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# Consuming the earth

There are now more than seven billion humans on this planet and the UN forecasts the number will reach 9.3 billion by 2050. Can the world's ecosystems and resources support so many? Not if existing consumption patterns continue. Humans are currently consuming resources and polluting the planet at a level 40% higher than the earth can renew or absorb. And although the fastest-growing populations are in China, India and other developing countries, it is people in the developed world, where population growth is near zero, who consume the majority of the earth's resources and create the most pollution.

The average daily water consumption of someone living in the Indian city of Mumbai is 90 litres – on a per capita basis. The equivalent figure for someone in New York is 607 litres. According to the One Planet Living initiative, if all seven billion of us consumed as much as the average North American we would need five planets.

**Recovery from the worst economic recession since the 1930s provides an opportunity to create an economy that is less wasteful and makes more efficient use of precious resources**

Obviously, current consumption patterns are unsustainable. Pressure on resources will increase exponentially as living standards in China and other fast-developing countries rise, bringing with it higher levels of consumption. We already know that China is building the equivalent of two power stations every week, and its carbon footprint is soaring – up 9% last year, while the US saw a 1.4% rise in its CO<sub>2</sub> emissions.

The economic recession will have seen consumption plummet in many countries, so at the moment we are using far fewer resources than before the financial crash of 2008. An economic upturn is likely to signal a return to pre-recession, unsustainable consumption levels unless action is taken to create a new model.

Recovery from the worst economic downturn since the 1930s provides an opportunity to create an economy that is less wasteful and makes more efficient use of resources. Policy tools that properly reflect the true value of our natural resources, and measures to raise awareness among consumers about the environmental consequences of their consumption choices, are the only way to ensure the planet can continue to support its burgeoning population.



**Paul Suff, editor**



Short cuts

## Councils can help SMEs to recycle

Defra is calling on local authorities to sign up to a new voluntary commitment pledging to make recycling easier for small and medium-sized enterprises (SMEs). The new Business Waste and Recycling Services Commitment, created jointly by Defra and the Federation of Small Businesses, outlines 12 best-practice principles, including providing clear information to companies on available recycling services and their waste management responsibilities; allowing SMEs to use household waste recycling centres if possible; and giving details of providers that can deal with any waste the council does not collect. Local authorities interested in signing up to any or all of the principles can find out more information by visiting WRAP's website ([wrap.org.uk](http://wrap.org.uk)).

## Consultants lack growth

Continuing economic uncertainty is taking its toll on the environmental consultancy industry, according to the annual snapshot of the sector by research firm Environmental Analyst. It says that the UK's environmental consultancy sector declined for the second consecutive year in 2010, with the market shrinking by £113 million, resulting in 1,000 job losses. The data reveal that the environmental consultancy market in the UK contracted by 8.4%, with the sector hit particularly hard by cuts in public sector spending. Environmental Analyst estimates that spending by the public sector on consultancy services fell by £79 million, while revenue from the private sector dropped by £34 million. Environmental impact assessment services remain the top income generator for consultants, despite a 12% fall in such activity. Contaminated land consultancy projects – which fell by 3.4% in 2010 – were the second most sought-after consultancy service. This year is expected to see a slight upturn, with Environmental Analyst predicting a 0.5% increase in turnover.

# UK's long-term CO<sub>2</sub> targets at risk

**Emissions** The UK's ability to meet its carbon reduction commitments is in doubt because councils are scaling back their efforts to combat climate change and businesses are failing to plan beyond 2020.

According to environment think-tank the Green Alliance, many local authorities are scrapping their sustainability functions as a result of budget cuts, with 37% of local councils admitting climate change is not a priority for them and a further 28% confirming they are dropping broader environmental activities to focus on one area, such as reducing greenhouse-gas emissions from their own operations.

At the same time, the Carbon Disclosure Project (CDP) warns that although more FTSE 350 companies are now actively working to reduce their emissions than were a year ago, only 15% of the 236 firms it surveyed have targets in place beyond the end of the decade.

"Business will play a crucial role in the UK government meeting its carbon budgets and so we need to see a greater take-up of long-term emissions reduction measures," said the CDP's chief executive Paul Simpson.

The CBI reacted to the CDP's report by arguing that firms' ability to plan long term is being hampered by the government's mixed carbon message.

"It is hard to set targets beyond 2020 when there is still so much uncertainty coming from our politicians," said Dr Matthew Brown, the CBI's head of energy and climate change. "We need both national and global action to ensure we have a framework within which investors can make the right decisions and businesses can plan to decarbonise."

Meanwhile, Jonathan Garrett, group head of sustainability at infrastructure company Balfour Beatty, argues that long-term targets cannot be made in isolation. "The CDP's proposal is helpful for companies that lack long-term targets, but we have a 50% reduction target for 2020 and putting in a target beyond that will not change our current trajectory," he said.

"When we approach 2020, we will be in a position to set new targets. Unless a target has some substance behind it, it's a bit of an academic exercise and is in danger of heading into box-ticking territory."

## Mining company appeals CRC inclusion

**Regulation** A mining company is appealing its mandatory participation in the Carbon Reduction Commitment Energy Efficiency (CRC) scheme.

ATH Resources, one of the UK's largest coal producers, believes the electricity consumed by the 12km overhead conveyor at its Glenmuckloch opencast coal site in Dumfries and Galloway should be exempt from the CRC, and is appealing an enforcement notice served by the Environment Agency for failing to register in the first phase of the scheme.

ATH claims that if it fails to win an exemption from participation in the CRC its costs will increase by £1.4 million a year for three years from April 2011. According to the company, the conveyor – Europe's longest overland conveyor – transports 2.8 million tonnes of coal annually to its Crowbandsgate rail facility, removing 54,000 lorry journeys a year.

All organisations that had at least one half-hourly meter (HHM) settled on the half-hourly market in 2008, and



whose annual electricity supply through HHMs that year was 6,000MWh or more, qualify for full participation in the CRC. Qualifying organisations that fail to register risk being fined £5,000, plus a further £500 for each working day that passes before registration is complete.

The phase I deadline was 30 September 2010, so ATH is potentially facing a fine approaching £150,000 if its appeal is rejected. The appeal was being heard as *the environmentalist* went to press.

# Solar sector threatened by speed of FIT changes

Thousands of jobs put at risk by plans to halve FIT support, warn industry experts

**Energy** Organisations from across the renewable-energy sector have condemned the depth of the suggested cuts to the feed-in tariff (FIT) for small-scale solar installations and proposals to impose them on projects completed months ahead of their introduction on 1 April 2012.

While the sector anticipated a reduction in FITs to reflect the 30% fall in costs since the scheme's launch, the proposal to cut payments to the smallest photovoltaic installations by more than 50% and to impose the new rates on projects installed as of 12 December came as a shock.

Howard Johns, chair of the Solar Trade Association, said: "We want a sustainable cut that will allow us to survive and deliver green growth... The government has a choice – either it can cut like this and make an entire industry go bust, or it can work with us to properly plan the phasing-out of the tariff."

Dr Mark Everard, visiting research fellow at the University of the West of England, installed solar panels on his home in 2010 and agrees the government's plans could stop others doing the same. "Anything that extended the payback period would have made the decision much more marginal," he said. "Halving the biggest benefit of installing solar panels will inevitably suppress demand, just at the point where the technology is beginning to take off."

Meanwhile, David Sowden, chief executive of the Micropower Council, criticised the government for effectively giving developers and homeowners just weeks to install panels in order to benefit from the original tariffs. "The speed of the changes," he said, "will leave many companies with stranded assets, a plethora of contractual disputes in the industry and another race to beat the six-week deadline."

Energy minister Greg Barker defended the government's proposals to impose the new tariffs early, however, saying it was the only way to ensure the scheme did not exceed its budget.

"Were we to announce a change now and leave the current arrangements in place until next April, there would be a massive gold rush, and the entire budget



for feed-in tariffs – the entire £867 million – would be gone by then," he said.

However, with DECC's consultation outlining the proposals not closing until 23 December ([lexisurl.com/iema11158](http://lexisurl.com/iema11158)) a number of solar industry organisations are considering taking legal action against the government. Jeremy Leggett, chair of PV installer Solarcentury, said: "There is no question that a 'consultation' with an end date of 23 December slashing tariffs from 12 December is wide open to legal challenge and we now expect a very serious industry challenge to be mounted."

The proposed changes to the FIT scheme follow the launch of long-awaited consultations from DECC and the devolved governments outlining future subsidy levels under the Renewables Obligation. "Much of the [DECC] package is good, although it is hugely complex," commented Paul Thompson, head of policy at the Renewable Energy Association. "Additional support for wave and tidal [energy] is welcome, but some other technologies seem to have got a bit of a raw deal."

DECC has also confirmed that the delayed Renewable Heat Incentive will be launched by the end of November. The initiative was finally given approval by the European Commission after DECC cut the tariffs for large biomass installations from 2.7p to just 1p per kWh.

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## IN PARLIAMENT



### A whole bunch of dilemmas

**Alan Whitehead is MP for Southampton Test**

Frenetic preparations are currently under way in DECC to translate the principles and outline timescales set out in the electricity market reform white paper into meaningful mechanisms that can regulate the electricity market firmly in favour of customers, as well as usher in the long-term replacement of, and investment in, the low-carbon energy plants and smart grid structures that will serve to keep the lights on and emissions down to perhaps 100g of carbon per kilowatt hour by 2030 – it is approximately 450g currently.

The plan is to complete the detail of the reforms in time for a Bill to go through parliament in early 2012, but that timetable looks to be slipping substantially. It is now likely that it will not come before the house until the end of next year. That is perhaps not surprising, because there are several significant dilemmas still to be resolved. One of them is where the estimated £200 billion of investment will come from. It is hoped the large energy utilities will provide a lot of it, but looking at the major energy companies' balance sheets, I'm not sure if they can carry too much new investment.

Another dilemma is that the existing electricity market doesn't really work. The big six are now an effective, if accidental cartel: they own much of the country's generating capacity, and some 99% of retail supply. Should some sort of open pool system be introduced into which all suppliers have to sell their wares transparently, or will the "market" as it stands, with some bells and whistles attached, do the job?

The signs are that the government will produce a modified electricity market that doesn't really deliver. It is time, I think, to take a more radical approach, such as interconnectors with the rest of Europe to supply reliable energy when variable (renewable) supply doesn't deliver, and decentralised grids. Getting it wrong will mean that we will be locked into a centralised, probably high-carbon system for years.

## DECC pulls plug on CCS project

**Emissions** Europe's third-largest coal-fired power station, Longannet in Fife, will not now pioneer carbon capture and storage (CCS) in the UK, after DECC and the consortium developing the technology failed to agree funding for the project.

The 2,400MW power station, which is owned by ScottishPower, was the only facility left in the government's original competition to develop a commercial-scale CCS demonstration plant. The government now intends to channel the £1 billion earmarked for CCS into other projects. "Despite everyone working extremely hard, we've not been able to reach a satisfactory deal for a project at Longannet at this time, so we've taken the decision to pursue alternative projects," said the energy and climate change secretary Chris Huhne.

Scotland's first minister, Alex Salmond, described the decision as a "deep disappointment". "CCS technology requires the courage and the vision to make the investment happen, and that is what has been lacking in successive Westminster administrations. At a time when North Sea revenues are coming in at record levels, it was surely not too much to expect that the Treasury would make the necessary funding commitment for Longannet to go



forward. The cost would have been less than a tenth of this year's estimated North Sea revenues of £13.4 billion," he said.

The Longannet CCS consortium, which in addition to ScottishPower includes the National Grid and Shell, has invested £20 million in research and development. The information, described as the most detailed of a commercial-scale, end-to-end CCS project ever conducted in Europe, will now be made available to other developers.

Seven potential UK CCS demonstration projects, including Longannet, were among 13 applications submitted to the European Investment Bank in May for funding under its NER300 process. A decision on the projects to receive funding is expected next summer. With Longannet out of the running, the six remaining projects will now also be the focus for financial support by the UK government.

## Waste transfer failures lead to big fines

**Prosecutions** Three North Yorkshire firms have been fined a total of £38,200 after failures to properly transfer waste resulted in 10 tonnes of food containing meat being dumped in a field where livestock grazed, potentially risking an outbreak of foot and mouth disease.

In March this year, waste management firm FD Todd & Sons collected food waste from ready-meal manufacturer Pro-Pak Foods. It was disposed of at a farm owned by Coast to Coast Recycling, which told Harrogate Magistrates' Court that it understood the waste to be vegetable matter only, when in fact it also contained pasta, pepperoni and luncheon meat. FD Todd & Sons informed Environment Agency (EA) inspectors that Pro-Pak Foods had changed the contents of the waste without telling the company, while Pro-Pak Foods claimed the waste was supposed to be sent to landfill.


The EA told the court that the firms had failed to properly use waste transfer notes,

with Pro-Pak foods not completing one at all and FD Todd & Sons failing to describe the waste accurately. These offences were compounded by the firms' failing to check what the waste contained.

In a similar prosecution, Norwich Magistrates' Court imposed maximum fines of £5,000 on two waste management firms after one wrongly described waste on its transfer note and the other attempted to transport it illegally to India.

The cases provide a timely reminder that all firms producing and managing waste need to provide accurate information on waste transfer notes following the recent introduction of the revised Waste Framework Directive (2008/98/EC). "All businesses have a legal responsibility to ensure the waste they produce is stored, transported and described appropriately to prevent harm to the environment and human health," said Sam Corp, head of regulation at the Environmental Services Association.





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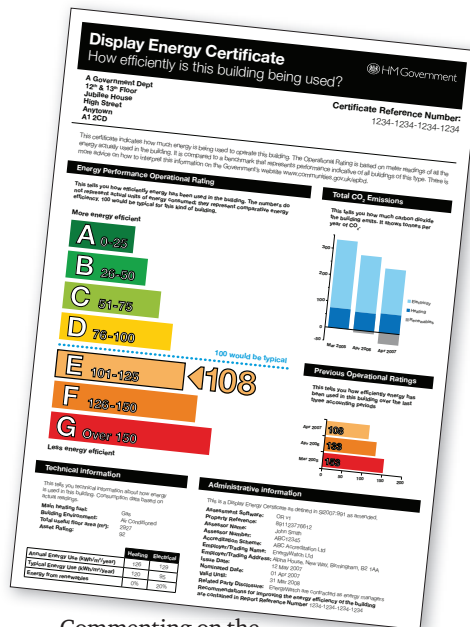
# Land Securities acts on energy

**Energy** Commercial property company Land Securities is to voluntarily post display energy certificates (DECs) in its managed London buildings after the government decided not to include a provision in the Energy Act 2011 to make DEC compulsory.

The company, the largest commercial property owner in the UK, says that it will now produce DEC for 49 properties in the capital. The first certificates will appear in the summer of 2012.

DECs detail a building's annual energy consumption and, under the energy performance of buildings Directive (2002/91/EC), they are currently required for public buildings of more than 1,000m<sup>2</sup>. In its Carbon Plan, published in March, the government said it would extend DEC to commercial buildings, but the measure was omitted from the Energy Act largely due to the additional costs it would impose on businesses.

However, the Chartered Institution of Building Services Engineers believes the benefits will outweigh the costs, as DEC are key to identifying opportunities for improved energy efficiency.



Commenting on the decision to voluntarily post DEC, Robert Noel, managing director at Land Securities, said: "It is a shame the government did not take the opportunity to introduce DEC across the property sector. We believe it is through measurement and benchmarking that we can help drive improvement. We

hope that others in the property sector will follow our lead."

Meanwhile, businesses have been warned that new potential measures on energy performance certificates (EPCs) allowed by the Energy Act will leave some commercial properties obsolete, as owners will not be able to let them unless energy-efficiency improvements are made. The Act provides the secretary of state (and Scottish ministers) with the power to introduce regulations to address the energy efficiency of non-domestic properties. It means that from April 2018 it may be illegal for landlords to rent a business property that has an energy efficiency rating of F or G. Approximately 18% of commercial properties currently fall into these categories.

According to Mat Lown, partner at legal firm Tuffin Ferraby Taylor, changes earlier this year to the software used to calculate the EPC rating will exacerbate the problem. He told delegates at the recent Carbon Show that the new parameters had resulted in ratings for a number of buildings dropping by one or two bands, pushing them into the F and G bands.

## CASE LAW

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### Regional strategies: still material considerations

In July 2011, the High Court quashed an inspector's decision refusing planning permission for a waste treatment facility in Derby. Resource Recovery Solutions (Derbyshire) had applied for planning permission to construct the facility, but the application was dismissed in January 2010. At appeal, the inspector refused permission due to the potential increase in traffic congestion, possible adverse effect on the air quality and possible undesirable impacts on the living conditions of local residents.

At the time of submitting the planning application, the development plan for the area where the site is located was comprised of the East Midlands Regional Spatial Strategy (RSS), the City of Derby Local Plan Review 2006 and the Derby and Derbyshire Waste Local Plan.

The status of the RSS (as forming part of the development plan) was initially uncertain at the time of the inquiry.

However, a decision by the court in *R (Cala Homes (South)) v Secretary of State for Communities and Local Government* [2011] EWHC 97 (Admin) during the inquiry period held that the revocation of an RSS was unlawful. Although the inquiry proceeded on the basis that the RSS was not part of the development plan, the inspector's decision was taken when the position had been clarified by the court – namely, when the RSS was part of the development plan.

Resource Recovery Solutions challenged the inspector's decision – by way of judicial review – on the basis that it contained errors in law, including a failure to consider and take into account the RSS and/or failure to refer to the need to consider the RSS based on the *Cala* decision.

The court allowed the application for judicial review and quashed the inspector's decision. It held that the RSS contained key information and relevant data relating to the application and that there was a real difference between the local waste policy

and the spatial strategy of the region, which was evidence-based. The inspector should have referred the matter back to the parties for the following reasons:

- the scale of the proposal was not only of local importance, but was relevant to the waste management needs of the entire subregion;
- the parties should have made reference to the RSS during the inquiry; and
- the inspector should have sought the parties' views based on the materiality and weight to be given to the RSS.

The appeal was allowed. This decision, together with the ruling in the *Cala* case, revives the use of regional strategies as forming part of the development plan. Until the Localism Bill comes into force, local authorities, developers and their advisers will have to consider the evidence in regional strategies when considering any planning applications.

Colleen Theron and Deirdre Lyons, LexisPSL



# Firms urged to take care over accredited certification

**Management systems** Organisations looking for ISO 14001 certification are being warned that some bodies offering so-called accredited certification services in the UK have not been assessed by the national accreditation body, UKAS.

Under European legislation each member state must appoint a single, nationally recognised body to assess and assure the competence of organisations providing accredited certification in its territory. This means that certification bodies operating in the UK must apply to UKAS to become accredited in accordance with the EU Regulation.

However, the Association of British Certification Bodies (ABCB) is warning that a number of 14001 assessment bodies in the UK have been accredited by other organisations, potentially leading to companies unwittingly applying for a certificate that their customers may not recognise. "We have identified that smaller companies in particular might not understand the difference between UKAS-accredited certification and other

accredited certification," Trevor Nash, chief executive of the ABCB, told *the environmentalist*. "For some, particularly those operating in the public sector, it could mean the difference between having their certification recognised for a tender or not."

Toby Robins, sustainable development director at green office supplies company Wiles Greenworld, agrees with Nash. "There is a question when bodies aren't UKAS-accredited as to whether the quality of audits meets the level you, as a customer, require," he said. "How can you have confidence that 14001 is being applied correctly?"

The ABCB also argues that while certification bodies accredited by UKAS are evaluated against recognised international standards, it is not always clear how the independent accreditation bodies are assessing organisations. It does, however, acknowledge that for some firms UKAS-accredited certification might not be necessary, but it warns that all firms should consider their options carefully before choosing a certification body.

## Airline protests fly over EU ETS

**Transport** The International Civil Aviation Organization (ICAO) has renewed its calls for non-EU airlines to be exempt from the EU emissions trading scheme (ETS), despite the fact that a senior adviser to the European Court of Justice (ECJ) has concluded that the plans to include them do not contravene international law.

At its meeting on 2 November, 26 members of the ICAO, including China and the US, voted in favour of challenging the EU's plans to include emissions from flights into and out of Europe when the aviation sector is included in the scheme at the start of next year.

According to EU estimates, the extension of the ETS to cover aviation could save 72 million tonnes of CO<sub>2</sub> each year by 2020, a 26% reduction in emissions compared with business as usual.

The launch of the ICAO's formal protest against the ETS follows a preliminary analysis from the ECJ signalling that a legal challenge by US airlines will be dismissed. ECJ advocate general Juliane



Kokott examined the arguments and concluded the revised ETS Directive did not breach any international agreements or laws. While not legally binding, Kokott's conclusions are a clear indication that the American airlines' case will fail when it comes to court early next year.

Days later, in the US, a Bill was introduced in the Senate that would effectively make it illegal for American airlines to comply with the ETS.

### Short cuts

#### EfW plant is IPC first

The UK's Infrastructure Planning Commission (IPC) has issued its first decision in granting permission for the Rookery South energy-from-waste (EfW) plant to be built in Bedfordshire. The IPC was created in 2009 to process applications for nationally important infrastructure and the 65MW electricity plant, to be built by Covanta, is the first development to receive consent after a detailed 13-month examination. The decision, and all the written evidence considered by the commission, including the environmental statement and the environmental impact assessment, together with the advice given by commissioners, can be viewed on the IPC website ([lexisurl.com/iema11148](http://lexisurl.com/iema11148)). Next April, as a part of the government's drive to scrap quangos, the IPC will be abolished and its responsibilities will transfer to the Planning Inspectorate.

#### Welsh ambition

The Welsh Assembly government's plans to tackle climate change are progressing well and, in some cases, outperforming the rest of the UK, according to the Committee on Climate Change (CCC). In an analysis of Welsh policy measures, the CCC highlighted the assembly's successful programmes to improve the energy efficiency of homes, its legally binding recycling targets and its ambitious plans to cut greenhouse-gas emissions by 3% each year over the coming decade. The report concludes by suggesting the Welsh government can build on its successes by doing more to help cut emissions from the public sector, transport and agriculture, and should lead by example in setting targets to reducing the carbon footprint of its own estate. In a separate report, the CCC advised the Northern Irish government to set legal CO<sub>2</sub> targets. Although the 2008 UK Climate Change Act extends to the six counties, requiring it to contribute to overall UK targets, the Act does not specify particular targets or budgets for Northern Ireland.

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# Sainsbury's splashes £1 billion on its sustainability strategy

**Sustainability** UK retailer Sainsbury's has outlined its plans to invest £1 billion by 2020 to improve its environmental and social impacts. Alongside setting targets to reduce carbon emissions from its operations by 30% against 2005 levels, the food retailer has also pledged to ensure the carbon footprints of each of its own-brand products are halved.

Other pledges include ensuring raw materials and food products are independently verified as being sourced sustainably and reducing the amount of packaging it produces by 50%. Chief executive Justin King said that the targets and investment were vital to ensuring the future of the company. "We do not see this plan as a luxury," he explained.

The firm's announcement came as other major UK food retailers announced new sustainability efforts. Asda has signed up to the Freight Transport Association's Logistics Carbon Reduction Scheme, to cut emissions from its transport network, while Waitrose confirmed that its second biomass



plant will be operational in December – providing renewable electricity and heat to its Bracknell store, and cutting carbon emissions annually by 1,000 tonnes.

The spate of new initiatives is reflective of a wider move across the UK's retail sector, according to Bob Gordon, environment policy adviser at the British Retail Consortium. "Retailers are embracing sustainability, in recognition that operating sustainably means an efficient and profitable business today and over the longer term," he said.

## Businesses lack knowledge on green skills, finds government

**Low-carbon economy** Companies in England are unsure of what skills are needed to support the transition to a strong and sustainable green economy, according to evidence gathered by the business department (BIS).

A report ([lexisurl.com/iema11144](http://lexisurl.com/iema11144)) detailing the results of a project on skills in the green economy indicates that, in general, businesses are currently not certain about their future green skills needs, although some sectors – including energy generation, the construction industry and the food and agriculture sectors – do identify specific skills needs.

"Organisations do not have the right level of awareness or understanding of their green skills requirements and the implications of the green economy. As a result they are unlikely to realise the importance and benefits of incorporating green skills within their business," says the report. It claims that many companies are failing to invest in skilling their workforces because there is a lack of

certainty about government policy, giving the example of the power sector, where training to a competent level typically takes two to five years, to illustrate this point. "Confidence in the timing of demand for these skills is too low to justify investment and much more certainty is needed about the size and timing of future investment programmes," it explains.

The report also makes the point that the transition to a green economy requires a workforce with the right skills, but that these should not be confined to just the low-carbon and environmental goods and services sector. All businesses need help using natural resources efficiently and sustainably and to be resilient to climate change, it says.

To support resource efficiency, for example, the report says companies will require management skills to develop business models that provide bottom-line benefits as well as skills to design and adopt technologies, products and processes to improve efficiency.

### Short cuts

#### Asbestos warning

The technical guidance on investigating, analysing and treating asbestos in soils needs to greatly improve, according to the results of a survey of practitioners by the Environmental Industries Commission (EIC). It reveals that 97% of the 231 respondents – which range from environment consultants and remediation contractors to laboratory organisations and regulators – believe that, despite a range of disparate guidance notes, there is a lack of targeted technical guidance for the assessment and remediation of asbestos in soils. Almost all respondents (96%) claim that their organisation's activities would benefit from such guidance, including improving their ability to better comply with the Control of Asbestos Regulations 2006. The lack of comprehensive technical guidance has led to confusion, says the EIC. "The Regulations apply as much to asbestos on land and in soil as to asbestos in buildings, but where there is a wealth of official regulatory guidance for asbestos in buildings, there is a relative dearth for soils," says Steve Forster, EIC member and director of IEG Technologies.

#### ISO 14001 to be revised

ISO member bodies have voted in favour of revising the flagship international environmental management systems (EMS) standard, ISO 14001, for the first time since 2004. The changes will revise the certification standard in line with last year's advice from the EMS Future Challenges study group. IEMA members are being asked for their feedback on potential changes to the standard in forthcoming workshops (see p.35). "The revision provides an opportunity to ensure EMSs can be applied as a more strategic environmental management tool across the value chain, helping organisations make a step change in environmental performance improvement," said Martin Baxter, IEMA policy director and the UK representative for the revision.

# EU sets out conditions for Kyoto II

Large-scale US scientific study confirms that the world is getting hotter

**Climate change** The EU will only support a second Kyoto Protocol commitment period if large greenhouse-gas (GHG) emitting countries currently outside the process join.

The first Kyoto commitment period ends next year and global negotiations on its continuation are stalled, with several countries already part of the protocol, including Canada and Japan, refusing to support an extension. Talks begin again in Durban later this month (COP17) to find a solution, and the recent EU environment council meeting confirmed the European position. Speaking after the meeting, EU commissioner for climate action, Connie Hedegaard, said: "The EU confirms its openness to a second commitment period as part of a transition to a wider legally binding framework, [but] the world needs others to commit as well, in particular the major emitters."

Later, following a pre-COP17 meeting in South Africa, Hedegaard went further,

pointing out that a second commitment period endorsed only by the EU and other ambitious developed economies would cover just 15% of the global emissions. "This is clearly not good enough. The world is waiting for the US and the emerging economies to commit," she said.

The US signed, but never ratified the protocol, while developing countries that are now major emitters of GHGs, such as China, are outside the 1997 treaty.

EU environment ministers also agreed that a second commitment period should end no later than 2020, and then converge with a new global legally binding agreement. COP17 must aim to develop a roadmap, with timelines, to achieve this objective, says the EU. It also wants the Durban talks to deliver a robust LULUCF (land use, land-use change and forestry) accounting framework and address the number of allowances – known as assigned amount units – that can be carried over in a second phase of the protocol.

The EU demands came as the latest annual GHG emissions report from the European Environment Agency confirms that the bloc of 15 member states that are party to the protocol is on course to meet its 8% emissions reduction target between 2008 and 2012. The data reveal that by 2010 emissions from the EU15 were 10.7% below base year levels.

Meanwhile, scientists working on the Berkeley Earth project have confirmed that the earth's average land surface temperature increased by 1°C over the past 50 years, which is in line with previous estimates. The project, based at the University of California, Berkeley, analysed temperature records from 15 sources going back to 1800 and found that issues frequently cited by climate change "sceptics" as distorting global temperature figures – such as the urban heat island effect, where urban areas are warmer than surrounding rural ones – have little impact on the Earth's temperature.

## EIA UPDATE

iema

### Strategic environmental assessment – court ruling

In October, the European Court of Justice decision on an SEA Directive (2001/42/EC) case in Northern Ireland was published. The ECJ ruled that in principle there are no legal problems with the Northern Ireland Environment Agency's consultation body role in relation to the plans of the country's Department for Environment ([lexisurl.com/iema11160](http://lexisurl.com/iema11160)).

### Consultation: RSS revocation – environmental reports

The government is consulting on environmental reports produced in response to the planned revocation of English regional spatial strategies (RSS). The reports find limited environmental consequences as a result of the revocations, which is surprising given the benefits predicted by the reports that accompanied the RSS's launch. For further information see [environmentalisonline.com](http://environmentalisonline.com) ([lexisurl.com/iema11161](http://lexisurl.com/iema11161)).

### EIA Regulations

**Northern Ireland** – is consulting on its town and country planning EIA Regulations. The draft Regulations take account of the 2009 changes to the EIA Directive (carbon capture and storage) and case law (*Baker and Mellor*). IEMA's Northern Ireland steering group will shortly be responding to the consultation.

**Wales** – the Welsh Assembly government will consult on revised town and country planning EIA Regulations by the end of the year, covering the same issues as its Northern Ireland counterparts. The revisions will also consolidate the numerous amendments into a new single Regulation once adopted in 2012.

**England** – the launch of EIA regulatory guidance is expected soon. Its delay is due to departmental sign-off processes.

### EIA conference

On 27 October, IEMA presented at a Scottish government EIA conference, held to ensure planning authorities are up to date with the new Regulations.

The event was a success and the Scottish government highlighted its updated EIA webpages ([lexisurl.com/iema11162](http://lexisurl.com/iema11162)), which will host slides and proceedings from the day. They also plan to revise PAN58 (first published in 1998) and are interested in hearing views on this via the website.

### SEA toolkit revisions













The Scottish government's review of the SEA toolkit is progressing well, with a lively event held on 1 November that discussed recommendations from the toolkit's volunteer review panels. A number of IEMA members have fed into this process, which will see a new guide and case studies produced in 2012.

### IEMA EIA webinars

IEMA will begin running monthly lunchtime webinars from late November with themes including ecology, socio-economics and effective EIA communication. EIA Quality Mark registrants will give presentations. For details see [iema.net/events](http://iema.net/events).




## NEW REGULATIONS

In force	Subject	Details
16 September 	<a href="#">Emissions</a>	The Storage of Carbon Dioxide (Access to Infrastructure) Regulations 2011 implement articles 21 and 22 of the EU Directive on the geological storage of CO <sub>2</sub> (2009/31/EC). <a href="http://lexisurl.com/iema11090">lexisurl.com/iema11090</a>
1 October (1 November)  	<a href="#">Water</a>	The Flood and Water Management Act 2010 (Commencement No.4 and Transitional Provisions) Order 2011 brings into force provisions of the 2010 Act. From 1 October, these provisions include requiring the relevant minister to provide guidance about how authorities are to achieve sustainable development when exercising flood or coastal erosion risk-management functions. From 1 November, the measures include requiring the Environment Agency to report to the Welsh ministers about flood and coastal erosion risk management in Wales. <a href="http://lexisurl.com/iema11107">lexisurl.com/iema11107</a>
1 October 	<a href="#">Waste</a>	The Landfill (Maximum Landfill Amount) Regulations 2011 specify the maximum amount (by weight) of biodegradable municipal waste allowed to be sent each year to landfills, for the whole of the UK alongside separate limits for England, Scotland, Wales and Northern Ireland. <a href="http://lexisurl.com/iema11091">lexisurl.com/iema11091</a>
4 October 	<a href="#">Pollution</a>	The Pollution Prevention and Control (Scotland) Amendment Regulations 2011 amend the 2003 Regulations. Changes include amending the definition of terms used in connection with the standard rules and replacing the definition of the EU Integrated Pollution Prevention and Control Directive (96/61/EC) with one that refers to Directive 2008/1/EC concerning integrated pollution prevention and control. <a href="http://lexisurl.com/iema11108">lexisurl.com/iema11108</a>
7 October 	<a href="#">Emissions</a>	The Climate Change (Annual Targets) (Scotland) Order 2011 sets annual targets – a requirement of s.4 of the Climate Change (Scotland) Act 2009 – for the maximum amount of the net Scottish emissions accounted for each year in the period 2023–27. <a href="http://lexisurl.com/iema11094">lexisurl.com/iema11094</a>
12 October 	<a href="#">Renewables</a>	The International Renewable Energy Agency [IRENA] (Legal Capacities) Order 2011 confers the legal capacities of a body corporate on IRENA, which promotes the widespread and increased adoption and sustainable use of all forms of renewable energy. <a href="http://lexisurl.com/iema11097">lexisurl.com/iema11097</a>
17 October 	<a href="#">Waste</a>	The Waste and Contaminated Land (Amendment) (2011 Act) (Commencement No.1) Order (Northern Ireland) 2011 brings into force the provisions of the 2011 Act. The Act, which was passed in February, made a number of changes to Part 2 of the Waste and Contaminated Land (Northern Ireland) Order 1997. <a href="http://lexisurl.com/iema11109">lexisurl.com/iema11109</a>
18 October 	<a href="#">Energy</a>	The Energy Act 2011 (p.8) has received royal assent. Its provisions cover energy efficiency, security of energy supply, and measures to reduce carbon emissions. <a href="http://lexisurl.com/iema11096">lexisurl.com/iema11096</a>
18 October 	<a href="#">Energy</a>	The Feed-in Tariffs [FIT] (Specified Maximum Capacity and Functions) (Amendment No.3) Order 2011 amend the 2010 Order, preventing an extension to an existing eligible installation qualifying separately for the FIT scheme. <a href="http://lexisurl.com/iema11092">lexisurl.com/iema11092</a>
16 November 	<a href="#">Emissions</a>	The Storage of Carbon Dioxide (Amendment of the Energy Act 2008 etc) Regulations 2011 form part of the implementation in the UK of the EU Directive on the geological storage of carbon dioxide (2009/31/EC). <a href="http://lexisurl.com/iema11100">lexisurl.com/iema11100</a>
21 November 	<a href="#">Emissions</a>	The Waste and Emissions Trading Act 2003 (Amendment) Regulations 2011 amend Chapter 1 of Part 1 of the 2003 Act. They also amend the Landfill Allowances and Trading Scheme (England) Regulations 2004 and the Joint Waste Authorities (Proposals) Regulations 2009. Parts 3 and 4 extend to England and Wales only. <a href="http://lexisurl.com/iema11099">lexisurl.com/iema11099</a>

## LATEST CONSULTATIONS

19 December


### F-gases

 The European Commission wants feedback on draft policy measures to tackle the creation of fluorinated gases (f-gases) by revising the existing EU Regulation on f-gases (842/2006). The proposed measures include a ban on new products and a scheme for phasing out the placing of hydrofluorocarbons on the EU market. New legislative measures are planned for 2013.

[lexisurl.com/iema11045](http://lexisurl.com/iema11045)

21 December


### Charges and fees

 The Environment Agency is asking for comments on proposed changes to its charging schemes from April 2012 to end of March 2015. The agency is suggesting no change for the majority of charge-payers for two years, with a check at the end of the first year (2013) to ensure this is sustainable. It is also planning a small number of technical changes and a small increase in charges in year three. The freeze on charges in the first two years does not include abstraction charges. The EA is proposing to increase these charges each year to ease specific cost pressures.

[lexisurl.com/iema11105](http://lexisurl.com/iema11105)

23 December

### Environmental permitting


 Defra is consulting on the level of fees and charges levied under the Environmental Permitting Regulations 2010 for the Local Air Pollution Prevention and Control (LAPPC) and Local Air-Integrated Pollution Prevention and Control (LA-IPPC) permits. These fees and charges in England are applied to around 19,000 or so businesses who hold LAPPC and LA-IPPC permits, including chipboard and glass manufacturers, foundries, animal renderers, crematoria, paint manufacturers, larger furniture works, petrol stations and high-street dry cleaners, and to their local authority regulators. The Welsh Assembly government is consulting separately on these charges. Its consultation closes on 23 January 2012.

[lexisurl.com/iema11101](http://lexisurl.com/iema11101)

[lexisurl.com/iema11199](http://lexisurl.com/iema11199)

6 January 2012

### Air quality

 Defra's proposed measures to reduce the risk of the daily limit value for PM10 air pollutants in London exceeding EU limits have been put out to consultation. The update was submitted

to the European Commission in June. The environment department says it expects the 2011 compliance assessment – to be finalised in September 2012 – to reveal that the capital's air quality complies with European limits for PM10.

[lexisurl.com/iema11106](http://lexisurl.com/iema11106)

20 January 2012

### Built environment

 The Scottish government is consulting on proposals to implement the recast EU Directive on the energy performance of buildings (2010/31/EC), which was agreed by the European Parliament and Council in May 2010. At the same time, the government is consulting on the related s.63 of the Climate Change (Scotland) Act 2009: energy performance of non-domestic buildings. It is proposed that eligible existing non-domestic buildings would be subject to an assessment of carbon and energy performance. This would consist of: an energy performance certificate, recommendations report, and action plan. Under the plans, building owners will have to make arrangements to measure, report and display operational ratings.

[lexisurl.com/iema11103](http://lexisurl.com/iema11103)

[lexisurl.com/iema11102](http://lexisurl.com/iema11102)

## NEW GUIDANCE

### Waste regulations

A quick guide for waste producers and businesses on the Waste (England and Wales) Regulations 2011 has been published by the Environment Agency ([lexisurl.com/iema11110](http://lexisurl.com/iema11110)). The Regulations, which came into force on 29 March 2011, implement the revised Waste Framework Directive. Measures include: requiring businesses to confirm that they have applied the waste management hierarchy when transferring waste and to include a declaration on their waste transfer note or consignment note; introducing a waste-hierarchy permit condition for new permits and, where appropriate, a condition relating to mixing of hazardous waste; establishing a two-tier system for waste carrier and broker registration, which includes those who carry their own waste, and introduces a new concept of a waste dealer; amending hazardous waste controls and definition; and excluding some categories of waste from waste controls.

### Energy savings

The Carbon Trust Advice Line has published a guide setting out how private and public sector organisations can cut their energy bills by rolling out an effective energy management strategy. According to the trust, organisations implementing such a strategy can save up to 25% on their energy costs, with payback on investment typically within two years. The guide, *Energy management – a comprehensive guide to controlling energy use*, is part of the trust's Expert in Energy series and can be downloaded from [lexisurl.com/iema11119](http://lexisurl.com/iema11119). An accompanying webinar ([lexisurl.com/iema11120](http://lexisurl.com/iema11120)) is also available.

### Feed-in tariffs

Ofgem, the energy regulator, has produced revised guidance ([lexisurl.com/iema11123](http://lexisurl.com/iema11123)) on the feed-in tariffs scheme for renewable generators. It provides an overview of the scheme's eligibility criteria and explains the process of seeking accreditation for installations that generate renewable electricity using solar photovoltaic, wind, hydro or anaerobic digestion technology and have a total installed capacity (TIC) of up to 5MW or is a fossil-fuel-derived combined heat and power installation with a TIC of up to 2kW.



## EVENTS CALENDAR

Date	Course	Location and details
28–29 November 2011	How to manage supplier social and environmental performance	Regent's Park Marriott Hotel, London <a href="http://lexisurl.com/iema11015">lexisurl.com/iema11015</a>
29 November 2011	Waste management forum 2011	Wolverton House, London <a href="http://lexisurl.com/iema11111">lexisurl.com/iema11111</a>
30 November 2011	Maintenance and assessment management	The Menzies Hotel, Glasgow <a href="http://lexisurl.com/iema11115">lexisurl.com/iema11115</a>
1 December 2011	Environment 2011: adapting to change through "localism"	Hotel Russell, London <a href="http://lexisurl.com/iema11122">lexisurl.com/iema11122</a>
2 December 2011	Towards zero waste	Cardiff Marriott Hotel <a href="http://lexisurl.com/iema11118">lexisurl.com/iema11118</a>
6–7 December 2011	The sustainable finance summit 2011	Novotel St Pancras, London <a href="http://lexisurl.com/iema11016">lexisurl.com/iema11016</a>
8 December 2011	Biomass health and safety workshop	Quality Hotel, Selby <a href="http://lexisurl.com/iema11116">lexisurl.com/iema11116</a>
12 December 2011	Building resilience: resource security and the role of the circular economy	CBI conference centre, London <a href="http://lexisurl.com/iema11203">lexisurl.com/iema11203</a>
15 December 2011	Future price limits: the challenges and opportunities of the developing agenda	School of Oriental and African Studies, London <a href="http://lexisurl.com/iema11112">lexisurl.com/iema11112</a>

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# Let the system take the strain

## Paul Suff investigates how an EMS can help organisations report and manage their greenhouse-gas emissions

**W**e will know shortly whether or not the government is to press ahead with mandatory reporting of greenhouse-gas (GHG) emissions by businesses. Affirmation of the introduction of such a duty, which will be linked to changes in the narrative reporting requirements for companies, will see Regulations coming into force in October 2012. The first disclosures will appear in 2013.

If the government decides to adopt option 3 in Defra's recent consultation, as many as 31,000 organisations will have to supply data. At the other end of the scale, it may simply opt to encourage more voluntary disclosure.

Whatever the outcome, there will be increasing pressure on companies from the government, and others, to report emissions. Companies new to GHG disclosure – and the latest figures from the Carbon Disclosure Project (CDP) reveal that one-third of the UK's largest firms (FTSE 350) failed to respond to its request for information on emissions this year – will have to establish the processes to collect, account, report and verify the data. A good place to start is an environmental management system (EMS).

### A systems approach

Organisations with a certified EMS already have the processes in place that may form the basis for GHG accounting and management. Both environmental management standard ISO 14001 and the European eco-management and audit scheme (EMAS) support the measurement and reporting of GHG emissions. Both apply the “plan-do-check-act” framework to manage environmental responsibilities, including monitoring and collecting data (see panel, p.19).

Those with an EMS that are also covered by existing regulatory measures, such as the Carbon Reduction Commitment Energy Efficiency (CRC) scheme and/or the EU emissions trading scheme, may already be using their systems to manage compliance. The 14001 standard requires certified organisations to maintain

an inventory of relevant legislation. It is best practice to regularly audit compliance, although there is no formal requirement to do so.

EMAS goes further, making it obligatory to demonstrate full legal compliance and to routinely conduct a compliance audit. The revised EMAS Regulations (1221/2009), which came into force on 11 January 2010, make monitoring and reporting on all six main GHGs – CO<sub>2</sub>, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride – a core indicator of performance. Registered organisations must report annually on their GHG performance and be able to demonstrate continuous improvement.

Ania Campbell, environment audit and compliance officer at Leeds City Council, which has been EMAS-registered since 2002, confirms that the standard ensures the council actively reports its emissions. “EMAS helps with reporting emissions because it forces organisations to focus on these issues. Having a registered EMS means the organisation is familiar with gathering and reporting data, so the processes are already in place to report on emissions,” she explains.

Until recently, local authorities in England have had to report emissions from their own estates and operations under national indicator 185 (NI 185). “When NI 185 came in, it required us to actively report our CO<sub>2</sub> emissions, something we had been doing through EMAS anyway,” adds Campbell. “It asked for a bit more data, but we already had the reporting framework in place thanks to our EMS.”

### Long-term thinking

To obtain the maximum benefit from managing GHG emissions through an EMS, organisations need to make more creative use of their certified systems. At the same time, many existing arrangements may require some tweaking in several areas.

Only half (52%) of organisations publicly report their emissions through 14001 or EMAS (for example, in a corporate environmental report), according to a recent poll of IEMA members. And only one-third of those do so regularly.

The 2010 poll, on GHG management and reporting ([lexisurl.com/iema11069](http://lexisurl.com/iema11069)), also found that IEMA members would like to see a closer link between 14001 and GHG reporting, possibly via guidance on how to link the two. IEMA plans to publish a briefing note by the end of the year on the link between 14001 and GHG reporting. It has already set out its GHG management



hierarchy, a planning and conceptual tool to assist practitioners and organisations when developing and implementing strategic approaches to reducing carbon and other GHG emissions.

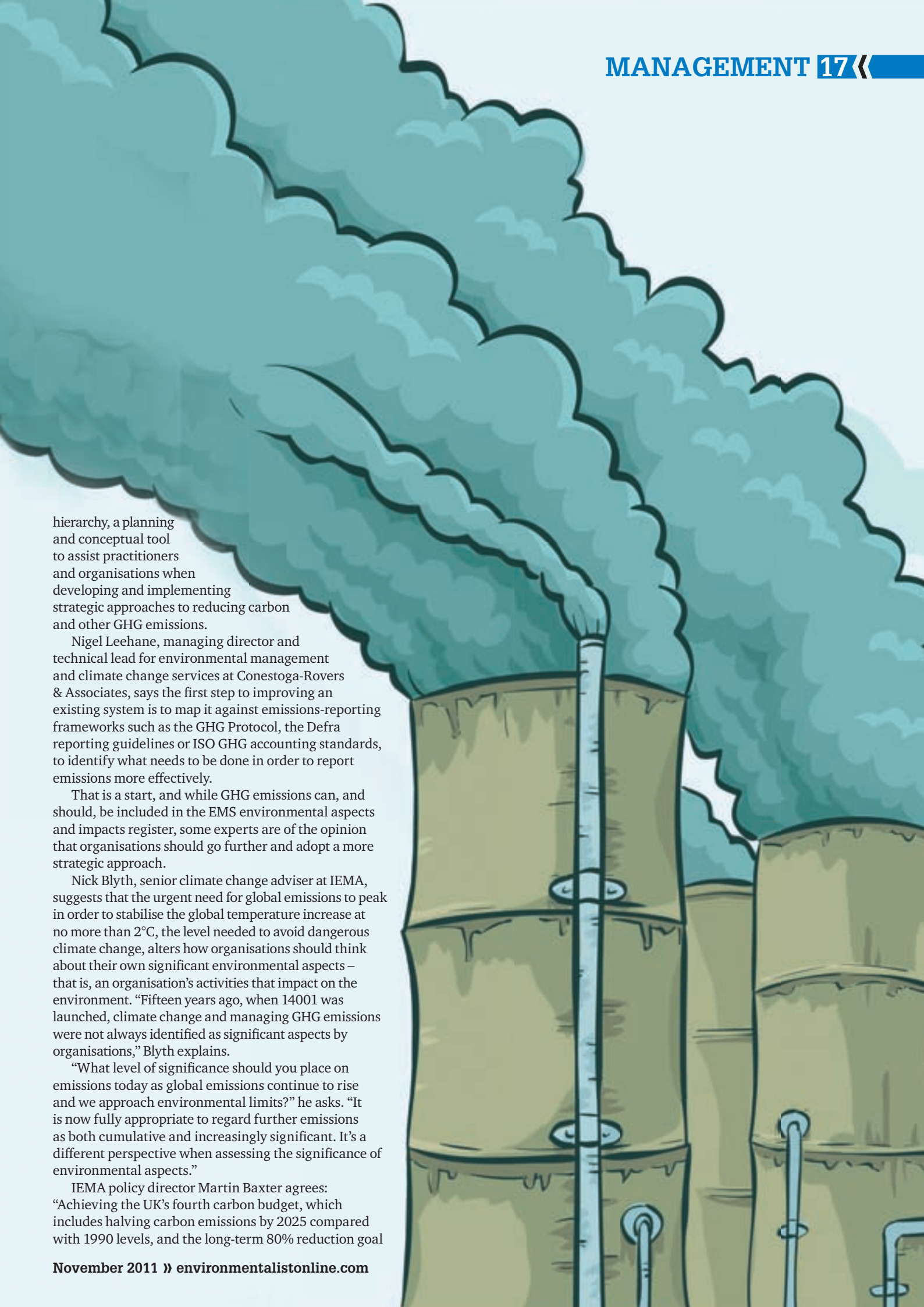
Nigel Leehane, managing director and technical lead for environmental management and climate change services at Conestoga-Rovers & Associates, says the first step to improving an existing system is to map it against emissions-reporting frameworks such as the GHG Protocol, the Defra reporting guidelines or ISO GHG accounting standards, to identify what needs to be done in order to report emissions more effectively.

That is a start, and while GHG emissions can, and should, be included in the EMS environmental aspects and impacts register, some experts are of the opinion that organisations should go further and adopt a more strategic approach.

Nick Blyth, senior climate change adviser at IEMA, suggests that the urgent need for global emissions to peak in order to stabilise the global temperature increase at no more than 2°C, the level needed to avoid dangerous climate change, alters how organisations should think about their own significant environmental aspects – that is, an organisation's activities that impact on the environment. "Fifteen years ago, when 14001 was launched, climate change and managing GHG emissions were not always identified as significant aspects by organisations," Blyth explains.

"What level of significance should you place on emissions today as global emissions continue to rise and we approach environmental limits?" he asks. "It is now fully appropriate to regard further emissions as both cumulative and increasingly significant. It's a different perspective when assessing the significance of environmental aspects."

IEMA policy director Martin Baxter agrees: "Achieving the UK's fourth carbon budget, which includes halving carbon emissions by 2025 compared with 1990 levels, and the long-term 80% reduction goal



by 2050, requires businesses to act. Companies' carbon-reduction goals will play a big part in the UK meeting its emissions objectives, so their targets and timescales should mirror the government's. It's not good enough in most cases for the EMS to generate short-term targets of, say, three years, when long-term planning and thinking are necessary."

Baxter gives the example of a decision to invest in capital equipment with a relatively long lifespan: "If you don't think about the equipment's environmental performance 10 or 15 years down the line, it risks being a 'stranded asset', having become obsolete because its impacts are too great. The EMS needs to support long-term thinking, so we know we're moving in the right direction." Recent data from the CDP suggest that few companies are taking a long-term view – just 15% of 236 FTSE 350 companies it surveyed had emissions-reduction targets stretching beyond 2020 (see p.4).

Baxter says it is not simply a case of the EMS setting a long-term target and working backwards in two- or three-year time periods. "We need to think more about the actual targets, set clear objectives, the building blocks to get there and how the EMS will drive action."

### Data accuracy

Although there is an expectation that performance data are accurate and complete, there is no explicit requirement in 14001 for such precision, so much will depend on the level of accuracy demanded by the government if it proceeds with mandatory reporting. The CRC data must be within a 5% margin of error, for example, with participants fined £40 for each tonne of CO<sub>2</sub> incorrectly reported. Any mandatory reporting requirement will be through the Companies Act and may demand a similar level of accuracy.

Baxter agrees that the precision required is likely to be set high, as is the case with financial data. But he says data used internally to identify where improvements can be made might not need the same degree of accuracy, and can rely more on estimations. "It's about what you are going to use the data for. You need to ask yourself whether it is fit for purpose."

The current Defra guidelines on GHG reporting say that reports should aim to achieve sufficient accuracy to enable users to make decisions with reasonable assurance as to the integrity of the reported information.

Campbell at Leeds City Council says that as a result of the reporting requirements of NI 185, initial meetings took place between key players to establish where responsibility for data collection would lie and to clarify and discuss any issues in collecting data. These

meetings, she explains, provided the groundwork for establishing the structure of data collection and provided a forum for exchanging ideas. To help visualise how the data are collected, the council has developed the use of flow diagrams. As a result, most of the information needed to report emissions is now relatively easy to gather.

Campbell says that Leeds wants its data to be as reliable as possible, so the EMAS team tries not to make too many assumptions, preferring to go back to the data providers to ensure accuracy and reliability in order to fill in any gaps. "However, there will always be inaccuracies. For example, if a council worker uses a pool car but does not put in a claim, then the data are incomplete. We try to ensure that they are as accurate as possible," she comments.

She also says the EMAS team is good at spotting anomalies. "Because we've been doing it for a while, you can often spot when the data look suspicious. We always check the data against the previous year's submissions. Last year we had a harsh winter so that skewed the energy data, while a long-running strike by refuse workers in 2010 affected the transport figures, as there were fewer refuse trucks on the road. Ultimately we have confidence in the data."

The data are collated in a central spreadsheet that only the core EMAS team can access. Campbell says that, over time, the data providers know what is required of them, and when. "We now just send email reminders to the data providers, alerting them to the deadline. They know what to do," she says. "The process only needs to alter if we decide we need more information."

As well as gathering accurate data, organisations also need the competence to analyse effectively the information to determine the focus for ongoing activity and deliver continuous reductions.

"An organisation may be good at collecting the data, but someone has to be able to properly interpret it to support decision making. What you do with the data is key," advises Baxter.

Leehane agrees that user competence is crucial if the data are going to help organisations better manage their emissions. He advises training key personnel in specific auditing and analytical skills, so that decision-makers can have confidence in the data. He adds that it is important that decision-makers themselves understand how emissions-reduction initiatives will support management objectives.

Third-party auditors also need to be competent in managing and reporting GHG emissions if they are to help clients to both comply and meet their own targets and objectives (see pp.20–21).

### Finding the answers

ISO 14001 and EMAS demand continuous performance improvement, but both standards are pretty vague on how to generate improvement ideas. Leehane believes that energy standards can help with GHG emissions reporting and reduction, particularly with identifying ideas where improvements can be made. "An energy standard like ISO 16001 [and now



## GHG EMISSIONS AND THE PLAN-DO-CHECK-ACT MODEL

Various aspects of the plan-do-check-act model, which underpins both ISO 14001 and the EU eco-management and audit scheme (EMAS), provide plenty of opportunities to monitor, collect data, set targets and reduce greenhouse-gas (GHG) emissions.

**Plan:** At the outset, a statement on tackling GHG emissions can be included in the environment policy that is a necessary requirement for both 14001 (clause 4.2) and EMAS. The environmental policy outlines the organisation's mission and the driving force behind the objectives, targets and management programme for the EMS. Clause 4.3.3 of 14001 focuses specifically on objectives, targets and implementation plans. GHG emissions can be included in the environmental aspects and impacts register that is required by 14001 (4.3.1). These are drawn up following an assessment of how the organisation interacts with the environment, identifying those aspects that are significant. Aspects are elements of an organisation's activities, products or services that can interact with the environment, while impacts are any change to the environment resulting from its activities, products or services.

Reduction targets and objectives can be set for aspects of operations and activities that contribute to atmospheric emissions.

Should the government introduce mandatory reporting, the relevant Regulations will have to be included in the legal register – legislation and other requirements that are applicable to the company – that is a requirement of 14001 (4.3.2). Other requirements could include demands by clients and customers to disclose GHG data. Planning also provides the opportunity to build the business case for reducing emissions.

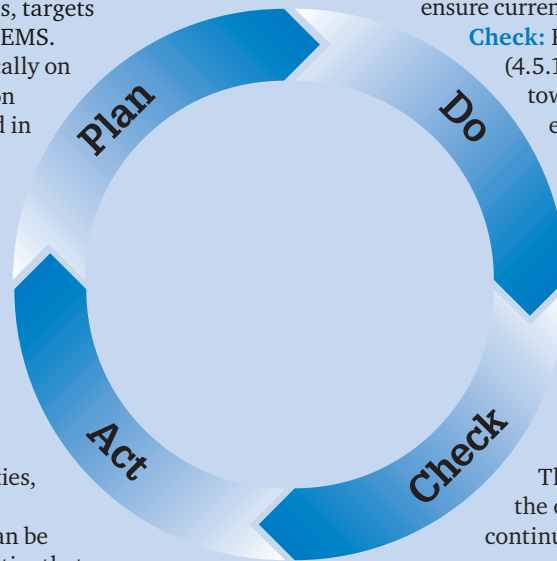
**Do:** Implement environment management programmes to meet objectives and targets (4.3.3); target activities to raise awareness (4.4.2) among employees of the environmental policy, and specifically the GHG reduction goals; train relevant

personnel (also 4.4.2) to raise their competence in areas such as GHG science, calculation methods and reporting techniques.

Individuals will be made responsible (4.4.1) for managing and implementing the different components of the EMS system to control emissions. They should communicate (4.4.3) progress on meeting GHG objectives and targets throughout the organisation, helping to engage the workforce in the process. Operational controls (4.4.6), such as standard operating procedures, will ensure current emissions are under control.

**Check:** Regularly monitoring and measuring (4.5.1) GHG emissions will track progress towards targets and help to manage energy and emissions reduction. Records (4.5.4) will demonstrate that procedures are being performed effectively. In addition, evaluation of compliance (4.5.2), which, although not a requirement for certification, involves an independent third party evaluating the EMS, demonstrates that an organisation has fulfilled its policy commitments, including having a process to ensure legal compliance. The internal EMS audit (4.5.5) ensures the effectiveness of the EMS and the continuous improvement cycle. Regular management reviews (4.6) will test management programmes and procedures to see if they are achieving the desired objectives and to identify areas for change. Periodic reviews of targets and objectives will determine whether they are sufficient or need altering in some way.

**Act:** Changes should be made to management programmes, processes and procedures to deliver better results and meet changing targets and objectives. Behavioural modification to better fulfil environmental policy requirements or overall business strategy should be encouraged. Investment programmes should be designed to improve energy efficiency, reduce emissions by adopting renewable and/or low-carbon technologies, and offset residual or unavoidable emissions.



50001] can be fairly easily integrated into 14001, as it is based on the plan-do-check-act model," he says.

"It might help solve the problem of how to identify areas for improvement, as 16001 contains requirements such as comparing energy performance indicators with those of similar organisations, to assist such activity." He says the guidance in Annex A to the 16001 standard is particularly useful, providing more detail on identifying, managing and measuring energy-related practices.

Leehane also advises organisations to keep an eye on sector initiatives on managing and reducing emissions, as they should provide relevant guidance and ideas.

The Carbon Trust standard and similar mechanisms, including Achilles's certified emissions measurement and reduction scheme and BSI's kitemark for energy reduction verification, also support emissions disclosure and can help identify where to target improvement activity. Other international standards, such as ISO

14064, provide criteria for quantifying, monitoring and reporting emissions and reductions.

The enduring axiom that you can't manage what you don't measure certainly applies to GHG emissions. Existing environmental management systems provide the starting point for effective evaluation, and with a little tweaking can constitute a powerful tool to help organisations make significant reductions.

The number of UK organisations with a certified-14001 or EMAS-registered EMS is relatively small. ISO reports that in 2009 (the most recent figures available) there were 4,985 14001 certifications in the UK, while the latest EMAS figures from the European Commission show that at the end of September 2011 only 60 organisations and 291 sites in the UK were registered to the European standard.

They, at least, should have a head start when it comes to accounting and reporting GHG emissions.

# Third-party audits:

Is there value in having an environmental

**T**he starting point for this argument should be to consider an alternative world, where there is no third-party certification to standards such as ISO 14001. How can the standard carry weight if there is no formalised checking process to maintain its integrity? Third-party auditing is about one thing: assurance – and it is this assurance that adds value.

A major shift over the past 20 years has been the increased focus on reducing environmental impacts. Government can drive this change to some extent by demanding proof of improvement from its own suppliers, but how many organisations are going to provide robust evidence to publicly substantiate their claims? One has to question the value of such claims without an independent audit to verify them.

ISO 14001 is a mechanism for ensuring that any spurious claims and greenwash are minimised. It provides a credible benchmark, and businesses working against this can gain a competitive advantage. Certification encourages responsible companies by giving a tangible reward, and gives a real incentive for the poor performers to improve. It's also worth noting that Defra endorses certification to standards approved by the UK's accreditation body, UKAS.

There are a variety of reasons for certification: to get the badge required for a tender; because the organisation has genuine care for its impacts on the environment; or because the certificate positively affects corporate image. For the purposes of certification, however, the motive is actually irrelevant. The only thing that matters is demonstrable continual improvement.

The environment will benefit from the effective implementation of the standard, regardless of the motive, but the only way to demonstrate a company has improved its performance is to have an independent audit of the fact.

Another key advantage of third-party certification is discipline. All businesses are designed, first and foremost, to make money. When economic conditions are strenuous, or the company is facing challenges, it is all too easy for issues that do not immediately affect business performance to slip in priority. The certification process, with its regular cycles of review and audit, ensures that this cannot happen: continual improvement has to be maintained.

Independence is an essential part of the auditing process. As an outsider, the auditor has no axe to grind and no incentive to put an unrealistically positive slant on what they find. Their role is to examine all the processes involved in meeting the standard critically and objectively.

The competence of the external auditors is a key component to ensuring value in third-party certification.

Certification bodies accredited to ISO 17021 by UKAS adhere to stringent criteria that have been further enhanced in the 2011 version. Annex B of 17021:2011 highlights the great breadth of criteria that need to be considered prior to an auditor being authorised to operate in a given industry. It is something the certification bodies and UKAS take very seriously. Competence requirements continue to rise, constantly increasing the value of third-party auditing.

Impartiality and assurance is the crux of any management standard. Without standards and their independent assessment, we risk slipping into a morass of claim and counter-claim of unproven performance that is impossible to evaluate.



**Max Linnemann** is sector manager for environment at certification body NQA



# are they worth it?

management system independently certified?

**A**t its most basic, the value gained from third-party certification is in assuring stakeholders that the policy commitments an organisation makes in its environmental management system (EMS) are being met. However, this value is inextricably linked to the quality of the audit and the capability of the auditor.

For example, to determine whether any organisation is compliant with legislation, the auditor must have extensive knowledge of the law. Frequently, I come across an environment management system that does not recognise planning or conservation laws, refers to out-of-date or irrelevant legislation, and does not adequately connect environmental aspects with relevant laws. Many auditors don't possess sufficient knowledge and experience of regulatory processes, so this basic value is rarely delivered. Another example is

pollution prevention, a broad area which is largely determined by the organisation's activities, products and services.

Often an EMS focuses exclusively on activities, and while auditors should require an organisation to recognise products and services if they are relevant, many allow the EMS to stand as just a facilities management or an operations management system, with no reference to commercial activities such as marketing, sales and procurement.

The fault does not lie solely with the certification bodies, as organisations can define the scope for their EMS too narrowly, or fail to engage their commercial functions in the system because it's "too difficult". The environmental impact of manufacturing a product is often a remarkably small part of the total impact when raw materials, use and disposal are also considered. An EMS must address this, and it is down to third-party auditors to highlight this issue when they discover that a company's focus is only on the operational side of their environmental performance.

The final area of value that should be gained from a certified EMS is the demonstration of continual improvement. Why go through the process if, at the end, there is no change? However, in reality many management systems contain weak statements of aspiration that are impossible to audit. Too many auditors accept promises of improvement, and when none is delivered seem to shrug their shoulders and allow the practice to continue.

Perhaps the biggest concern for third-party certification is the growth of unaccredited certification. Companies asked by customers to achieve 14001 can now buy an off-the-shelf environment management system and certification, the ultimate box-ticking and valueless exercise.

The solution to ensuring value from certifying an EMS is not simple and involves all the parties. While it is easy to point an accusatory finger at the certification bodies, organisations with environment management systems need to review their commitments to make sure they are getting the most out of certification.

Meanwhile, certification bodies and UKAS need to review the evaluation of auditor competence – mere sector experience is not enough; there must be some recognition of understanding of the commercial elements involved. Updating their knowledge of legislation should be a basic part of the continuing professional development of 14001 auditors.

Auditors must be capable and supported for true value to exist in third-party certification; then the process will be worth it.



**Ben Vivian is the co-founder and director of the Vivian Partnership, a sustainability consultancy**





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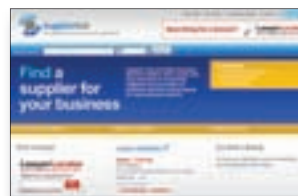


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# This year's model

From flood forecasting to fish stocks, **Owen Lewis** reveals how the Environment Agency is using modelling in its day-to-day activities

**T**he Environment Agency (EA) relies on environmental modelling to assist with most of its actions to improve the environment.

So, what do we really mean by modelling? A Google search unearths a mind-boggling array of answers. A truly inspiring definition remains elusive, however. The best one so far is: “modelling allows us to take a glimpse at the future through fragments of truth”.

Being able to take a glimpse at the future is essential to the EA. Models are integral to the agency's success. Each day it uses models to make decisions that have an impact on people and the environment. Modelling of hydrology and hydraulics enables the EA to confidently inform people and businesses about the risks of flooding for their particularly location.

Modelling water chemistry and ecology helps the agency, water companies, farmers and local communities to agree on the measures that need to be put in place if there are to be noticeable improvements in the health of wildlife in the rivers of England and Wales.

## 25k and counting

EA staff have access to more than 250 different types of modelling tools. These tools help them make decisions at various levels, from using global climate data to predict how changes to our climate could alter the variety and abundance of the nation's migratory fish stocks, to the models used to indicate when to

close the Thames Barrier (pictured above). Looking at all the environmental media across all scenarios, it is likely that the EA and its partners have about 25,000 models in use.

The agency has a blend of the old and new. Many of its older models continue to stand up to the test of time. The water quality planning (WQP) mass balance model, for example, has been around since the early 1990s and uses Monte Carlo simulation – computer algorithms that use repeated random sampling to produce results – to predict the impact of individual water industry discharges on river quality.

## ENVIRONMENT MODELLING TIPS

- 1 Clever does not mean complicated. Do not be intimidated by the term “modelling”. Some of the most simple models are also some of the best.
- 2 Apply the local touch. Ensure the modelling is evidence-based, but do not try to gather all of the evidence yourself. Asking others to provide the local evidence that can make a real difference to a decision is a great way of engaging with local communities.
- 3 Ensure that the modelling is rigorously conducted; anticipate the scrutiny you may face and prepare how you will respond to it.
- 4 Be open and transparent about the modelling. Let people know about the limitations, but don't let uncertainty be a bottleneck to taking action.
- 5 Modelling can be a cheaper, quicker way of gathering evidence.





The EA uses this information to set the environmental headroom that water companies must operate within. Every five years, as part of water-company planning cycles, the WQP is used in conjunction with its cousin SIMCAT (simulation of catchments) to agree £20 billion of environmental improvement schemes. This process is now in the fifth planning cycle and, thanks in no small part to the evidence that modelling has provided, over those 25 years there has been a remarkable and sustained improvement in the chemical composition of rivers.

Experienced agency staff say that it has taken two decades of continual improvement to get the models to a level where they are a trusted and established part of the way the EA operates. But sometimes the agency does not have the luxury of time, and recently has had to respond quickly to new challenges. The Water Framework Directive, for instance, inspired the EA to take a step change and, as well as evolving water chemistry models so that they can cope with diffuse pollution, it is now placing ecological modelling at the heart of its planning decisions.

The EA is now engaged in making some significant changes to its models. Examples include the fish health model, the Fisheries Classification Scheme (FCS2), which is being enhanced to increase its ability to identify environmental impacts, and the models that predict the health of plants and algae.

These models are providing a new perspective of the environment, taking the EA away from the black and white world of water chemistry towards amassing evidence to show how interconnected the environment is, how decisions taken to manage flood risk can impact on the ecology of the same river many miles away.

Truly integrated catchment planning is an established part of the agency's modus operandi, but the need to be constantly making the right call for the catchment, all who live and work within it and the wider environment, on a 24/7 basis, is a gargantuan challenge.

### The local touch

"Rubbish in, rubbish out" is one of the most common phrases spoken by a modeller. The phrase is used with reference to the data a model needs in order to make a prediction. A model can be fed all the data in the world, yet still produce a rubbish answer.

Time after time, EA modellers find out that the best people to seek advice from about fine-tuning models are within the local communities. But do they really want to get involved in modelling exercises? The EA has consistently found that the answer is yes. Whether that is because the Big Society ethos promoted by the government has really taken hold, or because there has been an increase in environmental awareness, the EA is not sure, but it realises that the potential benefits of engaging local communities is huge.

One of the many examples is the Peterborough visualisation model, created by Peterborough City Council, capitalising on strong community interest. The model will help the local population to monitor environmental performance and identify sustainable solutions to solve local problems.

It works by combining an impressive range of environmental performance data, covering energy, water, transport and waste systems, gathered from businesses and verified by local members of the public. As modellers, we need to accept graciously our blind spots and listen to the voice of local communities. The person living in the house with the stream at the end of the garden might not have a working knowledge of the agency's two-dimensional flood simulation model, but they will have a much better knowledge of how close the water got to their back door last time, which is vital knowledge.

"A model is never right, it's just less wrong than the alternative" is another classic from the modellers' phrase book. But the homeowner with a stream at the bottom of their garden can rightly expect to receive an accurate and timely warning before the next flood occurs.

The summer floods of 2007, and the flooding in Cumbria in 2009, have thrust flood forecasting into the spotlight. Since these events, the EA has been working to ensure it provides local authorities, emergency services, the media and local communities with the right information at the right time.

It has formed closer ties with the Met Office and, in 2009, the agency opened a joint Flood Forecasting Centre where experts in hydrometeorology – a new skill, linking weather expertise with river expertise – monitor the development of approaching areas of low pressure as they move in from the Atlantic, which, coupled with knowledge of existing river and



Owen Lewis is evidence manager, modelling, at the Environment Agency



groundwater levels, can help to make early predictions of flooding. In the same way that financial institutions were put under stress tests this summer, in March 2011 the EA worked with local authorities and fellow emergency responders in a national-scale flooding drill called the Exercise Watermark.

### The only alternative

Often there is no choice but to use a model. It is impossible for the agency to gather evidence on something that will not occur until next week, so the use of a model is clearly justifiable. Likewise, modelling is a sensible alternative to some of the logistical hurdles of monitoring. For example, the alternative to groundwater modelling is to pepper the countryside with boreholes so that the EA can track the level and movement of groundwater. If we did that Kent, Surrey and Sussex would have more holes in them than a pincushion.

Often overlooked is the role that models can play in reducing the costs of gathering observed evidence. Modelling and monitoring programmes should be designed together, but balance is key. Certainly the data a model derives is not normally as accurate as the data gathered from monitoring programmes, but the savings to the taxpayer are significant. And why would you not want to do something in cheaper way if it can make you more, not less, effective?

Do people believe modelling is a cheaper and sometimes a more effective approach? Not always. Trust is hard won and hard to maintain. The EA puts significant effort into ensuring the benefits of modelling are fully maximised and that its modelling is rigorously managed. If it isn't, then that is when things can go wrong.

For the EA, a wrong decision based on dubious modelling outputs can tarnish its reputation, consume significant resources and create overly cautious attitudes in the long run. The organisation has been speaking to a wide range of businesses and organisations to see how they manage their models. These include how Lloyds of London is implementing new legislation on the stringent management of financial models, and the way the British Geological Survey and the Met Office ensure their models are trustworthy. The agency also shares best practice with the US Environmental Protection Agency. Each of its

250 types of models is now under a model management framework, supported by data custodianship principles that other government departments are now becoming interested in.

### Known knowns, and known unknowns

Probably – and that word is used deliberately – the biggest challenge modellers face is to get better at communicating the level of confidence they have in their predictions. They already use probabilistic (probability of an event happening), or “ensemble”, modelling techniques in their day-to-day business. The ensemble approach has been a fundamental part of the quality modelling technique for decades. It is now applied to flood modelling and it is the accepted way of modelling steady changes to the world's climate. The way this works, in a nutshell, is by deliberately firing thousands and thousands of random variations in the data at a model so that the probability of one particular outcome is set against a large range of other outcomes.

**The alternative to groundwater modelling is to pepper the countryside with boreholes so the EA can track the level and movement of groundwater**

The sheer amount of data being exchanged can sometimes challenge the agency's computing infrastructure, something which cloud technology – virtual IT infrastructure – may be able to help with, but the bigger problem for the EA is how to convey confidence to the public, to key decision-makers and even to its own staff.

Being open and honest about the limitations of modelling is the intention; baffling people with science is not. The uncertainty of modelling should be recognised, but should never be a bottleneck to action. This is just as true for decisions the EA takes on environmental improvements as it is for flood forecasting. The EA can only solve the conundrum by building on the dialogue it is already having with partners and local communities about the level of confidence that people expect to be reached before they are willing to take action.

# Broadcasting a waste message

The BBC is boosting recycling rates by tackling behavioural change head on.  
*the environmentalist* finds out how

**T**he BBC employs around 20,000 people in studios and offices all over the UK. Managing individual recycling habits in a workforce of that size, across many different locations, is a challenging proposition. But that's exactly what the BBC's workplace department – responsible for running the organisation's property estate – set out to do when it embarked on a recycling project in September 2010.

At the time, the BBC had already set itself stretching waste management and recycling targets to 2013, including to reduce waste to landfill by 25% and increase the amount of waste recycled to 75% against a 2007/08 baseline. Great progress has been made in reducing waste to landfill. Across the estate the BBC now sends 78% less waste to landfill than in 2007/08, largely by taking advantage of new opportunities offered by waste management contractors; large London sites are now described as “zero-landfill” as general waste is sent to an energy-from-waste plant. Progress was slower than expected for recycling, however, with rates stagnating at around 50%.

This stalled progress provided the impetus for the recycling projects, as Olivia Preston, environment risk manager, explains: “We wanted to understand why people weren't recycling as much as they could, and to look at the factors that would engage them and prompt them to recycle properly as a matter of habit.”

## Fluctuating performance

When the project started, the BBC already had in place a fully compliant waste management policy, considering all elements of the “waste hierarchy” for preventing, reusing, recovering, recycling and, as the final resort, disposing of waste. The policy applies across the broadcaster's estate and offices, or “hubs” as its clusters of national and regional offices are called.

Offices in the BBC's major locations already operated recycling facilities for paper, confidential paper, plastics, cans, CDs/DVDs, glass and batteries, although there was great variety in the types and layout of facilities available. Where it was logistically feasible, dry, mixed recyclables were collected together. Waste electrical and electronic equipment was, and still is, collected separately at all sites.

After an initial rise in recycling activity following the introduction of various recycling facilities, progress faltered and it was clear that this would need to be addressed if the 75% improvement target was to be achieved. Although the overall recycling rate hovered consistently at around the 50% mark, there was no clear pattern, and the recycling performance of different offices could fluctuate from one month to the next. The one material that did appear to be recycled properly was that of spent batteries. Maybe, Preston conjectures, because batteries are perceived to be a more “toxic” form of waste.

The recycling project initially focused on eight major properties, which covered 81% of the total estate by headcount. The rationale for starting with the largest buildings was that it made sense to target action where it could have the biggest impact, with a trickle-down effect envisaged for the smaller locations.

The eight major hubs cover the length and breadth of the UK, including London W12 (Media Village and BBC Television Centre) and London W1 (including Broadcasting House), as well as Belfast, Bristol, Cardiff and Glasgow.

## People, process, technology

Most change-management initiatives focus on three main dimensions – people, process and technology. The BBC's recycling project was no exception. In order to maximise the recycling rate it looked at the behaviours of the people involved, whether the processes or “ways of doing things” around recycling could be improved, and whether the appropriate “technology” – in this case primarily the recycling and general waste receptacles – was in place.

As a first step, Preston and her team wanted to look at people's recycling behaviour and motivating factors. One approach involved asking staff to complete a brief online survey containing questions about current recycling behaviours, the barriers to more effective recycling, and what factors would encourage individuals to carry out more recycling. The survey had a response rate of 10% across a 6,000-strong sample of staff at BBC Media Village in London's White City.

«  
**75%**  
increase  
BBC's 2013  
recycling  
target –  
compared  
with 2007/08





To complement the quantitative survey findings, Preston and her team also held a number of focus groups in various BBC hubs to probe a bit deeper into people's recycling behaviour, and gain some anecdotal feedback. The sessions helped to raise awareness about the importance of recycling, respond to people's queries, and emphasise the role they could play in meeting the BBC's 2013 target. It was also an opportunity to tell staff about a new guide on recycling supporting the project's aims.

The next stage of the investigation – the “process” part of the project – followed the journey of waste and recyclable material from its point of use by staff to its collection by the BBC's external waste collection partners. This involved working with the portering staff who have responsibility for emptying office recycling and general waste bins and the transfer of waste to the service yard.

The “technology” part of the investigation focused on things such as ensuring the 1,100-litre bins dedicated to specific waste streams in the service yards had sufficient capacity. If they were too small or too few it could lead to significant contamination of different recycling streams at the end of the waste journey as there is a risk that recyclable materials could be deposited in the wrong bins. If this did happen, it would undermine most of the efforts made by staff earlier on in the recycling journey.

This part of the research also involved considering the effectiveness of signage on the bins, the positions of bins, and the provision of compactors for cardboard, paper and other suitable materials.

Waste audits were carried out to identify the composition of a sample of the waste, and the initial review showed that a 75% recycling target was realistic, as there was significant scope for improvement. This conclusion was based on the amount of recyclable materials that were being placed incorrectly in the general waste bins.

### Into action

An analysis of the findings from the exploratory stage of the project, including the work with the porters, the staff survey and focus groups, revealed five main themes to be influencing behaviour around recycling (see panel, p.28).

The key findings were built on to shape the next implementation stage of the project. One of the main actions was to improve the signage on the bins in every hub with bright, colour-coded labels. There are now large information posters near to the bins in certain high-footfall areas, with eye-catching icons and clear guidance about disposing of paper, cardboard, plastics, metals and general waste.

It is hoped that people will take the guidance on board, change their behaviour, and carry that with them into other office areas. Preston is adamant that encouraging behaviour change involves providing clear, helpful guidance that is easily accessible, rather than merely top-down instructions.



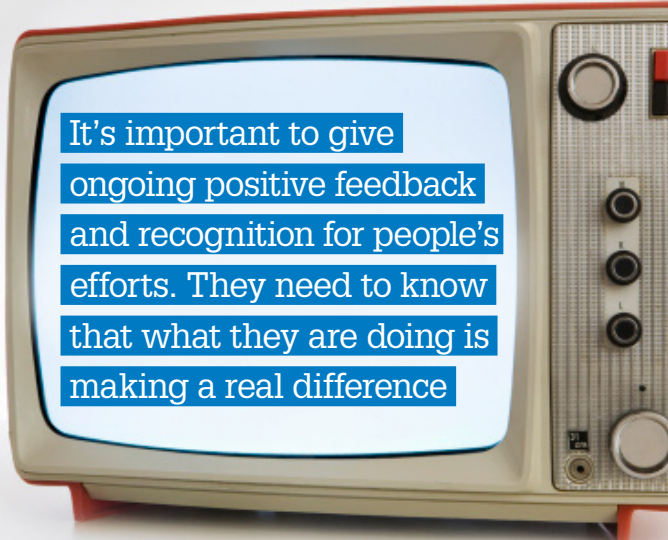
## KEY THEMES TO HELP FIRMS INCREASE RECYCLING RATES

- 1 **Convenience** – making the option to recycle as simple as possible, and making it easier to recycle than not. “Although this may seem obvious, it is no less important,” says Olivia Preston, environment risk manager at the BBC. “It means thinking very carefully, on a micro level, where to place the right kind of bin for the right kind of waste – for example, by coffee points, by lifts or by printers. We need to catch people on their normal journeys around the office.” As well as correctly positioned bins, the BBC has ensured that general waste bins are placed next to recycling bins so that people are not forced to contaminate the recycling streams. Under-desk bins had already been removed across the majority of the estate.
- 2 **Knowledge** – the level of understanding people have about waste and recycling affects their behaviour. Clear guidance on what materials can be included in each recycling bin makes it easier for people to do the right thing. There is still cynicism about what happens to recycled waste, so it is important for people to understand the benefits of recycling and the types of products that can be manufactured from recycled materials.
- 3 **Consistency** – both in the look of recycling facilities, for example the same colour bins for the same materials within each hub, and in the messages – that is, making signs about the BBC’s commitment to sustainability consistent across the corporation. Depending on the colours of existing bins, the colour scheme may vary between property hubs. The BBC uses the WRAP scheme where possible and, where different colours are used, the icons and design of the improved signage follow a consistent style. Staff moving between buildings will therefore recognise the recycling bins wherever they are, and know what can be recycled.
- 4 **Social pressure** – people are always influenced by the behaviour of their peers and the goal is to make proper recycling the norm at the BBC by publicising good recycling examples on the part of staff.
- 5 **“Creating a buzz”** – bearing in mind that the BBC employs a diverse range of creative people, it is fitting that there needs to be an energy, and a sense of fun, running through any initiative to improve recycling rates.

In all communications about recycling, Preston reminds staff of the 2013 recycling target, emphasising that there is a tangible goal to reach, and encouraging staff to play their part in achieving it. “We have also tried to boost the profile of recycling across the organisation,” says Preston. “As well as the new recycling guide, available on the intranet, we have launched initiatives like taking part in National Recycling Week in June.” Posters were put up in each building displaying that hub’s recycling performance, taking care to emphasise the positive improvements made. This is something that is now repeated at quarterly intervals, with updates posted in areas visible to staff, such as coffee points.

“It’s important that we give ongoing positive feedback and recognition to people to encourage their continued efforts,” remarks Preston. “People need to know that it is every individual making an effort that makes a difference – this came out strongly as a motivating factor in the research we carried out.”

The recycling rate is now moving in the right direction, although there is still considerable work to be done to achieve the 75% target, Preston is pleased with the progress to date, but says that it is still early days.



It's important to give ongoing positive feedback and recognition for people's efforts. They need to know that what they are doing is making a real difference

### Know your audience

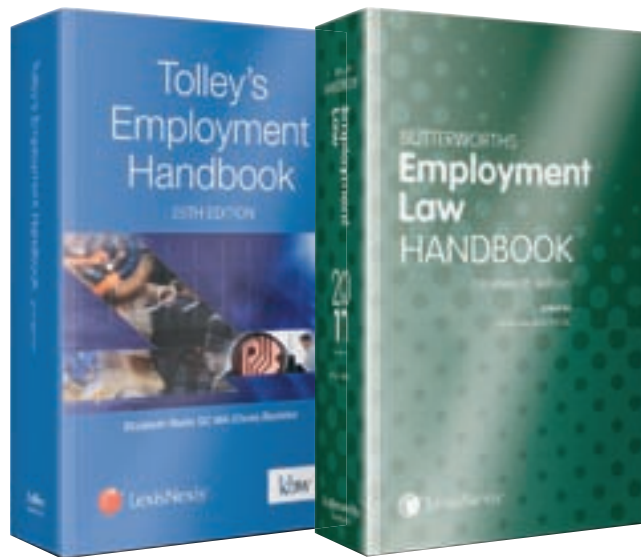
Employee behaviour is pivotal to achieving a significant improvement in recycling. As Preston explains, for energy and water management it is possible to largely engineer-out human error in any bid to save resources. But a purely technical approach is not feasible when it comes to an office’s recycling strategy as it is individuals who are responsible for putting their waste in the correct bins. And a one-off or ad hoc approach to influencing behaviour change is not feasible, as it needs continual reinforcement.

One key lesson that Preston flags up when undertaking any behavioural change is to know your audience. “It is important to engage with the people you are trying to influence and find the right ways to get the message across. For instance, the BBC is built of media people who are creative and deal with the visual, so it is important that we use vibrant images as well as text and make the signage interesting and creative.

“We have also made use of quick reference ‘QR’ codes for people to download the recycling guide on their smartphones, which has been well received by our gadget-friendly audience,” she says.

Preston says the size of the workforce remains the main challenge to improving recycling rates at the BBC. With such a large workforce, communicating any initiative and trying to affect behavioural change is daunting. “Our workplaces range from huge open-plan offices to tiny radio stations where it is not possible to predict nine-to-five behaviour. We therefore need to be flexible and recognise if one approach works well in one work setting but not another.”

One way of encouraging good practice is to publicise examples of where staff have taken the initiative. One such example is the Bristol hub where a team had a big clear-out of old VHS tapes. Previously, it had not proved economically viable to recycle the tapes, but through their own research the Bristol staff tracked down a local company that could extract the recycling components from the tapes at a reasonable rate. It is more examples of local initiatives such as this that Preston is keen to encourage, as the seemingly small efforts of the many will hopefully add up to a corporate effort large enough to hit a 75% recycling rate by 2013.



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# Walking on the wild side

Stephen Tromans welcomes plans to modernise conservation laws



**Stephen Tromans**  
QC, 39 Essex  
Street

Many readers may be unfamiliar with the work of the Law Commission. It is the statutory independent body created by the Law Commissions Act 1965 to keep the law under review and to recommend necessary reform. The commission's aim is to ensure that the law is fair, modern, simple, and as cost-effective as possible.

It is now beginning a foray into nature conservation, and is drawing up provisional proposals to reform the legal regime for wildlife management, as part of its 11th programme of law reform. The commission states that, while wildlife protection and the sustainable management of our natural heritage have become increasingly regarded as key policy aims for government over the past decade, the legal framework for wildlife management is "overly complicated, frequently contradictory and unduly prescriptive". As a result, it claims that the law creates unnecessary barriers to effective wildlife management, including the efficient implementation and enforcement of government policy.

In particular, the commission has noted how the law regulating human dealings with wildlife is spread over many statutes, going back to (at least) the early 19th century, and has developed from an initial concern with hunting, fishing and poaching to addressing habitat modification (burning and clearing), the control of pest species, protection from cruel methods of capture and killing, and now conservation – including the reintroduction of departed native species and the removal of non-native species.

The result, says the commission, is a "legal structure made up of succeeding geological strata of legislation with no coherent design" and "a preponderance of primary legislation, much of which has not been amended to reflect modern conditions". Conversely, the principal modern Act – the Wildlife and Countryside Act 1981 – has become so amended as to be "difficult for the non-lawyer to use".

The commission is right in this analysis. The area is ripe for legal rationalisation and reform. It is, of course, heavily influenced (indeed dictated) by European Union law in certain areas. However, there are many important provisions, such as those dealing with sites of special scientific interest (SSSIs), which are purely domestic in origin and application.

These provisions have, from time to time, attracted senior judicial attention, perhaps most famously in 1992 in the House of Lords case of *Southern Water Authority v Nature Conservancy Council*. On that occasion, Lord Mustill described the SSSI regime as "toothless". Since then the regime has been strengthened and given some teeth by the amendments of the Countryside and Rights of Way Act 2000.

The law does, however, remain somewhat obscure and piecemeal and has its share of oddities and inconsistencies, which those practising in the area have come to know – even possibly love – over the years. Certainly I can vouch for its complexities, having been on English Nature's council for six years as the law was being reformed, and having advised and appeared at court and public inquiries over the years.

Modernisation is vitally important because there is an ever increasing tension between the need for development, such as housing and infrastructure, and the protection and enhancement of the remaining natural heritage. It is in everyone's interest to have a regime that is coherent, understandable to the public and to developers as well as to experts, and provides effective checks and balances as well as enforcement procedures. Much of the current law was simply drafted in a different age, with different pressures and problems to those we now have.

The overarching goal of the commission's project is to make the law work better for all concerned with wildlife. This includes ensuring the statutory framework for wildlife management can facilitate the policy decisions of the government and allow for the appropriate balancing of human and nature conservation interests.

Law reform would seek to provide a modern and simple framework, with an appropriate balance between primary and secondary legislation, and guidance. The aim is to publish provisional proposals for reform in June 2012, followed by a three-month public consultation. A final report, with recommendations and draft bill for consideration by parliament, is scheduled for mid-2014.

Hopefully those involved in the area, and who have a good appreciation of the needs of the law, will find the time to contribute to the project.



# Bringing ideas to market

**Elisabeth Jeffries** on a system to help make green technologies developed in the UK a commercial success

**S**alter's Duck was an early prototype for wave power extraction. It was a device 30 years ahead of its time that could have revolutionised British energy. It surfaced in the late 1970s but was snuffed out by a combination of government policy and the interests of big business.

Several decades on, the mood has shifted. The government is now more favourably disposed towards renewable energy and, even if it is never perceived by industry as enough, provides more grants for research into, and the development of, new ideas. These can, if they make it as products, stimulate green growth.

But there is a snag: although British inventors are good at coming up with ideas, the UK needs to raise its game in terms of commercialising them in comparison with some other EU countries and the US.

## Technology centres

It was with this perceived flaw in mind that the government this year launched a series of new centres aimed at strengthening the nation's innovation performance. Technology Innovation Centres (TICs) have received £200 million in funding and, in part, are modelled on the robust, well-established network of applied research centres – the Fraunhofer Institutes (FIs) – that play a major role in driving innovation in Germany. Several TICs are proposed to promote greater innovation in environmental technologies. These include the high-value manufacturing TIC, which supports businesses developing biotechnologies for biofuels for instance, the offshore renewable-energy TIC and the resource efficiency TIC.

Technology transfer is the ultimate goal – getting some of the ideas generated at universities into

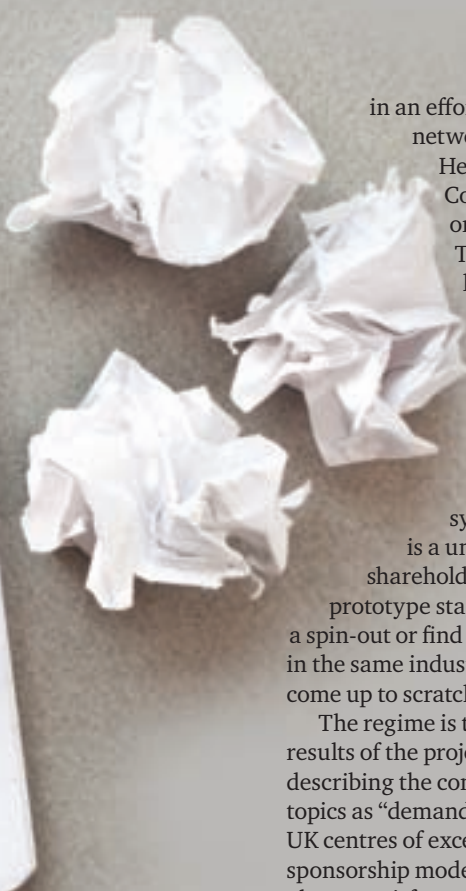
manufacturing plants in order to develop new products, processes and companies.

“Universities are not the best place for technology transfer ... they have a tendency to sit on intellectual property [IP] and wait for someone to buy it off them,” says Mike Oldham, programme manager at the Technology Strategy Board (TSB), the UK's innovation agency.

The new TICs are to act as a bridge between the universities and industry, helping commercial managers and investors disentangle themselves from the abstract and sometimes restrictive concerns of some science departments, which can hold back product development. “Universities' reason for existing is education and research. It's a different mindset to take that into the industrial base with a delivery ethos. Part of that is a dedicated team of the right people with the right mindset – not just a move to the next area of blue skies research,” explains Oldham. TIC managers will be expected to triple the government's initial funding injection through client fees and other sources of income.

Commercialisation in the UK of university IP has, perhaps, been haphazard and uneven in the past. It was





in an effort to create a coherent, structured network of innovation centres that Dr Hermann Hauser, founder of Acorn Computers and author of a 2010 review on innovation, recommended the TICs. The policy is a deliberate attempt to learn from the FIs in Germany. These consist of 60 centres, each specialising in a different sector or technology, with a strong engineering theme.

The FI network, explains Stephanie Jung, manager of strategy development at its Munich headquarters, is “a non-university system” but the director of a centre is a university professor who is also a shareholder. Typically, the FIs work as far as the prototype stage, following which they either create a spin-out or find a partner. Some FI centres compete in the same industrial sectors, losing staff if they don’t come up to scratch.

The regime is tough: “If a customer doesn’t like the results of the project, they don’t pay us,” explains Jung, describing the control of research and development topics as “demand driven”. Comparing them with UK centres of excellence, she says that the industry sponsorship model more common in the UK is not always satisfactory. “Sponsorship money goes into the system or into R&D somehow and sometimes there’s some output,” is how she views it.

Clearly, the UK infrastructure emerges from a different culture and will not be a replica of the FIs. But the client-based structure accompanied by core public funding, added to the creation of independent stepping stones between business and science, takes something from the FI model. It is a model that is worth considering because, as Europe’s biggest individual patent producer, the FI is a very successful organisation.

### The environmental sector

Environmental companies could benefit considerably. For one thing, the TICs could contribute to speedier commercialisation and cost reduction for emerging sectors, such as wave and tidal power, by providing facilities that smaller companies cannot themselves afford. The Offshore Renewable Energy TIC, due to start operating in the summer of 2012, would bolster that process, as there are still many problems to solve in both tidal, wave and offshore wind power.

As Neil Morgan, energy manager at the TSB explains, innovation will help offshore wind become more affordable over the next few years. “The largest capacity is 5–6MW per turbine in offshore wind. To drive down costs we need to get to 10MW at least and to do that we need bigger wind turbines. A 10MW turbine would need massive blades of 100m in diameter,” he says. Achieving that goal means improving existing composite materials and perhaps inventing new materials.

Since 70% of the cost of offshore wind power comes from the foundations, connections, maintenance and engineering, there are also opportunities for innovating in these areas. For instance, researchers could develop

lighter foundations and materials for them. Cutting out the need for a gearbox would also make turbines more efficient and reduce costs. One Edinburgh-based company, Artemis Intelligent Power, has done just that.

An increased innovation rate could mean the emergence of a more robust wind power supply chain based in the UK. International market players such as Clipper, Gamesa, Mitsubishi and Siemens are all developing wind farms around the British Isles or building manufacturing centres in the UK.

The proximity of suppliers would obviously cut their costs, too, and help build an industry cluster – another characteristic of successful innovation.

Morgan points out that UK companies are also at an advantage for another reason: “We know more about the UK sea bed than anyone else does about their local sea bed because of the North Sea oil and gas industry.” This could give local companies a head start when developing offshore solutions.

Tidal power has similar problems, but is at an earlier stage still; arguably, the industry has yet to settle on the best way of generating energy from tidal power equipment. In its early days, the industry used knowledge from the wind turbine sector to produce a horizontal axis design, and transposed it to an underwater environment. There are many that dispute this logic, though, and are testing other designs.

Only one company, Marine Current Turbines, has succeeded in running a commercial operating turbine for several years. Its 10MWh SeaGen turbine, sited in the waters at Strangford Narrows, Northern Ireland, can deliver 6,000MWh a year to the grid. The firm’s next step is to develop its first array.

If this is to become commonplace in the industry, and tidal power is to make a significant contribution to cutting CO<sub>2</sub> emissions, there may be a need to change some features of turbine devices. This is because a tidal array may provide a different set of challenges from a single turbine. In addition, researchers in the UK – and all over the world – are testing different device prototypes such as vertical axis turbines. All these ventures are risky, but stimulate innovation.

### A new strategy

There are already several renewable-energy research centres operating across the UK, so what difference will the new TIC make? The most significant missing ingredient, as identified by the Hauser review, is coherence. Hauser called for the creation of a coherent network of innovation centres that strategise innovation – embedded into the economy as the rail and road infrastructure is. The new TIC may take the form of a new centre or, perhaps more likely, a kind of control tower strategising research efforts and helping promote knowledge transfer across industry.

Perhaps this is particularly important in the relatively young field of renewable energy – and it certainly is for tidal power. The UK’s marine power research centres are, of course, quite small, geographically scattered and at an early development stage. Neil Kermod, managing director of the European Marine Energy Centre (EMEC), says more



**Elisabeth Jeffries** is a journalist specialising in business and the environment

collaboration and interconnection is needed. "The TIC would enable the UK to make sure its offering to help get devices into the water was coherent; not a set of different sites attracting people to go to different places," he says.

Much of the innovations at EMEC come about through the repeated process of testing devices in the water, and are very practical in nature. In one case, tests helped companies redesign equipment to make it easier to remove it from a lorry – a problem that had not been foreseen. Following tests, companies produced a second and third, suitably improved, device. Inventions that cut the costs of underwater turbine installation – an expensive and risky business – are also urgently needed.

A successful TIC would take this further and ensure it is coordinated and commercialised. It would also help ensure some ideas are shared. "The focus is to research issues that would benefit more than one developer, even where it is being dealt with by only one party," says Kermode. Bob Smith, CEO of tidal turbine company Pulse Tidal, points out that some of the most significant issues to overcome are to do with infrastructure – such as permitting, access to sites and grid problems.

That aside, the sector needs to solve important technical problems relating to the devices themselves. Smith also says that the removal of the gearbox from devices on both horizontal and vertical axis turbines is a priority. "We need a simplification of the power train in

a cost-effective way that's robust and reliable," he states. As with wind power, increasing the size of the turbines is another problem he describes as "a huge challenge" without which the device wattage cannot be raised.

Centres such as TICs have existed before, so some experts are sceptical, particularly given the closure of regional development agencies, which ran and helped fund innovation and business incubation centres. Some of those funds may be recycled into TICs. In the late 1980s, the then UK government launched the Faraday centres, a series of innovation hubs with a similar aim, while specialist institutes also existed in the 1970s.

John Bessant, professor of innovation and entrepreneurship at Exeter University Business School, takes a positive view of the centres' potential. "The TICs aren't a bad idea, not least because it's good to have focal points around particular themes," he says, drawing attention to the complexity and sheer volume of knowledge in modern economies, which particularly justifies the need for these kinds of hubs.

"The knowledge created in university spin-offs is just a small piece of the puzzle," he argues. "They produce all sorts of knowledge, new products and processes. It's a long frontier with a lot of traffic. Skills are increasingly about knowing where to get knowledge from, so having these centres is a good idea."

Hopefully, they will breed a new wave of Salter's ducks, and ones that this time actually fly commercially.

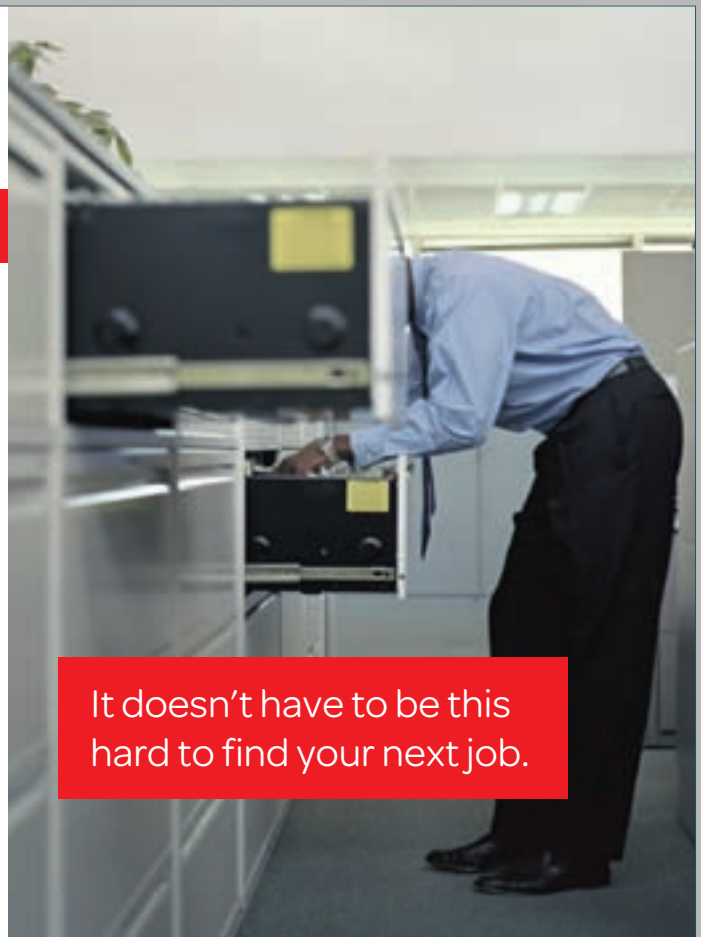
## the environmentalist

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# IEMA posts on the Guardian Sustainable Business blog

**Environmental skills** IEMA's work with members, business leaders, training organisations and recruitment companies places it in a unique position to gauge the perception and presence of environmental skills and knowledge in UK businesses. Because of this, and coupled with the recent launch of the Institute's environmental skills map for the profession, the *Guardian* newspaper's online Sustainable Business blog has asked IEMA's director of membership services Claire Lea (pictured) to contribute a monthly blog, detailing the Institute's findings from research and feeding back what businesses tell us about what they need in the form of environmental skills.

The first of the blogs was published on 25 October, but here we reproduce in full Claire's thoughts on sustainability and its associated opportunities through environmental skills and knowledge.

## Opportunities beyond compliance

Business sustainability issues are well documented and in these challenging economic times it may be hard to justify investment in the development of any skills, let alone investment in green ones. But now is the perfect time.

Using green skills in your organisation will enable you to identify efficiency savings and cost reductions in the short term. In the mid to long term, investing in green skills will secure long-term business viability through effective risk management and the identification of new business opportunities.

While it is encouraging to see senior sustainability roles on boards and the appointment of chief sustainability officers and directors, for many organisations environmental sustainability remains an operational, compliance-based problem. There is still considerable work to do to change this mindset.

The need to address business sustainability issues at a strategic level requires high-calibre, high-performing people with the right knowledge and skills. IEMA's research in summer 2011 highlighted that individuals are coming to these roles from a whole range of different backgrounds – the career changers (more than one-third of research participants)

Members are invited to add their thoughts by commenting on Claire's blog online at [lexisurl.com/iema11139](http://lexisurl.com/iema11139). While you are visiting, why not sign up to become a member of Guardian Sustainable Business?

gained their crucial environment knowledge through formal training, coupling this with existing management and leadership skills.

However, reflecting on the research into low-carbon, green or environmental sustainability jobs and skills over the past three years, I'm left thinking that there are still opportunities for us to do more to highlight the real value that environmental sustainability skills can and do bring to an organisation.

A great deal of research into skills focuses on the knowledge and abilities needed to deploy environmental technologies, rather than the skills required to embed sustainability in businesses. Action is needed to ensure that more organisations recognise the importance of environmental sustainability issues across the value chain.

Furthermore, the need for senior people with strategic-level skills coupled with the ability to look through a green lens across the whole organisation is of paramount importance.

One thing that has been missing is clarity about just what knowledge and skills are needed in environmental sustainability roles. Sustainability is relevant to those starting their careers – the potential CEOs of the future – right through to those in leadership roles now.

How do we ensure that graduates and others entering employment today develop the right knowledge and skills to become effective sustainability leaders of the future? In response to that question IEMA set out the knowledge and skills required by environment professionals at different levels in organisations, including those in leadership positions, in its environmental skills map, published in June ([lexisurl.com/iema11138](http://lexisurl.com/iema11138)).

An individual's abilities to effectively lead, engage, influence, communicate, plan, implement and deliver are core skills. What makes such individuals different – something that is not always



easy to capture in formal frameworks – is their ability to use their knowledge and skills to work across organisations. They take the complexity of environmental sustainability issues and provide clarity about how the business should respond to the sustainability agenda to deliver long-term success; this skill is invaluable to business.

Those businesses that have recognised this will surely have the competitive advantage and will be able to harness innovative thinking as environmental constraints take centre stage.

## More successful IEMA members

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

### Full

**Tim Burrows**, Genzyme Therapeutics  
**Nigel Chalmers**, Hyder  
**Katherine Illingworth**, Valpak  
**Alexandra Jones**, Gwynedd Consultancy  
**Emma Nicholson**, Rider Levett Bucknall  
**Mark Norman**, Cancer Research  
**Paul Reynolds**, Smurfit Kappa  
**Jamie Roddie**, Mabbett & Associates  
**Adam Stewart**, Teesside University  
**Lorna Stork**, GB Building Solutions  
**Sarah Swan**, Costain  
**Ben Wallace**, ESB International

### Dual

**Alastair Chapman**, Forest of Dean DC  
**Anthony Ellis**, Network Rail  
**Rebecca Mooney**, RICS  
**Sarah Pratt**, Sastun Consulting  
**Thomas Sek Khuen Tang**, Aecom

# Linking in to current debates

**Networking** IEMA's group on the LinkedIn networking site now has more than 4,000 members. Many members use the site to ask and answer questions that help them in their day-to-day jobs, while some discuss policy and professional issues. Others simply monitor the discussions to keep up to date on current issues of interest.

The number of members and discussions grows almost daily and there are currently several interesting and dynamic topics being debated. These include:

- I am looking for some help and some inspiration. I need examples of names people have used for "office champions".
- Are we good physicians of our environment? What are your thoughts?
- New method to determine the carbon footprint of products, processes or services based on life-cycle analysis.



- I have finally submitted my application for MIEMA. Does anyone now have any tips for the interview?
- Using a cloud-based approach for implementing an effective environmental management system.

There are also discussions on policy issues. Some members ask more than they answer and vice versa, but a common theme of the group is the sharing of knowledge.

Employment opportunities are also regularly posted by group members.

## Short cuts

### Survey on sustainable business practice

During September and early October all UK members – from Graduates to Fellows – were invited to contribute to IEMA's leading research on sustainable business practice.

A total of 1,348 unique responses were collected, demonstrating that IEMA members are consistently eager to lend their voices to matters of professional and policy interest. IEMA would like to thank everyone who took the time to contribute.

A special report on sustainable business practice, which uses the data from the survey and feedback collected from the spring/summer series of workshops, will be published in early 2012. IEMA members will have privileged access to the document. Look out for further details in future issues of *the environmentalist*.

### New career guidance for graduates from IEMA

Following a successful pilot event in February 2011, a series of workshops specially designed for university students considering a career in the environment profession was rolled out in October and early November.

Five student-only events were held at the universities of Hertfordshire, Lancaster, Leeds, Southampton and Sunderland between 27 October and 9 November. The events feature a welcome from IEMA's CEO Jan Chmiel; top tips on how to get into an environment role from IEMA's own graduate practitioner Richard Harada; and practical advice from recruitment and employment specialists. Delegates receive copies of the IEMA environmental skills map, which provides a clear picture of the knowledge, skills and experience needed to progress in the environment profession at every stage. They also get a copy of *the environmentalist*.

IEMA would like to thank Mary Argyraki, Louise Ellis, Becky Gordon, Jane Newbold, Lisa Palframan and Simon Kemp at the partner universities for helping the planning and delivery of these events.

## IEMA EVENTS

Date	Region	Topic
<b>Regional events</b>		
29 November	South East	Woodland carbon code
1 December	North West	Knowledge exchange: the prefect storm
1 December	North West	Revision to 14001: have your say
8 December	Midlands	Revision to 14001: have your say
8 December	South East	Christmas social
12 December	South West	Revision to 14001: have your say
13 December	Yorkshire & Humberside	Revision to 14001: have your say
13 December	South East	Revision to 14001: have your say
14 December	East of England	Christmas social
<b>CPD/membership workshops</b>		
23 November	East of England	Full and CEnv membership workshop (Ipswich)
23 November	Yorkshire & Humberside	Environmental law and legislation
23 November	South East	Full and CEnv membership workshop (Southampton)
30 November	North West	Waste management



# Environmentalists shortlisted for IEMA's 2011 graduate award

The graduate award, sponsored by commercial property company Land Securities, recognises the environmental achievements and contributions of exceptional graduate practitioners

This year's award received a record number of nominations – 20, compared with 17 in 2010 – and the standard remains extremely high.



The judging panel – Dave Farebrother, environment director at Land Securities; 2010 winner Sherry Palmer; Gary Cornell from consultants ERM; IEMA membership services manager James Thorne; Diana Montgomery, deputy CEO at the Chemical Industries Association; Dr Jane Newbold, visiting lecturer in environmental management at the University of Hertfordshire; and *the environmentalist* editor Paul Suff – met on 21 October to choose the finalists and agreed that the top three have all clearly demonstrated innovative thinking, hard work, professional leadership and exceptional communications skills.

The judges shortlisted Laura Duggan, Heather Poore and Charlie Symonds for the 2011 award. They find out whether they are the winner or a runner-up during the IEMA sustainable business conference on Tuesday 15 November. Here, the three finalists provide some insight into their background and how that has led them to become award-nominated practitioners.

Although the judges were unanimous in their choice for the final shortlist, a number of other submissions were commended. These include:

- an environmental coordinator who established a biodiversity plan, improved resource efficiency and increased environmental awareness among staff at a shopping centre;
- a graduate environmental specialist who had made an outstanding contribution to stakeholder engagement on assignment in Gabon, West Africa;
- an environmental adviser who, within six months, took sole responsibility for all environmental management on a £1 billion redevelopment project of a hospital site; and
- a sustainability adviser with a fire and rescue service who completely revamped staff engagement on sustainability across 43 sites, to help the organisation achieve its environmental goals.

Look out in the December issue of *the environmentalist* for a review of the IEMA sustainable business conference, including details of who was named winner of the IEMA graduate award 2011.

## Laura Duggan

**Job title:**  
Environment executive

**Organisation:**  
George Best Belfast City Airport

### What and where did you study at university?

For my undergraduate degree, I studied business, economics and social studies at Trinity College Dublin. Then I did a masters degree in leadership for sustainable development at Queen's University Belfast.

### Why did you want to work in the profession?

After completing my undergraduate degree, I became increasingly aware of environmental and development issues through my association with various NGOs and I was concerned about the future. I got involved in voluntary work in the environment field before deciding to pursue further studies in sustainable development to broaden my knowledge

**I believe it is important to work with businesses as they have a key role to play in bringing about improvements**

and gain some essential skills. I was really excited about the prospect of working at Belfast City Airport because I believe it is important to work with businesses as they have a key role to play in bringing about environmental improvements through their policies and practices, and that airports and the aviation industry, in particular, present a range of sustainability challenges.

### How did you feel when you found out you had been shortlisted?

It was a great surprise, but a fantastic one all the same! It is really encouraging to receive validation from highly experienced professionals in the field for the work I have been doing at Belfast City Airport. It has definitely motivated me to continue to pursue my career in the field.

### What are your top three tips for recent graduates seeking work?

Try to gain experience in the environmental field, whether it is paid or unpaid. Get involved in voluntary organisations as this can be a way to get experience, open up opportunities and make valuable contacts. Be flexible and open to projects that may crop up and don't be afraid to stray beyond your comfort zone in terms of previous academic and professional experience. Build up a network of contacts by joining organisations and associations related to the field.

### What her nominator said about Laura:

She has played a pivotal role in developing and implementing the airport's environmental systems.



## Heather Poore

### Job title:

Youth volunteering project manager

### Organisation:

Global Action Plan

### What and where did you study at university?

I gained a BSc (Hons) in physical geography at the University of Sheffield.

### Why did you want to work in the profession?

I became soberly aware of the scale and seriousness of climate change while studying at university. It was during this time that the Intergovernmental Panel on Climate Change released a report saying that scientists were more certain than ever that climate change was real. This really brought all the stuff I was learning about in lectures to life and hit home the desperate need for sustainable change. I knew something had to be done and I wanted to be a part of the action. I had been fortunate enough to study the environment and I felt I had a duty to lead the change,

**The IPCC report really brought all the stuff I was learning about in lectures to life. I knew something had to be done and wanted to be part of the action**

sharing what I had learned with people who may or may not otherwise have been exposed to the importance of the issue. Now I'm working with Global Action Plan doing just that – helping empower people to create change themselves.

### How did you feel when you found out you had been shortlisted?

Recognising my achievements has never been my forte so when I found out I was surprised, but delighted!

### What are your top three tips for recent graduates seeking work?

Have patience – it is very hard to get work straight away, so think about the type of work you want and be creative about how you can gain experience in the industry. I started with a two-month unpaid internship at Global Action Plan and fortunately it paid off. Attend every event, conference, workshop and volunteering day you possibly can and chat to people. It's usually the friend of a friend who can help you out. Sign up to all of the environmental news outlets, job websites and newsletters and work your way through them.

### What her nominator said about Heather:

She has shown outstanding commitment to inspiring young people to turn environmental messages into action.



## Charlie Symonds

### Job title:

Knowledge transfer associate, sustainable development engineer

### Organisation:

Stannah Stairlifts/Oxford Brookes University

### What and where did you study at university?

I studied industrial design and technology at Loughborough University. I focused my study around sustainable design, recycling and environmental issues in product design.

### Why did you want to work in the profession?

Excess packaging, blatant business waste and inefficient products have always seemed wasteful to me. I think there is great opportunity to develop products that have

**I think there is a great opportunity to develop products that have increased form and functionality, while reducing their impact on the environment**

increased form, functionality and personal value to the user while reducing their impact on the environment. As environmental performance becomes ever more critical, I think there will be a growing demand for these products and I look forward to being a part of that movement.

### How did you feel when you found out you had been shortlisted?

Fantastic! It is really good to know that the work I am doing is of a high standard and is appreciated by both Stannah and Oxford Brookes University, as well as environmental professionals.

### What are your top three tips for recent graduates seeking work?

Fully understand the product life cycle and how impacts in one area can have knock-on effects later. This will help you create more sustainable products over their whole life cycle. Be able to demonstrate leadership in pushing environmental issues and have the ability to explain sometimes complex principles to a non-technical audience. I would fully promote the Knowledge Transfer Partnership as a scheme to anyone starting out on their career or looking to employ a graduate.

### What his nominator said about Charlie:

He has almost single-handedly provided the company with a framework for its sustainability strategy for the next five years.



# David Dowson

Environment officer, Worcestershire Health and Care NHS Trust



## Why did you become an environment professional?

It was only through luck that I gained experience in the environmental field, following a long period of indecision post-university. I soon realised that a career in this sector represented the opportunity to perform a socially and environmentally responsible job in the sciences.

## What was your first environment job?

Initially I interned with a number of organisations and so fulfilled a variety of roles. I began by writing climate-change adaptation case studies for a public sector partnership and ended by performing an environmental audit of a manufacturing company in collaboration with Keele University.

## How did you get your first environment role?

Through networking I learned of the charity Change Agents UK (formerly Studentforce). It recruits graduates for environmental projects. I applied and was successful in gaining employment with Worcestershire Health and Care NHS Trust in July 2010.

## How did you progress your environment career?

It's an ongoing process. I involve myself in many differing projects in my workplace that span multiple departments and I take every opportunity to attend training sessions, webinars and conferences. I've found that I learn a lot by immersing myself in topics, departments or projects and prioritising my workload effectively.

## What does your current role involve?

I'm the single internal environmental lead at the trust, responsible for managing carbon and energy to meet government targets as well as promoting a more environmentally sustainable lifestyle among NHS staff. The ultimate aim is to reduce carbon emissions, cut costs and make the organisation more efficient.

## How has your role changed over recent years?

Initially, the job had two set aims: installing a monitoring and reporting structure and promoting environmental sustainability among staff. However, due to the size and changing nature of the field, it's grown to include all aspects of environment management, including recycling, policy making, green travel planning and project management.

## What's the best part of your work?

Seeing a project produce beneficial results through your own hard work and persistence.

## What's the hardest part of your job?

Engaging staff at all levels of the organisation, from the ward to the boardroom, to create a sustainable solution to a problem is always difficult.

## What was the last development/training course/event you attended?

I'm currently studying for a PGCert in sustainable business management and the last lecture series was part of a module teaching effective communication skills.

## What did you bring back to your job?

I now have the tools needed to keep all forms of communication succinct and relevant to the receiver, ensuring they know what they want to know.

## What is/are the most important skill(s) for your role and why?

Communication, time management, good analytical skills and a willingness to learn.

## Where do you see the environment profession going?

I think the field will grow exponentially in credibility, scope and influence over the next 10 years among all tiers of society. I can't predict whether this step change will be evolutionary or revolutionary, but either way, with natural systems coming under increasing

## CAREER FILE

### Qualifications

BSc natural sciences, MSc wild animal biology, AEMA, PGCert sustainable business management

### Career history

#### 2010 to now:

Environment officer, Worcestershire Health and Care NHS Trust

#### 2009–2010:

Intern, Birmingham Environment Partnership/West Midlands Climate Change Adaptation Partnership/Keele University

#### 2009:

Research assistant, Wildlife Conservation Society, Cambodia

pressure from a growing human population and unsustainable financial systems, I think it's inevitable.

## Where would you like to be in five years' time?

I won the Sustainability Star of the Year award from Change Agents UK in recognition of my work with the NHS in March 2011. I've been on a high ever since and I'd like to continue succeeding in the profession with the aim of achieving Full membership of IEMA, followed by Chartered Environmentalist status.

## What advice would you give to someone considering going into the environment profession?

Get as much experience and training as you can. This informs objective opinion, increases awareness of current developments and enhances your communication skills. An enormous amount of information on the environment is freely available on the internet, so don't be afraid to use it and to ask a professional if you need help.



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## Principal EIA Project Manager

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## EIA Project Manager Glasgow or Edinburgh

### About us:

LUC (Land Use Consultants) is one of the UK's leading environmental consultancies, specialising in planning, design, ecology and management. Founded in 1966, we have over 100 employees based in our offices in Glasgow, Edinburgh, Bristol and London.

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We are seeking to appoint a Senior Consultant specialising in Environmental Impact Assessment (EIA) to join our Scottish based Environmental Planning team.

You will be responsible for managing a number of our EIA projects, many of which are currently for wind energy developments and associated grid connection infrastructure. As a key part of our environmental planning team there are also likely to be opportunities to become involved in a wider range of our environmental planning work.

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You will have a good first degree in a relevant discipline ie planning, geography, or the environmental field and preferably will have completed a post-graduate qualification in Environmental Impact Assessment. You will have proven experience of project managing and co-ordinating large scale or complex EIAs which will ideally include wind energy experience. You will have strong project management and organisational skills, excellent oral and written communication skills and the ability to build effective relationships with clients and manage staff.

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For further details about LUC please visit our website [www.landuse.co.uk](http://www.landuse.co.uk).

To apply please email your CV and a covering letter, quoting reference: 2011-14 to Helen Ash, HR Manager at: [HR@landuse.co.uk](mailto:HR@landuse.co.uk)

Closing date for applications: 5pm, Friday 2nd December 2011

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# the environmentalist

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Christopher Bennett, Managing Director,  
Sustainable Commercial Solutions.

Contact Elle Umeh  
tel: 020 8212 1984  
email: [elaheh.umeh@lexisnexis.co.uk](mailto:elaheh.umeh@lexisnexis.co.uk)





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