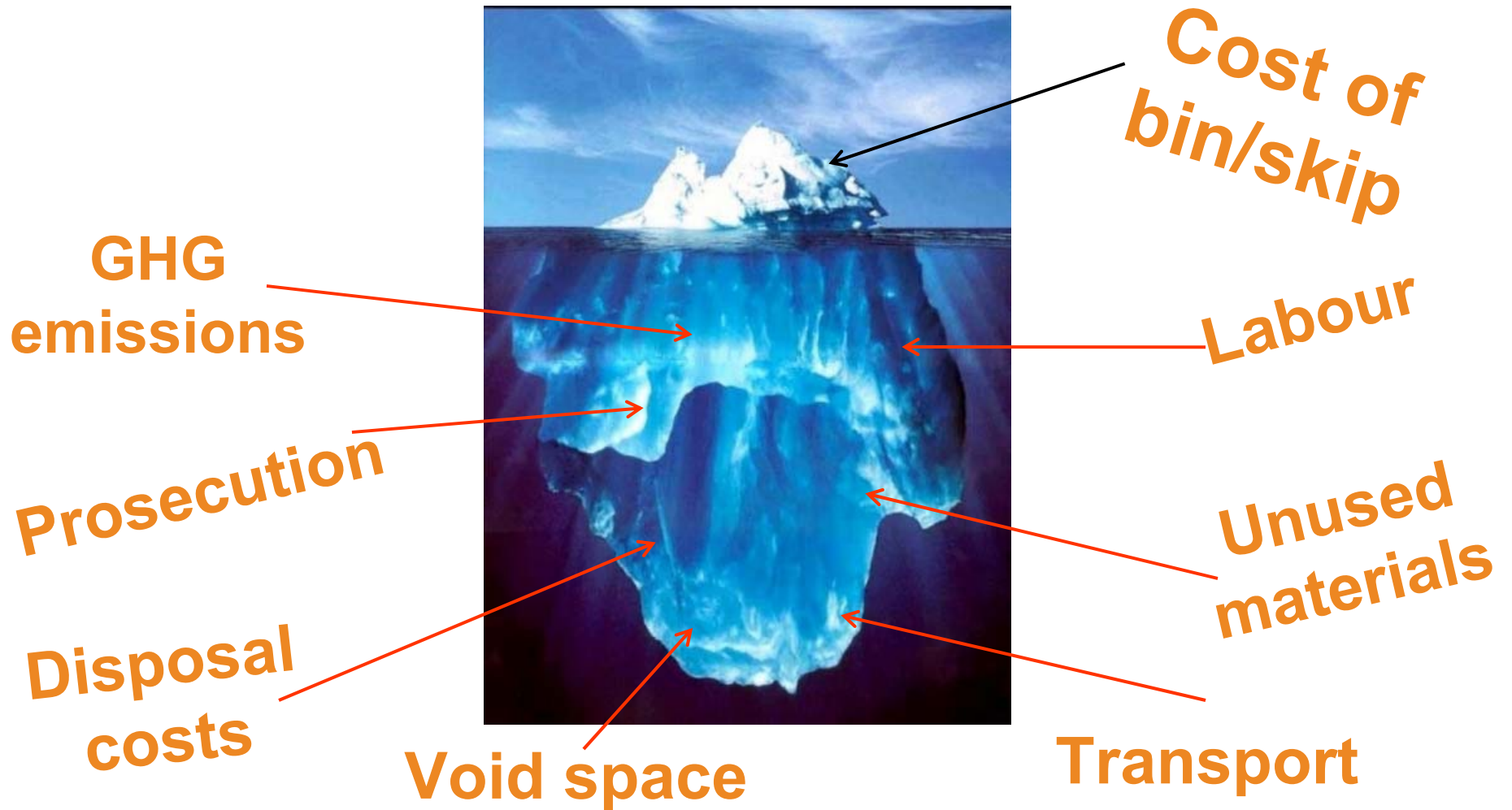


Dust

Loss of  
resource



# Waste: the issue





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# Waste: the issue

- All encompassing - affects every activity, process, individual

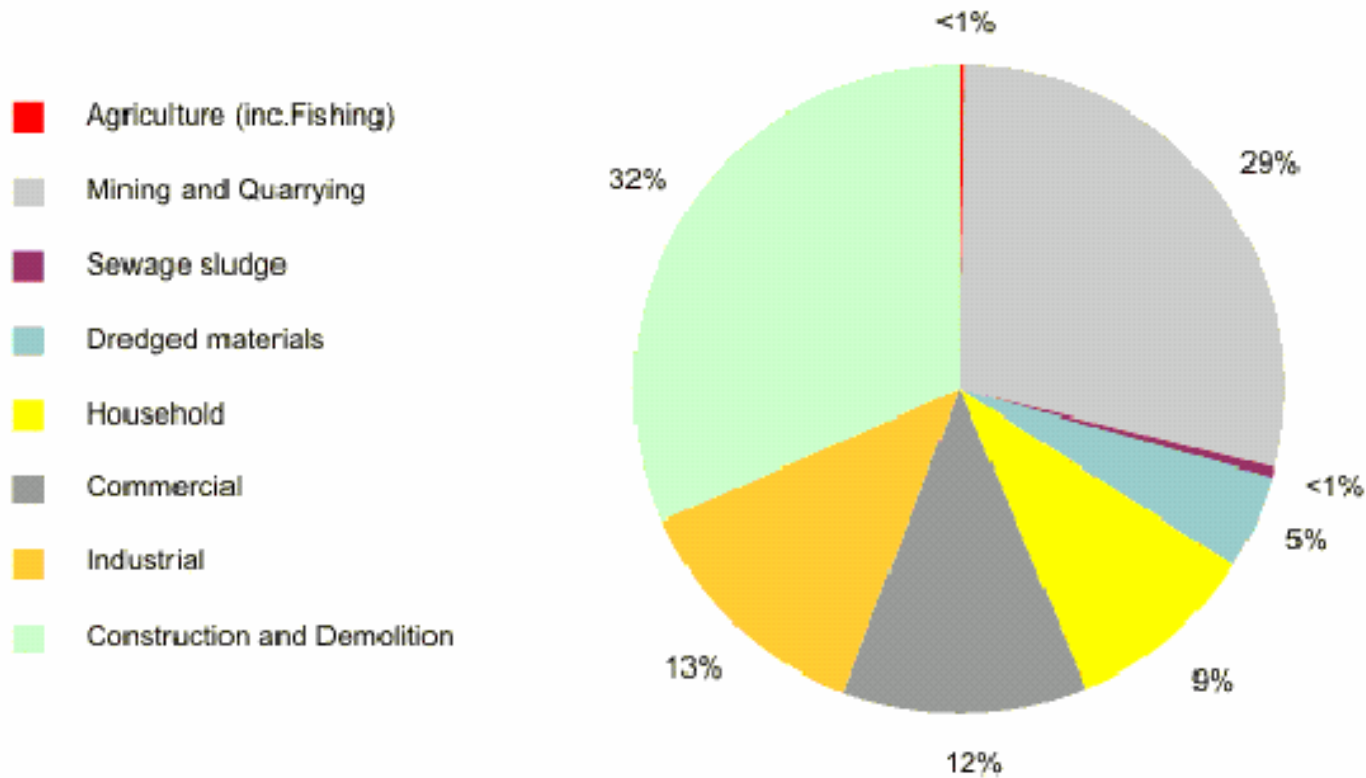
**Key question: Who creates waste and  
why?**

# Who creates waste?

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Estimated total annual waste arisings by sector : 2004



Total = 335 million tonnes

Source: Defra, ODPM, Environment Agency, Water UK

- 8.6 million tonnes of paper the UK recycled here and abroad last year saved 11 million tonnes CO<sub>2</sub>e - equivalent to taking 3.6 million cars off the road
- Selling the UK's used plastic bottles and paper for recycling in China actually saves emissions. Shipping these materials more than 10,000 miles produces less CO<sub>2</sub> than sending them to landfill at home and using brand new materials
- More energy is saved by recycling plastics than is gained by burning them. Recycling saves 2 tonnes of CO<sub>2</sub> equivalent emissions per tonne of plastic in comparison to incineration
- In 83% of circumstances, recycling paper, card, glass, plastics and metals was preferable to any other waste management option - currently estimated to save over 18 million tonnes of CO<sub>2</sub>e green house gas emissions.

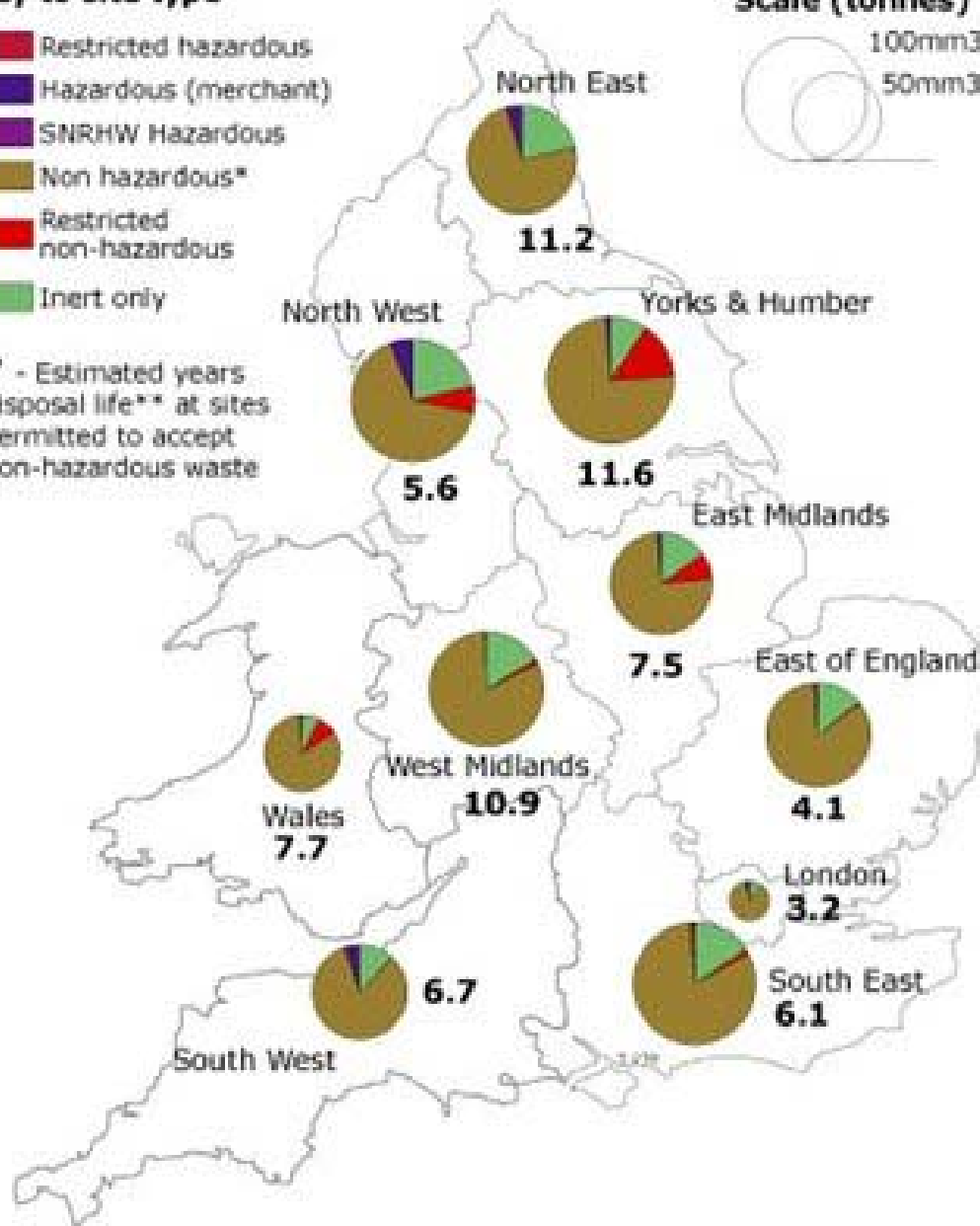
**England & Wales 2006: remaining landfill capacity by region showing type of site and life expectancy**

**Key to site type**

- Restricted hazardous
- Hazardous (merchant)
- SNRHW Hazardous
- Non hazardous\*
- Restricted non-hazardous
- Inert only

**7** - Estimated years disposal life\*\* at sites permitted to accept non-hazardous waste

**Scale (tonnes)**



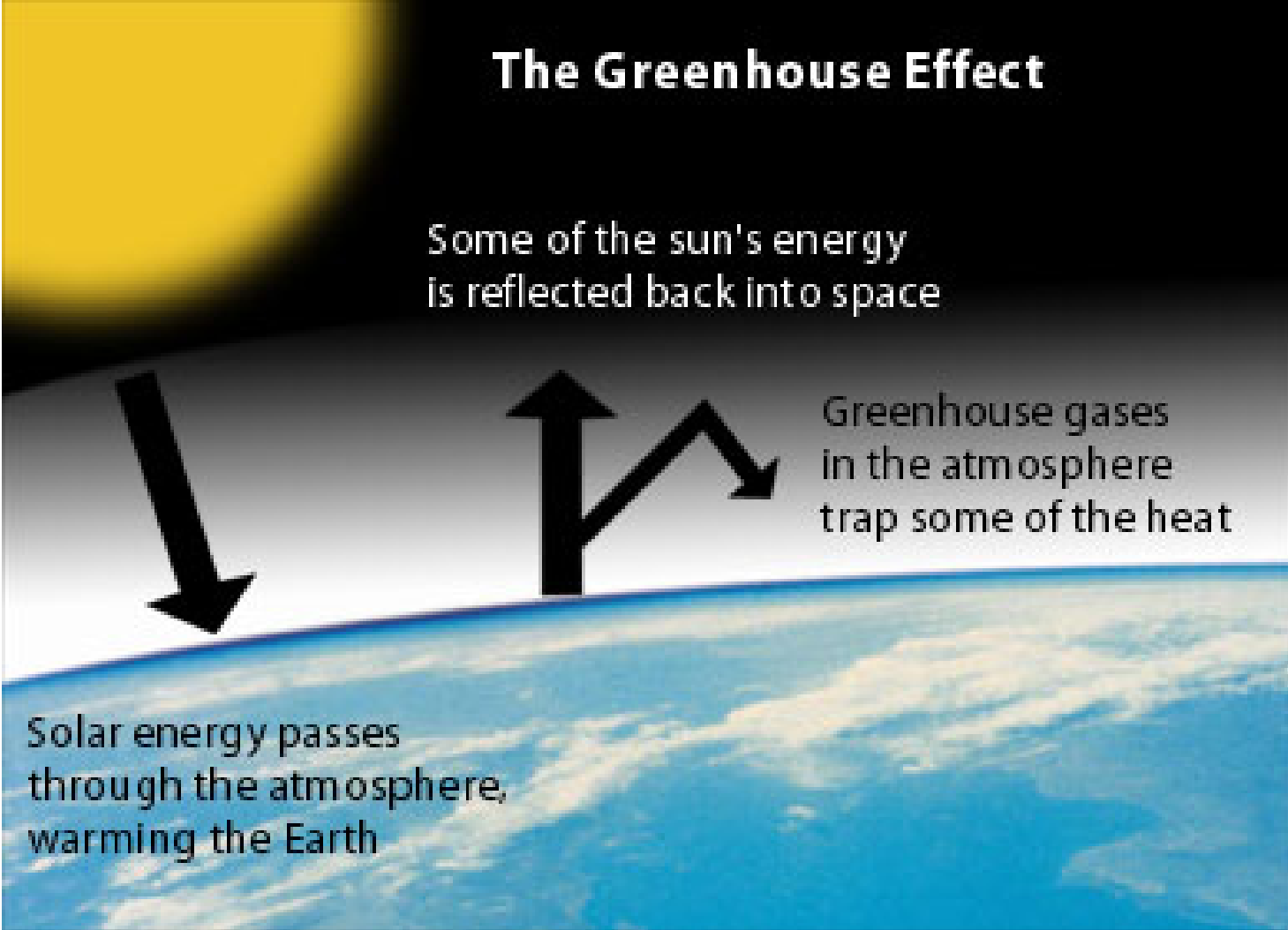


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# Climate Change: overview

## The Greenhouse Effect

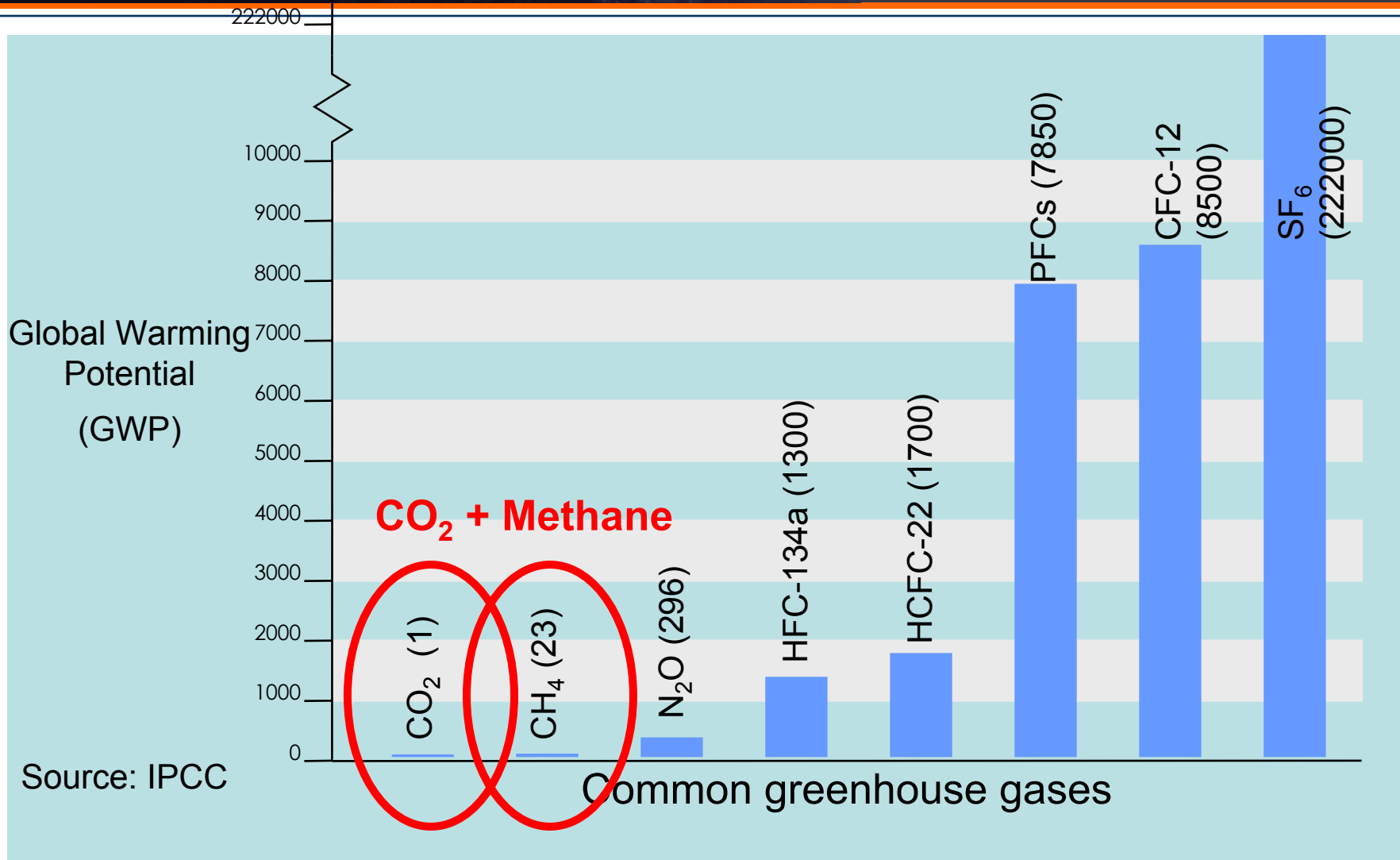


Some of the sun's energy  
is reflected back into space

Greenhouse gases  
in the atmosphere  
trap some of the heat

Solar energy passes  
through the atmosphere,  
warming the Earth

# Climate Change: greenhouse gases (GHGs)



# Climate Change: waste & GHGs

Material	GHG emissions saved (tonnes carbon equivalent per tonne of material)		
	Incineration: 32 km	Recycling: 32 km	Recycling: 320 km
Newspaper	-0.241	-0.944	-0.714
Mixed paper - residential	-0.211	-0.734	-0.684
Aluminium cans	0.030	-4.269	-4.049
Glass	0.027	-0.087	-0.028
PET plastic	0.313	-0.684	-0.384

**Table 3: Changes in GHG emissions with distance to a recycling facility** *The table shows that, as expected, GHG emissions increase if the distance to a recycling facility is increased (ten-fold here just for illustration). However the GHG savings are still much greater than for incineration locally. Figures were calculated using the US EPA “WARM” model (v 1.9).*





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# HEFE: carbon

- Low Carbon Transition plan (July 09):

“Every part of Government will need to help drive the transition that is needed to live within the UK’s carbon budgets. For the first time, each major government department will now have its own carbon budget representing its share of responsibility ..... From April 2010, it will also include emissions from schools, further and higher education institutions and the NHS.”

 HM Government

## The UK Low Carbon Transition Plan

National strategy for climate and energy



Building  
Britain's Future

ACT ON  
CO<sub>2</sub>



## Key action!

Contextualise waste when raising awareness, gaining buy-in and instigating change



# Exercise 1

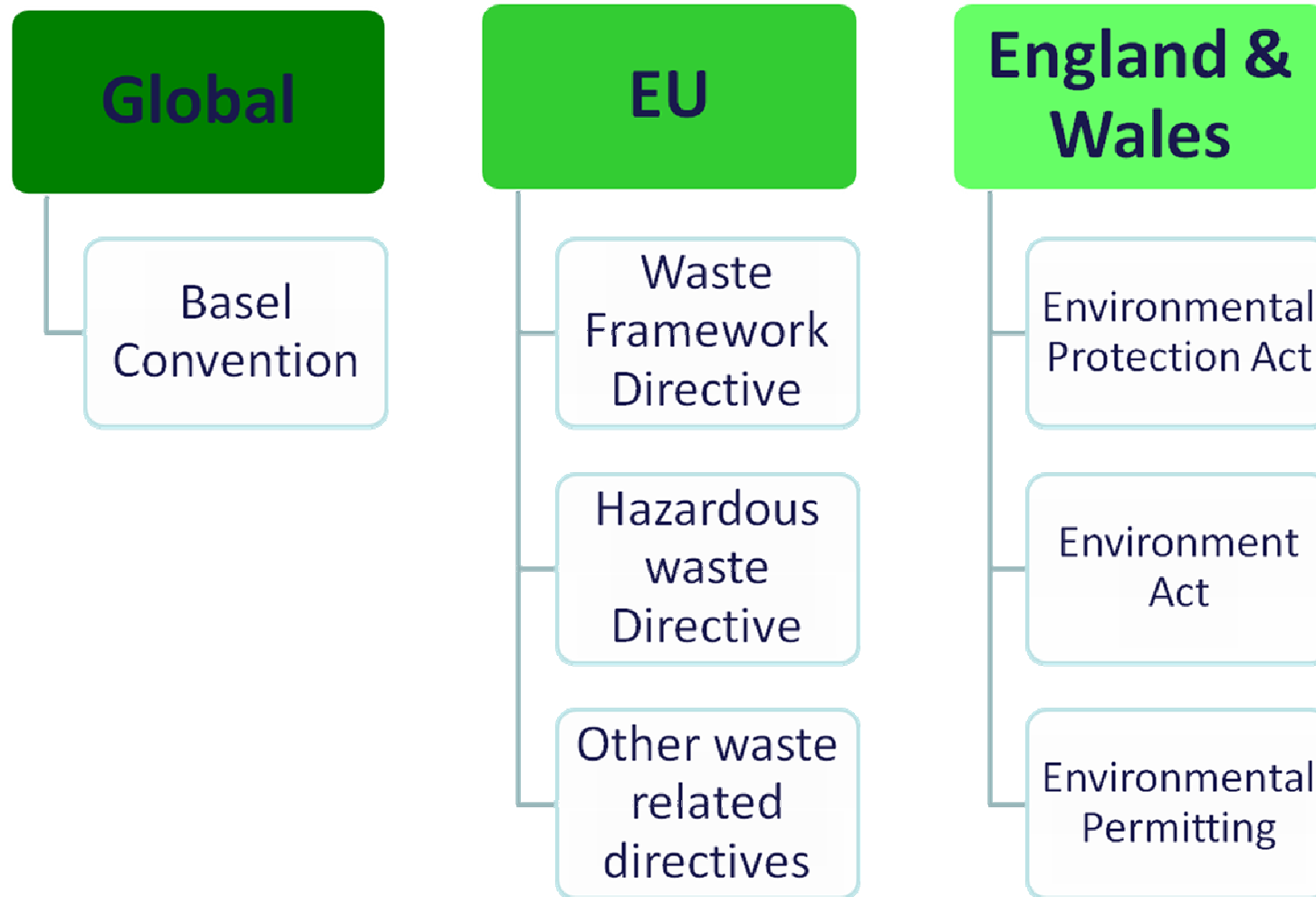


Break!



## Session 3

It's the law!



What are the primary aims of waste legislation in the EU and England?

- Reduction in waste
- Reduction in time/cost to Government to handle municipal waste
- Reduce necessity of landfill sites
- Encourage waste markets to be more efficient
- Increase reduction and re-use and recycling of waste
- Any more?



# Government Waste Strategy 2007

- Decouple waste growth from economic growth
- Emphasis on waste prevention & reuse
- Meet & exceed Landfill Directive diversion targets for biodegradable MSW
- Increase diversion from landfill of non-municipal waste
- Secure investment in infrastructure to divert waste from landfill & manage hazardous waste
- Increase recycling of resources and recovery of energy from residual waste using a mix of



# What is waste?

‘Any substance or object... which the holder discards or intends or is required to **discard**’.

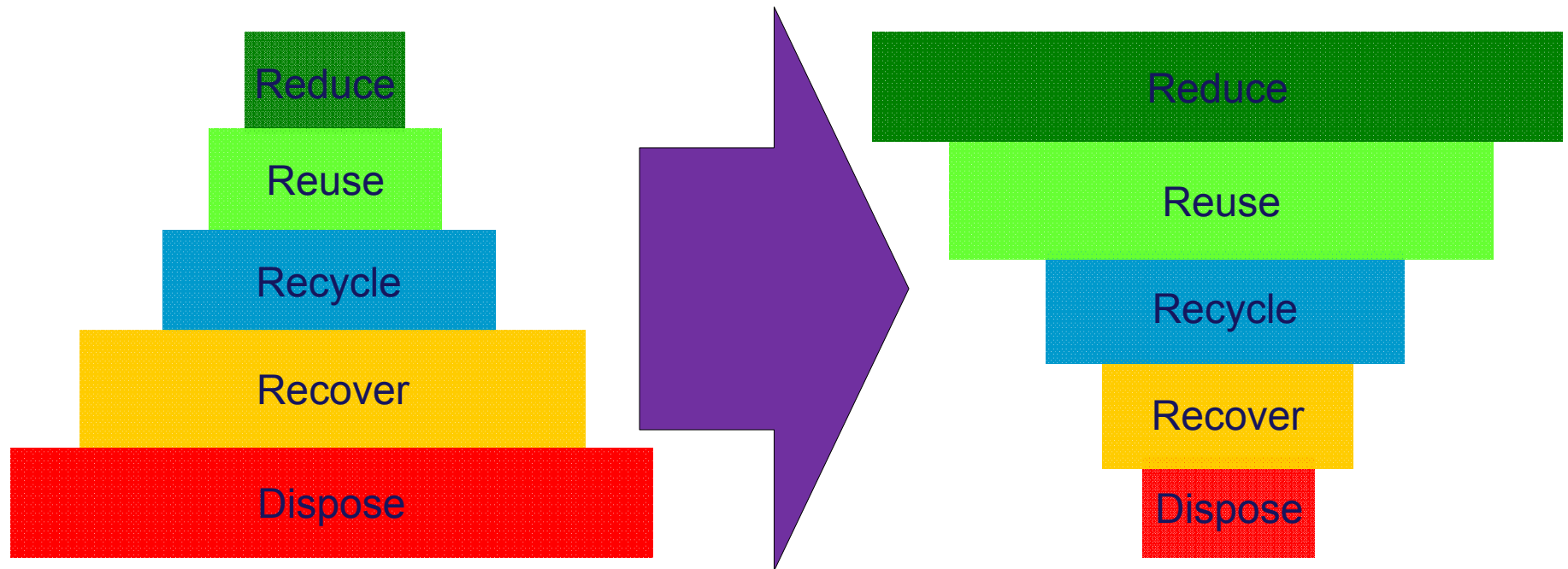
## **EU Directive: 75/442/EEC**

- EU legislation: if a material is to be **subjected to a disposal or recovery operation**, then it is waste.

# What is waste?

1. There is **no definitive list** of what is and is not waste
2. It is the **responsibility of the holder** of the substance or object to determine, on a case by case basis, whether it is waste or not
3. Although a waste may be **sold or traded**, or is capable of being recovered, this does not necessarily mean that it has ceased to be waste.
4. Waste **ceases to be waste** when it has been fully recovered and no longer poses a potential threat to the environment or to human health.

The primary driver for waste management in the EU





# Current waste legislation



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# Waste legislation

Legislation / Regulator

Requirements

**Environmental Permitting  
(England and Wales)  
Regulations 2007**

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- a) Must not handover waste to be treated / disposed of, without checking that the relevant person has an EP
- b) Must not treat/dispose of *any waste* yourself unless you/your organisation has a EP
- c) Must apply for exemptions for relevant activities
- d) Waste must be pre-treated before it is sent to landfill.



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# Waste brokers

- If renting out buildings and acting as a waste broker/manager



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# Waste legislation

Legislation / Regulator

Requirements

## **Environmental Protection Act Part II**

ENVIRONMENT AGENCY

- Section 33 prohibits the deposit, disposal and recovery of controlled waste without a valid EP
- Set in place a framework for the permitting of waste operations
- Section 34 establishes a 'duty of care' on all who handle waste



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# Waste legislation

Legislation / Regulator

Requirements

**Environmental Protection (Duty of Care) Regulations 1991 (as amended)**

**ENVIRONMENT AGENCY**

## **Fines/penalties**

**Summary conviction can result in a fine of up to £5000 and conviction on indictment can result in an unlimited fine.**



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# Waste legislation

- Searchable Environment Agency web-based database
- Ability to check validity of companies' waste licences

www2.environment-agency.gov.uk/epr.

The screenshot shows a Microsoft Internet Explorer browser window displaying the Environment Agency website. The address bar shows the URL <http://www2.environment-agency.gov.uk/epr/>. The page title is "Environment Agency - Home of Public Registers". The main content area is titled "Your Right to Know: Public Registers" and provides information about accessing public register data online. A sidebar on the left contains a navigation menu with links such as "Home of public registers", "What are public registers", and "Search public registers". A "Search Now" button is visible. On the right, there are sections for "Find your local Agency office..." and "Keep me informed of new public register services...".

This close-up view shows the search interface for Public Registers by company name. The heading is "Search Registers by Company Name". Below the heading, the text reads: "Enter part or all of the company name and select a public register to search for all the licences they may hold." The search form includes a text input field labeled "Company:" and a dropdown menu labeled "Public Registers:" with "Waste Carriers & Brokers" selected. A "Find" button is located to the right of the dropdown menu.



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# Waste legislation

## Duty of Care Waste Transfer Note

### Section A – description of waste

1. Please describe the waste being transferred:

2. How is the waste contained?

Loose  Sacks  Skip  Drum

Other  Please describe:

3. What is the quantity of waste (number of sacks, weight etc):

4. European Waste Catalogue code (6-digit code):

### Section B – Current holder of the waste (Transferor)

1. Full name (BLOCK CAPITALS):

2. Name, address and postcode of company:

3. Which of the following are you? (Please tick one or more of the boxes)

Producer of the waste:  Holder of waste disposal or waste management licence:  Licence number: Issued by:  
Importer of the waste:  Exempt from requirement to have a waste disposal or waste management licence:  Give reason:  
Waste collection authority:  Registered waste carrier:  Registered number: Issued by:  
Waste disposal authority: (Scotland only)  Exempt from requirement to register:  Give reason:

### Section C – Person collecting the waste (Transferee)

1. Full name (BLOCK CAPITALS):

2. Name, address and postcode of company:

3. Which of the following are you? (Please tick one or more of the boxes)

Authorised for transport purposes:  Specify which of those purposes:  
Waste collection authority  Holder of waste disposal or waste management licence:  Licence number: Issued by:  
Waste collection authority (Scotland only)  Exempt from requirement to have a waste management licence:  Give reason:  
 Registered Waste Carrier  Registration number: Issued by:  
 Exempt from requirement to register:  Give reason:

### Section D

1. Address of place of transfer / collection point:

2. Date of transfer:

3. Time(s) of transfer (for multiple consignments, give 'between' dates):

4. Name, address and postcode of broker who arranged this waste transfer (if applicable):

Transferor:

Transferee:

5. Signed:  
Full name:  
(BLOCK CAPITALS)  
Representing:

Signed:  
Full name:  
(BLOCK CAPITALS)  
Representing:

**PART A: Details of the waste including a waste description, how it is contained, what the quantity is and the relevant European Waste Catalogue**

**PART B: Name and full address of the current holder of waste including options as to whether or not the holder (the transferor) of the waste is licensed or exempt from licensing (if necessary).**

**PART C: Name and full address of the person / organisation collecting or carrying the waste including options as to whether or not the carrier (the transferee) of the waste is licensed to do so or exempt from licensing.**

**PART D: Address of the place transferring the waste, the date of transfer, the name and address of the waste broker (if applicable) and then signed confirmations from the transferor and transferee.**

## Control of Pollution (Amendment) Act 1989

- If you carry waste produced by your own business you don't usually need to register, **unless you produce construction or demolition waste**
- A fixed penalty notice of £300 may be served for the offence of a failure to produce a waste carrier's licence
- ***Registration: £144 for 3 years and £99 for renewal.***



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# Waste legislation

Legislation / Regulator

Requirements

**Hazardous Waste Regulations  
2005**

**List of Waste (England)  
Regulations 2005**

**ENVIRONMENT AGENCY**

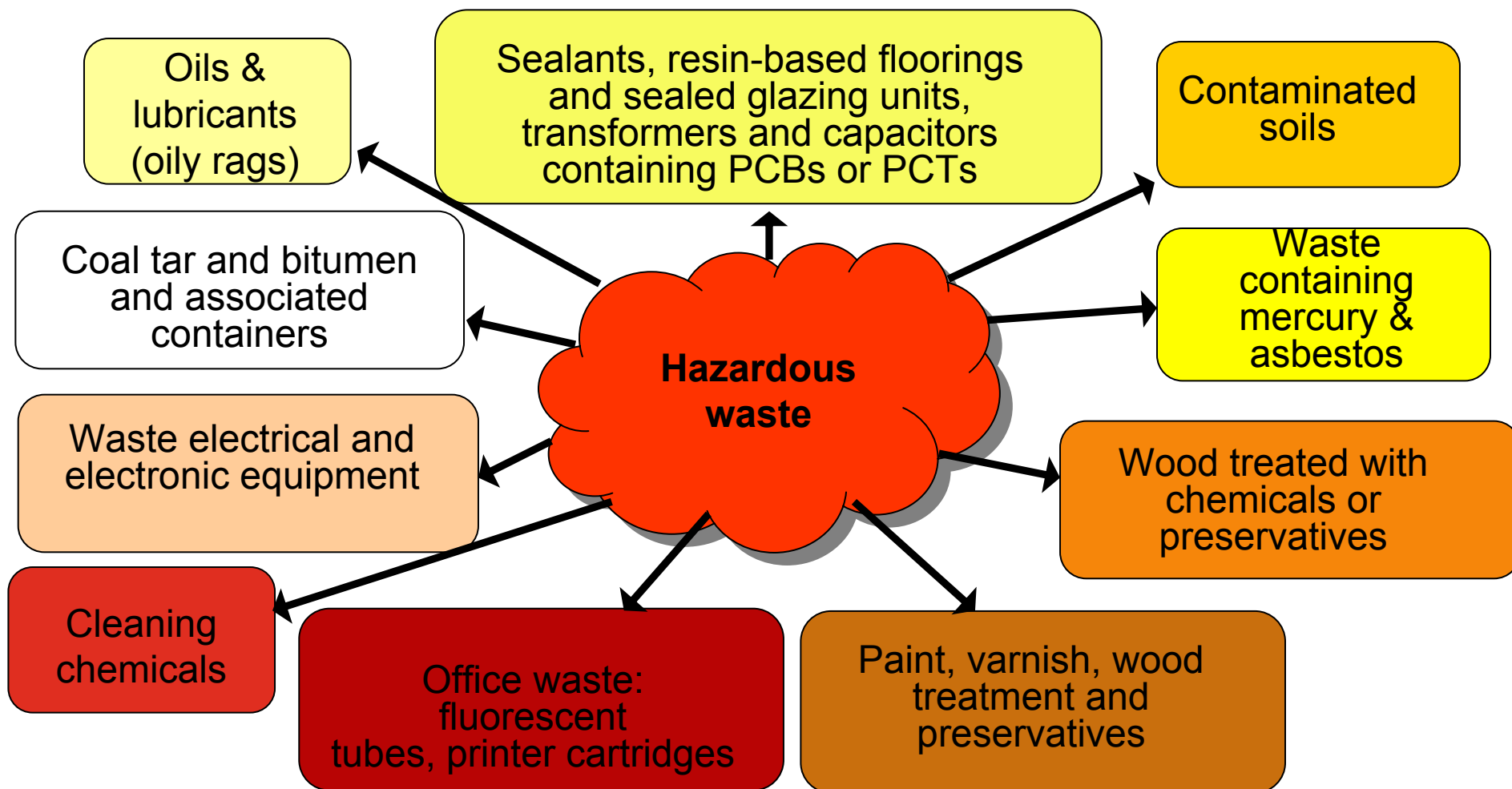
## **Fines/penalties**

April 2007 - Fixed Penalty Notices (FPNs) to be issued for certain offences.

**The fixed penalty fine is currently £300.**

On summary conviction: a fine not exceeding level 5 on the standard scale”, **currently £5000.**

Conviction on indictment: an **unlimited fine and / or 2 years imprisonment.**





- Registration with the EA:
  - Internet (£18)
    - <https://www.environment-agency.gov.uk/apps/hazwaste/registrationwelcome.jsp>
  - By telephone (£23):
    - Telephone 08708 502858
  - By post (£28):
    - Download form [http://www.environment-agency.gov.uk/commondata/acrobat/paper\\_app\\_1\\_030944.pdf](http://www.environment-agency.gov.uk/commondata/acrobat/paper_app_1_030944.pdf)
    - Telephone 08708 502858 for a hardcopy form.

## Legislation / Regulator

**Waste Electronic and Electrical Equipment (WEEE)**

**BERR**

## Requirements

### ▪ KEY POINTS

- a) All businesses that use electrical and electronic equipment (EEE) must comply
- b) You must **store, collect, treat, recycle and dispose of WEEE separately from your other waste.**
- c) You must obtain and keep proof that your WEEE was given to a waste management company, and was treated and disposed of in an environmentally sound way.



## Legislation / Regulator

**Clean Neighbourhoods and Environment Act 2005**

**Site Waste Management Plan Regulations 2008**

**ENVIRONMENT AGENCY (EA)**

## Requirements

- **SWMP's a legal requirement for construction projects over £300,000 since April 2008**
- **2 types of SWMP:**
  - **Standard - £300,000 - £500,000**
  - **Detailed – Above £500,000**
- **Enforced by LA's and EA**
- **Client responsible upfront, but client AND contractor in breach if no SWMP**
- **Keep SWMPs for 2 years.**



# SWMPs

- 1 **Responsibility**
- 2 **Waste types and quantities**
- 3 **Waste management options**
- 4 **Waste management contractors**
- 5 **Training and communication**
- 6 **Materials handling and storage**
- 7 **Measuring**
- 8 **Monitoring**
- 9 **Review**

The logo for ECUS features the word "ECUS" in a bold, orange, sans-serif font. To the right of the text is a graphic of several white arrows pointing right, with a white curved line or ribbon weaving through them. The background of the logo area is a dark, blue-tinted landscape with rolling hills and a forest line.

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# Other legislation

- Packaging Regulations
- Animal By-Products



# Future waste legislation

**Legislation****New Waste Framework  
Directive 2008/98/EC****Requirements**

- Adopted in 2008 (UK has 2 years to transpose it)
- Encourage more re-use and recycling e.g.
  - 50% household recycling and re-use by 2020
  - 70% non-hazardous construction and demolition waste by 2020
- Waste hierarchy now part of European law
- “Energy efficient” incineration = recovery (to reduce consumption of fossil fuels)
- Hazardous waste must be packaged and labelled in the course of collection, transport and temporary storage



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# Future waste legislation

Legislation

Requirements

## **Waste Controls (England and Wales) Regulations 2009**

- Key changes include:
- Simplify the existing waste regulations and make them more effective;
- Require waste brokers and dealers to register with the Environment Agency;
- Set out requirements for transfer notes;
- Control the seizure of vehicles involved in, or suspected to be involved in waste offences, by regulatory authorities.
- Meant to come into force in October 2009!

## Legislation

### **Environmental Permitting (England and Wales) (Amendment) Regulations 2010**

## Key changes include requirements

- The 3 tiers of current exemptions (complex, simple, un-registerable) will be replaced by a two tier system
- Exemptions that currently cover high risk activities will be replaced by standard environmental permits;
- Proposed charge of £50 to register an exemption
- “Appropriate periodic inspections” of sites which have registered
- Changes to a number of thresholds for certain activities;
- Transition period over three years.
- Come into force in April 2010.



# Managing compliance



- Key steps to managing compliance:
  1. Create a legal register
  2. Assess which legislation is applicable to you (i.e. all the legislation in this section)
  3. Carry out a waste legal audit (with trained auditors)
  4. Assess compliance (e.g. Use 1-3 rating where 1 is compliant, 2 is compliant with a 'watch' and 3 is non-compliant).



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# Managing compliance

- Netregs
- Croner
- Cedric
- Consultants

Assign responsibility for checks, updates and compliance related actions.

- HW - Segregation and storage
- Paperwork – subcontractors
- Look out for informal waste recycling
- Liquid wastes
- Responsibility and competence
- Investigate exemptions



# Key actions!

## **Ensure legal compliance**

- Create a waste legal register
- Check compliance regularly
  - Stay abreast of changes



# Exercise 2

- EWC Catalogue and List of Wastes
  1. Waste by source (Ch 1-12, 17-20)
  2. Waste “not otherwise specified” (Ch 16)
  3. Waste by type (Ch 13-15)
  4. **Absolute** and **Mirror**
    - Ch 15 packaging
    - Ch 17 Construction
    - Ch 20 municipal and separately collected fractions



Lunch!



## Session 4

# Waste management





What is waste management?

Key questions on waste management:

1. What wastes are produced?
2. How much waste is produced?
3. Which activities produce waste?
4. Why is each waste produced?
5. Who is responsible for waste?
6. How is waste stored?

**Establishing the baseline**





## 2. How much waste?

- Waste volumes:
  - Per skip/bin/container
  - Per waste stream
  - Per building
  - Per department
  - Per disposal route
- Look for large quantities and anomalies
- Monitoring & measuring.

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University of Nottingham

# University of Nottingham



## Clean & Green

- ◀ UoR Home
- ◀ Clean & Green Home
- About us
- Ethical procurement and Fairtrade
- Sustainable development
- Carbon management
- Recycling and waste management
- What we have recycled**
- Clean and Green team and initiatives
- Recycling facilities
- Waste disposal
- Green transport**
- Get involved
- Our research

### See also

- ▶ Select Environmental Services

## What we have recycled

Since August 2007, 1,153 tonnes of waste collected from all University properties (excluding farms) of which we have successfully recycled 372 tonnes (32%):

- 162 tonnes of mixed recyclables
- 97 tonnes of card & paper
- 25 tonnes of IT equipment
- 24 tonnes of glass
- 18 tonnes of metal
- 17 tonnes of wood
- 15 tonnes of clothing
- 9 tonnes of confidential waste
- 3 tonnes of fridges/freezers



Thus reducing the amount (781 tonnes) sent to landfill. Using an advanced 'Pay by Weight' system and being the largest company in Berkshire to do so, the University carefully manages all of its waste streams. We aim to raise this figure to 50% by 2012.

## What we recycle

Here is a summary of the recycling carried out by the University:

- Since October 2005, 37,043kgs of redundant IT equipment has been collected of which 91% has been reused and 9% has been recycled.
- Bottles Banks were installed at Central Catering/RUSU in February 2005 and at Halls with bars since March 2007.
- Fridges and freezers are stored and when the container is full they are taken to be de-gassed and re-processed.
- Confidential waste is shredded on site and then made into fuel pellets. Between August 2005 and February 2007, 21,193kgs of paper has avoided expensive landfill costs.
- Clothing Banks were installed at all Halls during the summer term and due to its success, there are plans to roll this out more extensively in the future.
- Three 40 cubic yard containers have recently been installed for the collection and recycling of

## 3. Which activities?

- Teaching?
  - Research?
  - Central services?
  - Catering?
  - Accommodation?
  - Construction?
  - General campus waste?
  - Large events?
  - Any others?
- 
- Understanding which specific activities create waste can help to inform your waste action plan by targeting waste-intensive activities.



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# 4. Why is waste created?

Lack of value placed  
on items and objects

Lack of awareness

Habits and culture

**WHY?**

Resource and  
process  
inefficiencies

Poorly managed  
supply chains



## 5. Who creates waste?

- WHO?
  - Employees
  - Visitors
  - Students
  - Public - users of facilities
  - Subcontractors
  - Suppliers
- WHERE?
  - Offices
  - Lecture halls/classrooms
  - Labs
  - Catering outlets
  - Student facilities:
    - Union
    - Learning centre
    - Sports centre
    - Accommodation

## 5. Who is responsible for waste?

- Waste segregation
- Waste handling and transportation
- Waste containers
- Waste paperwork
- Waste contracts
- Waste policy and procedures
- Waste training
- Waste communications
- Assign responsibilities
- Waste committee?
- Regular communications
- Clear instructions and guidance

## 6. Waste storage

- Containers
- Labels
- Weights
- Numbers
- Location
- Full to capacity?





# Establishing the baseline – HOW? Auditing

This will result in an action plan

**NOTE: compare theory with  
reality!**

## Additional questions – best practice

1. How can you implement the waste hierarchy?
2. Is waste managed at strategic level?
3. Are people aware?



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# 1 . Waste hierarchy

Reduce

Reuse

Recycle

Recover

Dispose



## 2. Is waste managed strategically?

- **Waste policy** - setting out organisation-wide commitments?
- **EMS** - integrated within an existing system
- **Sustainability Strategy**
- **Procurement**
- **Procedures/work instructions/communications**

# 3. Are people aware?

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- What level of awareness/knowledge/competance is required?
- How can you test that it is sufficient?
- How do you raise awareness?
- Target audience
- Creativity and messages
- Maintaining the momentum



# 3. Are people aware?

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- Training needs analysis
- Consultation and engagement
- Creative communication
- Clear messages
- Procedures
- Sharing best practice
- Rewarding success



Search Site



- EAUC Homepage
- EAUC Waste Management Guide**
- How to use the Waste Management Guide
- Contributors
- Disclaimer
- Why Manage Waste?
- Background to Waste Management
- Waste Management Review
- A structured approach
- Practical Waste Management
- Tenders & Contracts

Home > [EAUC Waste Management Guide](#)

## How to use the Waste Management Guide

The Guide to Waste Management provides practical information on how to identify and manage the waste produced in your institution. This is a complex subject to describe so the text includes cross-references throughout and includes information on relevant legislation, together with action advice on how to comply with any particular aspect of the law. You don't have to read the entire guide before you start, you can simply go the section you are interested in and follow the links.

If you find broken links please contact [info@eauc.org.uk](mailto:info@eauc.org.uk)

### Finding your way around the Guide:

- Action Boxes: Where you will find ideas for actions, activities or directions on how to go about practical tasks
- Information Boxes: for detailed information to help you with your practical actions
- Tables: simplify or summarise facts you may need
- Forms: are data collection forms for you to copy and use or adapt appropriately. This icon shows you an example of a

M

Ema

Pass

With

Ho

Ma

Co

Dis



- Home
- Reduce
- Reuse
- Recycle
- Recycling Directory
- Poster Creator
- Students
- How to Guides
- Case Studies
- About Us
- Waste Aware Sites

### Sort It



Reduce Reuse Recycle

Visit Sort It to find out how to Reduce, Reuse and Recycle household waste where you live.



## Reduce, Reuse and Recycle on campus

The resources provided on this website aim to help staff and students at Scotland's colleges and universities introduce and promote effective waste prevention and recycling services.

### ■ Campus recycling directory

Find out about private and public sector organisations who can provide your campus with recycling facilities.

### ■ How to guides

Find out how to plan effective promotions to publicise campus waste prevention and recycling facilities and get help with setting up recycling services.

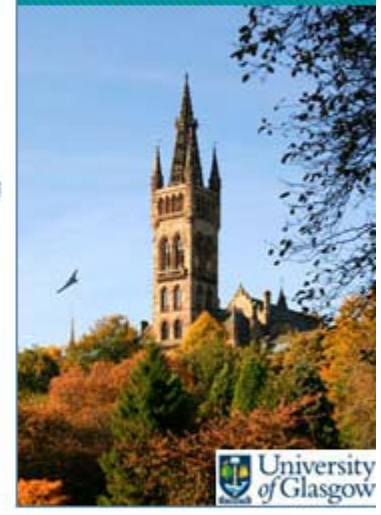
### ■ Students

Find out about career opportunities in the sustainable waste management sector and learn more about getting involved with environmental campaigning.



The Scottish Government is developing a new Zero Waste Plan for Scotland which outlines how we can all play our part in reducing the amount of waste we produce, reuse valuable resources and increase recycling levels to help Scotland become a Zero Waste Society.

### Case Studies



University of Glasgow

**Recycling Directory**

Collections  Centres

select local area

choose a material

Quick search

**Can Recycling Point**

**Poster Creator**

PDF POSTERS

**Campus Ezine**

Sign up here to receive updates.

@



- Home
- Reduce
- Reuse
- Recycle
- Recycling Directory
- Poster Creator
- Students
- How to Guides
- Case Studies
- About Us
- Waste Aware Sites



Visit Sort It to find out how to Reduce, Reuse and Recycle household waste where you live.

## Campus Recycling Directory

You can use this directory to search for reuse and recycling services in your area. Simply select your local area, or enter the first half of your postcode, and choose the type(s) of material(s) you are looking to reuse or recycle. Local and national companies operating in your area will then be displayed in your search results. You can widen your search by selecting more than one local area.

For more information about using the directory view the [Recycling directory how to guide](#).

Collections
 Recycling Centres

Search by postcode

  
 (ie 'FK', 'FK10') **OR**

Search by local area (s)

- Aberdeen City
- Aberdeenshire
- Angus
- Argyll and Bute
- Clackmannanshire
- Dumfries and Galloway
- Dundee
- East Ayrshire
- East Dunbartonshire
- East Lothian
- East Renfrewshire
- Edinburgh City
- Falkirk
- Fife

**Show Materials** Choose from those recycled in area(s)



## **Key actions!**

- Establish your waste baseline**
- Implement the waste hierarchy**
- Integrate waste into policy and procedure**
- Raise awareness**



# Session 4

## Waste auditing

- Waste audits incorporate general features common to any audit:
  - They are pre-planned and methodical
  - They should be free from bias or prejudice
  - They encompass some form of inquiry and critical consideration of the resultant findings
  - They are concerned with all activities that affect waste issues (in particular legal compliance, waste streams and waste awareness).

## Key considerations...

1. Define the scope of the audit
2. Audits objectives
3. Audit methodology

### **EXERCISE:**

- In groups, spend 10 minutes discussing one of the three points



# 1. Audit Scope

- Sampling approach
- Geographical
- Timescale
- Issue focused e.g. paper waste, hazardous waste, material use.

## 2. Audit Objectives

e.g.

- To assess compliance with relevant waste legislation
- To identify all waste streams generated by the library/students unions/X department
- To understand the disposal routes for each waste stream
- To identify examples of good and bad practice
- To establish what monitoring and measuring is in place
- To provide comment on the effectiveness of the building's waste management systems
- To provide recommendations for improvement

## Site walkover:

- mapping of waste bins together with an examination of their contents
- taking photographs and making observations
- interviewing key personnel including cleaners and porters
- Recording evidence.

- Internal audits require a structured plan
- Audit programme should consider:
  - Audit cycle
  - Frequency of activity based on:
    - Potential environmental impact
    - Problems identified from previous audits
    - Existing environmental management system
    - Legislation
    - Organisational changes.

# Audit toolkit - checklists

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<b>Responsibility</b>	<b>Yes/ No</b>	<b>Comments</b>
Does your institution have a waste policy?		
Does your institution have a nominated waste manager/officer?		
Is anyone responsible at department/section level? (contact details should also be included in template 3.2)		
<b>Containers and storage for general waste</b>	<b>Yes/ No</b>	<b>Comments</b>
Are appropriate containers used for the storage of waste?		
Who decides what storage containers are appropriate?		
Are containers properly labelled?		
Is waste stored in a specially designated area?		
Are the storage areas secure with restricted access?		
Are all employees aware of relevant waste management procedures?		
Is a licence required for any storage areas?		
If YES, is the licence displayed?		
Are there appropriate procedures in the event of an incident?		

# Audit toolkit - checklists

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<b>Segregation and handling of Special/Hazardous waste</b>	<b>Yes/ No</b>	<b>Comments</b>
Are wastes properly segregated? (special/non-special)(hazardous/non-hazardous)		
Are wastes properly labelled?		
Are waste handled in a safe manner (any hazards taken into account)?		
Are all appropriate employees made aware of procedures?		
<b>Documentation</b>	<b>Yes/ No</b>	<b>Comments</b>
Are adequate records kept of all wastes?		
Are adequate records kept of the licensed storage area?		
Are adequate records kept of the correct and safe disposal of wastes?		
Do you require documentation stating that the waste has been destroyed?		
If special/hazardous waste is produced is the site registered?		
Has the waste carriers registration documentation been checked? Who by?		

- The aim of an audit is to highlight where improvements can be made in a system
- Audit findings can take three main forms:

Non-conformities

Recommendations

Observations



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# Audit findings

<b>Waste Stream</b>	
<b>Location Description</b>	
<b>Disposal method</b>	
<b>Frequency of</b>	
<b>Collection</b>	
<b>Applicable legislation</b>	
<b>Procedure in place?</b>	
<b>General Comments</b>	
<b>Recommendations</b>	



① Findings

Description of the issue

② Corrective actions

How the issue will be addressed

③ Responsibilities

Who is responsible for carrying out the actions

④ Timescales

When the actions must be completed by



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# Priority issues

Issues	Recommendations
<p><b>Batteries.</b> The Batteries Directive was published in the Official Journal on 26 September 2006. The UK and all other Member States now have a deadline of 26 September 2008 to transpose the provisions into national law. Although this legislation is not yet official in the UK, it is important to be aware of and prepared for forthcoming legislation.</p>	<p>Instigate battery segregation and send batteries to be recycled. Create a procedure for battery recycling. Create a procedure to ensure that rechargeable batteries (and battery chargers) are procured instead of disposable batteries, wherever possible. (This saves energy because the energy needed to manufacture a battery is on average 50 times greater than the energy it gives out)</p>
<p><b>Consent to discharge / Trade effluent license</b> – Certain departments use chemicals (mainly for experiments) and at present some of these chemicals are released to drain with extensive dilution. This liquid waste would be classed as a trade effluent, as the University is a commercial organisation.</p>	<p>The University should consider contacting Yorkshire Water to obtain a Trade effluent license.</p>
<p><b>Training and communication</b> – Overall, the majority of University employees were unsure about several elements of the University's waste management (from waste storage to waste disposal routes, to responsibility and final destination of wastes), although there were some examples of knowledgeable and highly committed individuals.</p>	<p>Consider developing a training programme, for key personnel involved with waste to ensure they are aware of the University procedures and all legal requirements. The Chartered Institute of Wastes management Waste Awareness Certificate (delivered by ECUS) may be an appropriate course.</p> <p>Consider devising a simple awareness raising package for all employees to ensure everyone understands the key issues associated with waste including the waste hierarchy and requirements for waste segregation. This could involve short training sessions or alternative communication methods.</p>



# Key actions!

**Carry out baseline assessment  
audits**

**Develop an ongoing audit  
schedule**



# Exercise 3

## Virtual audit



Break



## Session 5

# Implementing a waste management action plan

# 5. Action Plan: process

① **AUDIT** a) Site walkover

② **AUDIT** b) documentation review

③ **Creating objectives & targets**

④ **Developing action plan**

Understanding the issues  
and the figures –  
establishing the baseline

Including corporate  
commitments and best  
practice

Step by step actions to  
achieve the targets

Assigning responsibilities

Setting objectives and targets are essential:

**Objective:** to reduce waste to landfill by 20% by 2012

**Target 1:** to calculate a baseline for waste volumes by Jan 2010

**Target 2:** to increase waste recycling by 10% by June 2010

**Target 3:** to deliver waste reduction awareness training to all Departmental Managers by Dec 2010



## Key points:

- No specified number of objectives and targets – flexible
- Each objective should have at least one related target
- SMART targets important
- Objectives and targets create a structure for the action plan – i.e. the actions created must enable the targets to be achieved.



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# Action planning benefits



- Identify the key objective/goal – what are you trying to do?
- Identify options for improvement
- Prioritise/assess options
- Identify resources required vs. resources available
- Consult, engage and communicate
- Create plan format.

<b>Vision &amp; strategy:</b>	The vision and strategy - the overarching goal(s) to be achieved
<b>Targets:</b>	Long-term targets both quantitative and qualitative agreed as part of the vision and strategy
<b>KPIs</b>	Key performance indicators against which success will be measured
<b>Actions:</b>	Prioritised, costed actions which collectively deliver the agreed priority options and work towards the longer-term targets
<b>Roles &amp; responsibilities:</b>	Who (council section / partner) is responsible for delivering what
<b>Timescale:</b>	Realistic time plan showing the sequencing of actions over a specified period
<b>Programme Management:</b>	How implementation will be: managed; risk management; review processes; reporting and communications and embedding the plan



- Essential to gain buy-in across the board!

**In pairs you have 2 minutes to:**

- Identify one barrier to gaining buy-in and one solution**

[Environment Team Home](#)

[Environment Team Overview](#)

[Waste and Recycling](#)

**[Waste guide for departments](#)**

- [Waste - Standard Procedures](#)
- [Shredding Request Form](#)
- [White Goods Collection Request Form](#)
- [Skip Request Form](#)

[What Can I Recycle?](#)

[Where Can I Recycle?](#)

[Recycling Scheme Review](#)

[Why Should We Recycle?](#)

[Waste Data - the latest figures are in!](#)

[Waste Legislation](#)

['The Golden Trio': Winners!](#)

[The Golden Bin Challenge: Reviewed!](#)

[Energy](#)

[Travel and Transport](#)

[Sustainable Procurement](#)

[Water](#)

[Biodiversity](#)



## Waste Guide for Departments

[Cardboard](#)

[Clinical Waste](#)

[Confidential waste](#)

[Feminine Hygiene](#)

[Furniture](#)

[General Waste](#)

[Hazardous Chemicals](#)

[IT Equipment](#)

[Lamp Disposal](#)

[Landfill](#)

[Metal](#)

[Paper](#)

[Plastic](#)

### Contact The Environment Team

The Environment Team  
Room 17 Estates Department  
Fielding Johnson Building  
University of Leicester  
LE1 7RH  
[environment@le.ac.uk](mailto:environment@le.ac.uk)  
[waste@le.ac.uk](mailto:waste@le.ac.uk)

### Recycling A-Z



### Useful Links for Staff

- [Waste Guide for Departments](#)
- [Waste - Standard Procedures](#)
- [Shredding Request Form](#)

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# *Golden Trio Award*

This certificate is awarded to

*Graham Shivers*

in recognition of valuable contributions to the environment

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



# Sustainable Development

- Home
- Legislation
- Environmental Management
- Green e-bulletin

Search

This site  University

- Sustainable development
- Energy
- Water
- Wildlife
- Waste and Recycling**
- Sustainable Procurement
- Transport
- Buildings
- FAQ's
- Contacts

## Waste and Recycling

### Facts and Figures



- In 2007/08, the University produced about 4,000 tonnes of waste, of which about 72 per cent was recycled.
- The third annual waste audit in February 2009 showed that about 40 per cent of the general waste produced can be recycled.
- Most of the waste (about 100 million tonnes) produced in England and Wales ends up in landfill.

### What are we doing?

The University has a duty of care to ensure its waste management operations do not harm human health and the environment.

- **Sustainable waste management** – we use licensed contractors to collect and dispose of our waste. You can find details about what to do with your waste by following the link to the Waste Management Guide. We've built waste bin compounds to improve our management of waste on the Highfield campus. We completed a third waste audit in February 2009 which showed that 40 per cent of the general waste could be recycled. A quarter was food waste.
- **Reduce, Reuse, Recycle** – we want to reduce the amount of waste we produce and encourage the reuse and recycling of materials. We've rolled out a mixed recycling scheme across all our campuses. This scheme will allow us to recycle more and so send less to landfill.
- **Waste Electrical and Electronic Equipment (WEEE)** – in 2007/08 we produced about 51 tonnes of WEEE. We have put in place a procedure to deal with this growing waste stream to ensure we meet various legislative requirements, while also looking for the best environmental option for the waste. Follow the link to the Waste Management Guide to find out how to dispose of your WEEE.

### What can I do?

We can all do our bit to reduce the amount of waste we produce:

- **Re-think** – for example, do I need to buy this product?
- **Reduce** – for example, don't print everything off and if you have to, print double-sided on draft mode (saves ink).
- **Recycle** – for example, buy more durable products that require less energy and contain less hazardous materials.

### Other Southampton sites:

[Waste Management Guide](#)

### Web links:

[Environment Agency Information on Waste\\*](#)

\*The University cannot accept responsibility for external web sites.

### University news:

[News feeds](#)



## Estate Support Service

### Services

[Estate Planning](#)[Capital Projects](#)[Property Services](#)[Travel to Work & Parking](#)[Reporting Faults & Problems](#)[Waste & Recycling](#)[Frequently Asked Questions](#)[New Recycling Scheme](#)[Newsletter](#)[What can I recycle?](#)[Cleaning](#)[Furniture](#)[Mail Delivery & Collection](#)[Improvement Works](#)[Grounds Maintenance](#)[Maintenance Works](#)[Portering](#)[Room Booking](#)[Security](#)

### Waste and Recycling

The University is proactive in its commitment to reducing resource use and diverting waste from landfill in support of the University's Sustainability Strategy.

In this section:

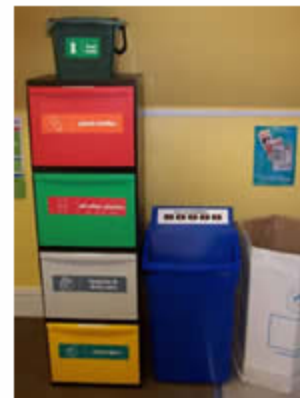
- [What can I recycle?](#)
- [New Recycling Scheme](#)
- [Office Declutter Guide](#)

#### What's new?

- ['All other plastics'](#) recycling rolled out across campus
- [Time for a spring clean](#)

The University's Waste Manager is Daniel O'Connor. Daniel works within the [Facilities Management Team](#) and can offer advice on legal compliance, hazardous waste, registration and current waste initiatives.

If you have any queries on waste management please contact Daniel on 0191 222 3963.



## Clean & Green

- ◀ UoR Home
- ◀ Clean & Green Home
- About us
- Ethical procurement and Fairtrade
- Sustainable development
- Carbon management
- Recycling and waste management
- What we have recycled**
- Clean and Green team and initiatives
- Recycling facilities
- Waste disposal
- Green transport**
- Get involved
- Our research

### See also

- ▶ Select Environmental Services

## What we have recycled

Since August 2007, 1,153 tonnes of waste collected from all University properties (excluding farms) of which we have successfully recycled 372 tonnes (32%):

- 162 tonnes of mixed recyclables
- 97 tonnes of card & paper
- 25 tonnes of IT equipment
- 24 tonnes of glass
- 18 tonnes of metal
- 17 tonnes of wood
- 15 tonnes of clothing
- 9 tonnes of confidential waste
- 3 tonnes of fridges/freezers



Thus reducing the amount (781 tonnes) sent to landfill. Using an advanced 'Pay by Weight' system and being the largest company in Berkshire to do so, the University carefully manages all of its waste streams. We aim to raise this figure to 50% by 2012.

## What we recycle

Here is a summary of the recycling carried out by the University:

- Since October 2005, 37,043kgs of redundant IT equipment has been collected of which 91% has been reused and 9% has been recycled.
- Bottles Banks were installed at Central Catering/RUSU in February 2005 and at Halls with bars since March 2007.
- Fridges and freezers are stored and when the container is full they are taken to be de-gassed and re-processed.
- Confidential waste is shredded on site and then made into fuel pellets. Between August 2005 and February 2007, 21,193kgs of paper has avoided expensive landfill costs.
- Clothing Banks were installed at all Halls during the summer term and due to its success, there are plans to roll this out more extensively in the future.
- Three 40 cubic yard containers have recently been installed for the collection and recycling of



## **Key actions!**

**Develop an action plan to  
address priority issues**

**Set waste objectives and  
targets**

**Develop a suite of action plans  
for departments**

**Consult engage,  
communicate, motivate**



# Exercise 4

## Action Planning



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# Key actions!



1. Contextualise waste when raising awareness, gaining buy-in and instigating change
2. Ensure legal compliance
3. Create a waste legal register
4. Check compliance regularly
5. Stay abreast of changes
6. Establish your waste baseline
7. Implement the waste hierarch
8. Carry out baseline assessment audit
9. Develop an ongoing audit schedule
10. Develop an action plan to address priority issue
11. Set waste objectives and targets
12. Consult engage, communicate, motivate



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# Further help and support

- EAUC
- WRAP
- Envirowise
- Waste Aware Campus

You are here: [Home](#) / [Business](#) / [Using recycled paper](#) / [Case studies](#) /

## University Case Studies

### Bournemouth University

Attracting students through recycled paper

[> Further details](#)



### The University of Edinburgh

Recycled paper in higher education

[> Further details](#)



### University of Gloucestershire

Learning to benefit from recycled paper.

[> Further details](#)



### Robert Gordon University

Using recycled paper to support organisational rebranding

[> Further details](#)



### University of the West of England

University makes switch to recycled

[> Further details](#)



# Case studies



# Summary





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# Course aims & objectives

- To provide an introduction to the impact of waste globally, nationally and in the HEFE sector
- To understand the key requirements of waste legislation in England & Wales
- To gain a comprehensive understanding of the practicalities of waste management
- To be able to carry out a waste audit
- To implement a waste action plan.



**Thank you!**

**[www.ecusltd.co.uk](http://www.ecusltd.co.uk)**

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**Tel. 0114 266992**