



IEMA Foundation Certificate in Environmental Management

Introduction

This Supplement has been prepared to augment and update your study material for the IEMA Foundation Certificate in Environmental Management. You should read it in conjunction with your existing course material.

Please note that the case studies in this Supplement are additional examples designed to help you in studying the course, rather than essential changes to the content of the course which you need to be aware of.

User Guide

Please add the following **Case Study** box to the **User Guide** at the beginning of your course:



Case Study

Case study boxes contain examples of real-life scenarios and situations related to the main content and they are very useful for gaining a deeper understanding of the topic.

Element 1: Sustainable Business Thinking

Key Environmental Issues

Global Climate Change

Immediately before the More box at the end of this subsection, please insert the following Case Study box:



Case Study

Energy Efficiency

Terra Nitrogen (now part of CF Industries), a leading nitrogen fertiliser producer, was looking at alternative ways in which to use waste carbon dioxide and steam that was generated through the manufacture of ammonia. With the help of the National Industrial Symbiosis Programme (NISP) the company was put in touch with the Humberside fruit and vegetable grower, John Baarda Ltd. A joint collaboration between the two companies meant that John Baarda constructed a £12 million greenhouse (the largest in the UK) and cultivates 300,000 tomato plants. The site will use 12,500 tonnes of CO₂, a by-product of the nearby Terra site. Steam from the plant will also be used to heat the greenhouse. The results of the project include:

- 65 new jobs created.
- Reduction of 12,500 tonnes of CO₂ emissions.
- Successful reuse of waste heat.
- £15 million private investment in the region.



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Environment and Business

Resource Efficiency

Immediately before the **More** box at the end of this subsection, please insert the following **Case Study** box:



Case Study

Resource Efficiency

The Dyson Airblade is a ground-breaking hand dryer that:

- Works by blasting a sheet of unheated air at 400mph to scrape water from hands in 10 seconds.
- Has a small, low energy, brushless motor that provides enough pressure to dry hands without the need for heat.
- Does not require a power-hungry element to operate, unlike conventional hand dryers.
- Avoids paper-towel waste.

A footprinting exercise undertaken by the Carbon Trust identified that:

- The polycarbonate-ABS plastic used to make the product produces 50% less CO₂ emissions during production than the aluminium equivalent.
- Transport to washroom makes up only 1% of the total carbon footprint of the hand dryer.
- Energy use during operation represents 90.8% of total carbon emissions, but a lot of carbon emissions reduction work was carried out to keep this low, including the use of a digital motor that spins at 88,000 rpm (five times faster than a Formula 1 car engine).
- The end-of-life phase of the product represents around 1% of its total footprint.

Element 2: Environmental Legislation

Key Pieces of Environmental Law

Waste

Environmental Permitting for Waste Sites

In this subsection, immediately after the paragraph beginning “Although there are exemptions”, please insert the following **Case Study** box:



Case Study

Legal Case

A haulage company deposited more than 10 tonnes of waste soil in order to fill a lake and allow a miniature railway to be re-routed during January and February 2010. The company pleaded guilty to depositing controlled waste at a site without a permit or exemption and was fined £27,500 and ordered to pay costs of £7,796. Records from the haulage company show that the waste included wood, plastics, metal and masonry and was delivered to Billing Aquadrome in 604 loads. The illegal dumping was a breach of the then **Environmental Permitting Regulations 2007** (now updated to 2010) by depositing waste at a site without a permit or exemption, and Section 34 of the **Environmental Protection Act 1990** by failing to ensure a written description of the waste was transferred.



Duty of Care

In this subsection, immediately before the **Example of a Waste Transfer Note**, please insert the following **Case Study** box:



Case Study

Legal Case

The owner of a Plymouth waste-disposal company was given a nine-month prison sentence suspended for two years and made the subject of a four-month curfew (between 8 pm and 7 am) when his vehicle was used to dump asbestos and other waste on an industrial estate. An eye-witness saw two men fly-tipping waste from a flatbed truck and when approached it sped off. The court heard that the defendant had falsified DVLA documents and signed waste documents with a false name and that in 2010 there were 1,800 fly-tipping incidents costing the local authority £125,000. The man was found guilty of allowing his vehicle to be used in the commission of fly-tipping, an offence under Section 33(5) of the **Environmental Protection Act 1990**.

Packaging Regulations

Please delete the whole of this subsection.

Obligated Businesses

Please delete the whole of this subsection.

Then substitute the following new text:

“Producer Responsibility

Producer responsibility is a policy tool that places responsibility for products when they get to the end of their life on the organisation that places the product on the market.

There are a number of European directives that implement the concept, these being based on priority waste streams as identified in the European Union’s Fifth Action Programme. (All of these directives have been implemented into UK law.)

Packaging Waste

The **Producer Responsibility Obligations (Packaging Waste) Regulations 2007** were introduced to ensure that packaging is recovered and recycled and does not end up in landfill sites. This was the first in the theme of European-initiated producer responsibility laws that make the producer of a product responsible for its environmental impacts.

The Regulations require those who are members of the packaging chain, whether they are manufacturers or retailers, to recover or recycle a calculated amount of their packaging waste. In order to demonstrate that packaging waste has been recovered or recycled, certificates are issued by companies who actually carry out recovery or recycling of packaging.

Companies who have an obligation to recover or recycle, but cannot do so because the packaging has long since moved up the supply chain, are able to buy recovery and recycling certificates to prove compliance. These certificates are called Packaging Recovery Notes (PRNs).

The Regulations apply to businesses:

- In the packaging chain.
- Handling more than 50 tonnes of packaging material and/or packaging in a year.
- Having an annual turnover of over £2 million.

Businesses are classed as being in the packaging chain if they:

- Manufacture raw materials for packaging.
- Convert raw materials into packaging.
- Fill packaging (i.e. put goods or products into packaging).
- Sell packaged goods to the final user.
- Perform a ‘service’ provision (e.g. businesses that lease/hire out packaging, franchisors and other licensors, pub-operating companies, etc.).



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- Import packaging/packaging materials/packaged goods into the UK.

Recovery basically means reprocessing to aid recycling, incineration with energy recovery and composting.

The specialist companies which arrange for the final recovery and recycling of packaging materials, called Compliance Schemes, issue materials certificates to provide evidence of the tonnage of each material handled. Companies which join a compliance scheme will take on the legal responsibilities of their clients to provide the agencies with this data and evidence of compliance.

Waste Electrical and Electronic Equipment

The objective of the **Waste Electrical and Electronic Equipment Regulations 2006** is the prevention of WEEE. If this cannot be achieved, reuse, recycling and other forms of recovery of such wastes should be undertaken. Ultimately the aim is to minimise the quantity of such items ending up in landfill. The target is for EU member states to collect 4kg per person per year, on average.

Some of the key requirements of the **WEEE Regulations** are:

- Producers - must join an approved compliance scheme; must mark EEE with a crossed-out wheelee-bin symbol; must keep records of the amount of EEE they put on the market.
- Distributors – must provide a free take-back service; must provide information to householders on collection and take-back services and information on the effects on human health and the environment, etc.
- Consumers – no obligations placed on consumers although they are encouraged to play their part in the separate collection of WEEE.
- Collection and treatment – local authorities are encouraged to register their civic amenity sites as designated collection facilities.

Batteries

The **Batteries and Accumulators (Placing on the Market) Regulations 2008** and **Waste Batteries and Accumulators Regulations 2009** have the following provisions:

- Prohibit the use of cadmium and mercury above certain limits in batteries. (The limits vary for different battery types. Some battery applications have exemptions.)
- Require specific labelling to facilitate recycling (the crossed-out wheelee-bin symbol; 'Pb', 'Cd', 'Hg' if contains lead, cadmium or mercury, respectively).
- Require that appliances that use batteries are so designed that the batteries can easily be removed.
- Battery producers have to register with the regulator, join and finance a battery compliance scheme (which will carry out waste battery collection, treatment and recycling obligations).
- Portable battery sellers have to take back waste (i.e. spent) portable batteries free of charge but may pass these on to a battery compliance scheme.
- Waste industrial and automotive batteries must not be disposed of by landfill or incineration.
- Producers of secondary portable and automotive batteries (i.e. batteries that are rechargeable and not single use) must mark them with their capacity.

End of Life of Vehicles

The **End of Life of Vehicles (ELV) Directive (2000/53/EC)** is designed to prevent or reduce the quantity of waste that is produced from ELVs and improve recovery and recycling levels for ELVs. End of life of vehicles is defined as motor vehicles and their components that are classed as waste.

Key requirements include:

- Producers – registration of vehicles; restriction on the use of certain heavy metals; making of rubber and plastic components to aid recycling; free take-back of vehicles put on the market after 1 July 2002.
- Vehicle owners and operators – must check that dismantling and disposal sites are properly licensed or permitted and registered as an authorised treatment facility.
- Site accepting motor vehicles – must have a licence or permit; must be an authorised treatment facility, allowed to issue certification of destruction to vehicles owners."

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Water

In this subsection, immediately before the paragraph beginning "There are similar controls in place", please insert the following **Case Study** box:



Case Study

Legal Case

A food producer was fined £8,000 in March 2012 for discharging dirty effluent into an Old Leake stream in Boston. It was also required to pay costs of £4,632. Under an environmental permit the company was allowed to discharge treated trade effluent from a treatment plant after it had met prescribed standards. Following Environment Agency testing of stream water it was found that the discharge had a significant effect on invertebrates and low oxygen levels were reported as far as half a kilometre downstream. The company was found not to have complied with a condition of its permit contrary to Regulation 38(2) of the **Environmental Permitting (England and Wales) Regulations 2010**.

Regulatory Agencies

In this main section, immediately below the table entitled "**Regulatory Bodies and Responsibilities**", please insert the following new paragraph:

"You should be aware that it is likely that the Welsh division of the Environment Agency will be replaced by a new body known as Natural Resources Wales in 2013. This will also cover the current duties in Wales of the Forestry Commission and the Countryside Council for Wales."