

IEMA Associate Certificate Supplement



IEMA Associate Certificate in Environmental Management

Introduction

This Supplement has been prepared to augment and update your study material for the IEMA Associate 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 2: Background to Environmental Law

Background to UK Law

Criminal Courts

Types of Criminal Law

In the last paragraph under this subheading, please amend the 1st sentence to read:

“**Framework Acts** are the opposite of the **prescriptive Acts.**”

Regulators

Environment Agency/Scottish Environment Protection Agency

After the last paragraph under this subheading and immediately before the **More** box, please insert the following:

“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.”

Option for Enforcement

Below the table in this subsection, please insert the following Case Study box:



Case Study

Legal Case

A North Wales builder and waste operator is no longer able to work in the waste industry after his permit to carry and store waste was revoked. In April 2011, the defendant pleaded guilty to charges of illegal waste disposal on farmland in Conwy and Denbighshire and not storing or treating waste properly. Following a number of enforcement actions which were ignored, the Environment Agency permanently revoked his permit to store waste at an industrial estate in Denbigh and to carry waste as part of the company that he owned.



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Overreaching Criminal Environmental Law

Pollution Prevention and Control Act 1999 and Environmental Permitting (England and Wales) Regulations 2010

In the **More** box at the end of this subsection, please delete “<http://www.netregs.gov.uk/>” and substitute “<http://www.environment-agency.gov.uk/business/topics/permitting/default.aspx>”.

Element 3: Controls on Emissions to Atmosphere

Air Pollution Laws

Global Climate Change

European Union Climate Change Laws

Below the **More** box in this subsection, please amend the 2nd bullet point to read:

- “**Directive 2010/31/EU** on the Energy Performance of Buildings.”

Element 4: Waste Management

Waste Categories

In the **Key Information** box at the beginning of this main section, please delete the 1st bullet point and substitute the following:

- “Waste can be defined as ‘any substance or object which the holder discards, intends to discard, or is required to discard’.”

Then immediately below the **Key Information** box, delete the 1st paragraph of text (including the source) and substitute the following:

“Waste is described as:

‘any substance or object which the holder discards, intends to discard, or is required to discard’.”

European Waste Laws

Managing Waste

General Requirements

Immediately before the paragraph in this subsection beginning “There are two key duty holders”, please insert the following **Case Study** box:



Case Study

Legal Case

A Wellingborough wood-recycling company was fined £3,000 and ordered to pay £3,000 costs for causing the escape of wood dust from a yard in May 2012. Local residents and businesses stated that exposure to the dust caused irritation and pain to the eyes, sneezing and covered cars (it was difficult to remove as it contained sticky sap). The company pleaded guilty to breaching the **Environmental Protection Act 1990** for more than a year as it failed in its duty to implement reasonable measures to prevent the escape of waste from its control.

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Hazardous Waste

Site Waste Management Plans (SWMP)

At the end of this subsection and immediately before the subheading “**The Waste (Scotland) Regulations 2012**”, please insert the following **More** box:



More...

For a simple guide to site waste management plans visit:
http://www.environment-agency.gov.uk/static/documents/NetRegs/SWMP_Simple_Guide_Feb_2011.pdf.

Then delete the whole subsection headed “**The Waste (Scotland) Regulations 2012**” and substitute the following text:

“Waste Restrictions

For England and Wales under the **Waste (England and Wales) Regulations 2011 (as amended)** the following requirements have been set:

- Waste paper, metal, plastic or glass must be collected separately by establishments or undertakings from 1 January 2015.
- All waste collection authorities must make arrangements for the separate collection of waste paper, metal, plastic or glass.
- For both the above an exemption to separate collection is when the collection is not technically, environmentally or economically practicable or when it is not necessary to ensure recovery.

For Scotland under the **Waste (Scotland) Regulations 2012** the following requirements have been set:

- Producers of controlled waste (not including occupiers of domestic properties) must ensure separate collection of dry recyclable waste from 1 January 2014.
- Food businesses must ensure that food waste is separately collected by 1 January 2016.
- Persons who collect and transport controlled waste must keep separate all waste that is collected separately.
- Persons who produce food waste must ensure from 1 January 2016 that it is not disposed of to a drain or sewer.
- Requirement to remove from mixed waste recyclable metal and plastics from 1 July 2012.
- Ban on biodegradable municipal waste from landfill, so as to reduce methane emissions from 1 January 2021.
- Local Authorities must provide householders with a collection for dry recyclables from January 2014 and food waste from January 2016.”

Then delete the **More** box at the end of the subsection headed “**The Waste (Scotland) Regulations 2012**”.



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Waste Minimisation

In this main section, immediately before the bullet point “**Preparing for Reuse**”, please insert the following **Case Study** box:



Case Study

Waste Prevention

- A.G. Barr’s Cumbernauld site has since 2010 made some significant savings in plastic primary packaging of its soft drink bottles, including reduction of:
 - 2 litre bottle by 10.5% to 38.5g.
 - 500ml bottle by 17.9% to 14.7g.
 - 250ml bottle by 20.5% to 14.7g.

This has resulted in a carbon reduction of 1,860 tonnes of CO₂ equivalent and saved 505 tonnes of plastic. The 500ml and 250ml bottles are amongst the lightest weight carbonated soft drink bottles on the market.

- Typhoo tea launched an Eco Refill pack in November 2011. The new product reduced packaging weight by 92% based on the standard Typhoo 40-teabag carton. It is said to be the lightest weight tea packing on the UK market. In addition to packaging reduction the product will also lead to transport and carbon reductions.

Then immediately before the subheading “**Landfill**”, please delete the closing inverted commas and insert the following **Case Study** box:



Case Study

Anaerobic Digestion

Adnams breweries have installed an Anaerobic Digestion plant in Southwold. The plant consists of three sealed chambers that convert organic waste (such as brewery waste and local food waste) into biogas, which is then transferred to the Gas Grid. The purpose of the plant is to:

- Reduce waste to landfill, saving around 50,000 tonnes of CO₂ equivalent per year.
- Create gas from renewable sources as the carbon released from the combustion of biogas will be carbon neutral, since it was removed from plants and animals as they grew rather than being locked away as fossil fuels.
- Prevent the release of methane, a powerful greenhouse gas, by stopping waste going to landfill and channelling it to the Gas Grid.

Further benefits:

- As a by-product from the process, a liquid organic fertiliser is produced that can be used by local farmers, including barley growers.
- Around 4.8 million kilowatt hours of gas are planned to be generated per year (enough for around 235 family homes).

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Waste Treatment Technology

In this subsection, immediately before the bullet point “**Anaerobic Digestion (AD)**”, please insert the following **Case Study** box:



Case Study

Waste Separation

Shasun Pharma Solutions is a contract manufacturer of pharmaceutical and bulk chemical products based in Cramlington in the North East of England. In 2009, the company was paying for disposal of around 4,000 tonnes of hazardous waste per year. With the help of the Environment Agency the company reassessed 360 process streams and implemented a waste segregation and bulking strategy to optimise the revenue generated by its waste. Now more than 95% of the waste is focused toward sustainable reuse in the industrial sector, changing a £1 million waste cost into a significant profit for the business.

Summary

In this main section, please delete the 1st bullet point and substitute the following:

- “Waste can be defined as ‘any substance or object which the holder discards, intends to discard, or is required to discard’.”

Element 5: The Water Environment

Water Management Laws

Key European Directives

Water Management Framework

At the end of this subsection and immediately before the subheading “**Water Quality Standards and Objectives**”, please insert the following new text:

“River Basin Management Plans are required by the **Water Framework Directive**. They operate as an important means of gaining improvement, sustainable use and protection of the water environment. The Directive requires that each member state produces a plan for all river basin districts within its territory. The plans must include objectives for water bodies, reasons why objectives have not been met where relevant and action plans for meeting objectives.

In some cases, river basin districts will pass through international borders and plans will require international co-operation. For example, the plan for the River Danube in central Europe requires the input of many countries including Germany, Hungary and Slovakia to name a few.

Water quality objectives are the industry-preferred means of legal control in reaching the requirements of the Directive as they allow for classification based on the actual use of the watercourse rather than a specific set standard.”

Then insert the following **More** box:



More...

The River Danube river basin management plan can be viewed at:

<http://www.icpdr.org/main/publications/danube-river-basin-management-plan>



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Water Discharge Activity Permits

In this subsection, immediately before the paragraph beginning “The **Water Industry Act 1991**”, please insert the following **Case Study** box:



Case Study

Legal Case

A £30,000 fine was issued to a dairy distribution depot in Essex that allowed milk to escape from its site, causing pollution of a watercourse in Barking. The issue was initially found by an Environment Agency Inspector when they discovered a white substance being discharged into the watercourse from a surface water drain. This led to extensive fungal growth and caused damage to the natural environment over the following months. Further investigation revealed that staff were washing milk spillages into the drainage system, part of which eventually discharged to the watercourse. The company was found guilty of causing a water discharge activity by breaching Regulation 12(1)(b) of the **Environmental Permitting (England and Wales) Regulations 2010**.

Water Use Efficiency

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



Case Study

Water Efficiency

Molson Coors at its Tadcaster factory aimed to improve water efficiency, and raise awareness of the importance of water in the local community. It invested in equipment to increase water efficiency, by cleaning and reusing water from a range of processes. In 2008, the amount of water used was 3.8 pints of water to produce one pint of beer. Following implementation of improvements in 2011, this had decreased to 3.3 pints of water per pint. The company has planned to reduce its water use by 15% by the end of 2012 (compared with 2008 levels).

Water Pollution Prevention

Water Treatment Technology

Physical Treatment

Immediately above the **Simple Decanter Centrifuge** diagram in this subsection, please insert the following new paragraph:

“A centrifuge operates to clarify an effluent around a centre line. The unit rotates at high speed around its centre line and, as it does so, the impact of gravity is replaced by that of centrifugal forces that can be around 4,000 times that of gravity. Such force can be used to cause effective separation of solids from liquids at a much faster rate than sedimentation.”

Sewage Treatment

At the end of the text in this subsection, please insert the following **Case Study** box:



Case Study

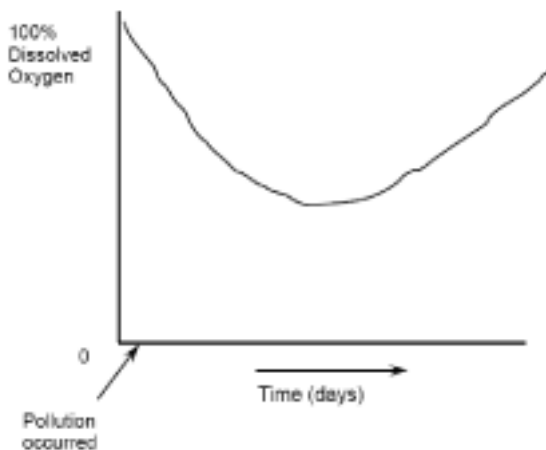
Legal Case

A local water company was ordered to pay £33,000 in fines and costs for poor maintenance of a sewage treatment works in Cornwall. There had been a long history of non-compliances and failures with plant. During an inspection, an Environment Agency Officer noted in May 2011 that a filter bed was not working, which resulted in pungent odours and black effluent being released into a nearby stream. The discharge killed most aquatic life for a distance of 600 metres and also severely impacted the stream further down the catchment. The company pleaded guilty to breaching its water discharge activity permit issued under the **Environmental Permitting (England and Wales) Regulations 2010**.

Then insert the following additional text:

“Links between Natural Treatment Process and Wastewater Treatment Technologies

A watercourse will naturally recover from serious organic pollution over a period of time. Initially, soon after the pollutant enters the water, the oxygen levels begin to drop, until eventually they will reach a level that will lead to significant changes to the watercourse’s biodiversity. This could mean that species that cannot cope with very low oxygen conditions, such as fish, will die, whereas others that can, such as blood worms, will thrive. However, as time proceeds, bacteria will feed on the organic pollutant until it is used up and the oxygen level will recover to the levels present before the incident.



Dissolved Oxygen “Sag” Curve

This is similar to the way the secondary treatment works in sewage treatment, particularly that of a trickling filter where a film of algae, protozoa and bacteria break down organic particles and substantially reduce the oxygen depletion potential of the effluent. Additionally, other wastewater treatment techniques closely mimic natural purifying activities such as sedimentation of solid particles that may occur in a lake or slow flowing river and the action of UV light from the sun to kill aquatic pathogens present in a reservoir.”



Element 8: Hazardous Materials Management

Pesticides

Legislation Applying to the Control of Pesticides

After the 2nd bullet point under this subheading, please insert the following:

- **“Plant Protection Products (Sustainable Use) Regulations 2012** - cover requirements for development of national action plans for plant protection products (PPPs) and prevent professional use of PPPs unless the user has a specified certificate or is authorised and reasonable precautions for storage, handling and mixing of PPPs are in place.
- **EC Directive on Sustainable Use of Pesticides (2009/128/EC)** - key requirements include development of national action plans; mandatory test of application equipment; training; operator, adviser and distributor certification; ban on aerial spraying (with some limited exemptions); provision for water protection and sensitive sites; reduction of risk with regard to storage, handling and disposal; promotion of low input regimes (integrated pest management).”

Element 10: Producer Responsibility

Introduction to Producer Responsibility

In this main section, below the **Key Information** box, please delete the existing bullet points and substitute the following:

- **“EC Directive on Packaging and Packaging Waste (94/62/EC).**
- **EC Directive on Waste Electrical and Electronic Equipment (2002/96/EC).**
- **EC Directive on Waste Batteries and Accumulators (2006/66/EC).**
- **EC Directive on End-of-Life Vehicles (2000/53/EC).”**

Packaging Waste

Packaging Waste Regulations

In this subsection, immediately before the subheading **“Essential Requirements”**, please insert the following **Case Study** box:



Case Study

Legal Case

A company that imports and distributes kitchen units and electrical accessories was fined £18,000 and forced to pay costs and compensation in October 2011. The prosecution followed a visit to the company’s premises in Avonmouth, during which it became apparent to an Environment Agency inspector that the company was obligated under the **Producer Responsibility (Packaging Waste) Regulations 2007**, as it handled 164 tonnes of packaging a year and had an annual turnover of £22.9 million. By failing to register it had made savings of £5,430.