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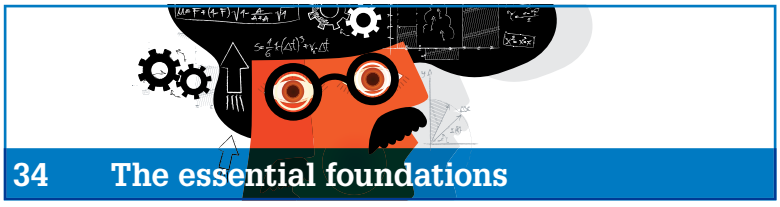
UK experts Martin Charter and Vic Clements on the fundamentals of ISO 14006, the new international standard for eco design

Lucy Yates from Consumer Focus and the Carbon Trust's Harry Morrison discuss the pros and cons of labels revealing a product's CO_2 emissions

The UK's higher education sector has to cut its emissions by 43% against 2005 levels. *the environmentalist* finds out how Lancaster University is doing

Robert Wiseman Dairies is piloting innovative software to cut down on face-to-face meetings, saving money and reducing emissions. Paul Suff reports



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IEMA works alongside government, the media and industry to enhance the recognition of the profession and promote the importance of practitioners in combating climate change, working towards a low-carbon economy and building a sustainable future.

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Wasted resources

A judicial review is to consider whether the government has correctly transposed the revised Waste Framework Directive (rWFD). Specifically, the court will decide whether Defra's interpretation of art. 11 – promoting high-quality recycling by 2015 through separate collections – is poor and will result in inferior materials arriving at recycling facilities.

The Campaign for Real Recycling (CRR), the group of UK reprocessors that sought permission for the review, certainly thinks the government has a case to answer. It believes that the Waste (England and Wales) Regulations 2011, which transpose the rWFD in those two countries and came into force on 29 March, are deficient and will lead to valuable resources being wasted. It says the government should embrace not just the letter of the Directive, but the spirit of it as well.

Whether or not the High Court will side with the CRR remains to be seen, but a new report (p.9) from the UK Environmental Law Association suggests that the government's transposition of EU legislation is frequently flawed. Although the findings are only preliminary (a final report is scheduled for February), they highlight several problems, notably that piecemeal transposition can create a patchwork of legislation that too often is overly complex and lacks transparency. It cites the Water and Waste Framework Directives as examples of this, with both having been implemented via an array of different UK primary statutes, statutory instruments, ministerial directions, government and regulator policy documents and regulatory position statements.

> The UK's hotchpotch of environmental legislation and guidance is incomprehensible to lawyers let alone the environmental professionals who must also make sense of it

Such a hotchpotch of legislation and guidance is confusing and incomprehensible for lawyers, let alone the businesses and environmental professionals that must make sense of it in their everyday activities.

The government's Red Tape Challenge provides an opportunity to create a more coherent and transparent legal regime. But that will only happen if the focus is on streamlining existing environmental regulation and improving how the government transposes EU laws, rather than on ditching laws essential for the protection of the environment.

Paul Suff, editor

Short cuts

ECHA consults on hazardous substances

Twenty chemicals are on a new candidate list released by the European Chemicals Agency (ECHA) for possible authorisation under the EU REACH – Registration, Evaluation, Authorisation and restriction of Chemicals – Regulation (1907/2006), which came into force on 1 June 2007. The chemicals have been identified as substances of very high concern, either because they are classified as carcinogenic and/or toxic for reproduction or pose a risk to the environment. There are already 53 substances on the candidate list. Inclusion imposes new information requirements on suppliers of preparations and products containing the substances. It can also mean chemicals are selected for authorisation, triggering additional duties for producers, importers and suppliers of substances. The latest ECHA proposals (lexisurl.com/iema10804) are subject to a public consultation, which is open until 13 October.

Scottish compliance

New figures from the Scottish Environment Protection Agency (SEPA) reveal that 85% of operators covered by its compliance assessment scheme (CAS) achieved a rating of excellent, good or broadly compliant in 2010. CAS details how well permitted operators in Scotland have met the conditions of their licences, including operators with pollution prevention and control (PPC) Part A and (for the first time) Part B permits. Of the 4,075 operators included in the 2010 CAS, 2,951 (72%) were rated excellent, 476 (12%) good and 51 (1%) as broadly compliant. Of the remaining sites, 354 (9%) were classed as at risk, 200 (5%) as poor, and 43 (1%) as very poor. The figures show an increase in the number of PPC Part A sites achieving a rating of excellent, good or broadly compliant, up 3.5% from 83.4% in 2009. Next year the figures will also include sites regulated under water resources use, radioactivity and small point source regulatory schemes.

Report clarifies green transition but lacks new policy initiatives

Strategy The government has responded to calls by business leaders to define what it means by a green economy and to clarify businesses' role in the transition by publishing a new joint report from DECC, Defra and the business department (BIS).

The document, *Enabling the transition to a green economy* (lexisurl.com/iema10748), provides a vision to 2020 and maps out planned government action in a number of areas, including on climate change and resource efficiency.

The key theme is cooperation between the business community and the government, and the report highlights the creation of the Green Economy Council – a group of chief executives and government ministers that meets quarterly to discuss how the economy can rise to the low-carbon challenge – as evidence of how this partnership will work going forward.

"Moving to a green economy presents huge opportunities for British businesses not only to reduce their environmental impact, but also to transform products and services, develop cleaner technologies, and capture new international markets," said environment secretary Caroline Spelman.

Although the document includes recommendations for business that the government says will deliver major cost savings and increased competitiveness, it contains no new policy initiatives, mainly regurgitating policies already in place.

The lack of any new announcements was criticised by environmental groups. "These publications are basically a summary of what the government is already doing," commented Luke Wreford, at WWF UK. Steve Lee, chief executive at the Chartered Institute of Waste Management, said: "We look forward to seeing more information on the real measures that will need to be put in place to underpin the government's vision and support UK businesses to meet the challenges ahead, many of which are not sufficiently addressed in this document."

Producer duty fails cost test

Waste Government measures to ensure manufacturers take responsibility for the waste created at the end of product life cycles are failing because local authorities and taxpayers are paying to recover and recycle the materials. That is the conclusion of a report for the Scottish government outlining potential producer responsibility regimes.

To be effective the regimes, which cover packaging, waste electrical and electronic equipment (WEEE) and end-of-life vehicles, must ensure the full financial burden of collecting and recycling waste rests with the producer, argues the report. These firms can then pass the additional costs on to consumers, ultimately following the "polluter pays" principle.

However, this is not the case in the UK, where efforts to minimise the cost to industry of regimes such as the obligation to take back WEEE have resulted in local councils paying for the majority of waste management. Another criticism is that the UK only attempts to meet the minimum requirements of EU Directives, rather than attempting to set leading targets.

Responding to the criticisms in the report, a spokesperson for the business department said the regimes were important in meeting the UK's obligations under European law but that the government was committed to improving them where necessary. "The government wants to work in partnership with local authorities and businesses to encourage and spread best practice in waste prevention and resource management," he said. "This includes looking to business to take greater responsibility for the products they place on the market, from design to disposal."

The Scottish report was welcomed by the country's environment secretary Richard Lochhead, who said it would help to inform future waste policy in Scotland. "As our zero waste plan is driven forward, there is scope to consider how existing producer responsibility regimes may more effectively influence and improve the management of waste and resources."

Zero Waste Scotland has already confirmed that it is looking at options to take forward pilots of deposit-and-return systems outlined in the report.

Most CRC reports on time

Only 5% of participants fail to submit data, as firms reveal the administrative burden of the scheme

Emissions Initial figures from the Environment Agency suggest that the vast majority of businesses and public sector bodies covered by the Carbon Reduction Commitment Energy Efficiency (CRC) scheme have handed in their first-year reports on time.

Just 254 of the 4,549 reports expected did not reach the agency by the 29 July deadline, seeming to contradict reports from earlier in the year suggesting that more than 10% of participants were struggling to prepare the required reports while others were willing to be fined rather than comply with the scheme's complex requirements.

Following the high compliance rate for submitting reports, the agency confirmed that the first performance league table will be published as planned in the autumn. At the same time, DECC asked organisations to detail, in a survey, the costs of participating in the CRC as it seeks to simplify the scheme during phase II, which starts in 2013.

Each participant has had to collate and present two reports to cover the first year of the scheme, which started in April 2010 – a footprint report summarising all the energy they were supplied with in the previous year and an annual report detailing emissions that fall under the CRC.

Jonathan Garrett, group head of sustainability at infrastructure firm Balfour Beatty, says that the second of these reports was the most difficult to put together. "If the scheme was restricted purely to half-hourly metered data it wouldn't be a problem. But the requirements on top of that made the whole process very, very resource intensive," he said. "We had to compile huge amounts of information for the reports, with one spreadsheet containing 27,000 lines of data."

To ensure it could meet the requirements of the CRC, Balfour Beatty created two new full-time job roles to manage the process.

Meanwhile, Thomas Cook estimates it spent 125 days in preparing for and understanding the scheme.

Victoria Barlow, group environment manager at the travel company, confirmed that the main difficulties lay in sifting through 900 sources of data and reclassifying operations in line with the CRC's categories.

Garrett at Balfour Beatty argues that a failure to understand the realities of businesses may have caused many of the problems. "The CRC just wasn't designed for complex organisations and the government doesn't seem to have appreciated the difficulties the requirements would cause on the ground."

Both Garrett and Barlow agree that existing proposals to improve the scheme do not go far enough.

"We support the CRC and its aims," said Barlow. "But after spending more time and resources than we anticipated on the first reporting process, we support a simplification of the scheme that allows organisations to focus more on making energy efficiencies."

Initial estimates indicate that more than 60 million tonnes of carbon dioxide emissions were reported on in this first year of the scheme, which equates to more than 10% of the UK's total annual CO_2 output.

Official EU HFC-23 figures misleading

Emissions A study by the Swiss Federal Laboratories for Materials Science and Technology (EMPA) claims that EU emissions of the highly potent greenhouse gas (GHG), trifluoromethane (HFC-23) are much higher than those recorded in member states' GHG inventories and reported to the UNFCCC.

According to the research, which is published in *Geophysical Research Letters* (lexisurl.com/iema10769), emissions of HFC-23 between July 2008 and July 2010 were 60–140% higher than the official figures in national reports in 2009.

The largest discrepancy was for Italy, where the researchers estimate emissions of 26–56 megagrams per year (Mg/yr), compared with the national inventory total of 2.6Mg/yr. However, the Netherlands and the UK also underestimated their HFC-23 emissions.

EMPA reports that UK HFC-23 emissions over the two-year period were 12–21Mg/yr, while the official figure for 2009 was 5.5Mg/yr. The researchers say the disparities place a question

mark against the validity of the HFC-23 inventories and emissions reported under the Kyoto Protocol.

Trifluoromethane is one of the most harmful known GHGs, with a global warming potential almost 15,000 times greater than carbon dioxide. Apart from minor uses in air conditioners and fire extinguishers, HFC-23 emissions are primarily from the manufacture of chlorodifluoromethane (HCFC-22), commonly used as a cooling and foaming agent, and in polymer production.

By using atmospheric transportation simulations, the EMPA researchers were able to locate accurately the point source of the emissions. They found, for example, that the HFC-23 polluted air masses recorded at a monitoring site in the Swiss Alps, originated almost exclusively from Italy's sole HCFC-22 factory, the Solvay Solexis plant near Milan.

"Given the vast profits made by the European fluorochemical industry, it is absolutely scandalous that they are not destroying all HFC-23 produced by their factories," commented Clare Perry, senior campaigner at the Environmental Investigation Agency. She called on the European Commission to include mandatory 100% destruction in its revision of the 2006 F-Gas Regulation (842/2006), which is planned for later this year.

Under the Kyoto Protocol, signatory countries are required to report their venting of HFC-23, although there is no obligation on them to reduce discharges.

EIA UPDATE

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IEMA webinar and workshops

On 10 August, more than 150 members listened to IEMA's first EIA-related webinar. The session provided an opportunity to gain updates on UK EIA for members unable to attend the summer workshops. IEMA now plans to run further lunchtime EIA webinars later in the year.

More than 450 members attended the Institute's 14 EIA workshops held across the UK in July and August. The presentations provided by IEMA, EIA Quality Mark registrants and guest presenters are available to download from lexisurl.com/iema10808.

New EIA Regulations

The English Town and Country Planning EIA Regulations came into force on 24 August (p.11).

The Regulations consolidate amendments made to the original 1999 Regulations and changes made to the EIA Directive (85/337/EEC). The 2011 Regulations also include further changes to take account of recent case law – *R (on the application of Baker) v Bath and North East Somerset Council* [2009] EWHC 595; and *R (on the application of Mellor) v Secretary of State for Communities and Local Government* [2009] EWCA 1201 and European case C-75/08, 30 April 2009 – as well as other amendments.

Guidance on interpreting the Regulations is expected to be placed on the website of the Department for Communities and Local Government in the next few weeks. Download the Regulations at lexisurl.com/iema10821.

Consultation on the Welsh Town and Country Planning EIA Regulations is expected to start later this month. IEMA can confirm that Wales will follow Scotland and England in consulting on a move to consolidate its EIA Regulations related to planning.

Planning checklist

The Planning Portal has made the EIA screening checklist used by the Planning Inspectorate and National Planning Casework Unit available for download from its website.

The checklist (lexisurl.com/iema10812) provides a framework that local authorities could voluntarily adopt to ensure they effectively record screening opinions.

SEA in Ireland

In May, the Republic of Ireland launched amendments to its Strategic Environmental Assessment (SEA) Regulations with the updates influencing the SEA of plans in various sectors. A presentation by the Irish Environmental Protection Agency, including discussion of the main changes, can be downloaded at lexisurl.com/iema10811.

Environment Agency guidance

The Environment Agency has published a revised version of its document, titled *Strategic environmental assessment and climate change: Guidance for practitioners*.

The guide (lexisurl.com/iema10810) applies to England and Wales and provides useful advice and links to data sources for different aspects of climate change.

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Short cuts

EU to miss EAP targets

The final review of the EU's sixth Environment Action Programme (EAP) has confirmed that despite creating a clear policy framework, member states' failure to implement EU rules effectively has meant that targets, including halting biodiversity loss and improving resource use, will not be met. According to the report, since its launch in 2002, the 10-year plan has helped to create the EU emissions trading scheme and extend the Natura 2000 network, but has proved unable to cut overall waste production. Janez Potočnik, European commissioner for the environment, confirmed that the results from the EAP were not always as good as the commission had hoped for. "Better implementation of EU rules by member states is needed to close the gap between the EAP's legislative ambitions and its end-results," he said. The report concluded that member states' inclusion in the programme was no guarantee they were committed to its objectives.

UK cleans up rivers

The River Thames and the River Taff, which runs through Cardiff, have been named as two of the UK's most improved waterways, having been transformed from heavily polluted, lifeless rivers in the 1960s and 1970s to ones teeming with fish today. The rivers formed part of a list of 10 waterways published by the Environment Agency in recognition of the improvements made after the introduction of tighter regulation for polluting industries. The good news was, however, followed by concerns over the amount of sewage on UK beaches, after an alert service for beachgoers issued 48 warnings of spills in less than two months. Environment pressure group Surfers Against Sewage, which is providing the trial service in collaboration with water companies, warned that spills were happening too frequently, with nine alerts issued for Salcombe, in Devon, and eight for Summerleaze beach in Bude, Cornwall during the summer months.

UK environment sector bucks economic trend

Industry The performance of the UK low-carbon environmental goods and services (LCEGS) sector is outstripping that of the economy overall, according to the latest update from the business department (BIS).

The findings (lexisurl.com/iema10796), which cover both the UK and the global LCEGS sector, reveal that domestic sales in 2009/10 totalled £116.8 billion, a 4.3% increase on the previous 12 months. During the same period, overall UK growth was just 1.8%. The UK LCEGS sector is also performing better than the sector globally. Worldwide sales in 2009/10 were £3.2 trillion, only 1.8% up on the 2008/09 figure, largely due to no or poor growth in the US and Asia.

BIS says that more than 55,600 UK companies operate in the LCEGS sector, employing 914,273 people. The sector is dominated by three low-carbon industries – alternative fuels (general), alternative fuels for vehicles and building technologies – and two renewable-energy subsectors – wind and geothermal.

In the UK, the biggest areas of growth were wind energy (up 6.6%) and photovoltaics (up 5.8%). Exports of UK LCEGS goods and services were 3.9% higher in 2009/10, at £11.3 billion, than in 2008/09. The UK is ranked sixth worldwide for the overall LCEGS sector, and sixth in 19 of the 24 subsectors, behind the US, China, Japan, India and Germany. In the five other subsectors, the UK is second for carbon finance and seventh for alternative energy sources, geothermal, environmental consulting and photovoltaics.

Looking ahead, BIS forecasts continuing growth for the UK LCEGS sector. It expects growth to be 4.8% during the current financial year, rising to 5.8% in 2016/17. Over the next decade, the business department is forecasting high growth for both wind and carbon finance. Much lower growth is forecast for the wastewater, air pollution and waste management subsectors, however.

BIS expects global growth to be 3.7% in 2010/11. Longer term, global growth is forecast to be 4% in 2015/16. Sectors forecast to perform strongly during the current financial year are carbon finance (up 9.2%), additional energy sources (6.8%) and wind (5%).

Ill wind blows away turbine project

Renewables The collapse of plans to build 10MW wind turbines at a factory in Northumberland has not damaged the buoyant mood of the offshore sector, according to the industry trade body.

RenewableUK's head of offshore wind, Nick Medic, says that the announcement ending the Britannia project, which had been due to receive £6.9 million of government support, should not be seen in isolation. "While the project kicked off a surge of interest in manufacturing, in its wake we have had a number of important announcements from many of the major players in the offshore wind industry, including Siemens, Gamesa and Vestas, which shows interest is not abating."

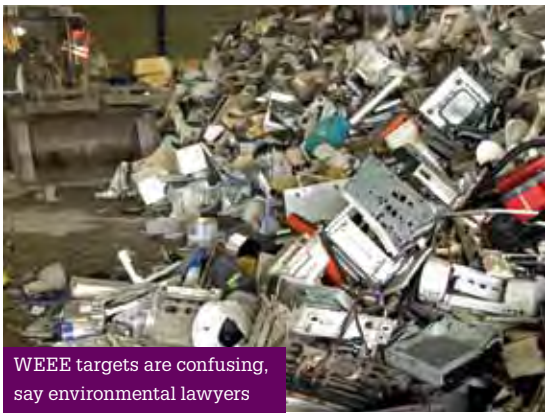
Meanwhile, Ditlev Engel, CEO of Vestas, has called on governments to provide help to renewables firms to attract the investment they need to drive the transition to decarbonised energy. "Regulatory certainty is what we really need to make sure this moves forward," he said. Medic agreed: "We need to have a firm business case on top of government's commitment to reduce carbon. Primarily we need to have a good price per unit of energy generated."

In a bid to ensure that offshore wind can compete with traditional forms of electricity generation, the government has appointed Andrew Jamieson, a director of ScottishPower and the chair of RenewableUK, to lead a new working group tasked with cutting the costs of the technology. The group aims to lower the price of energy from offshore turbines to that of gas-powered plants by 2020.

The government is also investing £6.5 million to fund up to 50 students over the next 10 years studying for an engineering doctorate through the new Industrial Doctorate Centre in Offshore Renewable Energy. Students will spend 75% of their time working in industry and the rest researching, designing and testing new technology at leading universities.

Green laws ripe for reform

Regulation Concern about the quality and effectiveness of environmental regulation in the UK has been voiced by lawyers in an interim report for a project by the UK Environmental Law Association (UKELA) and King's College London.



WEEE targets are confusing, say environmental lawyers

Legal practitioners believe environmental regulation lacks coherence, integration and transparency, says the report (lexisurl.com/iema10774). The project, looking at the quality of the UK's environmental laws, has discovered confusion in several areas, including over an agreed definition of waste, the duty to conduct an appropriate assessment under the Habitats Regulations, and what constitutes "equivalent" amounts of electronic waste under the Waste Electrical and Electronic Equipment (WEEE) Regulations.

Eloise Scotford, main author of the report and law lecturer at King's College, told *the environmentalist* the research gives credence to anecdotal evidence that lawyers and environment professionals are finding it increasingly difficult to navigate UK environmental legislation. "There's a high volume of statutes in UK environmental law and no logical boundaries, so it is particularly susceptible to incomprehensible and inaccessible regulation," she says. Scotford also says it would be wrong to wholly blame the EU – which is the source of the majority of environmental legislation – for the poor quality of UK laws. "The UK is not very good at transposing EU Directives; too often it ends up rushing through regulations to meet transposition deadlines," she explains.

On a more positive note, the lawyers generally welcome developments to condense and simplify legislation, particularly recent changes to the Environmental Permitting Regulations in England and Wales, and the Water Environment (Controlled Activities) Regulations in Scotland.

The final report from UKELA and King's is due to be published in February.

Valuing ecosystems services is the key to global food security

Biodiversity Global food production could double and become more resilient to climate change, but only if there is a radical shift in the value placed on ecosystems services, according to the UN Environment Programme (UNEP).

New research from UNEP and the International Water Management Institute (IWMI) argues that if farmland was recognised as providing services such as water purification and flood defence, as well as supplying food, the agriculture sector could better manage water and land use (lexisurl.com/iema10768). This "agroecosystems" approach could help to ensure sustainable water supplies and reduce the amount of land lost to degradation, through actions such as promoting livestock movement, diversifying land use and making more efficient use of rainwater.

"Agriculture is both a major cause and victim of ecosystem degradation," said Eline Boelee of IWMI, the report's lead scientific editor. "Sustainable intensification of agriculture is a priority for future food security, but we need to take a more holistic, 'landscape' approach."

David Molden, deputy director-general for research at IWMI, warned that a change in approach is essential. "We are heading for disaster if we don't change our practices from business-as-usual," he said. "There is a need for a seminal shift in the way modern societies view water and ecosystems and the way we, people, interact with them."

Short cuts

£390k for tidal EIA

The Carbon Trust has awarded £390,000 of funding to a renewable-energy firm building the first full-scale tidal array off the Welsh coast, to help monitor its impact on the local marine environment. Tidal Energy's DeltaStream device is due to be installed near to the Pembrokeshire city of St David's next year, after receiving planning permission and funding from the Welsh Assembly government in July. The 1.2MW array will sit on the seabed and is expected to generate enough electricity to power 1,000 homes each year. The Carbon Trust grant will provide up to 60% of the cash needed to ensure a comprehensive environmental impact assessment (EIA) is carried out during the array's 12-month demonstration period. The EIA findings will then be shared with the rest of the marine energy sector to help the development of similar projects.

Smarter data

The impact assessment (IA) accompanying a consultation from DECC on the roll-out of smart meters concludes that there is a strong business case for their installation by small and medium-sized firms. It covers sites with an electricity profile of classes 3 and 4, and those with an annual gas consumption below 732MWh. Capital and installation costs for a communications hub with fixed WAN (wide-area network) – the government's preferred option – are estimated at £358 million, with other costs, including expenditure on communications, bringing the overall total to £604 million over a 20-year period. However, the benefits could total £1.63 billion, mainly from savings from reducing energy consumption. UK-wide benefits, from reduced carbon emissions, are estimated at £535 million. The IA also identifies other, non-monetary benefits that smart meters can provide, such as being a strong enabling tool for many energy-efficiency policies and facilitating improved competition. The consultation ends on 13 October (lexisurl.com/iema10806).

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In force	Subject	Details
20 July	Energy	The Energy Information Regulations 2011 implement the requirements of EU Directive 2010/30/EU on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products. They also implement elements of the EU market surveillance Regulation (765/2008). lexisurl.com/iema8470
20 July (31 July)	Pollution	The Environmental Protection (Controls on Ozone-Depleting Substances) Regulations 2011 enforce EU Regulation 1005/2009, which was amended last year by Regulation 744/2010. The EU Regulation controls the production, sale and use of substances that deplete the ozone layer. Similar Regulations – Controls on Ozone-Depleting Substances Regulations (Northern Ireland) 2011 – came into force in Northern Ireland on 31 July. lexisurl.com/iema8467; lexisurl.com/iema8473
21 July	Hazardous substances	EU Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment recasts the original Directive (2002/95/EC) (as amended) to improve clarity. Member states have until 2 January 2013 to transpose the recast Directive. lexisurl.com/iema8474
21 July	Waste	The Waste (Fees and Charges etc) (Amendment) Regulations (Northern Ireland) 2011 update the fees and charges payable for waste management licences under the Waste and Contaminated Land (Northern Ireland) Order 1997. lexisurl.com/iema8471
23 July	Waste	EU Regulation 661/2011 amends Regulation 1418/2007 concerning the export for recovery of certain waste to certain non-OECD countries. lexisurl.com/iema8485
31 July	Pollution	The Ozone-Depleting Substances (Qualifications) Regulations (Northern Ireland) 2011 relate to the minimum qualifications required by those working on the recovery, recycling, reclamation or destruction of controlled substances, and the prevention and minimisation of leakages of controlled substances. lexisurl.com/iema8472
31 July	Transport	The Cleaner Road Transport Vehicles Regulations 2011 implement EU Directive 2009/33/EC on the promotion of clean and energy-efficient road transport vehicles. lexisurl.com/iema8481
1 August	Energy	The Feed-in Tariffs (Specified Maximum Capacity and Functions) (Amendment No.2) Order 2011 amends the 2010 Order by extending the method of accreditation for feed-in tariffs for small-scale hydro-generating stations. lexisurl.com/iema8482
1 August	Waste	EU Regulation 664/2011 amends Regulation 1013/2006 on the shipments of waste to include certain mixtures of wastes – such as solid plastic waste – in Annex IIIA. lexisurl.com/iema8484
20 August	Environment protection	The Chemical Analysis of Water Status (Technical Specifications) Regulations (Northern Ireland) 2011 implement EU Directive 2009/90/EC laying down technical specifications for chemical analysis and monitoring of water status. lexisurl.com/iema8477
24 August	Planning	The Town and Country Planning (Environmental Impact Assessment) Regulations 2011 replace the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999, but only for England. Since the 1999 Regulations came into force they have been amended on several occasions to take account of case law and amendments to the EIA Directive. The 2011 Regulations include further changes to take account of recent case law, as well as to make a limited number of other amendments. lexisurl.com/iema10821

LATEST CONSULTATIONS

4 October

Energy

DECC is consulting on the type of "capacity mechanism" to be introduced with the planned reform of the UK electricity market. The energy department is seeking views on two different approaches: a targeted mechanism, with a proposed model of a strategic reserve, comprising centrally procured capacity that is removed from the electricity market and only used in certain circumstances; or a market-wide mechanism in the form of a capacity market, in which all providers willing to offer capacity can sell that capacity.
lexisurl.com/iema8503

5 October

Wastewater

The government is aiming to streamline the planning process for nationally significant wastewater transportation projects by introducing secondary legislation (under s.14 of the Planning Act 2008). The proposed changes would subject wastewater transfer and storage infrastructure projects (sewers) to the same streamlined planning application process as other major infrastructure projects, such as large sewage-treatment works and power stations. Defra has issued a consultation setting out the proposals.
lexisurl.com/iema8491

7 October

Planning

The Localism Bill will reform the planning process, and the Department for Communities and Local Government is consulting on revisions to Regulations – currently the Town, and Country Planning (Local Development) (England) Regulations 2004 (as amended) – that govern the process by which local councils prepare their development plans. The consultation seeks views from interested parties on whether the revised Regulations are fit for purpose.
lexisurl.com/iema8498

14 October

Hazardous substances

Defra is consulting on plans to abolish the Advisory Committee on Hazardous Substances (ACHS) as a statutory non-departmental public body and reconstitute it as a new expert scientific committee. The consultation also asks for views on proposed new terms of reference and a name for the successor body.
lexisurl.com/iema8489

20 October

Hazardous waste

Defra has issued a draft Hazardous Waste National Policy Statement (NPS) for consultation, setting out the strategic need and justification of government policy on the provision of nationally significant infrastructure projects for hazardous waste.
lexisurl.com/iema8490

21 October

Energy

A consultation has been issued by the European Commission on a draft legal act on the harmonisation and interoperability of environmental information as defined in Annexes II and III of the INSPIRE Directive (2/2007) on the creation of an EU-wide spatial data infrastructure.
lexisurl.com/iema8493

24 October

Pollution

The Department of Environment in Northern Ireland is consulting on amending the Pollution Prevention and Control Regulations (Northern Ireland) 2003 as part of its actions to transpose EU Directive 2009/126/EC.
lexisurl.com/iema8508

NEW GUIDANCE

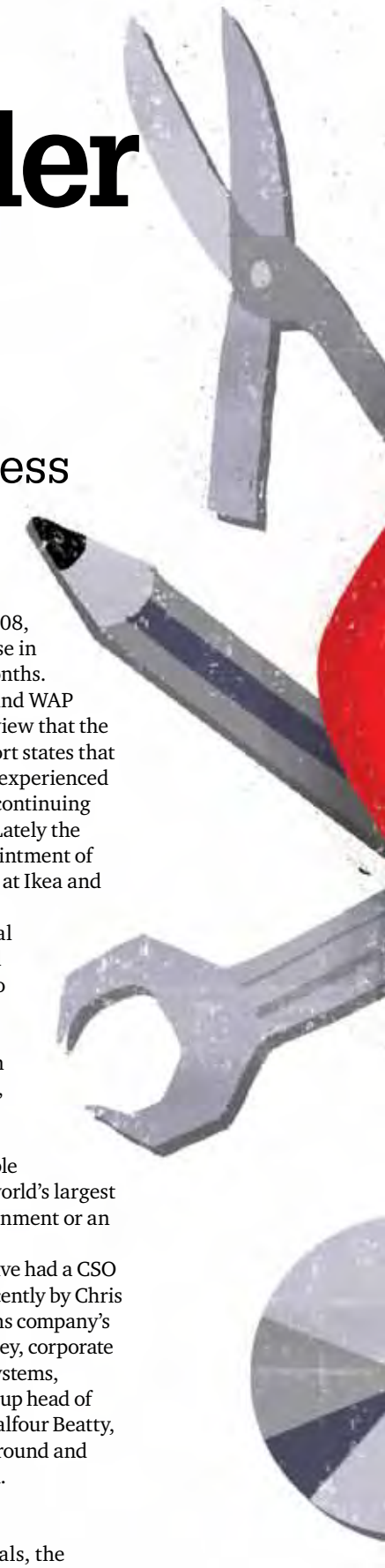
Waste hierarchy	Article 4 of the revised EU Waste Framework Directive (2008/98/EC) sets out five steps for dealing with waste. The steps are ranked according to their environmental impact to produce a "waste hierarchy". Defra has now published guidance (lexisurl.com/iema8512) on applying the hierarchy for businesses or public bodies that generate, handle or treat waste.
Carbon emissions (CRC)	The Environment Agency, Scottish Environment Protection Agency and Northern Ireland Environment Agency have issued revised conversion factors and emission factors for organisations participating in the Carbon Reduction Commitment Energy Efficiency (CRC) scheme (lexisurl.com/iema10815). The conversion factors enable organisations to change the quantity of a particular fuel supply into the CRC standard unit to fulfil its reporting obligations under the scheme, while the emission factors measure the amount of pollution produced when a certain quantity of electricity is supplied or a supply of gas or other fuel is processed or burned.
Hazardous waste	The Northern Ireland Environment Agency (NIEA) has produced a new guide on the Hazardous Waste Regulations and the List of Wastes Regulations in the six counties. HAZGUIDE NI 03 (lexisurl.com/iema8510) has been published following the introduction, in April, of new Regulations and to comply with changes to the legislation on chemicals, including the replacement of the Approved Supply List with Annex VI Table 3.2 to the Classification, Labelling and Packaging of Substances Regulation.
Rainwater harvesting	The Environment Agency has set out its opinion on rainwater harvesting systems in a new position paper (lexisurl.com/iema8506), noting that, although such equipment can be a useful means of enhancing water supplies and reducing demand on water resources, its effectiveness varies considerably, and recommends that simple water-efficiency measures should always be considered before such systems.

EVENTS CALENDAR

Date	Course	Location and details
4–5 October 2011	Waste technology summit	Regents Park Marriot, London lexisurl.com/iema10817
5–6 October 2011	European bioenergy expo and conference, and Microgen and NextGen exhibitions	Stoneleigh Park, Warwickshire lexisurl.com/iema10667
6 October 2011	Energy-effective lighting – developments in ultra-low lighting solutions	Menzies Hotel, Glasgow lexisurl.com/iema10818
11–12 October 2011	Energy solutions 2011	London Olympia lexisurl.com/iema8513
11–12 October 2011	Water 2011	Hilton Tower Bridge, London lexisurl.com/iema10836
20 October 2011	Coastal flooding and erosion risk management	Hamilton House, London lexisurl.com/iema10834
20–21 October 2011	Carbon show 2011	Business Design Centre, London lexisurl.com/iema8277
24–25 October 2011	Sustainable innovation and design	Farnham Castle, Farnham lexisurl.com/iema8276
15–16 November 2011	Corporate responsibility reporting and communications summit 2011	London lexisurl.com/iema10835

Follow the leader

Paul Suff finds out exactly what senior sustainability professionals do, and hears how one IEMA member became head of sustainability at a billion-pound UK business



Job titles with sustainability in them are increasingly common, particularly at a senior level. The title "chief sustainability officer" (CSO) is now appearing alongside chief finance officer, chief operating officer and chief technology officer in the list of senior personnel in a number of large corporations. BT, Coca-Cola, DuPont, Google, Ikea and Siemens are just some of the companies with CSOs. Others have people in similar roles, but the job title differs, such as head of sustainability or sustainable business; or vice-president, sustainability.

The majority in senior sustainability positions have an environmental background. Few are on the board although most report directly to senior executives, but they play a central role in developing business strategy and are standard bearers for the profession as it seeks to be at the forefront of business change. A senior sustainability role is not simply a rebadged senior environment one, however. There is much more to it, and it requires skills that not all environment professionals are equipped with, as IEMA chief executive Jan Chmiel told *the environmentalist* in March.

Chmiel explained that he has encountered environment professionals who have switched from compliance to a sustainability role who feel uncomfortable in their new position because they lack some of the necessary skills. "They often do not have the social and economic knowledge or the communication and influencing skills to be able to talk to their peers and superiors in a way that demonstrates business acumen," he said.

An emerging market

CSOs and their ilk are relatively new positions. Recruitment company Acre Resources reported earlier this year that the CSO title started to appear around 2006 in the US before spreading worldwide. But they are still relatively few in number. A 2008 study of the CSO role in major global companies by US consulting and executive recruitment business Hudson Gain found that only 191 of the 1,241 firms examined had executives listed with responsibility for sustainability (and/or the environment) explicitly indicated in their job title, although several more performed a sustainability role, bringing the total to 214 or 17%.

There is evidence that more businesses are now appointing CSOs. A report from global executive recruitment company Heidrick & Struggles, also published in 2008, stated that there had been a substantial rise in demand for CSOs over the previous 12 months. Another US study, from Footprint Talent and WAP Sustainability Consulting, reinforces the view that the CSO role is more prevalent. The 2010 report states that the sustainability function as a whole has experienced remarkable recent growth, and forecasts continuing expansion for at least the next five years. Lately the ranks of CSOs have swelled with the appointment of Beatriz Perez at Coca-Cola, Steve Howard at Ikea and Scott Wicker at UPS.

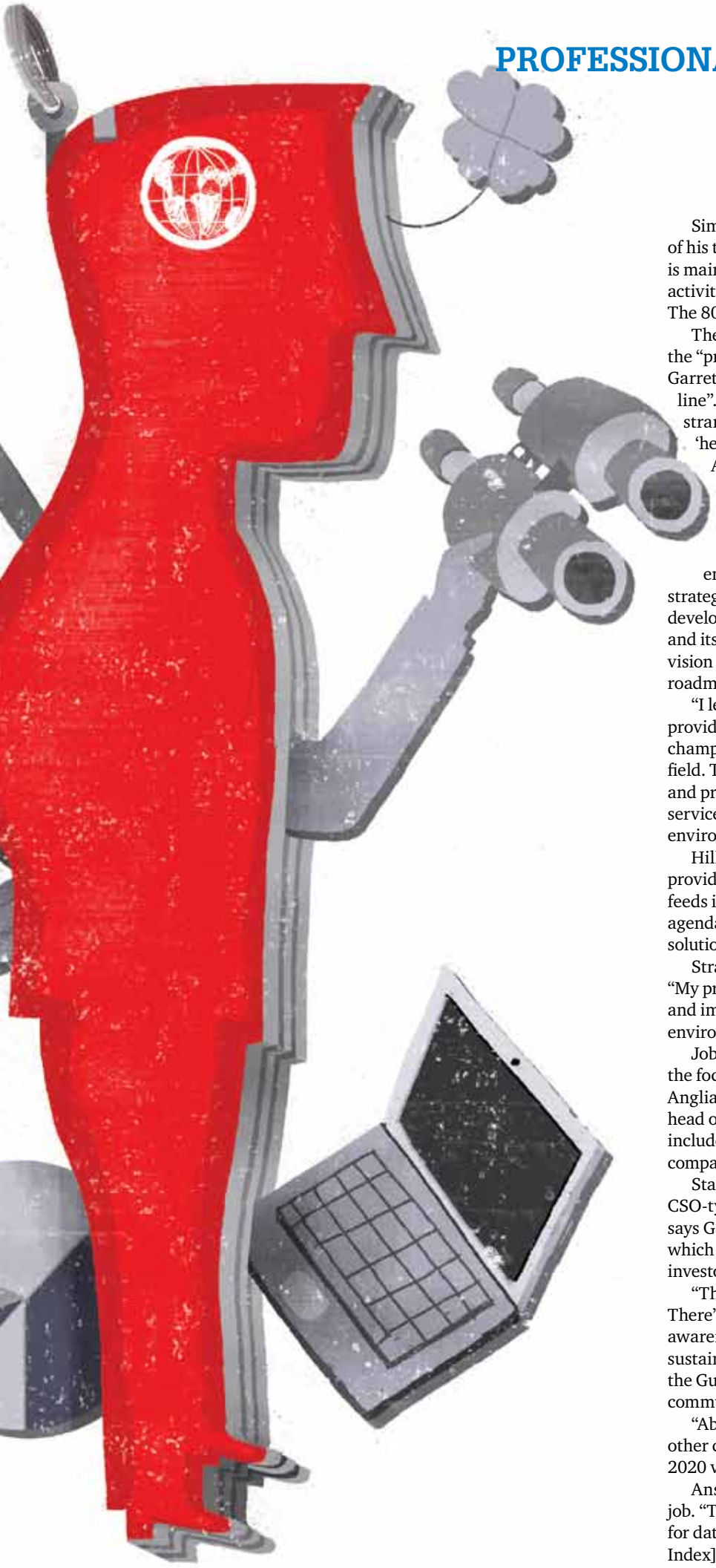
Dealing effectively with environmental challenges, such as carbon emissions and resource efficiency, is increasingly vital to business success, and is fuelling demand for senior sustainability personnel. Environment professionals are often seen as ideal people to take on CSO-type roles, and moving from an environmental to a sustainability role is fairly common.

Network consultancy Six Degrees People reported in 2009 that many CSOs in the world's largest companies had a safety, health and environment or an environment generalist background.

BT is one of the few UK companies to have had a CSO for several years, a role performed until recently by Chris Tuppen who, in 1991, had been the telecoms company's first environment manager. Henrietta Anstey, corporate responsibility, sustainability lead at BAE Systems, and Jonathan Garrett (see panel, p.19), group head of sustainability at infrastructure company Balfour Beatty, also have an extensive environment background and have stepped up to a sustainability position.

Strategic view

For some senior sustainability professionals, the environment is the main focus of their role, as Henrietta Anstey explains: "My role, which was a new position, has evolved over the last three years as momentum has gathered. It has always been 100% spent on environmental issues."



Similarly, Ian Hill, CSO at Openreach, spends most of his time on environment-related matters. "My role is mainly about the environment, but I do support activities in the social arena – such as charity giving. The 80:20 rule would easily apply."

The roles of others have a broader remit. In line with the "profit, people, planet" definition of sustainability, Garrett's role covers all elements of the "triple bottom line". "Sustainability at Balfour Beatty has three strands, going under the headings 'profitable markets', 'healthy communities' and 'environmental limits'. And my job covers all three areas. For me that is really exciting as I'm getting away from purely working on the environment to working on all aspects of the triple bottom line."

Irrespective of whether the role is purely an environmental one or is broader, leadership and strategy development are common features. "My job is developing group policy/strategy around sustainability, and its delivery. We've developed a 2020 sustainability vision for the company, setting out our ambitions, and a roadmap of how to get there," explains Garrett.

"I lead our UK Sustainability Services Practice, providing direction to our UK consultancy team and championing new innovations in the sustainability field. This includes leading on business development and proposition development, including new business services for our clients," says Tony Rooke, head of environment and sustainability at Logica.

Hill's role also involves strategy development. "I provide thought leadership across Openreach, which feeds into BT Group and externally on the sustainability agenda," he says. "I also create and deliver innovative solutions that support Openreach's business goals."

Strategy delivery is key to Anstey's work: "My principal focus is to support the businesses and implement the executive-level objectives for environmental sustainability that we created last year."

Job adverts for senior sustainability roles confirm the focus on strategy development and delivery. Anglian Water, for example, is currently seeking a new head of sustainable development, and responsibilities include developing and coordinating the delivery of the company's sustainable business strategy.

Stakeholder dialogue is another important feature of CSO-type roles. "I do the group sustainability report," says Garrett. "And I introduced a stakeholder panel, which now numbers 11 and is a mix of customers, investors, green building council and suppliers.

"They provide feedback on our report and strategy. There's also a profile-raising piece, to increase awareness of what Balfour Beatty is doing around sustainability. IEMA has helped here, introducing us to the Guardian Sustainable Business network. External communications are increasingly important.

"About a quarter of my time is spent on reporting and other communication activities. The rest is around the 2020 vision and the roadmap."

Anstey confirms that reporting is a key aspect of her job. "The role includes responding to external requests for data, such as the DJSI [Dow Jones Sustainability Index] or the CDP [Carbon Disclosure Project] and other

ad hoc surveys. I am also responsible for improving our global environmental data, which is a big challenge given the number of sites we have. Each year we produce our global carbon footprint, which we publish on our website," she explains.

In addition, both Anstey and Rooke work with stakeholders, principally customers. "I also work closely with the Ministry of Defence, one of our main UK customers, to implement the principles of sustainability. We have worked together on a number of projects to understand carbon labelling of defence products, apportioning GHG emissions through the supply chain and material scarcity," reports Anstey.

"My work with clients often entails moving the perception of sustainability as a compliance issue to one where it generates real business value: cost saving, risk mitigation and measurement, and increasingly as providing revenue opportunities," says Rooke.

Key skills

Senior sustainability roles require a mix of good technical environmental understanding but also management skills that many environmentalists do not possess. The new IEMA skills map (lexisurl.com/iema10676), which was launched in *the environmentalist* in June, defines some of the skills and knowledge required by senior sustainability personnel.

The 14 competencies necessary at leadership level include the ability to "understand business and commercial tools and the influence they have on organisational strategy and effectiveness", and be able to "influence, persuade and challenge others to lead and promote sustainability". Another is to "identify and manage strategic opportunities and risks to improve business resilience".

"There are a lot of skills that you need to bring that are not specific to the environmental area. Many of these are key management skills," says Rooke, listing these as: consulting, people management, business development, management of profit and loss, innovation, team building, presentation and delivery, networking and strategic/operational planning.

Hill agrees. "I do need an understanding of environmental issues because part of my role is about ensuring risk management and compliance both to legislation and in support of our ISO 14001 ambitions. However, it is much broader than that," he explains. "The key skill is in being able to interpret and articulate the big picture (and the detail) of the environmental agenda in the context of the priorities of the business and in terms to which people can relate in their daily roles. In that sense, communication, influencing and change management skills are key. I do not have a large team, so what I achieve has to be done through influence. Listening to colleagues on the 'frontline' is also essential and provides some of the best ideas and most fulfilling experiences in terms of implementing them. So it's a balance of technical skills and softer skills, and the latter are particularly critical.

"So-called 'softer' skills, such as influencing, effective stakeholder management and the like, are every bit as important as knowing the detail of the latest piece of legislation. The more senior you become, the more important these skills become."

Anstey agrees that these skills are vital. "Although my role is an environmental one, I spend a lot of time seeking to build effective relationships and influencing others, so good communications skills are a must. You need to have a genuine interest and a passion for the subject; there are people out there who don't get it or don't want to get it," she says. "If you want people to change, you need to have enthusiasm – otherwise why should they bother?"

Rolling out Balfour Beatty's 2020 sustainability vision to its 30 operating companies and 50,000 employees around the world required good communication and presentation skills, Garrett acknowledges.

Together with Mike Peasland, CEO of construction services in the UK, who is the senior sponsor for sustainability in the company, Garrett did a roadshow selling the vision to the management teams worldwide. "We did more than 20 half-day meetings," he says.

Garrett explains that he had completed a course called "making an impact" in a previous role that helped him communicate the vision. "It was all about making presentations, speaking to groups and voice coaching. It was videoed and you'd go through it afterwards," he says.

The Anglian Water job advert underlines the skills required by CSOs and heads of sustainability. In addition to sustainability knowledge, it asks for management experience in behavioural change, social marketing and managing complex projects, as well as an ability to engage at board level and throughout the organisation, and commercial acumen – specifically, understanding the financial drivers behind sustainability.

In role

The right skill set is vital to successfully applying for such positions. "My advice is to work on skills, knowledge and behaviours, which are the stuff which underpins capability. Increased capability in turn supports stronger influence, and influence is what determines your effectiveness and success," says Hill.

Anstey also believes that environmentalists should never stop improving themselves. "Getting my Masters (my first environmental degree was in 1990 and a lot had changed), gaining my Chartered Environmentalist status and recently becoming an IEMA Fellow has really helped my development in BAE Systems," she says. "I would encourage every IEMA member to go for chartered status as it shows you are committed."

Business knowledge is important, especially as "environmentalists" are often seen as not understanding fully how businesses work.

"If you are working in a corporate environment, get some business acumen as this will help you to be seen more as part of the organisation rather than the specialist 'outsider'," says Anstey. Rooke concurs. "Just having a passion for the environment … is not going to get you very far if you cannot convert that into what businesses and the government need to get through the current economic times," he says. "The most successful people in sustainability and environment are those who understand how sustainability drivers can deliver real business value."

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MY ROUTE TO HEAD OF SUSTAINABILITY AT BALFOUR BEATTY

Balfour Beatty employs 50,000 people worldwide and has an annual revenue of £10.5 billion. **Jonathan Garrett** became group head of sustainability at the infrastructure company in July 2010, having joined as group head of environment in September 2008.

Career path

Garrett graduated from the University of Southampton in 1988 with a BSc in environmental science. The EU Directive on environmental impact assessment (EIA) had recently come into force, and Garrett saw the EIA as an opportunity to put his degree to use. "I thought I'd like to be an environment consultant, but I didn't know where to start," he recalls.

In the event, his first job was with a health and safety consultancy. "I did things like asbestos surveys, air monitoring and COSHH [Control of Substances Hazardous to Health] assessments," he says. "I did that for four years, but I was still looking for that environmental opening," he explains. "I thought environmental auditing skills would be more in demand, so started looking at how to get into that area."

To help him get the coveted environmental position, Garrett did a Masters degree at Lancaster University. "It was a new course, an MSc in European environmental policy and regulation," he explains. "What appealed to me about the course was that half of it was traditionally taught, so six months in a classroom, and the other half (six months) was spent researching and writing a dissertation. I thought that if I plan the dissertation right, I can do it in an organisation and get great work experience."

He approached British Airways (BA) with the offer of working for free for six months. At the same time, he worked part time for his previous firm collecting samples for testing. "It worked out really well. I'd get up really early, go to Swindon, pick up the samples, get some water samples in Cowley, drop them all off in Wimbledon and be at Heathrow for 10am." His time at BA coincided with the introduction of BS 7750, so he did his dissertation on how one could apply BS 7750 in the company.

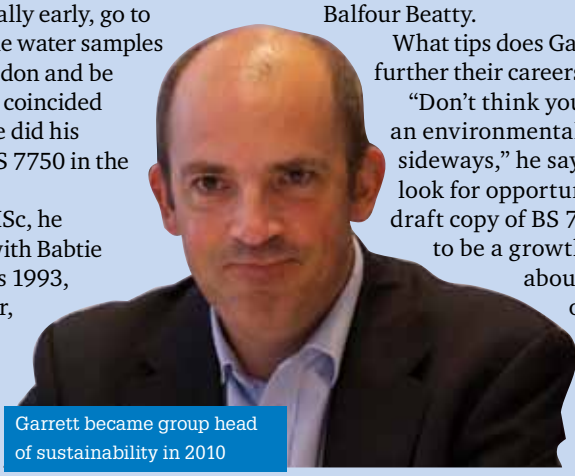
As soon as Garrett completed the MSc, he got a job as an environment scientist with Babtie Environmental, now Jacobs. "That was 1993, so just pre-ISO 14001," he recalls. Later, following a chance encounter at an environmental breakfast meeting in Farnham with Alan Fletcher from March Consulting, Garrett got a job as a senior consultant. "That was my big break. It was a fantastic job. I was there for three years. My CV was turned on its head. I gained heaps of experience in environmental training and auditing. I did work in the Ukraine, Greece and the Czech Republic as well as the UK. March's client base was industrial with a bit of public sector, so it was ideal," he says.

In October 1997, he followed Fletcher to the LGC (Laboratory of the Government Chemist), where Garrett established a whole new business stream around environmental management systems.

His next career move came in 1999. "I'd done 10 years in consultancy and had a desire to work on the other side of the fence, to go into industry. I saw a full-page advert for an environmental manager at Smiths Industries (now Smiths Group). That was just what I was looking for," he explains. "When I started, all Smiths had was an environmental policy statement. So, I had a clean sheet to develop an environmental strategy. We achieved 14001 at every site around the world (17 countries) over three years. We rolled it out with ERM – a global EMS training programme. I did my first corporate environmental report at Smiths."

After six years at Smiths, Garrett was headhunted to the role of safety and environment director at RHM (Rank, Hovis McDougall). "The appeal of this job was that it was a different business model: UK-based and centralised. The other key draw was that at Smiths I just had one administrator, with the other key personnel out in the business. At RHM I had a 28-strong team."

The takeover of RHM by Premier Foods saw Garrett move on, becoming head of corporate social responsibility at Brett, a largely southeast-based building materials company. After a year with Brett, he was headhunted to his current position at Balfour Beatty.



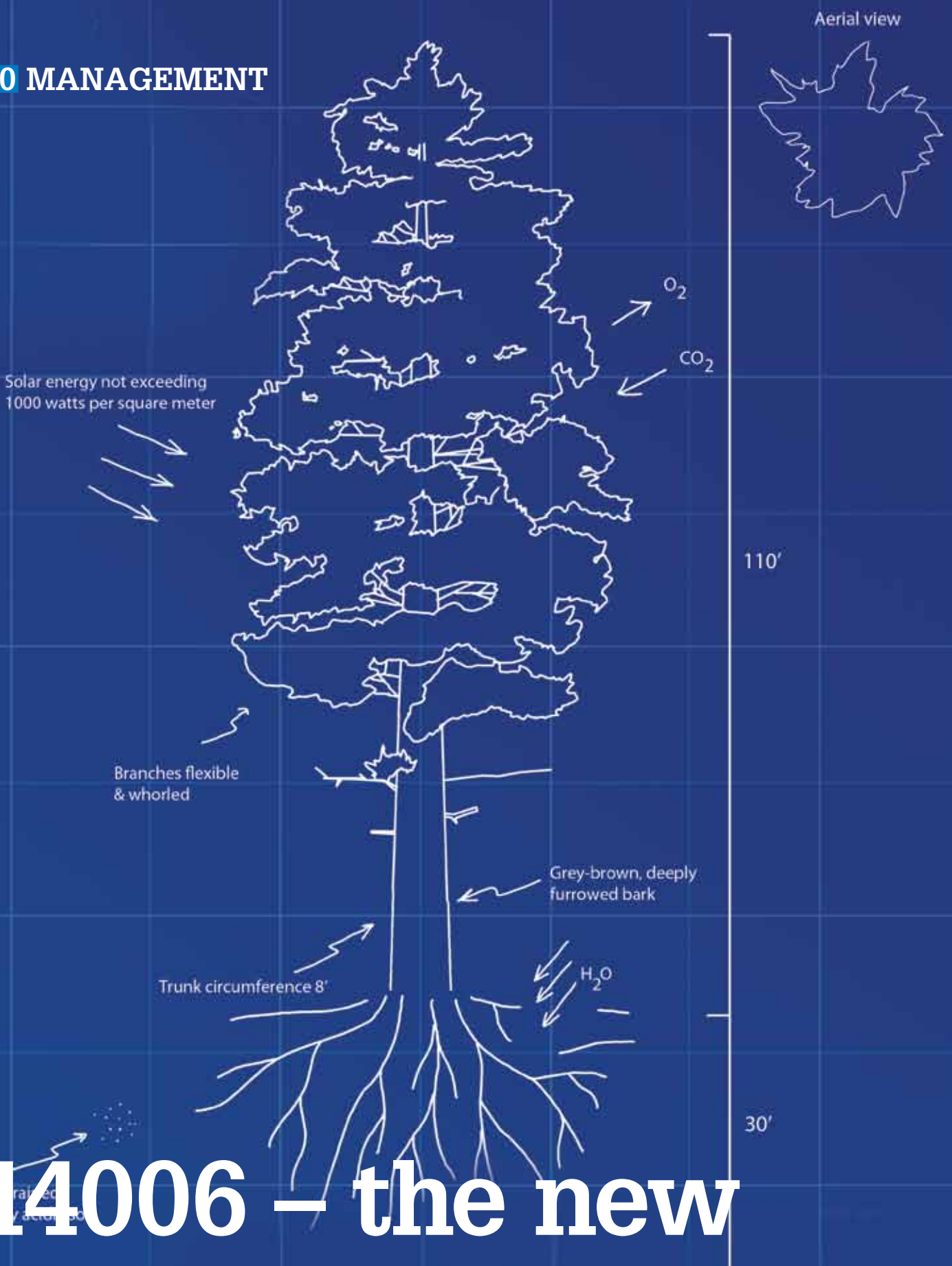
Garrett became group head of sustainability in 2010

What tips does Garrett have for others wanting to further their careers in a similar way?

"Don't think you necessarily have to start with an environmental job. You can always move sideways," he says. He also advises people to look for opportunities. "I just happened to see a draft copy of BS 7750 and could tell it was going to be a growth area. And, once you are in, it's about promoting yourself. If your organisation has a leadership talent pool, find out how you get into it and what you need to do to make the leap into a leadership role. Also, develop your network."

Another important tip is to thoroughly understand the organisation you work for, including identifying the key personnel. "My advice would be if you want to bring about change where you work first understand the 'rules of engagement' – how does the organisation get things done; what language do they use; how should you present your case and who can help you along the way?" remarks Anstey.

Developing a network is also considered crucial for senior roles. "My career advice is to develop a network, and keep massaging it throughout your career," says Garrett. "Always look outside your organisation," advises Hill, "and across and into it as much as upwards. By that, I mean you can always learn from other organisations, so a strong network is critical in helping you bring new ideas into the organisation for which you work."



14006 – the new standard in design

Martin Charter and **Vic Clements** outline the new international standard for eco design

The past few years have seen a growing legislative requirement to address the environmental impacts of products, and this, together with changing external market conditions, is increasingly driving eco design – that is, designing products to reduce their environmental impacts or improve their environmental performance – to the forefront of business planning.

Many companies are beginning to see environmentally focused design of their products and services as a way to achieve or maintain market advantage and, as business goals are tied inexorably to the marketability of the company's products, eco design will become a strategic issue, affecting the longer-term sustainability of the business.

Manufacturers carrying out eco design can realise benefits in cost reduction, improved stakeholder and supply chain relationships, improved image, employee motivation and innovation. The potential benefits, however, arise from changes in critical operational and planning activities and can only be realised if they are anticipated, recognised and recorded as part of the overall corporate goals, objectives and targets.

Dutch electronics company Philips (see panel, p.22) recognised early on that, to be successful, the implementation of eco-design processes must be firmly embedded in the strategic planning and management processes of the business and not just in the product design and development activities. Many organisations already address the environmental impacts of their business activities through an environmental management system (EMS), such as ISO 14001 or the Eco-Management and Audit Scheme, but struggle to satisfactorily address the impacts of their products and services through this route.

To address this, a new standard in the environmental management arena, "ISO 14006: Guidelines for incorporating eco design into environmental management systems" has been introduced.

New member of the family

As the number and name suggest, this standard is closely associated with 14001 and is intended to assist organisations in establishing a systematic and structured approach to the incorporation and implementation of eco-design activities within a certified EMS.

The guidance is intended to be applicable to all organisations, regardless of type, size and product provided. Although aimed primarily at organisations that have an EMS, perhaps also combined with a quality management system in line with ISO 9001, 14006 is also of value to organisations that have only quality management systems. It may also be useful where no formalised environmental or quality management systems exist, but where there is interest in reducing the adverse environmental impacts of products.

A growing need

It is estimated that, in general, up to 80% of a product's environmental impact is fixed by its design, so it is during design and development that efforts should be made to reduce these impacts and improve a product's environmental performance.

Eco design is the systematic identification and integration of environmental aspects into product design in order to reduce adverse environmental impacts and improve environmental performance of the product throughout its whole life cycle. In this context, an environmental aspect of a product is any element or function that can interact with the environment. Environmental impact means any adverse change to the environment, wholly or partially resulting from the product in any phase of its life cycle. In order to carry out eco design in a systematic and managed way, organisations need to identify appropriate activities and then have the necessary levels of competence to effectively carry out and manage these activities.

Many companies see environmentally focused design of their products and services as the way to achieve or maintain their market advantage

Primary eco design activities take place within an organisation's design and development area and it is here that the technical knowledge required in carrying out and managing eco design must reside. However, when eco design is to be carried out under the umbrella of an environmental management system, then the manager of the EMS must have an understanding of what these activities are and how they are to be managed and controlled. In this way the integrity of the EMS is not jeopardised and the environmental goals and objectives for the products can be achieved.

14006 is needed because no existing standard covers and relates the differing areas of knowledge and competencies required for eco design in an EMS. These areas of knowledge and competency are threefold:

1. Assessment of the life-cycle impacts of the products on the environment and identification of appropriate design measures to reduce the adverse effects of these impacts.
2. Management of the product design and development activity to implement these design measures.
3. Fitting the eco-design activities and the management of them within an EMS.

The first two of these are likely to be situated within the design and development function, but the third is clearly of major significance to the manager of the EMS and it is here that 14006 is primarily directed.

A number of standards which individually covered relevant areas of knowledge and competency were used to inform the development of 14006. They included:

- 14001:2004 – Environmental management systems: requirements with guidance for use.
- 9001:2008 – Quality management systems: requirements.
- ISO/TR 14062:2002 – Environmental management: integrating environmental aspects into product design and development.

Martin Charter, director, and **Vic Clements**, senior associate, at the Centre for Sustainable Design, were convenor and UK expert respectively to the ISO working group TC207/SC1 WG4 that developed 14006

EXAMPLE OF CORPORATE ADOPTION OF ECO DESIGN

The Dutch electronics company Philips produces a wide range of so-called "Green Flagship" products, from light bulbs to televisions. Each of these products is benchmarked against competitor products in six green areas – weight, recycling and disposal, lifetime reliability, energy efficiency, packaging, and hazardous substances. To be chosen, the new design must perform significantly better (>10%) in at least three areas. Green Flagship products are designed to have the best environmental performance in the market, be the most innovative, environment-friendly product in its portfolio, or be the best environmental solution in its application area. The three Philips sectors – healthcare, lighting and consumer lifestyle – saw a 33% increase in sales of green products in 2007. Sales of such products totalled €5.3 billion in 2008.

- IEC 62430:2009 – Environmentally conscious design for electrical and electronic products (now BS EN 62430:2009).

The first of these links management of an organisation's processes with environmental impacts, but does not include design management processes. The second covers the design and development management process, but is not related to environmental impacts. The third assists in incorporating the evaluation of environmental aspects and impacts into the design and development activities of products. The fourth, although intended for electrical products, contains basic generic eco-design principles. Individually, they do not fully explain the total range of activities that are involved within an environmental and business management framework, such as provided by 14001.

Up to 80% of a product's environmental impact is fixed by its design, so it is during this phase that performance improvements should be made

Structured approach

14006 incorporates the necessary information from the other standards, such as 14001 and 9001, so that the appropriate processes and procedures can be put in place to implement structured and managed eco design under the umbrella of an EMS.

By using this standard, organisations can build on their existing management processes and competencies without necessarily having to implement or use all of the linked standards.

14006 is not intended to be an eco-design manual, but it does contain guidance on what eco-design activities are carried out in a design and development context. 14006 is referred to as a "guidance" standard, so is non-certifiable, but compliance with it will increase confidence that eco design is being effectively carried out and managed.

When applying 14006, an organisation should always use its existing activities, processes and procedures as a starting point and use the guidance in the standard in a flexible and practical manner. 14006 contains the following three principal clauses that provide guidance to managers of EMSs, while Annex A and B give more detailed information:

- *Clause 4* – addresses the role of top managers. It explains the potential benefits of eco design and discusses the strategic issues of relevance to business and management.
- *Clause 5* – shows how eco-design activities can be incorporated into and managed under an EMS. This clause provides guidelines for addressing eco design as part of a certified EMS. The requirements of 14001 are given in boxes and for each sub-clause specific guidance is provided on how the sub-clause relates to the appropriate eco-design activity. For example, sub-clause 5.4.6, "Operational control", focuses on an organisation's product design and development activities and incorporates the method described in sub-clause 7.3, "Design and development", of 9001. Specific guidance related to eco design is also provided.
- *Clause 6* – explains the specific eco-design activities that need to be addressed in the design and development process and is based on BS EN 62430.
- *Annex A* – provides more detailed information on the strategic issues and the role of top management in eco design as presented in clause 4.
- *Annex B* – shows how 14006 relates to other management system standards.

The standard was published on 8 July 2011 and is now active. Irrespective of the reason an organisation may have for carrying out eco design, this guidance standard will be an invaluable tool for EMS managers, containing all the relevant information needed for a successful implementation in one document.

€5.3 billion

Total value of "green" products sold by Philips in 2008

The authors will lead a workshop on the business implications of ISO 14006 at the IEMA conference on 15 November 2011. A more detailed briefing document webinar and training programme on 14006 will also be launched in November 2011. Readers of *the environmentalist* can also join a 14006 LinkedIn group to discuss issues related to the management of eco design.

CO_2 labels – a help

Are carbon labels on products really

The need to act on climate change has driven an interest in increasing consumer demand for low-carbon products, thereby encouraging producers to cut carbon emissions and bringing about more sustainable consumption. Carbon labelling, as one element of this, is an example of the belief that the way to influence what customers buy is through environmental product information. However, the proof that consumers act on this information when deciding what to buy is limited.

When considering labelling as a way to influence consumer purchasing behaviour, we forget how people actually shop. On a typical weekly supermarket shop, we do not spend much time analysing what we will buy. On average, we spend just 16 seconds in a supermarket aisle – that's in the whole aisle, not choosing one product.

Shoppers make decisions based on price, brand, promotions, habits and shelf positioning, among other things. It is unrealistic to think that anyone, except for a small group of dedicated green consumers, will spend time comparing the carbon footprints of products.

When considering labelling as a way to influence consumers, we forget how people shop. On average, we spend just 16 seconds in a supermarket aisle – that's in the whole aisle, not choosing one product

This is not to say that labelling can never be useful. The A–G labels on white goods are an excellent example that brought about market transformation. However, this was achieved through the joint action of regulators, retailers and manufacturers.

Regulators implemented standards and retailers didn't want to stock poor-performing products. This sent a signal to manufacturers that they needed to develop more energy-efficient products. Consumers could then choose between products that were already more energy efficient. A virtuous circle was formed.

This is not the case with carbon labelling, which puts the burden solely on consumers. Labels mean they have to navigate their way through complex environmental information to differentiate low- from high-carbon products.

Those in favour of carbon labelling must consider what they are trying to achieve. If it is to bring about successful consumer behaviour change, we must start from where consumers are, not where we want them to be.

A gramme of carbon dioxide is not a metric understood by consumers – people don't have a concept of whether 75g of CO_2 per packet of crisps is a lot or a little, or even what a gramme of CO_2 is. More thought must be given as to what would be useful for consumers, moving beyond the overused solution of a labelling scheme.

Carbon footprinting can definitely work for companies to improve the carbon performance of their supply chains, and carbon labelling is a great way to help companies tell the wider world about what they are doing. But as a way to get consumers to choose low-carbon products, the evidence for carbon labelling is sadly lacking.

Lucy Yates is a sustainability expert at Consumer Focus

or a hindrance?

helping us to be more sustainable?

Labelling schemes can take decades to become established on product packaging. However, research has shown that the Carbon Trust's Carbon Reduction Label, which helps shoppers to spot brands that are measuring and reducing their products' carbon footprints, is growing steadily in reach and influence.

The Centre for Retail Research estimates the total UK sales of green and organic merchandise in 2009 at £8 billion, while the total value of goods sold bearing the Carbon Reduction Label reached more than £3 billion. According to the centre, the label – which was launched in 2007 and is now used by a range of companies, including Dyson, Kingsmill, Tesco and Walkers Crisps – has established itself more quickly than the green and organic market.

The label's success is testament to the fact that carbon literacy is on the rise among consumers and that brands are responding.

Almost three-quarters of respondents to a recent Defra survey said they were familiar with the term "carbon footprint", meanwhile research from marketing organisation Vanson Bourne into carbon-conscious buying habits revealed that 47% of shoppers said that they were more likely to choose low-carbon-labelled goods over non-labelled ones and 21% said that they would pay more for products bearing a carbon-related label.

Research shows that the Carbon Trust's Carbon Reduction Label, which is helping shoppers to spot brands that are measuring and reducing their products' carbon footprints, is growing in influence

Of course, not all of the best consumer intentions translate into action, but more people want to live low-carbon lifestyles and carbon-labelling initiatives enable that willingness to translate into action.

Some brands also use the Carbon Reduction Label to display advice for consumers on how to use a product in a way least harmful to the environment. Big savings can be made in cutting energy wasted in the home by cooking food with a lid on your saucepan or washing at 30°C, for example.

This type of guidance is understood and appreciated by consumers; the Vanson Bourne research found that 70% of people are in favour of following simple energy-saving advice on product packaging to reduce their carbon footprints.

Carbon is a complex issue and there is still much to be done to help consumers understand the footprints of the goods they buy.

But, despite the critics who argue that labelling is too complex or that there is insufficient consumer understanding, awareness and demand for low-carbon goods is steadily rising.

Our shopping choices drive a large proportion of our personal carbon footprints. Carbon labelling not only raises awareness of this issue and empowers consumers, it also encourages brands to focus on their supply chains and the savings they can make as well as innovating to develop new low-carbon goods and services. It is early days yet, but carbon labelling is a vital step in building a low-carbon economy.

Harry Morrison is the director of certification at the Carbon Trust

Cutting CO_2 by degrees

the environmentalist learns how Lancaster University is implementing a number of innovative energy-efficiency projects to meet tough emissons targets

Lancaster University views energy consumption and carbon emissions as arguably the two most important issues affecting the organisation if it is to address the challenges of climate change and resource depletion.

The University Council, its most senior-level governing body, has not hesitated in agreeing funding for a raft of carbon-efficiency projects for the campus, some of them demanding a sizeable investment. But these projects mark only the start of Lancaster's journey to massively reduce its carbon footprint.

The wider goal

The wider arena within which Lancaster University is setting and implementing its carbon-efficiency goals is a pressing one. The Climate Change Act 2008, which sets binding carbon-reduction targets for greenhouse-gas emissions of at least 34% by 2020 and at least 80% by 2050, also places a requirement on public sector organisations to achieve reductions in line with these national targets.

For higher education institutions the sector-wide target is equivalent to a 43% reduction, against a 2005 baseline, in scope 1 and 2 emissions (direct emissions as well as those from the generation of purchased electricity consumed by the organisation) by 2020 and 83% by 2050. The sting in the tail relates to future funding opportunities: capital funding, in England at least, will soon be linked to institutions' performance against carbon-reduction sector targets. It is not surprising that the Higher Education Funding Council for England (HEFCE) has already signalled to institutions "a more demanding approach to carbon reduction and the need for carbon plans".

The latest performance data on how UK universities are progressing towards the 43% carbon-reduction target do not inspire a great deal of confidence so far in universities' ability to reach the stretching 2020 sector milestone. Published annually, and this year in partnership with the *Guardian*, the People & Planet's Green League finds that carbon emissions have actually gone up in 63% of the 142 participating universities (lexisurl.com/iema10678). There are mitigating circumstances for some universities' lack of progress, the *Guardian* report acknowledges: a research-intensive university is bound to use a lot more water and energy, for example. Those universities with old, leaky buildings are also at a disadvantage from an energy-saving perspective.

Jonathan Mills, environment and sustainability manager at Lancaster University, agrees: "The sector target is a tough one and it is undoubtedly going to be harder for some institutions than others to achieve – but there are always opportunities.

"This is a research institution and our science-related faculties consume more energy, but one of our aims is to green our labs."

For Lancaster, the fact that it is a leading university in terms of environmental research and teaching is a strong reason for the university to be

ambitious in its carbon-emission targets and in the projects it implements in order to achieve them. Its carbon management plan (CMP) recognises this, "incorporating a range of projects from the conventional to the cutting-edge".

Carbon-reduction framework

Lancaster University's CMP was developed as part of the Carbon Trust's 2008–09 Higher Education Carbon Management five-step programme, which helps institutions develop the capability to identify and implement practical cost and carbon savings. It was also, sensibly, developed as part of a much wider "infrastructure masterplan" that sets out an implementation framework for infrastructure projects for 2007 to 2017.

The masterplan draws on a sustainable energy infrastructure study (SEIS) that was undertaken by consultants Arup, which came up with solutions to address campus expansion requirements while at the same time reducing the university's carbon footprint. The SEIS estimated that energy efficiency and the renewable-energy projects it recommended would collectively reduce campus energy consumption by 10%, or by 2,300 tonnes of CO_2 equivalent (tCO_2e) a year based on 2007 figures.

The university's scope 1 and 2 carbon emissions in 2005 were 29,131 tCO_2e and its CMP – covering the period 2009 to 2020 but primarily relating to projects that will be implemented by 2012 – sets the following targets for carbon reduction:

- 2012: -34.9% (19,266 tCO_2e);
- 2017: -35.6% (18,751 tCO_2e);
- 2020: -43% (16,868 tCO_2e); and
- 2050: -83% (5,031 tCO_2e).

Director of facilities, Mark Swindlehurst, says it is critical that all types of technology are considered in the choice and design of carbon-emission reduction projects, as the longer-term targets for 2020 and 2050 will only be achieved through the deployment of all available technology.

The university has implemented a detailed programme of carbon-reduction projects, including energy-efficiency measures, and overseen the construction of faculty buildings and student residences built to the highest environmental performance standards in order to reach these long-term goals. The key projects (see panel, p.28) that provide the basis for the calculated carbon savings are:

- energy- and utility-efficiency projects;
- a utility metering project;
- awareness campaigns;
- a voltage-reduction project;

The university's scope 1 and 2 emissions in 2005 were 29,131 tCO_2e. By 2020 they need to be cut to 16,868 tCO_2e and, by 2050, to just 5,031 tCO_2e

- installation of new gas thermal boilers;
- installation of a new CHP boiler;
- installation of a biomass boiler; and
- a wind turbine project.

The CMP indicates that significant reductions in carbon emissions can be achieved within the next two to three years if all of the above projects are implemented in full; savings after this timescale are therefore projected to be more limited and will depend on new, currently unfunded projects.

Behavioural change by staff and students

Encouraging cultural change among staff and students is critical to achieving the university's ambitious carbon-reduction targets. Mills says this means the university constantly reinforcing its messages about sustainability. The institution held a carbon-awareness

LANCASTER'S KEY PROJECTS

Given the significant investment required for most of the university's energy-saving projects, a business case had to be presented to justify each one. The University Council approved the funding for the projects set out in the carbon management plan (CMP) in full. "The funding needed to see through these carbon-reduction projects was equivalent to the cost of a new office block, which demonstrates the senior-level commitment we have here for sustainability," comments Mark Swindlehurst, director of facilities.

Utility metering project

Electricity, heat and water metering has now been installed in all the main university buildings, enabling energy and water consumption to be automatically monitored on a building-by-building basis. The metering, requiring a £500,000 investment, enables the university to identify the heaviest energy and water uses across its campus. It also flags up any anomalies, such as one faculty's research experiment where it transpired water was being used as a cooling agent and then dumped, effectively leaving a tap running. Sustainability manager Jonathan Mills says the university is now studying the available energy data in detail, starting with the top 10 biggest users.

Installation of new gas thermal boilers and a CHP unit

When Lancaster commissioned a review of its infrastructure in 2007, it was clear that a substantial part of its heating services infrastructure – three dual-fuel hot-water boilers and a combined heat and power (CHP) unit – had reached the end of their economic life. A significant investment was required to bring the heating infrastructure back to an acceptable condition and make it more energy efficient. The project to replace the 1960s boilers with high-efficiency gas-fired boilers was completed in early 2011. Mills says that the old boilers functioned at between 65% and 70% efficiency, while the new gas-fired ones perform at up to 93%. Work is also almost complete on the new CHP unit; plans for the installation of a biomass boiler will be revisited at a slightly later date, although space has already been allocated in the boiler room for its eventual installation.

Lancaster University's new gas-fired boiler is delivered

Wind turbine application

The university's 2007 assessment of its infrastructure identified wind power as one of the most suitable low-carbon technologies. It has already had one planning application, for two wind turbines, turned down but is optimistic that its current one, for a single turbine on the Hazelrigg site to the east of the M6 motorway, will be given the go-ahead. The application was submitted in October 2010 and would see one 2MW wind turbine erected on the northern part of the Hazelrigg site, projected to produce 10% of the university's annual electrical power requirements – equivalent to two-thirds of the residential requirements of all students who live on campus. "If we are successful the wind turbine will have a far-reaching impact, not only by reducing CO_2 emissions but by putting the university firmly on the sustainability map and having a strong symbolic value in the community," says Swindlehurst. "It will be a landmark here with the same impact locally as Blackpool Tower."

day to launch its CMP, with local radio broadcasts and presentations and, from December 2010 to March 2011, it held around 15 carbon-awareness roadshows targeting different faculties and departments.

Lancaster has sustainability champions across its workforce and has expanded its carbon-saving competitions for students – the winning idea in the most recent round features special software for taxis to collect a full complement of passengers, rather than the energy-wasteful practice of single occupancy.

The most visible, living demonstration of energy efficiency for Lancaster students is the university's eco-residences, which have attracted a number of environmental awards, including the Green Gown award that recognises exceptional initiatives by higher education institutions to become more sustainable.

They have also gained a BREEAM "excellent and outstanding" rating – the first education building to do so, says Mills – and helped the university to win the UK BREEAM multi-residential category in 2008.

The new eco-residences – complete with roof-mounted solar thermal panels, lighting controlled by passive infra red units and enhanced air tightness and insulation levels – opened in 2008 to provide 752 rooms where students can monitor their utility consumption online. The facility enables the university to run an energy-saving competition among residents, by offering £600 per term to the flat achieving the lowest energy consumption. The competition is very successful and creates a healthy level of peer pressure to turn off lights and appliances in "standby" mode. The residences comprise around 10% of overall campus student accommodation and are the most popular on-site.

Progress so far and future plans

So far, carbon emissions (for scope 1 and 2 emissions) have fallen from 29,151 tCO_2e in the 2005/06 baseline year to 28,252 tCO_2e in 2009/10. The major infrastructure projects, such as the utility meters, only started coming on stream from March 2011, and have yet to be included in the data.

"There has also been a significant expansion of the university estate between the baseline year and 2009/10," Mills adds.

But both Mills and Swindlehurst are quietly confident about the university's ability to meet its 2020 and 2050 carbon-reduction targets. And even more sure that the commitment and focus needed to realise these goals are in place. These qualities are also evident in the university's proactive approach externally to the carbon-reduction agenda, such as its membership of the "HEFCE measuring scope 3 carbon emissions advisory group", a project to help the higher education sector measure indirect carbon emissions.

Lancaster already has one eye on the new projects that will need to be developed in order for the university to meet its longer-term carbon-reduction targets. Although these have not been finally defined at the moment, they could include plans for the energy-efficient refurbishment of plant rooms, the virtualisation of computers and installation of photovoltaics on more university buildings.

The Lancaster
Environment Centre

LANCASTER UNIVERSITY

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MRes Environment and Development*
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*=Overseas Placement

Pollution

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MSc Environmental and Biochemical Toxicology
MSc Environmental Pollution and Protection

Science of the Environment

MRes Science of the Environment
MSc Biophotonics
MSc Environmental Science and Technology

For further information including funding please contact Andy Harrod (lec.pg@lancaster.ac.uk; +44 (0)1524 593478) and consult our dedicated website http://www.lec.lancs.ac.uk/postgraduate

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Distance no object

Robert Wiseman Dairies is piloting software to cut down on face-to-face meetings, saving money and reducing emissions. **Paul Suff** reports

Environment champions working at Robert Wiseman Dairies' 22 UK sites meet regularly to exchange ideas, share progress and discuss problems with environmental issues at their sites. The location of those meeting has changed over the past year, however. Rather than rotate the meetings around the country – with sites as far apart as Glasgow and Droitwich, in Worcestershire – collaborative software now allows them to work together without leaving their own offices, making significant environmental and financial savings.

Getting together

One of Wiseman's key environmental targets, announced last year as part of the firm's five-year sustainability strategy, is to reduce fuel consumption across the business by 15% by 2015 – based on the ratio of fuel litres per tonne of liquid input (milk). Much of the improvement will come from maximising the fuel economy and emissions savings from the company's fleet of lorries through good driving and efficient route planning, as well as using the most efficient vehicles.

Reducing company car mileage will also contribute, even though such journeys account for only 2% of Wiseman's transport emissions. But whereas the use of HGVs is an inescapable feature of the business operations, with milk collected from farms on a daily basis and transported by lorry to dairies and then to retailers, a significant proportion of company car travel is unnecessary.

"We found that around half the business miles travelled in company cars were not strictly necessary," says Debbie Rusk, environment manager at Robert Wiseman Dairies in Glasgow. "So, if we could find a way of collaborating without making car journeys we'd be able to significantly reduce company car use, which will help meet our 2015 fuel target."

Internal analysis reveals that a two-hour meeting involving all 22 environment champions at the firm's head office could produce 1,700kg of CO_2 emissions and cost £4,300 in travel costs and employees' time (see a real example in the panel on p.32). A collaborative network therefore makes both environmental and financial sense.

"Now people are used to collaborating online, they can see the benefits and how much more convenient it is than sitting in their cars for hours," says Rusk. She also adds that such arrangements can provide even larger gains, for example when there are traffic problems, which can add enormously to the length of a journey and significantly increase emissions.

Networking

David Leitch, network architect at Wiseman, says that the firm looked at several web-based systems before deciding to pilot a collaborative desktop system called Appshare, which was developed at the University of Strathclyde. "The problem with collaboration tools, like video conferencing, is that they require substantial investment in new bandwidth to make them work well enough to support a number of users, while some desktop collaboration systems will work OK if there are only a small number of users at any one

REAL SAVINGS

Robert Wiseman Dairies' environment champions meeting, June 2010 (attended by seven champions): carbon and financial savings

Emissions avoided

- Total savings = 199.7kg CO_2:
  - Scott would have flown, creating 63.96kg CO_2; and
  - diesel would have contributed 135.7kg – made up from Debbie, Craig, Jim L and Jim F sharing, Scott driving from the airport, Stuart driving from Droitwich and Bob driving from Bridgwater.

Costs avoided

- Total = £867:
  - Scott's flights would have been £129 and £119, plus hire car £38.83;
  - diesel for 511 miles at 9.9 miles per litre @ 135p per litre = approximately £70;
  - lunch for eight people = £30; and
  - time saved – the meeting took two hours out of each champion's working day, rather than taking most people offsite for a full day. Estimating costs at £10 per hour and with 48 hours of work time saved (6 people x 8 hours), results in a £480 saving.

time. We experimented with a couple of collaboration systems, but these only allowed two or three users on before our network collapsed under the strain."

That's because collaboration systems tend to hog bandwidth, particularly as the number of participants rises, potentially disrupting other business network technologies, such as email, enterprise resource planning and customer service management systems.

Appshare, however, can accommodate several hundred users in one or more meetings at the same time. "Appshare is scalable in the sense that lots of people can use it without any network problems and without the need for any additional bandwidth," says Leitch.

According to CEO Stephen Behan, the software will cost a company the size of Wisemans around £150,000 a year to roll out to all staff, whereas alternative collaborative systems cost the same but also require a £1 million-plus investment in additional bandwidth. "From a practical perspective Appshare works like any other collaboration tool, but from a technical perspective it is entirely different. Its scalable architecture means that it doesn't hammer the network," explains Behan.

The system is secure as it is deployed in the corporate network, rather than being linked via the internet to a third-party server. Appshare also integrates with other applications. Leitch warns that this is crucial. "I tested it to make sure it wouldn't cause any adverse effects on our other voice and data applications," he says.

Web-based collaboration tools, such as Appshare, enable users who have downloaded the software and who are invited to a meeting to share a desktop.

Rusk outlines the typical agenda for the meetings of environment champions to illustrate how she and her colleagues use the system: "Each of us gives a 10 to 15 minute Powerpoint presentation on the challenges and highlights at our site over the previous three months. Then we go through our 'action log', which details what we should have done since our previous meeting.

"We also look at our 'utility ratios', which itemise our electricity and water use and waste arisings, for example. And we highlight any new legislation that everyone needs to be aware of. Then it is on to any other business. [Using the software] is like letting your colleagues look over your shoulder while you talk them through a slide or document."

All for one

All the environment champions at Robert Wiseman Dairies have now been trained to teach others how to use Appshare, and the company plans to roll the system out across the group. Rusk advises that senior management support is crucial to get people to alter their existing behaviour. "Adopting a technology that changes the way people work is no trivial challenge; it's not enough that the technology works, there has to be strong management determination to drive the use of the technology throughout the business.

"We found AppShare easy to use, but the bigger challenge has been to encourage our colleagues to abandon their cars and stay in the office. This kind of change demands the support of the senior management if expectations of success are to be realised."

So with transport accounting for about 25% of UK carbon emissions (higher than in 1990), and with commuter and business travel constituting nearly 40% of all miles driven by car, working together online wherever possible rather than getting together face to face can be a cost-effective way of significantly reducing business emissions.

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The essential foundations

Paul Reeve continues his journey through the syllabus of the IEMA Associate certificate course, providing notes on the fundamentals of environment management

IEMA Associate certificate – Module 1
The key aim is to understand the issues, science and philosophy that underpin environmental sustainability.

The first article in this series (lexisurl.com/iema10681) noted that sustainable development (SD) is defined as the process of "meeting the needs of the present without compromising the ability of future generations to meet their own needs". It also reported that in 2005, the UK government published "Securing the future", a landmark national strategy for SD.

Now the government says that SD means "making the necessary decisions now to realise our vision of stimulating economic growth and tackling the deficit, maximising wellbeing and protecting our environment, without negatively impacting on the ability of future generations to do the same".

This statement, it adds, updates the "principles underpinning the UK's 2005 sustainable development strategy, by recognising the needs of the economy, society and the natural environment" (lexisurl.com/iema10682).

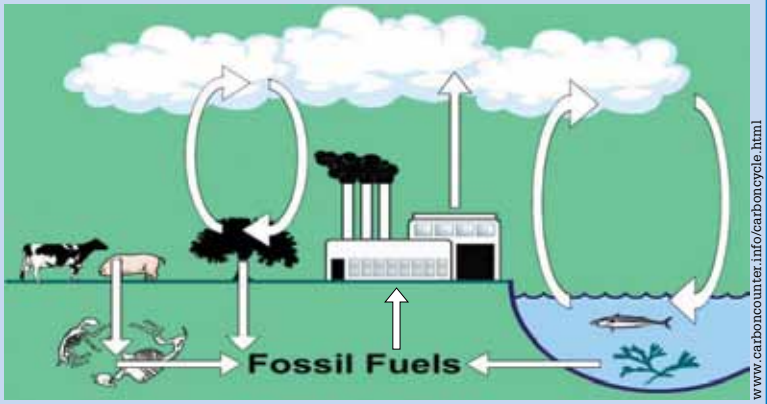
The precautionary principle

The 2005 strategy set out the following principles of SD:

- living within environmental limits;
- ensuring a healthy and cohesive society;
- achieving a sustainable economy;
- promoting good governance; and
- using sound science responsibly.

A key principle of SD is that there are limits to what can be emitted into the air, sent to landfill, or how much of an environmental resource, such as biodiversity (see panel, p.37), can be lost before there is significant environmental, social or economic harm. A fundamental problem is that society does not always know what the environmental limits are. This is

THE CARBON CYCLE AND GREENHOUSE-GAS EMISSIONS



www.carboncounter.info/carboncycle.html

Two fundamentally important natural processes are the breakdown and recycling of substances, including essential chemicals. There are various natural cycles for essential substances such as water, carbon, nitrogen and phosphorus.

For example, the "carbon cycle" involves both the (very) long- and short-term recycling of carbon materials. Photosynthesis converts carbon dioxide in the atmosphere into the biomass of plants, as organic carbon. Herbivores then obtain this carbon by eating plants, while carnivores (or omnivores) obtain the carbon by eating herbivores (and plants). When plants or animals die, organic matter is consumed by decomposer organisms. These return carbon to the soil, or to the atmosphere as respiratory carbon dioxide.

A similar biological carbon cycle occurs in marine (and other aqueous) environments. When marine life dies and decomposes, a significant amount of organic carbon builds up in underwater sediments, while some is returned to seawater as respiratory carbon dioxide.

Billions of tonnes of sedimentary carbon have been deposited, over geological timescales, as hydrocarbons (notably to create fossil deposits of coal, gas and oil) or as calcium carbonate (for example, from shells and other skeletal material) to form limestone or chalk. The eventual combustion or dissolution of these carbonaceous materials ultimately returns the carbon to the atmosphere or water, mainly as carbon dioxide.

Unfortunately, compelling scientific evidence suggests that society's prodigious combustion of fossil fuel for energy is affecting the carbon cycle. Burning huge quantities of fossil fuel has, within generations, returned geological carbon to the atmosphere (as carbon dioxide) from deposits that were created over millions of years.

Deforestation and other habitat loss can also return carbon to the atmosphere that is stored in biomass or soils. Examples are burning timber and other biomass and the degradation or exploitation of carbon-bearing soils (such as peat).

Carbon dioxide contributes to global climate change via the so-called "greenhouse" effect (greenhouse gases absorb solar energy that is re-radiated from the Earth, and which would otherwise radiate into space).

particularly important if there is a risk of major, and possibly unpredictable or irreversible, environmental impacts. To help deal with the problem of uncertainty and significant risks to the environment, Principle 15 of the 1992 United Nations Rio Declaration set out the "precautionary principle".

It emphasises that absolute scientific certainty is not required before policy measures are developed or implemented. Global impacts that have invoked the precautionary principle include stratospheric ozone depletion (by certain halogenated chemicals) and climate change (substantially due to carbon dioxide).

Action in support of SD

At a national level, "Securing the future" included the following UK priorities for action: climate change and energy, and natural resource protection. In addition to national strategies, organisations may decide – or find they are compelled – to take a range of actions to support SD. For example:

Resource/supply chain options

- Substitute materials or energy from non-renewable resources with sustainable renewable resources (eg from accredited sources).
- Consider transport impacts (eg local sourcing).
- Minimise packaging, preferably using recyclable or reusable packaging.

Operational options

- Enhanced resource productivity (eg using fewer materials and less energy per unit of output).
- Minimise waste through reuse and recovery.
- Shift from pollution abatement only, to intrinsically cleaner technology.
- Improve the use of transport (eg alternative communication methods or transport fuels).

Market-related options

- Design products for durability, repair, reuse or recyclability (eg easy disassembly, parts common to different equipment).
- More efficient products (eg using less energy, water).

MSc in Sustainability and Responsibility

This exciting two-year, part-time programme, builds on Ashridge's strengths in research, consulting and teaching in the areas of sustainability and responsibility.

- Explore new approaches to address sustainability and responsibility issues in your own context.
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business school

Paul Reeve is head of environment at the Electrical Contractors' Association.

Cross-cutting practices

- Life-cycle thinking to "design out" major impacts.
- Partnerships with suppliers, contractors and customers.

Two parameters that affect an organisation's choices are acceptability and feasibility. The former refers to financial imperatives, such as profitability and financial risk, as well as internal and external stakeholders' views. Feasibility relates to the constraints on taking action, such as the availability of technology, materials and skills at an acceptable cost, the readiness of the supply chain.

The term "anthropogenic" refers to human – as opposed to natural – activities that emit greenhouse gases (GHGs) to the environment. In the case of GHGs (see panel, p.35) significant anthropogenic emissions of carbon dioxide and other GHGs – most notably methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride – are believed to be accelerating global warming, a precursor of climate change.

Significant global and regional changes in climate will affect the environment, societies and economies. As such, environment managers are increasingly involved in assisting with adapting to climate change, in addition to controlling anthropogenic GHG emissions at source.

BACK TO BASICS: ECOSYSTEMS

Ecosystems – which include habitats – range from various marine environments, estuaries, rivers and lakes, to prairies, woodland, swamps, deserts and heath land, and "modified" ecosystems, such as cities, towns and agricultural land. Natural ecosystems can be complex.

Biodiversity refers to the diversity of habitats, species of plants and animals, and to genetic diversity. A wide range of interactions can affect biodiversity – excessive human presence, pollution, land clearance, water extraction, and climate change.

How an ecosystem responds to chemical pollution depends on the substance involved, the amount released, the receiving environmental medium – air, water or land – and the natural energy available. However, various harmful substances, such as persistent organic chemicals, do not degrade easily in the environment. In some situations, the environment alters emissions in a way that is not beneficial to society. For example, airborne solvents and nitrogen oxides from urban business and transport can react with sunlight to produce ground-level ozone, which is harmful to human health.

Paul Reeve is an IEMA Fellow. He originally conceived and produced the Associate membership course and exam with Paul Hyde. They are joint authors of the popular textbook "Essentials of environmental management", on which this In training series is based.

IEMA graduate award judges looking for something special

Winner will be announced at national conference in November

Graduate award The IEMA graduate award recognises the skills, talents and achievements of early-career environment professionals. The nomination deadline falls at the end of September.

Here, two members of the panel, lead judge Dave Farebrother and the 2010 winner Sherry Palmer, tell us what the award means to them and what they hope to see in the nominations this year.

Dave Farebrother, environment director at IEMA graduate award sponsor Land Securities, has headed the judging panel for three years.

Land Securities is again sponsoring the award. What is it about this award your company identifies with?

We see a problem in our sector – a shortage of building engineers who actually know how to operate buildings effectively. The right technology has been implemented but we haven't been training people who can run the complicated buildings we construct effectively and efficiently. I fear we could see the same problem with environmental issues if we don't have enough people who are competent to deliver desired outcomes.

We see the IEMA graduate award as a good way of encouraging people to strive for excellence. It has always recognised high achievers in their field and hopefully that encourages other people to follow suit.

What challenges do you think graduates and other early-career environment practitioners are facing at the moment?

Assuming they are actually lucky enough to get a job, the obvious concern right now is job security. Aside from that, looking at the built environment sector, there is the challenge of overlapping issues. There is also a danger that individuals come out of university, having trained in one particular area, and get a job, but are then expected to know everything – which, without experience, they can't possibly do. I would say that graduates need broader knowledge and experience, but that is a catch-22 situation.

Dave Farebrother leads the panel judging this year's nominations

You've been a panel judge for three years. Over that time, have you noticed any changes to the calibre of award nominations?

We are getting a greater number of entries to the awards now, but I would like to see even more. There must be a lot of people out there who are contributing and achieving a lot, but are not being put forward. In terms of calibre, the top-level entries are getting better, but there is a bulk in the middle which is really people just doing their job, which is great, but we really need to see something special.

The main frustration is that many of the nominations are not accompanied by sufficient suitable evidence.

Could you describe what your ideal winner will have achieved, as demonstrated by their nomination materials?

I don't think there is a perfect answer, but the winner and the shortlisted candidates should have a mixture of some, or even all, of the following:

- they are doing more than just their job;
- they've devised something out of the ordinary;
- they demonstrate passion for what they do;
- they can show some measurable results; and
- they show some evidence of leadership.

It's not always possible to do everything, but demonstrating an innovative approach or setting some new standards are great ways to get the judging panel interested and excited.

Are you looking forward to presenting the award to the winner at the IEMA Sustainable Business conference?

Yes! It's sometimes difficult to find time to attend a whole event, but it is always good to be at the IEMA conference, attend the sessions and hear what's being said. For me, meeting the winner and the runners up is the best bit; it's interesting and useful, and – personally – I'm never too proud to borrow ideas from the winner!

Sherry Palmer was last year's winner

Sherry Palmer won the 2010 graduate award for her outstanding work at Belfast-based building and civil engineering contractors McLaughlin & Harvey.

How has winning the award benefited your work profile?

I have been quite modest about winning the award, to be honest. It is beneficial to have on my CV and the coverage in *the environmentalist* has raised my profile within the local environment profession.

What have you been doing at work since winning the award?

Work is always busy, with new challenges and responsibilities continuing to emerge in terms of environmental management and sustainability.

I still focus on managing the environment systems for the construction of Phase 2B of the Royal Victoria Hospital redevelopment in Belfast, which is due for completion in 2012. I also prepare our entries and submissions to environmental awards, and conduct environment audits on construction and civil engineering projects all over the UK.

What advice would you give to anyone thinking of nominating someone (or asking to be nominated) for this award?

Putting a nomination forward is a great way of acknowledging that one of your colleagues is making exceptional achievements in their field regardless of the final outcome of the nomination. Entering the awards also communicates to other environment professionals that innovations are taking place and it is really valuable to recognise this formally.

This is the first time a previous winner has been a judge. Are you looking forward to it?

I am very much looking forward to reading the submissions and getting an insight into the new frontiers being explored by the next generation of environment professionals. It will also be interesting to see what the judging process involves. It's like having a backstage pass! I am honoured to be on the panel.

What experience do you think you can bring to the judging panel?

Because I have an insight into the standard of last year's winning entry, and also met the runners up and spoke to them about their projects, I will be looking for something completely different! The environment profession is constantly evolving and I will bear that in mind while judging the entries. As a recent environment engineering graduate, I have a broad range of technical and scientific expertise to draw upon.

What will you look for in a potential winner when you read through the nominations?

I will be looking for an entry that tells a story of someone who is doing something unique or ground breaking, or who is having a widespread impact on an organisation or community. In order to continue to improve the way we care for the environment, individuals entering the environment profession must be innovative, influential and fearless in the face of making change happen.

The deadline for entries is 30 September. Anyone thinking of nominating a graduate practitioner should visit lexisurl.com/iema8321 for information on how to do so, including details of what supporting evidence is required.

IEMA EVENTS

Date	Region	Topic
Regional events		
27 September	South East	International perspectives on environmental and social impact assessment
28 September	South West	Green drinks (Bristol)
4 October	North West	Eco house visit
5 October	South East	Networking social
13 October	South West	Green drinks (Southampton)
20 October	Republic of Ireland	Sustainability at the Aviva Stadium and an overview for all
CDP workshops		
28 September	Midlands	Environmental law and legislation
29 September	North West and Wales	Social
13 October	Yorkshire & Humber	Ensure your waste management practices are compliant and sustainable
26 October	South East	Environmental law and legislation
Membership workshops		
27 September	Midlands	Full and CEnv membership workshop (Peterborough)
29 September	Midlands	Associate Open Book workshop (Birmingham)
6 October	Wales	Full and CEnv membership workshop (Cardiff)

NQA named as sponsor of IEMA 2011 conference

2011 conference IEMA is delighted to announce NQA, the leading assessment, verification and certification body, as the lead sponsor of its forthcoming conference, "Sustainable business: environmental professionals driving change". It is the second consecutive year that NQA has sponsored the Institute's flagship annual conference.

At this year's event, NQA will be hosting early afternoon sessions, with its experts speaking on ISO 50001 between 1.30pm and 2.10pm in the main lecture theatre on both 15 and 16 November, providing all delegates with the opportunity to learn more about the new international energy management standard.

Max Linnemann, environment sector manager at the assessment, verification and certification body, said: "NQA is very much looking forward to sponsoring the IEMA sustainable business conference. It is a great chance to meet this year's delegates and translate the language of the new international energy management standard, ISO 50001, during the afternoon sessions of the conference.

This will allow the delegates to leave feeling knowledgeable about the new standard."

With the event now less than two months away, places at the conference on 15–16 November are being booked up very quickly. In addition to speakers from NQA, the conference line-up also includes BSkyB's Fiona Ball, P&G's Peter White, Lloyds TSB's Paul Turner and Steve Wallace from National Grid.

To find out more, book online, choose your workshops and reserve your place at one of the NQA sessions, go to lexisurl.com/iema10692 today. For more about NQA, visit www.nqa.com.

Short cuts

Sign up to Guardian Sustainable Business

Guardian Sustainable Business is a global platform for business leaders to engage with cutting-edge corporate sustainability thinking and practice.

From business models to biodiversity, it finds the best examples of how businesses are responding to sustainability challenges and gets the people making it happen to tell you how they're doing it.

IEMA members are invited to sign up for free. Membership entitles you to the following:

- invitations to networking events at the *Guardian*'s head office;
- first look at job opportunities;
- an exclusive weekly newsletter from the editor;
- live Q&As with your sector's most influential and innovative personalities; and
- a 20% discount on an extensive programme of seminars.

For more information, visit lexisurl.com/iema10691 or follow on Twitter @GuardianSustBiz.

More successful IEMA members

IEMA would like to congratulate the following individuals on the success of their Full (MIEMA), Chartered Environmentalist (CEnv), Dual (MIEMA and CEnv) and Fellow (FIEMA) membership applications.

Full

Maxwell Burrell, TACP LLP
Mark Lovett, Apetito
Aradhana Mehra, University of Derby

Chartered Environmentalist

Matthew Lee, British Nuclear Group

Dual

Joe Hague, Gatwick Airport
Mark Hedges, BMT ISIS
Alison Rothnie, Balfour Beatty
Joanna Simpson, Higher Education Funding Council for England

Fellow

Henrietta Anstey, BAE Systems

2,000 new members join the Institute

Members During the first half of 2011, IEMA received and processed more than 2,000 new membership applications. As of 31 July, 2,002 new members had joined the Institute since the beginning of the year.

The figure is an indication that IEMA, with its dedication to creating a sustainable future through the development of environmental skills, knowledge and thought leadership, continues to be the professional body of choice for environment practitioners around the globe.

The rate of new members is 8% up on the same period last year. From the 2011 intake of members, the business sector is the fastest-growing area, at 59%. The remaining 21% work in consultancy, 11% in the public sector and a further 9% in education or academia.

At the start of September, IEMA had more than 10,000 active professional members (from Associate to Fellow) and a further 5,000 ambitious and interested individuals at the Student, Graduate and Affiliate levels. There is also evidence of an increase in the number of registrants progressing to Full membership, which is very encouraging.

Three-quarters of this year's new members come from just five of our 13 regions: the South East leads with 30%; the North West comes second with 16%; the Midlands and South West groups have both welcomed 10% each and Yorkshire and Humber 9%. Just under 7% live outside of the UK.

"It is very encouraging to see so many members join us this year. The numbers are a reflection, I believe, of the growing recognition there is among organisations of the importance of environmental skills," commented IEMA CEO Jan Chmiel. "I'd like to welcome each and every one of the 2,002 new members and I would encourage them to see IEMA membership not only as a way to develop their careers but also to shape the future of the profession."

Special IEMA report on EIA

Impact assessments By 2020, more than £150 billion of new infrastructure will have been developed across the UK posing both risks to the environment and significant opportunities for improvement. In the consent process, environmental impact assessment (EIA) acts to ensure the environment is integrated into design.

As previewed in the July issue of *the environmentalist*, IEMA recently published *The state of environmental impact assessment practice in the UK*, the latest addition to its special reports series (lexisurl.com/iema8431).

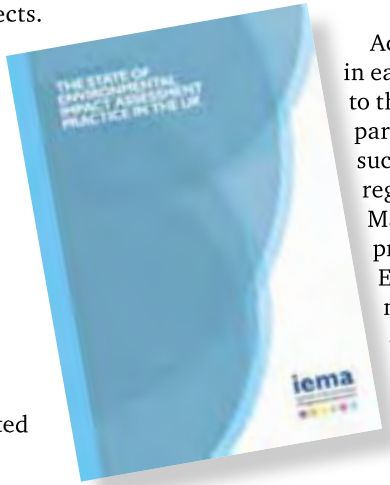
This in-depth research was completed and authored by IEMA's environmental assessment lead, Josh Fothergill, and aims to ensure that EIA continues to play an enhanced role in engaging communities and shaping new development to find the best environmental outcomes.

"In undertaking this research we found that having environment professionals who are passionate about the environment is an integral part of project design," said Fothergill.

"What became clear is that in the UK EIA is continuing to evolve, and that there is healthy debate as to how this can be best achieved. The report captures this important piece of environmental thought leadership, presenting it in a manner that makes it accessible to anyone interested in delivering a sustainable future."

The report also reveals that EIA is increasingly having an early influence in helping to shape developments so they avoid negative community and environmental effects.

"However, it is clear that practice is not perfect and work needs to be done to ensure that developers recognise the value that EIA coordinators deliver when truly integrated within the design process," commented Fothergill.




EIA acts to ensure the environment is integrated into the design process

By establishing a vision for EIA within the report, IEMA has reinforced its leadership role in further improving EIA practice in the UK. IEMA has identified six key areas for action to improve EIA in the UK. These are:

- a focus on communicating the added-value generated by EIAs;
- realising the efficiencies of effective EIA coordination;
- developing new partnerships to enhance the EIA process;
- listening, communicating and engaging effectively with communities;
- practitioners actively working together to tackle the difficult issues in EIA; and
- delivering environmental outcomes that work both now and in the future.

Activities to deliver progress in each of the action areas linked to the vision will be delivered in partnership with key partners, such as those organisations registered to the EIA Quality Mark. In this way, environment professionals involved in EIA will help to deliver more efficient and effective assessments for a more sustainable future.

Many EIA specialists have welcomed the publication of the report.

"With new EIA regulations in England [lexisurl.com/iema10821] and Scotland, the launch of this report is very timely," said Topsy Rudd, director of Cascade Consulting.

"It provides an interesting and thought-provoking view of EIA practice in the UK, and challenges all those involved in the process to think about how their work acts to deliver effective community and environmental outcomes as a result of new development."

Trevor Turpin, director at Nicholas Pearson Associates, said that the report's advice for maximising the future benefits to be gained from EIA was particularly welcome. "This is an excellent and thorough report which should be read by all in the development process if EIA is to continue to make a positive and effective contribution to planning," he said.

"It provides an easily accessible resource for those to whom the EIA process may be new, as well as those who might have thought that the environment was no longer an issue."

IEMA members and other interested parties can download a free pdf of the full report and its appendices from lexisurl.com/iema8431. Hard copy versions are on sale, priced at £50 (plus postage and packing), from the IEMA publications shop (lexisurl.com/iema10690).

Course provider	Location of course	Dates courses running Oct	Nov	Dec	Contact details
ASSOCIATE CERTIFICATE IN ENVIRONMENTAL MANAGEMENT					
The Associate certificate course can be delivered as part of an MSc, via applied learning, distance learning and residential learning. If you are interested in a course, please contact the provider direct by telephone or email.					
Cambio Environmental	Abergavenny, Cardiff, Maidstone, Worcester	*	*	*	*julia@cambio-uk.com* www.cambio-uk.com + 44 (0) 1873 890819
Corporate Risk Systems	Distance learning; applied learning route	*	*	*	*cmf@crsrisk.com* www.crsrisk.com + 44 (0) 1283 509175
EEF	Leamington Spa	*		*	*training@eef.org.uk* www.eef.org.uk/training + 44 (0) 1926 310500
Environmental Academy	Various UK – Associate certificate for the environmental practitioner (NCFE Level 3)	*	*	*	*info@environmental-academy.co.uk* www.environmental-academy.co.uk + 44 (0)1914 956248
Envirotrain Training	e-learning	*	*	*	*info@envirotrain.co.uk* www.envirotrain.co.uk
Integra Training & Consulting	Sunderland	*			*enquiries@integratrainingandconsulting.co.uk* www.integratrainingandconsulting.co.uk + 44 (0) 1915 152311
Loreus	Distance learning	*	*	*	www.loreus.co.uk + 44 (0) 1158 483050
North Notts Create	North Notts College	*			*csiddall@nnc.ac.uk* + 44 (0) 1909 504747
Nottingham Trent University	Blended learning; distance learning and attendance; and CPD modules available throughout the year				*s3.enquiries@ntu.ac.uk* + 44 (0) 1158 484460
OSTAS	Southam, Warwickshire	*			*sam@theacegroup.co.uk* www.ostas.co.uk + 44 (0) 1926 813356
Pivotal Performance	Various UK	*	*	*	*info@pivotal-performance.com* www.pivotal-performance.com + 44 (0) 1536 533233
RRC Training	Distance learning; e-learning	*	*	*	*info@rrc.co.uk* + 44 (0) 2089 443100
Santia Consulting	Various UK	*	*		www.santia-training.co.uk + 44 (0) 1443 824600
SEQM	Newcastle		*		*office@seqm.com* www.seqm.com + 44 (0) 1912 651034
The Key Consultancy	Bromsgrove	*			*gl@thekeyconsultancy.co.uk* www.thekeyconsultancy.co.uk + 44 (0) 1527 575182
University of Bath	Distance learning	*	*	*	*iem@bath.ac.uk* www.bath.ac.uk/iem + 44 (0) 1225 386405
University of Derby	Derby; distance learning; MSc starts Jan/Sep	*	*	*	www.derby.ac.uk + 44 (0) 1332 590500
University of London	Distance learning (Feb–Oct)	*	*	*	*cedepadmin@soas.ac.uk* www.soas.ac.uk/cedep/ + 44 (0) 2078 984273

Course provider	Location of course	Dates courses running Oct	Nov	Dec	Contact details
INTRODUCTION TO EMS COURSE					
Bureau Veritas Training	London	*			*hsetraining_uk@uk.bureauveritas.com* + 44 (0) 2079 026148
RRC Training	Distance learning; e-learning	*	*	*	*info@rrc.co.uk* + 44 (0) 2089 443100
EMS IMPLEMENTATION COURSE					
ECUS	Sheffield		*		*training@ecusltd.co.uk* www.ecusltd.co.uk + 44 (0) 1142 669292
Waterman Environmental	Sheffield			*	*a.turley@waterman-group.co.uk* + 44 (0) 1142 298900
WSP Environmental	Edinburgh, London, Manchester	*	*		*learningsolutions@wspgroup.com* + 44 (0) 1313 442300
FOUNDATION CERTIFICATE IN ENVIRONMENTAL MANAGEMENT					
Cambio Environmental	Abergavenny, Cardiff, Maidstone, Worcester	*	*		*julia@cambio-uk.com* www.cambio-uk.com + 44 (0) 1873 890819
EEF	Leamington Spa		*		*training@eef.org.uk* www.eef.org.uk/training + 44 (0) 1926 310500
E.ON Engineering Academy	Various UK	*	*		*eaenquiries@eon-uk.com* www.eon-engineeringacademy.com + 44 (0) 2476 191540
Pivotal Performance	Various UK	*	*		*info@pivotal-performance.com* www.pivotal-performance.com + 44 (0) 1536 533233
RRC Training	Distance learning; e-learning	*	*	*	*info@rrc.co.uk* + 44 (0) 2089 443100
Santia Consulting	Various UK	*	*		www.santia-training.co.uk + 44 (0) 1443 824600
Workplace Law Environmental	London; e-learning		*		*sales@workplacelaw.net* + 44 (0) 8717 778881
FOUNDATION COURSE IN ENVIRONMENTAL AUDITING					
AFNOR Groupe	Abu Dhabi			*	*aglass@rsk.co.uk* + 44 (0) 1928 726006
Antaris Consulting	Dublin	*			*michelle.boreland@antarisconsulting.com* www.antarisconsulting.com + 353 614 64666
Aspects International	Various UK	*	*		*john@aspexint.com* www.aspexint.com + 44 (0) 1423 781218
SEQM	Newcastle		*		*office@seqm.com* www.seqm.com +44 (0) 1912 651034
University of Brighton	Brighton	*			*ccp@brighton.ac.uk* www.brighton.ac.uk/ccp + 44 (0) 1273 642305
LEAD ENVIRONMENTAL AUDITOR COURSE					
AJA Academy	Abu Dhabi, Bahrain, Italy, Qatar, Saudi Arabia	*	*	*	*marketing@ajaacademy.com* www.ajaacademy.com + 39 066 507541
Antaris Consulting	Dublin			*	*michelle.boreland@antarisconsulting.com* www.antarisconsulting.com +353 614 64666
Aspects International	Various UK		*		*john@aspexint.com* www.aspexint.com + 44 (0) 1423 781218

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BSI Training	Swindon, Manchester, London, Northampton, York	*	*		www.bsigroup.co.uk/training + 44 (0) 845 086 9000
Bywater Training	Wakefield, London, Oxford	*		*	*sales@bywatertraining.co.uk* + 44 (0) 1908 543900
EQS Asia Pte	Furama Riverfront, Singapore			*	*training@eqsasia.com* www.eqsasia.com/ + 65 62 218006
ERM CVS	Various, worldwide (UK, North America, Asia)	*	*		*matt.bayram@ermcvs.com* + 44 (0) 2032 065281 + 1 973 519 5962
Excel Partnership	Various UK	*	*	*	*training@excelpartnership.co.uk* www.excel-world.co.uk + 44 (0) 1442 242929
IQMS	Various UK		*		*enquiries@iqms.co.uk* www.iqms.co.uk + 44 (0) 1915 169191
LRQA	Various UK	*	*	*	*lrqatraining@lrqa.com* www.lrqatraining.co.uk + 44 (0) 800 328 6543
SGS UK	Various UK	*	*		www.training.sgs.com/uk + 44 (0) 1276 697777
Sustainable Growth Company	Aberdeen, London, Manchester	*	*		*cer@sgc91.com* + 44 (0) 1484 681796

Course	Course provider	Location of course	Dates courses running Oct	Nov	Dec	Contact details
CPD & OTHER APPROVED COURSES						
IEMA environmental awareness	Olive Consultancy	Southampton		*		*admin@consultolive.com* www.consultolive.com + 44 (0) 2380 441440
Carbon, GHGs, foot-printing, accounting and management	Aspects International	Various UK	*	*	*	*john@aspexint.com* www.aspexint.com + 44 (0) 1423 781218
Carbon, GHGs, foot-printing, accounting and management	Conestoga Rovers & Associates (Europe)	London, Edinburgh, Nottingham		*		*training@cra.co.uk* + 44 (0) 115 965 6700
Carbon, GHGs, foot-printing, accounting and management	Olive Consultancy	Southampton		*		*admin@consultolive.com* www.consultolive.com + 44 (0) 2380 441440
Certified sustainability practitioner training	Centre for Sustainability and Excellence (CSE)	US, Abu Dhabi, UAE	*		*	*development@cse-net.org* *marketing@cse-net.org* www.cse-net.org +3 2108 085565
Environmental awareness	RBS Mentor	Various UK	*	*		*alexis.ballantyne@mentor.uk.com* + 44 (0) 1412 274341
Environmental awareness award for business and industry	Environmental Academy	e-learning	*	*	*	*info@environmental-academy.co.uk* www.environmental-academy.co.uk + 44 (0) 1914 956248
Environmental management for senior executives	Woodland Grange Training Conference Centre	Leamington Spa	*			*training@eef.org.uk* www.eef.org.uk/training + 44 (0) 1926 310500
Environmental management for supervisors	Construction Learning World	Various UK	*	*	*	*sgoodman@constructionlearningworld.com* + 44 (0) 1159 739212
Internal energy auditor course: BS EN 16001	Antaris Consulting	Dublin		*		*michelle.boreland@antarisconsulting.com* www.antarisconsulting.com + 353 614 64666

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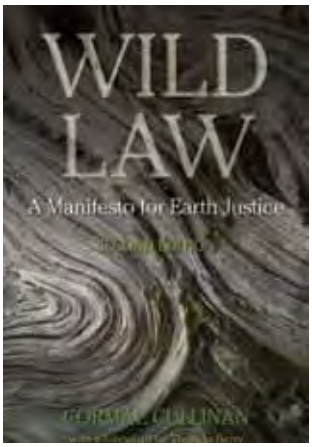
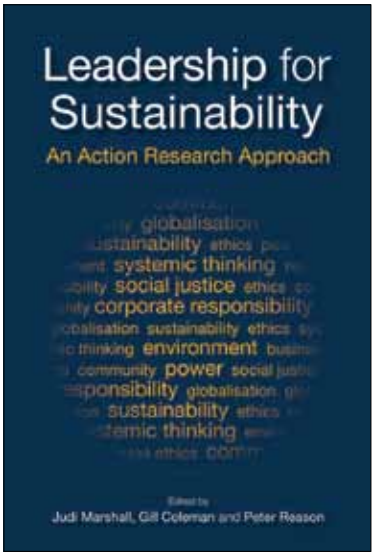
Institute of Environmental Management & Assessment

Wild law: A manifesto for Earth justice

Cormac Cullinan / Green Books / Paperback: £12.95 /
ISBN: 978–1–9003–2290–4



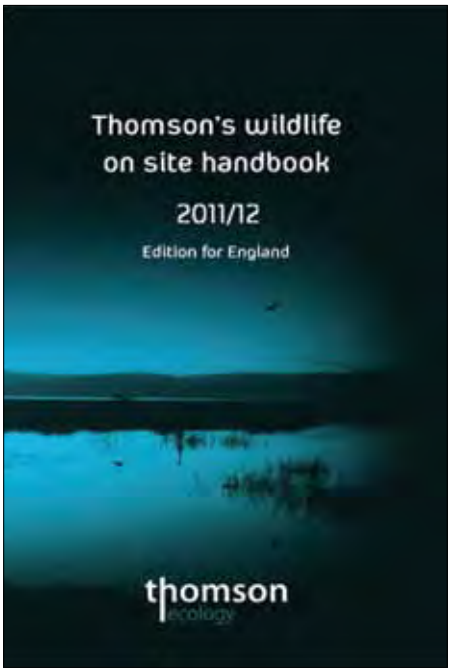
BOOK The growing tension between the natural environment and voracious economic growth is at the heart of Cormac Cullinan's thought-provoking book. This is the second edition and provides further substance to his ideas on how existing political systems and structures need to change to ensure human beings coexist happily with the rest of the Earth's community without degrading and destroying the planet – living with nature rather than trying to dominate it, as the author puts it in his preface. The new edition differs from the original, which was published in the aftermath of the 2002 World Summit on Sustainable Development, by incorporating a new postscript and the Universal Declaration of the Rights of Mother Earth, adopted at a conference in Bolivia in April 2010. Cullinan describes the application of what he refers to as "Earth jurisprudence" to promote social and environmental justice. Is it feasible in the 21st century? Read the book and draw your own conclusions.



Leadership for sustainability: An action research approach

Judi Marshall, Gill Coleman and Peter Reason /
Greenleaf Publishing / Hardback: £35 /
ISBN: 978–1–906093–59–4

BOOK An inspiring insight into the different ways in which environment professionals can lead sustainability, this book centres on the experiences of 29 individuals who completed the MSc in Responsibility and Business Practice, which ran at the University of Bath between 1997 and 2010. The first third of the book is dedicated to a comprehensive introduction to the course, the principles behind its creation and the concept of action research – working with others to improve the way they address issues through cycles of action and reflection. The rest of the book focuses on participants' experiences of the course and how it has informed their professional lives since. The stories differ widely from the person inspired to create the Carbon Disclosure Project, to another who completed the world's first eco ironman triathlon, but each offers an interesting perspective on the emotional and practical reality of trying to lead sustainability. While the text is quite academic in places, the book remains an accessible and fascinating read.



Thomson's wildlife on site handbook 2011/2012

Thomson Ecology / Paperback: £14.99
Online version available at lexisurl.com/iema10704

BOOK Following the international agreement to halt biodiversity loss by 2020, made in Nagoya, Japan last October, the protection of wildlife and habitat is a particularly hot topic for governments at the moment. It is important therefore for environmentalists, especially those working on civil engineering and construction projects, to keep abreast of the latest legislative developments. Published by consultancy Thomson Ecology, this handbook provides a concise and clear overview of the key legislation and case law covering ecological protection in England (an edition covering Wales is also available). It also covers recent developments, such as the natural environment white paper published in June. The book includes tables of important international, European and national regulations, details of when licences are required, and useful calendars showing when it is best to carry out surveys and mitigation action. Most useful is the section of the book dedicated to practical guidance on specific protected species and habitats and what you need to consider if they are on your site. Overall, this is a helpful, quick reference guide for non-specialists.

Simon Quincey

Graduate geo-environment consultant

CAREER FILE

Qualifications
BSc (Hons) geography

Career history
2008 to now
Graduate geo-environment consultant, Hyder Consulting

2006–2008
Geo-environment technician, Bettridge Turner & Partners

Why did you become an environment professional? My interest in the environment started when I was at secondary school. I enjoyed geography and often watched programmes on nature and the environment, normally hosted by Michael Palin. When I finished my A levels I decided to pursue geography at degree level, which I hoped would lead me to a career in the outdoors and ultimately the environment profession.

What was your first environment job? It was as a geo-environment technician, which consisted of monitoring ground gas and groundwater across the UK and then processing the results ready for use in desk studies.

How did you get your first environment role? My first job was actually offered to me by a friend from the church I attended at the time.

How did you progress your environment career? Each summer – between studying at the University of Plymouth – I returned to Bettridge Turner & Partners to gain further skills and training. After graduating I was offered a permanent position at Hyder Consulting, where I was introduced to the graduate scheme. I have since gained experience through a variety of projects including working at the Olympic Park site for London 2012.

What does your current role involve? As a geo-environment consultant at Hyder I have a diverse role that includes a mixture of office-based and site work. Since starting in 2008, I have been involved in environmental monitoring at several sites in the southeast of the UK and have recently been given the challenge of a supervisory role as part of a site investigation and ongoing earthworks at an inert landfill site. In the office I help produce environmental and geo-technical monitoring reports and correspond with suppliers of materials for borehole and equipment maintenance.

How has your role changed over the past few years? My role has developed considerably in recent years, providing numerous challenges. I have increased my knowledge and understanding of the environment and our place in it. I have gone from merely reporting data from sites to understanding and interpreting the information and being able to report clearly and concisely. Recently I have been given further responsibilities that have encouraged me to ask questions and, more importantly, find the answers out for myself.

What's the best part of your work? The best part of my work is being outdoors in the environment, despite the weather.

What's the hardest part of your job? The most difficult part of my job is interpreting the statistics and presenting data.

What was the last development/training course/event you attended? I completed my personal track safety course earlier this year.

What did you bring back to your job? The course allowed me to do work in the railway industry in preparation for future site works beside the track.

What are the most important skills for your role and why? Thinking logically, and being adaptable and personable are really crucial in my job. Both on site and in the office it is essential to be able to think logically and prioritise in order to complete the job on time and to the required specification. If problems arise it is vital to be able to adapt and provide direction and the solution if possible. My role often requires me to be part of a team and being personable is very important in that work environment.

Where do you see the environment profession going? I see the environment profession becoming increasingly prominent as demand for alternative resources and technology increases in a world where pressure on the environment continues to build.

Where would like to be in five years' time? I would like to have progressed further in my current line of work and have achieved chartered environmentalist status with IEMA.

What advice would you give to someone considering going into the environment profession? I would advise any applicant to be completely honest in regard to their views on the environment and prepare for both the physical and mental challenges in the sector. If you are passionate about the environment and demonstrate this when applying to join the profession it increases your employability.

Tell us about your career
The "My career" page aims to inspire other environment professionals by showing how an individual has progressed her/his career. If you have a career story you'd like to share with your IEMA colleagues, please contact sarah.russell@lexisnexis.co.uk.

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Closing date for applications: Friday, 7 October 2011.
Early applications welcome.

For further information, job specification or application with covering letter and CV please email **recruitment@templegroup.co.uk** or contact **Evy Skinner** on **01825 790964**. To find out more about Temple and the work we do, visit our website at **www.templegroup.co.uk**

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