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

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Cut the crap

The UK has some of the lowest energy prices in Europe, but some of the highest energy bills. That's because its housing stock is generally older and of poorer quality. A sure-fire way to reduce bills is to make homes more energy efficient. According to the Energy Saving Trust, a typical house with insulated cavity walls is up to £140 a year cheaper to heat than one with no insulation, while installing solid-wall insulation saves about £490 a year.

So, you'd think politicians under pressure from the electorate over soaring energy bills would be keen to improve energy efficiency? Wrong. The government has decided that tweaking the so-called green levies paid through energy bills to reduce them by about £50 per annum is better than accelerating already inadequate energy efficiency measures. Plans to extend the period covered by the Energy Company Obligation (ECO) to 2017 and lower the carbon emissions reduction targets within ECO by 33% will mean that too many houses in the UK will continue to leak energy, doing little to reduce costs for those who live in them. Industry installed 80,000 solid wall insulations in 2012, but the UK Green Building Council estimates that the proposed changes to ECO will see this total fall to 25,000 a year over the next four years. Figures from the National Insulation Association reveal that there are over 7 million homes in the UK requiring solid wall insulation, and more than 5 million in need of cavity wall insulation.

The government has tried to cushion the impact of changes to ECO by:

continuing to target help at the poorest households; offering new house buyers up to £1,000 to spend on energy-saving measures; encouraging landlords to make rented properties more energy efficient; and providing more funding to improve energy efficiency across the public sector. It also plans to make the green deal simpler and more straightforward. Any policy to improve energy efficiency is welcome, but the only one of these likely to be effective is the extra £90 million for the Salix programme to fund improvements in hospitals and schools, and this will do nothing for household energy bills. The other measures are not really new and will have a limited impact. The green deal, for example, has been an abject failure since its launch in January: just 0.6% of households expected to take out a green deal loan in its first year have done so. Simplifying the scheme while not reducing the relatively high rates of interest charged for loans is unlikely to foster greater interest.

Improving energy efficiency is not just about reducing bills: better insulated homes will cut carbon. Decc says changes to ECO will increase CO2 emissions by at least 2.7 million tonnes, while 2.4 million tonnes will be saved through the government's new proposals. That's assuming enough new house buyers and private landlords make improvements to their properties, and more people take out green deal loans. But, although ECO is mandatory, placing legal obligations on the large energy suppliers to deliver efficiency measures, the proposed changes rely on incentives to attract consumers. Figures released by Decc in November revealed that 98% of energy efficiency measures installed in the nine months to end of September through the green deal and ECO were delivered by the latter.

The revisions to ECO have not been as extensive as first feared, but the changes will do little to cut bills or reduce carbon emissions.

Although No.10 dismissed reports in the media that the leader of the self-styled greenest government, David Cameron, had said it was time to "get rid of all the green crap" when discussing reviewing levies on energy bills, it's all too believable. It really is time for politicians to cut the crap and make energy efficiency a priority.

The UK has some of the lowest energy prices in Europe, but some of the highest bills. A sure-fire way to reduce energy bills is to make houses more energy efficient



Paul Suff, editor

Short cuts

Greener websearches

Environmentally friendly search engine ecosia.org has announced that it is now planting a tree every 60 seconds. The carbon-neutral, Berlin-based social business donates 80% of its advertising revenue to the “plant a billion trees” programme by the Nature Conservancy. Since its launch four years ago, Ecosia has raised more than \$1.7 million for the environment and funded the planting of more than 124,000 trees in Brazil. In November, Ecosia confirmed that it now had 2.5 million users worldwide and helping to plant more than 10,000 trees every week. “If Ecosia had as many users as Google, we could have the chance to end deforestation once and for all,” said the search engine’s founder, Christian Kroll. Ecosia has pledged to plant 1 million trees in 2014.

SEAT goes solar

Automotive manufacturer SEAT has installed 53,000 solar panels at its Martorell factory. The SEAT al Sol project at the Barcelona plant covers a 270,000m² area and generates 15 million kWh a year. The installation reduces annual CO₂ emissions from the plant’s production processes by 7,000 tonnes. SEAT says the overhead installation has the added benefit of protecting completed cars against adverse weather conditions. The completion of the SEAT al Sol project came as parent company, VW Group announced that two-thirds of the €82.5 billion its automotive division plans to invest in the next five years will be channelled into making vehicles more efficient as well as measures to improve the environment performance of its production facilities. In 2011, VW launched its “Think Blue. Factory” programme under the motto: “More sustainability – less environmental impact”. The objective of the programme is to continuously reduce the environmental impact of production. By 2018, VW plans to reduce its waste production, water consumption, solvent use and carbon emissions by 25%.

Compliance rates on the up

Regulated sites across England and Northern Ireland continue to improve their environmental performance, according to the latest compliance figures from the Environment Agency and its counterpart in Northern Ireland, the NIEA.

In its annual report on industrial emissions, pollution incidents and the performance of permitted sites, the agency confirms it dealt with just 504 cases of serious pollution last year. The figure is the lowest on record, with the number of serious incidents falling 55% since 2000.

Just 38% of serious pollution incidents in 2012 were from permitted sites – down from 42% last year. The water and sewage sector was singled out for praise by the regulator for improving its performance. After an increase in incidents in 2011, significant polluting events caused by England’s nine water companies fell by 47% year on year.

The agency warned, however, that serious pollution from the waste sector

increased for the second year in a row, with the majority of incidents relating to odours.

The 2012 figures also reveal that a record number of permitted sites are performing at the highest level of compliance, with 78% of environmental permit holders rated as “A” – up from 76% in 2011. The figures reveal that there has been no improvement, however, in the number of poorly performing organisations – those ranked D, E or F.

Meanwhile, the first report on NIEA compliance and enforcement rates from the environment department in Northern Ireland confirms that compliance with industrial water orders stood at 91% in 2012/13 – a 4% increase since 2008/9. The number of breaches related to protected sites has also fallen, down 57% on 2008/9 figures. However, the change may be explained by the new risk-based monitoring regime introduced in 2010/11, under which the percentage of sites inspected fell from 97% to just 28%.

MPs criticise offsetting plans



Defra’s proposals for a biodiversity offsetting scheme are “overly simplistic” and do not offer enough protection for important habitats, according to the environment audit committee (EAC).

Although biodiversity offsets could compensate for damage caused to England’s natural environment, Defra’s plans were not sophisticated enough to evaluate the complexity of habitats, particularly the impact on individual species, said the MPs. “The assessment process [to calculate biodiversity loss] proposed by government appears to be little more than a 20-minute box-ticking exercise,” warned Joan Walley, chair of the EAC.

During its inquiry into Defra’s proposals, the committee heard evidence from environment secretary Owen Paterson, developers and wildlife groups. The committee concluded that the plans failed to offer enough protection to

important habitats, such as sites of special scientific interest (SSSIs) and ancient woodland. “Ministers must take great care to get offsetting right or they risk giving developers carte blanche to concrete over important habitats,” said Walley.

MPs recommended that the metric for assessing biodiversity loss should be changed to give more significance to the national importance of SSSIs, for example, and that the scheme should be mandatory.

The conclusions by the EAC echo IEMA’s response to Defra’s proposals, with members confirming they did not believe developers would take up biodiversity offsetting unless it was mandatory.

IEMA members also want further safeguards for the environment, including the application of a mitigation hierarchy and for the scheme to demonstrate that offsets were providing habitats of equal value to those being lost.

World edging towards new treaty on climate change

World leaders are on course to deliver a new global climate change treaty in 2015, claimed Marcin Korolec, president of the UN climate change conference in Warsaw (COP19). "It has set a pathway for governments to work on a draft of a new universal climate agreement," he said as 11 days of negotiations ended.

The conference agreed a timeframe for countries to table their contributions to reduce or limit greenhouse-gas emissions under a new global climate agreement, which is due to come into force in 2020. Details of these contributions have to be outlined ahead of COP21 in Paris in 2015.

"All countries must contribute to future reduction efforts, and table their contributions well in advance of the Paris conference," confirmed EU climate change commissioner Connie Hedegaard.

The conference also established an international mechanism for damage and casualties, which should boost protection of the most vulnerable people from climate change and extreme weather, and changes to the UN-REDD framework, which aims to reduce the amount of carbon emissions generated as a result of deforestation and forest degradation.



However, the gulf between developed and developing nations that emerged at COP17 in Durban two years ago has not been bridged. A group of "like-minded" countries, including China and India, wants to retain the strict separation between developed and developing countries that is enshrined in the Kyoto protocol, while industrialised nations, such as the US and the EU bloc, are keen to develop a new global regime.

"Looking ahead, 2014 will be a crucial year on the road to Paris, with developed and developing countries having to deal with the underlying dilemmas and divisions between them for a deal to be inked in 2015," said Haege Fjellheim, senior analyst at Point Carbon.

Knowledge gap on efficiency

UK businesses are missing out on cost savings worth £1.6 billion due to the absence of available finance for energy efficiency measures combined with a lack of leadership buy-in, according to a new report from the Westminster Sustainable Business Forum.

After a six-month inquiry chaired by Lord Whitty and Oliver Colville MP, the report warns that companies, particularly small firms, need more support to finance energy-saving measures in commercial buildings. It found that, even where finance is available, a lack of skills and poor understanding of the commercial benefits of cutting energy use hamper the installation of more efficient equipment.

"This report shows clearly a worrying lack of understanding across the UK commercial sector of both the benefits of improved energy efficiency and the ways in which companies can finance and engage in improvements," said Whitty.

Many firms are unaware of the support available to them to improve a building's energy efficiency, says the report. A poll for the inquiry of firms occupying buildings managed by one property company revealed that just 11% were aware of the non-domestic green deal, for example. The forum wants the government to relaunch the non-domestic green deal without the "golden rule" – which states that the cost of installing energy-efficiency measures must be no higher than the savings made on energy bills over the lifetime of the loan – claiming that it is preventing firms from making comprehensive retrofits.

Action to raise awareness among business leaders of the commercial benefits of saving energy, including forcing senior executives to sign off the energy audits required by the mandatory energy savings opportunity scheme, due to launch in December 2014, would boost commercial energy efficiency, says the report.

Short cuts

EU budget and EAP

The EU will spend at least €180 billion on tackling climate change and encouraging low-carbon growth by 2020. The European parliament has approved the EU's €960 billion budget for 2014–2020. The agreement commits the bloc to spending at least 20% of the budget on green policies. Climate-related spending is set to increase significantly in policy areas relating to economic development, research and innovation, and infrastructure, as well as existing environment and climate change programmes. European authorities have also formally approved the 7th EU Environment Action Programme (EAP) and written it into law. The new plan, which comes into immediate effect, will run for seven years and focuses on nine priority objectives. These include: protecting nature and strengthening ecological resilience; boosting resource-efficient low-carbon growth; and promoting the better implementation of EU environmental legislation.

Electric British Gas

British Gas has teamed up with Nissan in the UK's largest trial of commercial electric vehicles. The energy company will operate a fleet of 28 all-electric Nissan e-NV200 vans for a six-month national winter test to determine the viability of including 100%-electric vehicles among its 13,000 home service vans. The trial, which started in November and runs to April 2014, will assess how the vans perform in winter conditions during typical daily usage patterns for British Gas home engineers. Hitachi Capital Commercial Vehicle Solutions, which manages the British Gas fleet, will provide 24-hour support during the trial. Gateshead College has trained the drivers to ensure they are fully briefed on operating the vehicles. All 28 engineers involved in the trial have been provided with a British Gas home charging point and access cards to public infrastructure to keep the vehicles charged. British Gas aims to have at least 10% of its fleet running on electricity by 2015.

In parliament



A word on
behalf of ECO

The chancellor revealed in his autumn statement the outcome of one of the fastest “reviews” in history: the appraisal of “green levies” that was suddenly announced by David Cameron just a few weeks ago.

The problem with this review is that the different amounts that appear on energy bills as levies perform a variety of different tasks. Only some of them would truly fit this “green levy” description, such as those that underwrite wind farms and solar energy, and which were ruled out of the review. Ironically this left the carbon floor price – a levy that doesn’t save any carbon emissions and goes straight to the Treasury – and the charges which fund programmes that help the fuel-poor to manage their energy bills and contribute to making homes more energy efficient.

So, the main recipient of the review was the Energy Company Obligation (ECO), the £1.3 billion annual obligation on energy companies to improve the performance of the most energy incompetent homes. But, if you want to save the most, permanently, on energy bills, ECO or something similar is necessary. The UK has some of Europe’s cheapest energy prices, but also some of the highest energy bills. This is because, as a rule, we live in more poorly insulated, leakier homes. The number of energy inefficient houses is twice as high as in Scandinavia, for example.

The effects of ECO-type schemes on bills can be startling. Many homes with solid walls across the country can halve their bills through effective insulation, whereas an energy price freeze, for example, would save perhaps £72. Of course, energy efficiency measures affect the country asymmetrically, whereas less dramatic measures spread the gain. But overall everyone will lose in the long term if we do not take seriously the energy efficiency of our homes and invest in their improvement.

Alan Whitehead, Labour MP for Southampton Test and a member of the House of Commons energy and climate change committee.

Firms given flood warning

The wet weather in England in 2012 cost the economy almost £600 million, according to new research from the Environment Agency. It says the overall cost to businesses of the extreme weather last year was about £200 million, with damage to commercial property and contents alone totalling £84 million.

The regulator says flooding occurred one day in five during 2012, costing businesses affected £60,000 on average. The agency estimates that 175,000 businesses in England and Wales are at risk of flooding. As part of its annual flood awareness campaign, the agency has urged companies to sign up to receive flood warnings and make a flood plan so they are well prepared.

“It is vital that businesses plan for weather impacts to safeguard their operations today and in the future. Every £1 spent on preventing flooding saves £8 in repairing damage,” said David Rooke, director of flood and coastal risk management at the agency.

Earlier this year, the Chartered Management Institute found that extreme weather was increasingly hampering



organisations in the UK. It reported that ten years ago, extreme weather events interfered with just 15% of businesses each year, but this figure increased to 29% in 2008 and to 49% in 2012. Also, figures published by the Association of British Insurers in February revealed that the cost of flood damage since 2000 has leapt by 200% on the 1990s.

Flood protection advice for businesses is available at lexisurl.com/iema17024.

WEEE 2014 plans confirmed

The government has further clarified its plans to implement the recast EU Waste Electrical and Electronic Equipment (WEEE) Directive (2012/19/EU) and changes to the UK WEEE system through revised regulations from 1 January 2014.

In its response to the consultation on implementing the recast Directive and proposals to alter the UK WEEE system, the business department confirmed that a new category for solar photovoltaic (PV) panels would be created in the revised WEEE Regulations, even though most PV panels are unlikely to enter the waste cycle for several years.

The department also said that, although the draft regulations placed LED lamp sources in category five, from January they would be included in category 13 to avoid that classification becoming an unwanted waste stream.

The government also plans to introduce a target and compliance fee system in 2014. Under this arrangement, all producers placing at least 5 tonnes of electrical and electronic equipment

(EEE) on the market each year must join a producer compliance scheme (PCS).

Each PCS will be given a tonnage target of WEEE to collect, broken down into the categories detailed in the Regulations. These targets will be set annually by the government in line with the national WEEE collection target. If a PCS collects too little, it will have to pay a compliance fee per tonne or face sanctions for non-compliance. Alternatively, they can purchase WEEE from another PCS that has collected too much waste.

Meanwhile, the Environment Agency has clarified the revised system for small producers of EEE. A company placing less than 5 tonnes of electrical goods on the market in the year before a compliance period – for example, between 1 January 2013 and 31 December 2013 – no longer has to join a PCS. Small producers now have the option to register with a regulator for an annual fee of £30 and file paperwork proving how much EEE they produce directly. The first deadline for direct registration is 31 January 2014.



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Efficiency key to EU staying competitive

European businesses exporting energy-intensive goods will lose out to firms in the US and Asia unless they become more energy efficient. The warning comes from the International Energy Agency (IEA), which says disparities in global energy prices will undermine Europe's competitiveness in 2035.

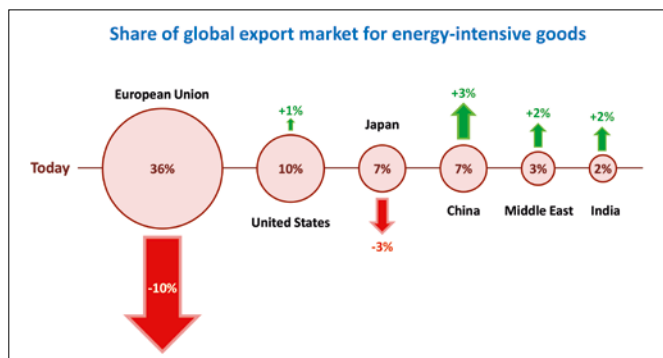
The IEA confirms in its *World energy outlook 2013* (WEO 2013), that new unconventional sources of oil and gas have already had a significant impact on international energy prices, with European industrial firms paying more than twice that of their US counterparts for electricity and three times as much for natural gas. Although the cost gap is expected to narrow in the coming decades, it will not disappear, and Europe's share of the international market in energy-intensive goods is expected to fall by 10% by 2035. At the same time the US, China, the Middle East and India will see growth.

"WEO 2013 highlights the importance of taking advantage of potential efficiency

gains to remain competitiveness," said Maria van der Hoeven, executive director at the IEA. "Efficiency has become a focal point of energy policies, but two-thirds of the economic potential for energy efficiency is set to remain untapped in 2035

– unless market barriers like fossil fuel subsidies can be overcome."

The IEA report confirms that in 2012 fossil fuel subsidies increased to \$544 billion worldwide, while support for renewables totalled \$101 billion. The report predicts a rapid expansion in the deployment of renewables in some regions, but says that fossil fuels will still provide 75% of the world's energy in 2035. Carbon emissions from the energy sector, which accounts for two-thirds of global CO₂



output, remain on a "dangerous course", concludes WEO 2103.

"If we stay on the current path, we will not come close to limiting the rise in global temperatures to 2°C," said van der Hoeven.

The report came as energy giant RWE confirmed it was abandoning plans to build one of the world's largest offshore arrays in the Bristol Channel. The firm said a combination of "technical difficulties" and "market conditions" meant that the project was no longer financially viable.

EIA update

iema

Directive moves forward

The European parliament recently agreed amendments to plans to revise the Environmental Impact Assessment (EIA) Directive. The revision process now progresses to three-way discussions between the parliament, the EU council and the European commission. Lithuania included EIA as a key element of its environmental agenda for its six-month presidency of the council.

There appears to be an appetite from those leading the process to rapidly progress an agreed text, but this may be curtailed by significant differences in views on the scale of change that is required. The parliamentary amendments would broaden the revisions proposed by the commission in October 2012, requiring "experts" to conduct the EIA and review the environmental statement. However, the council appears to favour a pragmatic approach that would take EIA a step forward rather than a leap.

IEMA's position statement on the revised Directive (available at lexisurl.com/iema17033) also favours a pragmatic approach, with the aim of

delivering improvements that make EIA more effective and efficient rather than unduly complex.

A concern for IEMA members is that all parties in the three-way European discussions are promoting a late scoping process linked to the submission of the application for consent. Although this change would not stop EIA practitioners delivering early and effective scoping during pre-application, it risks confusing industry and fails to recognise the value of this critical process.

IEMA will continue to track the revisions and update members on progress. The next key deadline is early spring 2014; if the three parties fail to agree a revised text by then IEMA expects the process to be delayed by at least six months due to the European parliamentary elections next May.

Examining NSIP

Martin Broderick (pictured), a leading EIA practitioner and IEMA member, has been appointed by the communities and local government secretary to the authority which examines applications



for nationally significant infrastructure projects (NSIP). He is a member of the panel examining the application for a 430MW combined cycle gas turbine/integrated gasification combined cycle power plant in Humberside (lexisurl.com/iema17034).

Broderick recently presented IEMA webinars on environment management plans and offshore cumulative effects assessment. The latter was also the topic of an article in the April 2013 issue of *the environmentalist* (environmentalstonline.com/cumulative-effects).

Budget cut a challenge to future of Wrap

Defra funding of Wrap is being slashed from £26 million in 2013/14 to £15.5 million in 2014/15, leaving the waste body dependent on support from the devolved administrations and income from its commercial activities.

Resource management minister Dan Rogerson told delegates at Wrap's annual conference that Defra would continue to fund the waste and resources body, but said the environment department could not maintain finance at current levels. "We're reducing the funding to 60% of current levels. This is still a significant sum," he said. Rogerson said that, in future, Wrap would focus its expertise on reducing food waste, improving the sustainability of textiles and electrical products, and in supporting local authorities and the recycling and reuse sectors.

He also told delegates that from next spring Defra would withdraw from some of the areas where it now does proactive policy work, including energy-from-waste, commercial and industrial waste, and

construction and demolition waste. "It's not that I don't think that these are important, but others, such as businesses, are already doing work and are best placed to act," he claimed.

Wrap's chief executive Liz Goodwin told the conference that the 40% cut in Defra funding leaves the waste and resources body with its biggest challenge, but she said it was already working to diversify its income base. "With support from our partners and a willingness to consider different and new ways of working I believe Wrap will continue to thrive," she said.

In July, Wrap announced that it had secured €3.1 million from the EU for its REBus – resource efficient business



CEO Liz Goodwin believes Wrap will continue to thrive

models – project, which will enable it to deliver 10 pilots with major organisations and a further 20 with small businesses in the UK and in the Netherlands.

Goodwin pledged that, despite the funding reduction, Wrap would not become purely a consultancy. "We acknowledge a need to be more commercial in approach and outlook, but not to be a consultancy, let me be clear about that," she said.

From environmentalisonline.com...

Carbon costs

Calculations by the Treasury and the business department reveal that the companies responsible for constructing and maintaining the UK's infrastructure could save a total of £1.46 billion each year by 2050 through carbon-efficiency measures. The figure is included in a new joint industry-government report. It concludes that the UK's infrastructure, which accounts for more than half of the country's carbon emissions, needs to maximise the use of existing assets, ensure new assets use low-carbon materials and embrace new, more resource-efficient construction technologies. "Reducing carbon reduces costs," said Lord Deighton, commercial secretary to the Treasury. "It is part and parcel of saving materials, reducing energy demand and delivering operational efficiencies." Senior management buy-in is also crucial to low-carbon infrastructure, advises the report. environmentalisonline.com/ICR

Marine zones

Marine habitats close to Beachy Head, the Cumbrian coast and Torbay are among the first sites to be designated as marine conservation zones (MCZs) in the UK. They will now be protected from activities, such as fishing and marine energy schemes, that could harm biodiversity or ecosystems. The 27 MCZs cover 8,000km² of offshore and 2,000km² of inshore waters and contain rare, threatened and representative native habitats and species, such as seagrass beds, the spiny lobster and the long-snouted seahorse. Each site is protected under a designation order that came into force on 12 December and lists the specific features and species protected. Restrictions on activities at the sites will vary depending on local needs and the features that must be protected. Temporary reduction of species numbers will be disregarded if the population is resilient enough to recover. environmentalisonline.com/MCZs

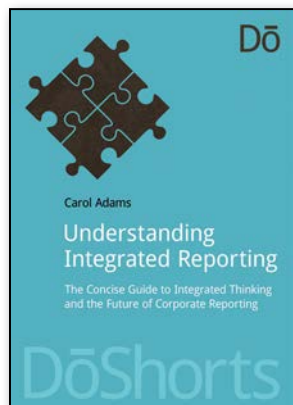
Resource loop

Climate change, increased competition for materials and tighter environmental regulation mean that UK manufacturers must shift to a circular-economy approach in the coming decades, according to a new government report. Looking ahead to what the manufacturing sector will look like in 2050, the research concludes that environmental sustainability will have a profound effect on production processes. To remain competitive, firms will have to use fewer resources, design products specifically for reuse and ensure that materials are constantly recovered and recycled. Legislators and consumers will also be putting manufacturers under greater pressure to reduce their greenhouse-gas emissions and lower the environmental footprint of their products. With natural resources likely to be given a financial value, businesses will be forced to better account for their environmental impacts. environmentalisonline.com/Man2050

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Recent prosecutions

Escaping dust costs waste business £73,000

Swindon-based Averies Recycling has been fined £11,000 and ordered to pay £60,000 costs after dust escaping from an unlicensed site “blighted” neighbouring businesses. Company officer Lee Averies was also fined £2,000 for allowing the offence to be committed and for neglecting to ensure appropriate measures were in place or followed to control dust.

Bristol Crown Court was told that dust from the company’s waste transfer station at the Marshgate Industrial Estate in Swindon settled on cars outside nearby business premises, causing a nuisance and affecting staff and customers’ quality of life, and contributing to one company having to replace air filtration equipment.

In addition to the financial penalties imposed on the company and Lee Averies, the company has signed a memorandum of agreement (MoA) with the Environment Agency, committing itself to a series of improvement measures at the Marshgate facility and a second site, 3.5 miles away in Brindley Close. Under the MoA, the company must update its environment management system, as well as its dust and odour management plans. It has also agreed to construct a building at the Marshgate site to enclose the waste operations and prevent dust escaping.

In sentencing the firm, Judge Mercer said its failure to conduct activities properly had a “considerable impact” on the life of its neighbours and may have affected a nearby brook. He said the MoA should ensure the problems do not recur, but warned that if they do and the company is prosecuted again, the penalties would be harsher.

“Waste businesses must ensure that as operators they have a permit and that their activities do not cause nuisance by allowing, in this case, dust to repeatedly escape from their premises, thereby risking pollution of the environment, as well as disrupting the working lives of surrounding businesses and their employees,” commented agency officer Glen Browne.

Community order for waste offences

Glasgow Sheriff Court has ordered a company director to undertake 135 hours of unpaid work in the community for a series of waste offences.

The penalty was imposed on John Baird, director at South Lanarkshire construction company Oaktay, after he pleaded guilty to illegally disposing of controlled waste. The court heard that construction waste, including soils, timber, plastics, aggregate, gloves, glass, brick and fencing, was dumped on land adjacent to a new building being constructed by Oaktay. The Scottish Environment Protection Agency (Sepa) sent Baird a notice to remove the waste within 21 days, but he failed to meet the regulator’s deadline.

Commenting on the case, Sepa officer Ed Turner said that Baird had been the recipient of a final warning letter, as well as having verbal discussions with agency officers in person and over the phone. “He was made aware of his obligations and was given ample time to remove the waste. However, he had shown no inclination to work with us,” confirmed Turner.

£67,000 penalty for chemical spill

Polluting a tributary of a river in Essex with an agricultural chemical has cost a farming business more than £67,000.

Berwick Hall Farm Limited was fined £34,000 and ordered to pay costs of £32,997, as well as a victim surcharge of £120, after a tractor pulling a sprayer of agricultural chemicals tipped while crossing a badly constructed bridge and emptied about 5,000 litres of pesticide into Toppesfield Brook. The pollution killed more than 15,000 fish and prevented Anglian Water from taking water from the River Colne to fill a local reservoir for 27 days. Dams were built to contain the pollution, but biologists found macro invertebrates either dead or dying up to 15km downstream.

“This incident had a catastrophic impact on fish and aquatic life, and affected drinking water supplies. The damage, combined with the fine and the huge costs incurred by the farm’s insurers, should act as a sobering reminder to all pesticide users of the acute and toxic nature of the chemicals they use,” said Environment Agency officer Peter Cooke.

Case law

Identical development ensures EIA compliance

In *Gibson v Harrow LBC and Parish of St George Headstone* [2013]

EWHC 3449, the High Court upheld planning permission for a housing development, despite the failure by the local authority to screen it.

In *Gibson*, four separate planning applications were made for a housing development; three were refused, but the fourth was granted permission. Although permission was refused for the third application, it had undergone an environmental impact assessment (EIA) screening assessment and it was declared that the development did not require an EIA. The fourth application was for an identical development, but without a previously identified defect in the planning obligation submitted with the application. The decision to grant permission was challenged on two main grounds: failure to screen the application; and failure to register the screening direction.










Reg 7 of the EIA Regulations (read together with reg 5) says a screening assessment should be carried out to determine whether an EIA is required. Although the fourth application for planning permission was new, it related to a development which, in its physical dimensions, characteristics and impact on the environment, was identical to the third application. Therefore, there was no obligation on the authority to carry out a further screening assessment.

Reg 23(1) requires a copy of a screening opinion to be placed on the planning register. The authority admitted it had failed to comply with this obligation. The court granted relief in respect of this breach because the failure to place the opinion on the register did not affect the decision to grant planning permission.

Jen Hawkins

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New regulations

In force	Subject	Details
9 Sep 2013 	Water	EU Directive 2013/39/EU amends 2000/60/EC (the Water Framework Directive) and 2008/105/EC (the directive on environmental quality standards, also known as the Priority Substances Directive) as regards priority substances in water policy. Member states must transpose 2013/39/EU into domestic law by 15 September 2015. lexisurl.com/iema16521
11 Sep 2013 	Ecodesign	European Commission Regulation 801/2013 amends Regulation 1275/2008 with regard to eco-design requirements for standby, off-mode electric power consumption of electrical and electronic household and office equipment; 801/2013 also amends Regulation 642/2009 with regard to eco-design requirements for televisions. lexisurl.com/iema16522
21 Sep 2013 	Water	The Water Environment and Water Services (Scotland) Act 2003 (Commencement No 9) Order 2013 brings into force section 23 of the 2003 Act empowering Scottish ministers to make regulations to fix charges for the provision of water services. lexisurl.com/iema16526
24 Sep 2013 	Energy	The Renewable Heat Incentive Scheme (Amendment) (No 2) Regulations 2013 amend the 2011 Regulations, introducing new requirements relating to emissions from plant generating heat from solid biomass; new metering provisions; and making various incidental and miscellaneous amendments. lexisurl.com/iema16683
30 Sep 2013 	Packaging	The Packaging (Essential Requirements) (Amendment) Regulations 2013 amend the 2003 Regulations. Specifically they implement art 1 and the annex to EU Directive 2013/2/EU on packaging and packaging waste, and amend the definition of packaging. lexisurl.com/iema16528
1 Oct 2013 	Planning	The Town and Country Planning (Fees for Applications, Deemed Applications, Requests and Site Visits) (England) (Amendment) Regulations 2013 amend the 2012 Regulations, inserting, for example, a new regulation (2A), which sets out how the fee for pre-application advice will be calculated. The Enterprise and Regulatory Reform Act 2013 (Abolition of Conservation Area Consent) (Consequential and Saving Provisions) (England) Order 2013 amends sections 74 and 75 of the Planning (Listed Buildings and Conservation Areas) Act 1990. The Town and Country Planning General (Amendment) (England) Regulations 2013 amend the 1992 Regulations, making provision for the secretary of state to determine applications for planning permission made by a local planning authority for the development of land relating solely to the demolition of an unlisted building in a conservation area. lexisurl.com/iema16523 ; lexisurl.com/iema16524 ; lexisurl.com/iema16525
1 Oct 2013 	GHG reporting	The Companies Act 2006 (Strategic Report and Directors' Report) Regulations 2013 amend the Large and Medium-Sized Companies and Groups (Accounts and Reports) Regulations 2008 to require quoted companies to make certain disclosures regarding greenhouse-gas emissions. lexisurl.com/iema16244
1 Oct 2013 	Built environment	The Building (Miscellaneous Amendments) (Scotland) Regulations 2013 amend the Building (Scotland) Regulations 2004, the Building (Procedure) (Scotland) Regulations 2004 and Building (Forms) (Scotland) Regulations 2005. lexisurl.com/iema15531
23 Oct 2013 	Hazardous substances	European Commission Regulation 944/2013 amends Regulation 1272/2008 on classification, labelling and packaging of substances and mixtures. Specifically, 944/2013 amends the two lists of harmonised classification and labelling of hazardous substances in annex VI of 1272/2008 to include updated classifications for substances already subject to harmonised classification and to include new harmonised classifications. Regulation 944/2013 applies from 1 December 2014 for substances, and 1 June 2015 for mixtures. European Commission Regulation 945/2013 approves cypermethrin as an existing active substance for use in biocidal products for product-type 8 – wood preservatives. lexisurl.com/iema16688 ; lexisurl.com/iema16689

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New regulations

In force	Subject	Details
25 Oct 2013 	Environment protection	The Nitrate Pollution Prevention (Wales) Regulations 2013 replace and revoke the 2008 Regulations, which controlled the application of nitrogen fertiliser in nitrate sensitive areas. Changes include the designation of nitrate vulnerable zones (reg 7). lexisurl.com/iema16685
1 Nov 2013 	Ecolabelling	European Commission amending decision 2007/742/EC prolongs the validity of the ecological criteria for the award of the EU ecolabel to electrically-driven, gas-driven or gas-absorption heat pumps until 31 October 2014. lexisurl.com/iema17031
7 Nov 2013 	Finance	The Enterprise and Regulatory Reform (Designation of the UK Green Investment Bank) Order 2013 designates the UK Green Investment Bank for the purposes of sections 3 to 6 of the Enterprise and Regulatory Reform Act 2013. lexisurl.com/iema16975
8 Nov 2013 	Planning	The Town and Country Planning (Marine Fish Farming) (Scotland) Regulations 2013 replace and revoke the 2007 Regulations. lexisurl.com/iema16682
18 Nov 2013 	Environment protection	The Nitrate Pollution Prevention (Designation and Miscellaneous Amendments) Regulations 2013 amend the 2008 Regulations relating to nitrate vulnerable zones in England. lexisurl.com/iema16961
25 Nov 2013 	Energy	The Carbon Capture Readiness (Electricity Generating Stations) Regulations 2013 implement art 36 of EU Directive 2010/75/EU on industrial emissions. The Regulations relate to the construction of combustion plants with a rated electrical output of 300MW or more and require appropriate ministers to determine prior to granting consent whether certain conditions are met relating to the feasibility of carbon capture and storage. lexisurl.com/iema16963
25 Nov 2013 	Hazardous substances	European Commission Regulation 1088/2013 amends 1005/2009 on applying for import and export licences of products and equipment containing or relying on halons for critical uses in aircraft. 1088/2013 simplifies the process to allow the issue of general licences. lexisurl.com/iema16959
30 Nov 2013 	Waste	The Controlled Waste and Duty of Care Regulations (Northern Ireland) 2013 revoke and replace the Controlled Waste Regulations (Northern Ireland) 2002, which classify waste as household, commercial or industrial waste for the purposes of Part 2 of the Waste and Contaminated Land (Northern Ireland) Order 1997. The Waste (Amendment) Regulations (Northern Ireland) 2013 revoke regs 4, 5 and 6 of the 2011 Regulations. They also correct errors in several regulations, including the 2011 Regulations, the Controlled Waste (Duty of Care) Regulations (Northern Ireland) 2002 and the Pollution Prevention and Control Regulations (Northern Ireland) 2003. lexisurl.com/iema16965 ; lexisurl.com/iema16962
1 Dec 2013 	Energy	The Electricity Generating Stations (Applications for Variation of Consent) (Scotland) Regulations 2013 relate to applications for electricity generating stations granted under section 36 of the Electricity Act 1989. Reg 5 applies the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000. lexisurl.com/iema16964
1 Dec 2013 	Environment protection	The Environmental Noise, Site Waste Management Plans and Spreadable Fats etc. (Revocations and Amendments) Regulations 2013 revoke the Environmental Noise (Identification of Noise Sources) (England) Regulations 2007, the Environmental Noise (Identification of Noise Sources) (England) (Amendment) Regulations 2007 and the Site Waste Management Plans Regulations 2008. lexisurl.com/iema16974
15 Dec 2013 	Pollution	The Pollution Prevention and Control (Designation of Energy Efficiency Directive) (Scotland) Order 2013 designates EU Directive 2012/27/EU on energy efficiency as a relevant directive for the purposes of paragraph 20 of Schedule 1 to the Pollution Prevention and Control Act 1999. lexisurl.com/iema16980

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Latest consultations




24 Dec 2013

Electricity market reform

 Decc is consulting on an implementation package for the planned electricity market reform, including how the proposed contracts for difference and the capacity market mechanisms will operate. Both mechanisms are designed to encourage investment in the low-carbon energy sector over the next 10 years. Decc says the consultation is aimed at electricity generators, suppliers and consumers; network operators; the industry's regulator, Ofgem; environment and energy efficiency organisations; electricity service companies; the construction sector; and financial institutions. lexisurl.com/iema16690

24 Dec 2013


Risk assessment

 The Environment Agency is proposing to make changes to seven of the 11 supporting annexes in its H1 risk assessment framework. The annexes contain guidance on carrying out risk assessments for activities listed in the Environmental Permitting Regulations 2010. Changes proposed include: combining annexes D and E to present one screening methodology for all surface water discharges; redefining the purpose of annex K to enable

consideration of derogations from achievable emission limits presented in the best available techniques conclusions document under the Industrial Emissions Directive; and the introduction of a point-source odour screening tool into annex F. lexisurl.com/iema16995

10 Jan 2013

Natural Resources Wales

 Stakeholders have been invited to submit their views on whether the proposals set out in a consultation document provide the right strategic direction for Natural Resources Wales (NRW) over the next three years. Among other things, the consultation considers: what the NRW is and what it does; its finances; and how to deliver its priorities. Stakeholders' views will help inform the NRW's first corporate plan, which will be published in March 2014. lexisurl.com/iema16996

15 Jan 2014

EU energy policy

  The review of the balance of power between UK and EU policymakers is now examining energy. Decc is leading this review and is seeking evidence from stakeholders on how EU competences – the power for the bloc to act in particular areas conferred on it by EU treaties –

impact energy activities and operations in the UK. The review poses questions including: Has the exercise of certain competences by the EU helped or hampered UK interests? Has the European Commission developed internally coherent policies? To what extent have actions at EU level been successful and in what areas might UK energy interests be better served at the national, EU or international level? What future challenges does the EU face and how best might these be addressed to also benefit the UK? lexisurl.com/iema16992

15 Jan 2014

Environment Bill

 The Welsh government has issued a consultation setting out its proposals for an Environment Bill, which aims to ensure the right legislative framework is in place to manage Wales' natural resources in a joined-up way. Proposals include: ensuring existing statutory frameworks for natural resource planning and management work together; Natural Resources Wales has the legislative tools to enable it to implement integrated natural resource management; and action to reduce waste and ensure the country's natural resources are used to best effect. lexisurl.com/iema16997

New guidance

Contaminated land

The Scottish Environment Protection Agency (Sepa) has published a new 13 question checklist on the types of raw data that must be included in submissions relating to the site characterisation of land contamination in support of the interpretation of risks to the water environment (lexisurl.com/iema16697). Sepa says that data is required by the owner/developer to undertake adequate site characterisation and risk assessments, and is used by the regulator to see if the assessments are satisfactory. It warns that if the information is absent, it cannot review the submission and owners/developers will be required to resubmit the data in the correct format.

Green infrastructure

Victoria Business Improvement District, the body responsible for managing and promoting London's Victoria area and the first UK business improvement district (BID) to conduct its own green infrastructure audit, has published a best practice guide to green infrastructure auditing (lexisurl.com/iema16999). Described as a blueprint for greening and enhancing urban areas, the guide is designed to help other BIDs and urban planners transform towns and cities. Commissioned by Victoria BID and written by Arup with support by Natural England, the guide provides in-depth information on creating a green infrastructure audit.

Building regulation

Information on requirements to achieve fabric energy efficiency targets have been included in amendments to the approved documents and compliance guides for energy efficiency, under part L of the Building Regulations, published by the communities and local government department (lexisurl.com/iema17000). The guidance aims to assist those who are building domestic and non-domestic dwellings to comply with revised building regulations which come into force on 6 April 2014.



Certifying compliance

John Barwise on whether third-party audits of permitted sites can guarantee legal compliance

Environment management systems (EMS) are increasingly popular as a way of reducing an organisation's environmental impacts and improving business performance. But does implementing an EMS help to ensure legal compliance? Environment regulators currently carry out onsite inspections and monitoring to ensure permitted operations are complying with the conditions of their permits. This is costly in terms of time and money.

The Environment Agency's operator risk appraisal tool (OPRA) takes the presence of an EMS into account when assessing risk at the sites it regulates. Since 2011, the agency has been piloting an approach that goes a step further. Its environmental permitting regulations assurance scheme (EPRAS) consists of the operator confirming annually that the site has complied with its permits (or details of any breaches) and a third-party audit against a specially developed compliance management checking tool, called EMS+.

The approach is being piloted at several sites across five industry sectors. Evidence from the trials, along with feedback from participants, will be used to determine whether such a scheme should be more widely available, potentially from April 2015. EPRAS is the latest in a long line of projects exploring ways of aligning EMS implementation with regulatory compliance, with the aim of cutting administration costs and lowering inspection fees. But can it work?

Frame of reference

An EMS provides an effective mechanism for controlling environmental impacts, reducing risk, complying with regulations and improving environmental performance. The most widely used, certifiable EMS standard is ISO 14001. At the last count, in 2012, more than 285,000 14001 certificates had been issued worldwide, about 10,000 of which are in the UK. The EU standard, EMAS (eco-management and audit system), meanwhile has more than 4,500 registered organisations across 8,000 sites worldwide.

Both 14001 and EMAS require organisations to demonstrate continual improvement in environmental performance, but only EMAS requires full compliance

with applicable legislation, as a condition of EMS registration. 14001 requires a commitment to comply with applicable legislation, but full compliance is not a certification requirement.

There have been numerous research studies to see whether a certified EMS can be used as a mechanism for improving regulatory compliance. In 2000, the agency introduced its EMS regulation project, in partnership with certification bodies and businesses. The aim was to assess whether regulators could rely on conformance with 14001 or EMAS as an indicator of regulatory compliance. While the study confirmed that environment management systems did bring benefits in terms of environmental improvements, it was inconclusive on whether certification improved compliance.

In 2002, a three-year study was launched examining the potential benefits of linking systems with regulation across a range of European businesses. The incentive was to find ways of reducing fees for participating organisations by establishing a partnership approach to inspection between regulators and certifiers. The results show strong evidence that an EMS certified by an accredited certification body improves environment management activities and results in higher detection rates of non-compliance. However, evidence of legal compliance from the sample groups showed mixed results across different regions.

An *ENDS* survey carried out jointly with IEMA and the UK's accreditation body, UKAS, in 2006, discovered growing confidence in EMS as a useful tool for detecting non-compliance and reducing environmental risk, but evidence of improving compliance was again inconclusive. Interestingly, the results revealed an increased level of confidence in the credibility of certification bodies compared with an earlier survey.

These studies indicate that a certified EMS can lead to continual improvement in performance and raise awareness of statutory responsibilities, but that it does not guarantee legal compliance.

Third-party certification of 14001 in the UK is undertaken by certification bodies, many of which are accredited by UKAS. The auditor's primary responsibility is to determine whether an organisation's



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EMS is functioning properly and is capable of consistently achieving the organisation's stated environment policy and objectives.

Guidance for accredited certification bodies on compliance auditing (EA-7/04) states that auditors are required to assess the conformity of an EMS to the requirements of 14001, but not to make a direct evaluation of legal compliance. The guidance states that it is the role of regulators and not auditors to conduct legal compliance audits and inspections. It adds: "It should be stressed that certification body auditors are not inspectors of the environmental regulator. They should not provide 'statements' or 'declarations' of legal compliance." The guide acknowledges, however, that an organisation's compliance with applicable legal requirements is of concern to regulators and other interested parties, and that while certification of an EMS is not a guarantee of legal compliance, it is an efficient tool to achieve and maintain compliance.

Sniffing out change

Against this background, the UK's environment regulators have been exploring various ways of linking third-party EMS certification audits with inspection regimes that will benefit all parties.

EMS certification aligned to regulatory inspections opens up the possibility of compliance auditing by proxy. Certified organisations would benefit from having fewer inspections and lower compliance fees, and there would be more business opportunities for EMS certification bodies. Environment agencies would be able to focus their attention on those organisations whose activities pose the greatest risk to the environment and require more complex control. However, a convergence of auditing and inspection would require a major realignment of the auditing procedures used by UKAS-accredited certification bodies to match them with regulatory inspection regimes.

Sustainability analysts Sniffer recently led a research project on behalf of UK regulators to assess whether third-party EMS certification audits can provide assurance of legal compliance. The scope of the research was extensive, but the main objectives were to:

- assess existing auditing processes and the consistency of approach, and make recommendations for improvement;
- identify what opportunities there are for

- maximising synergies between regulators and certification bodies; and
- develop a position statement on environment management systems to help the regulators refine their approach to third-party certification bodies.

The research involved all the key players in EMS certification, including face-to-face interviews with representatives from certification bodies and regulators, discussions with UKAS, open debates on LinkedIn and online surveys of environment managers, auditors and other stakeholders. Most of the participants indicated a need for better communication and cooperation between certification bodies and agency inspectors. Issues were also raised about the significant differences between EMS auditing and regulatory inspection, and that environment agencies should provide clearer guidelines on legal requirements and inspection regimes.

The research indicated that certification bodies have differing views on compliance auditing, with some bodies keen to deliver assurance of legal compliance, while others were reluctant to take on this role – in part, because of legally binding confidentiality agreements with their clients. There was also some concern that, while certification bodies were responsive to the UKAS accreditation process, there is a lack of evidence regarding the quality or effectiveness of that process.

The final Sniffer report (lexisurl.com/iema16938) contains more than 30 recommendations that the researchers suggest are necessary to provide assurance that EMS certification audits can deliver consistent legal compliance. The report concludes that, at present, audits of legal requirements and compliance evaluation are generally not sufficiently consistent to be used as a proxy for regulatory inspection.

The findings will be used to establish closer cooperation between regulators, UKAS and certification bodies, and, ultimately, to strengthen alignment between UKAS-accredited certification and legal compliance. Ruth Wolstenholme, managing director at Sniffer, says:



“The UK environment agencies intend to use the report’s findings in further work with UKAS, IEMA and other bodies to address the issues identified, implement the recommendations and improve correlation between accreditation and regulatory compliance.”

The Sniffer report and its recommendations are mainly based on the current version of 14001, but the authors suggest there may be further opportunities to strengthen the links between certification and legal compliance with the proposed revision of the standard, which is expected to be published in 2015. IEMA has been pushing for the revised standard to tighten requirements on demonstrating legal compliance and performance improvement.

Martin Baxter, executive director of policy at the Institute and the lead adviser to the UK delegation on the revision, comments: “The proposed changes to the standard emphasise the need for organisations, through their EMS, to be able to demonstrate that they are actively managing compliance and know their compliance status.” He also says that the communication requirements related to compliance performance have been strengthened, so there is greater focus on internal assurance of performance data before it gets reported to regulators. “In combination, these changes would provide a stronger basis for regulators more explicitly recognising 14001 in their regulatory approach,” explains Baxter.

Cutting red tape

The Environment Agency certainly takes the view that an effective EMS has the potential to improve regulatory compliance and is exploring new ways of linking the environmental permitting regime with certified systems. OPRA already provides an EMS-type framework for managing and assessing environmental risks. It includes compliance rating attributes, which enable organisations to determine whether their

operations fall within the high, medium or low risk profiles. And, working in partnership with Assured Food Standards, the organisation that manages the Red Tractor mark, certification bodies and others, the agency launched the pig and poultry assurance scheme (PPAS) in 2010.

The scheme aims to cut “red tape” and reduce costs for farmers, and focuses on pig and poultry producers who achieve a high standard of compliance under the Environmental Permitting Regulations 2010 (EPR). As part of the scheme, the agency trains auditors to carry out regulatory inspections, at the same time as undertaking certification audits.

The PPAS goes beyond regulatory compliance to cover the management of energy, water, waste and other resources, leading to greater business efficiencies and fewer environmental risks. The 800 firms that have joined the scheme complete fewer compliance audits than other producers, saving them £880 a year each in inspection fees, according to the agency.

The EPRAS aims to see whether a similar assurance scheme can work in other industries. The voluntary pilot scheme ran from October 2011 to June 2013 in 30 of the best performing sites in five key sectors – cement and minerals; waste; chemicals; metals; and food and drink. EPRAS is similar to the pig and poultry assurance scheme and can be used in conjunction with an auditor’s EMS certification work. It has two main components: an annual compliance statement (ACS), and an independent audit. The ACS, which is signed off and sent to the agency by a senior manager at the operator, confirms that the site has complied with its permit and identifies whether any conditions have been breached.

To support the businesses taking part, the agency has developed a compliance checking spreadsheet (EMS+), which contains background information on compliance auditing and a series of questions that the site operator must complete. The emphasis is on



environment management and there are priority questions on “management and operations”, “resource efficiency” and “performance indicators”, as well as on legal compliance.

Once the internal audit is complete, an approved auditor carries out an independent permit compliance EMS audit. They assess the operator’s response to selected questions and ensure supporting evidence is in place. Auditors grade their assessment using an options feature in the EMS+ spreadsheet.

In practice

Lafarge Tarmac, a 14001-certified construction materials and services firm, took part in the trials at its Cauldon cement plant in Staffordshire. Those involved included the agency inspector, the company’s certification body, LRQA, and staff from Lafarge.

LRQA undertook a routine 14001 assessment as part of phase I of the project and reviewed the findings against assessment criteria set by the agency. Phase II of the project was conducted on themes agreed by the agency and LRQA, with the aim of improving self-assessment in line with the 14001-surveillance cycle. Audit reports were completed to the satisfaction of the Environment Agency for both phases, along with a declaration of compliance signed by the managing director of the cement and lime business.

Comments from Lafarge suggest that, although the pilot was compatible with its 14001 certified EMS, the process was lengthy, time consuming and not really appropriate for the firm’s extensive monitoring and regulatory regime. David Shenton, senior environment manager at Lafarge Tarmac, was, however, cautiously optimistic that EPRAS can work in some circumstances. “Overall, the trial wasn’t entirely appropriate for the complex range of operations at Lafarge and did not achieve the desired outcome. It can work for some processes and industries, particularly those of a

simpler nature,” he says. “However, for others to gain the best from this process, it is important that difficult questions are addressed, such as why does an operator have an EMS and what is their business ethic towards environmental performance? These aspects need to be fully understood.”

Wider rollout?

The EPRAS trials have now ended and the results are being reviewed by the Environment Agency to assess the suitability of an assurance scheme for industry. In its present form, the scheme may not be suitable for all businesses, but there is scope for improvement and many businesses could benefit from aligning EMS certification with regulatory compliance. “The main driver for conducting a trial was to see how we could be a more effective regulator, using information gained through existing audits to assess compliance, and also testing to see where we could reduce the burdens on an operator,” says Stefan Robinson, compliance and enforcement manager at the agency.

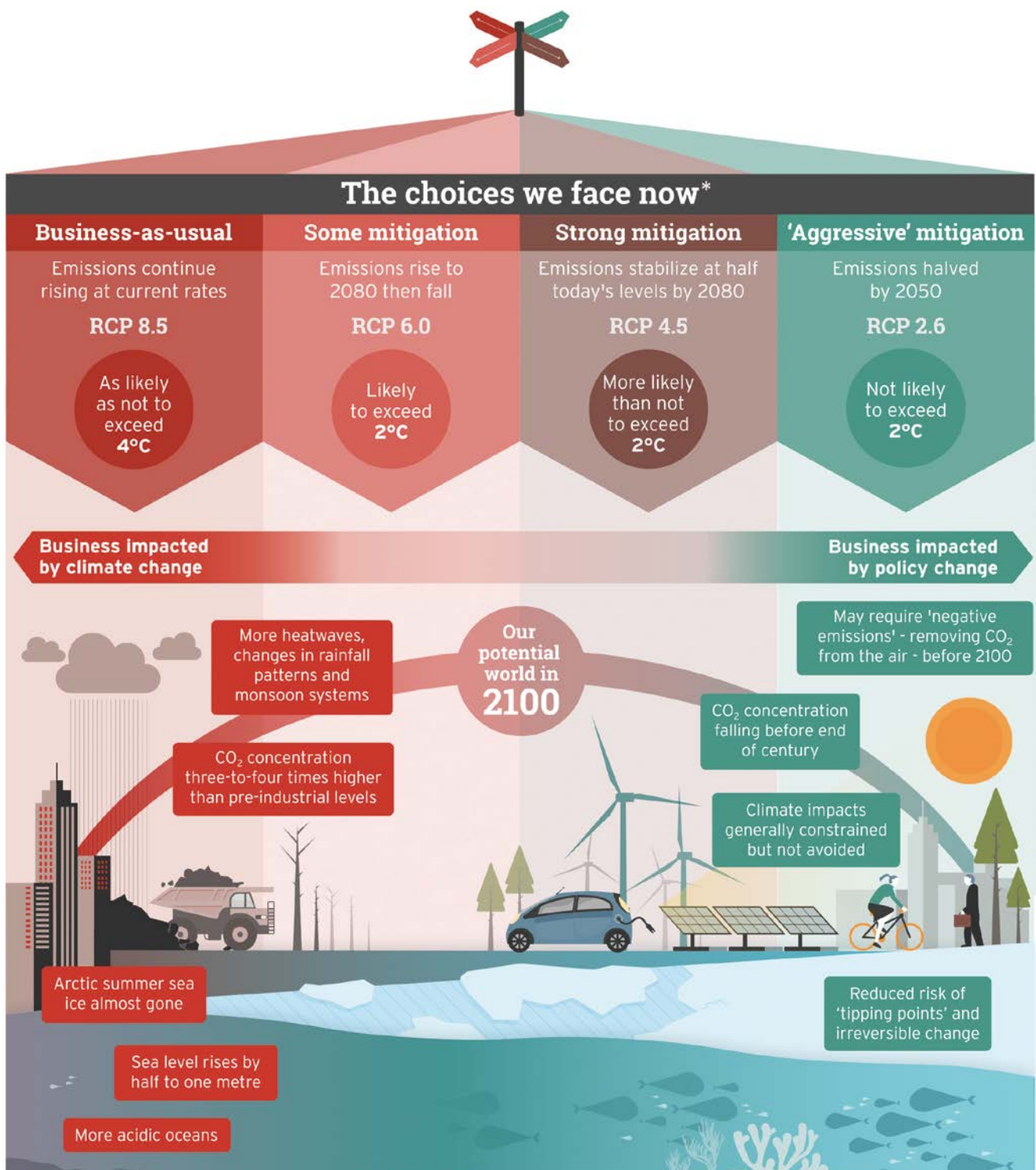
There is a convergence of interests in finding ways of aligning EMS with regulatory compliance. Businesses would benefit from having less bureaucracy and fewer inspections, and certification bodies would see their auditing role enhanced, perhaps benefiting from increased business opportunities as more companies engage in EMS implementation. Meanwhile, regulators would be able to focus their resources on industries that pose the greatest risk to the environment.

All the evidence suggests, however, that more work is needed to improve communications and cooperation between regulators, UKAS and certification bodies if real benefits are to emerge from relying on third-party audits to attest to compliance.

John Barwise, MIEMA CEnv, is a director at environment management and communications consultancy QoL.

Carbon crossroads

The Intergovernmental Panel on Climate Change explores four potential futures, depending upon which policies governments adopt to cut emissions

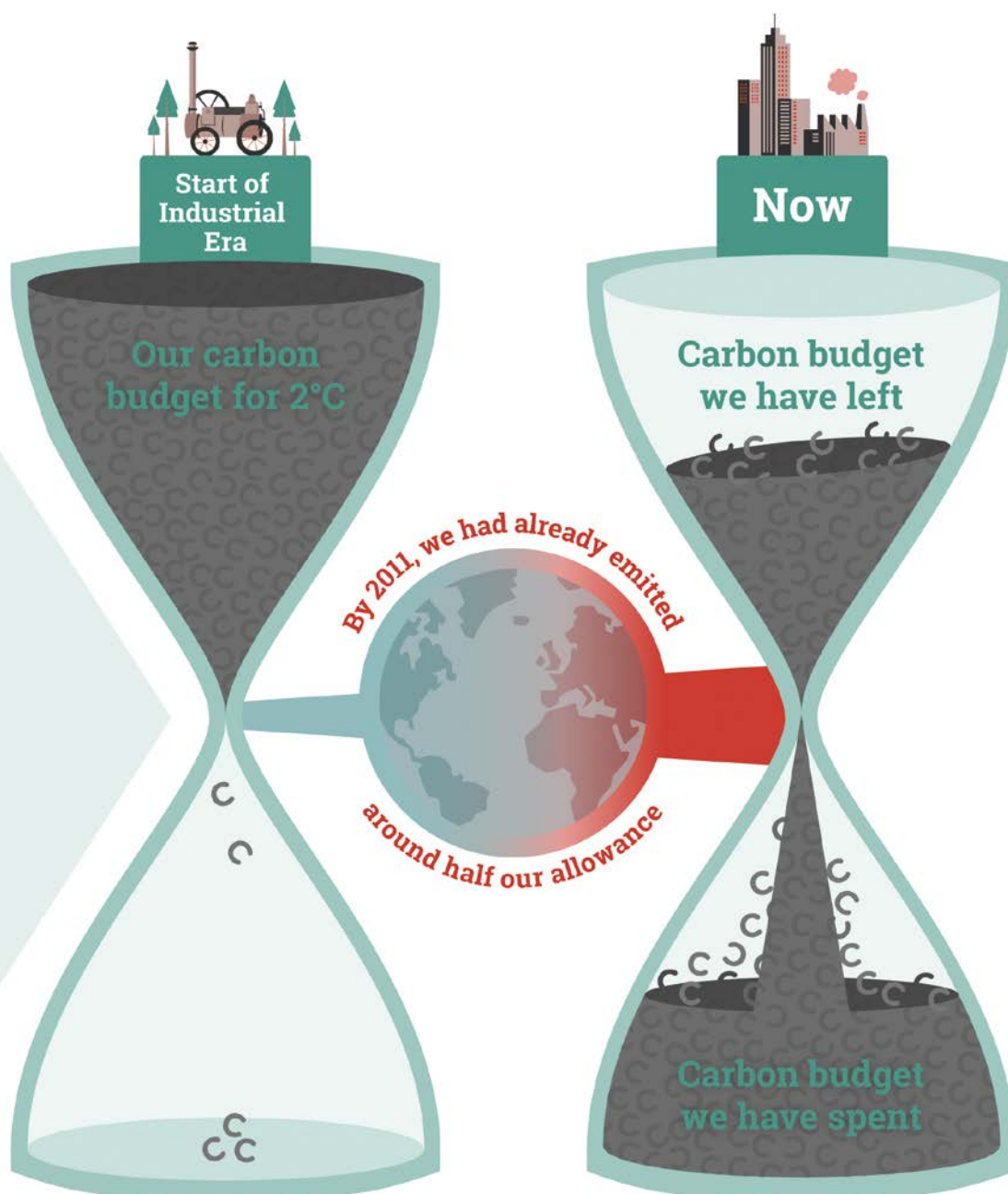


* The four "representative concentration pathway" (RCP) scenarios each project a different amount of carbon to be emitted by 2100 and, as a result, lead to differing levels of human-driven climate change. Climate change will continue after 2100 and elevated temperatures will remain for many centuries after human CO₂ emissions cease.

Material from the IPCC's fifth assessment report, working group 1, published on 27 September 2013.

The pathway to 2°C

Meeting the internationally agreed target of 2°C means spending what remains of our carbon budget wisely*



Unless we follow the 2.6 RCP path we will reach our budget limit between 2050-2070

* To have a better than two-thirds chance of limiting global warming to 2°C above pre-industrial levels, total cumulative CO₂ emissions since the start of the industrial era would need to be limited to 1,000 gigatonnes of carbon. About half of this amount had already been emitted by 2011. The amount of carbon that can be released would be reduced if concentrations of non-CO₂ greenhouse gases continue to rise. Other factors – for example, the unexpected release of the greenhouse gases from permafrost – could further tighten this “carbon budget”.

This graphic is reproduced with kind permission of the European Climate Foundation – europeanclimate.org.

22 Consumption

Christmas tree

2m artificial tree	40kg CO ₂ e
2m real tree	3.5kg CO ₂ e

Tree decorations

160 standard fairy lights	40kg CO ₂ e
160 LED fairy lights	5kg CO ₂ e

Dinner options

1kg turkey	10.9kg CO ₂ e
1kg lamb	39.2kg CO ₂ e

Presents

£435 – 310kg CO ₂ e (total presents bought)
£348 – 230kg CO ₂ e (wanted presents)
(on average we spend £87 on unwanted gifts)

Stuffing ourselves?

Peter Brown investigates the main environmental impacts of Christmas

As an annual festival of overconsumption, Christmas is attracting increased attention for the waste and emissions it produces. The figures are startling; according to a report published by the Stockholm Environment Institute (SEI) unit at the University of York, if Christmas consumption patterns in the UK continued throughout the year, the annual carbon footprint per person would rise from around 12 tonnes of CO₂ equivalent (CO₂e) to 79 tonnes.

At Christmas, we tend to eat more, buy more, travel more and waste more. Christmas is a time when people are very aware of how much they are consuming, so it's also a useful opportunity to promote the carbon reduction message. "You can have a huge positive impact if you bring up a discussion about carbon footprints or if you change some of your own habits at Christmas," says Dr Paul Swift, analyst at the Carbon Trust.

Mike Berners-Lee, author of carbon footprinting handbook *How bad are bananas?*, agrees. "There's loads going on at Christmas that doesn't actually help us have a good time," he argues. "If we recognise that, if we change a few social norms and agree to celebrate Christmas a bit differently, we can have a far better time and help the planet too."

Waste is a major contributor to the Christmas period's high carbon footprint. "The excess around Christmas is the edible and non-edible stuff that people buy and don't use," says Berners-Lee. Huge amounts of paper and high footprint presents are thrown away each year. Likewise, uneaten food ends up in landfill, where it decomposes and releases methane.

Calculating carbon footprints is a notoriously complex process in which both direct and indirect emissions must be taken into account. In the case of the plastic toys in a Christmas stocking, for instance, it's a question of calculating the emissions caused not only by the manufacture, transport and packaging of the toys themselves, but also by the extraction of the oil used to make the plastic. Given these complexities, researchers emphasise that the numbers they provide are realistic estimates rather than definitive figures. So, with that in mind, just how bad is Christmas?

Eat, drink and be merry

First, some good news for those who enjoy a Christmas turkey with all the traditional trimmings; in terms of carbon footprints, you could do a lot worse. Ten million turkeys were consumed in the UK last Christmas, according to Defra, and if you are going

to eat meat then it is one of the lower carbon options. Environmental Working Group, a US think tank, calculates the farm-to-plate carbon footprint per kilogram of turkey as 10.9kg CO₂e, which compares favourably with the 39.2kg CO₂e for lamb, 27kg CO₂e for beef and 12.1kg CO₂e for pork. The disparity is largely accounted for by the fact that cattle and sheep get through more energy-intensive feed and produce more methane than poultry or pigs.

Local and seasonal are the watchwords for low-carbon eating all year round, and the typical ingredients of a Christmas dinner tend to tick these boxes. Brussels sprouts, potatoes, parsnips and carrots are some of the most carbon-efficient vegetables available and are all in season in the UK in December. In a report for Booths Supermarkets, Berners-Lee's Small World Consulting found that potatoes and root vegetables had the lowest carbon footprint of any vegetables: less than 1kg CO₂e per kilogram of food, taking into account the footprint of the farming, processing and transport involved in getting the food on to shelves.

But, while turkey and root vegetables have a relatively small footprint, the same cannot be said of one ubiquitous Christmas condiment. A 2007 study by the University of Manchester estimated the total carbon footprint of a traditional Christmas dinner for eight at 20kg CO₂e and more than half of that came from cranberry sauce, the majority of which is imported from the US. So, cutting back on the cranberry sauce is one way to reduce the carbon footprint of Christmas dinner. Another is to avoid meat altogether. In a 2010 update to its report *The carbon cost of Christmas*, the SEI estimates that diners could save 4kg CO₂e by opting for a meat-free Christmas meal.

But by far the most effective way to reduce the carbon footprint of the food eaten at Christmas is to do just that: eat it. "Very often at Christmas, people make twice as much food as they actually need," explains Swift. "If you're throwing half that food away, that's doubling the carbon footprint."

According to Wrap, food waste in the UK generates 25.7 million tonnes of CO₂e each year, 20 million tonnes of which could be avoided. With the typical UK household spending £150 more than usual on food over the festive period, it's clear that cutting food waste is a big opportunity to reduce carbon footprints.

Spoiled rotten

As with food, a big factor in the carbon impact of Christmas presents is waste. A significant proportion of the gifts given each year are unwanted. SEI reports

that each person in the UK spends an average of £435 on presents each Christmas, which translates into a footprint of 310kg CO₂e. The researchers also found that at least 20% of gifts are unwanted. Take those poorly chosen presents out of the equation and that footprint drops to 230kg CO₂e. Durable, high quality gifts are generally a better bet than plastic toys likely to end up in the bin after a few days' vigorous use.

Since 2008, product development firm IDC has conducted an annual analysis of the carbon footprint of the most popular Christmas presents. In 2012, top sellers included Tefal's Actifry fat fryer (134kg CO₂), the video game *Just dance 4* (52kg CO₂) and the Kindle Fire e-reader (46kg CO₂). The IDC calculation takes into account every stage of the product's lifecycle, from the materials used in manufacture to transport and energy consumption. IDC's analysis also reveals that the overall footprint of the top Christmas gifts decreased by 15% between 2008 and 2012, attributing the change to a combination of manufacturers' efforts to reduce CO₂ emissions and consumers favouring more environmentally friendly products.

Electronic gadgets are perennial big sellers, however, and the computing gaming consoles Playstation 4 and Xbox One are expected to be top of the charts this year. The Carbon Trust estimates the footprint of a games console to be around 80kg CO₂e and, although these machines tend to be getting more energy efficient with each generation, that is offset by the fact that we're buying them in ever greater numbers. If you do intend to buy a console, Swift's advice is to avoid leaving it on standby and run games from the hard drive rather than the discs to save energy.

Alongside presents, of course, wrapping paper and Christmas cards add to festive carbon footprints. Wrapping paper is a major source of waste over Christmas. UK government figures from 2011 revealed that more than 226,800 miles of paper is thrown out each year. The Carbon Trust recommends buying recycled wrapping paper, reusing last year's, or making and decorating your own from scrap paper to help cut carbon emissions. Meanwhile, a Royal Mail survey in 2012 revealed that people in the UK expected to send, on average, 20 Christmas cards. According to the analysis by the SEI, that translates to a carbon footprint of 5kg CO₂e per person, with most of that figure due not to the paper involved, but the delivery van. Recycling cards and envelopes is an obvious way to keep this footprint as low as possible.

Deck the halls

A full-on, extravagant light display that covers your entire house with animated reindeer and snowmen could have a carbon footprint of more than 270kg CO₂, according to the Energy Saving Trust. Most of us will opt for something more modest, but all those little blinking lights still add up: 160 standard fairy light bulbs can generate 40kg CO₂ over the festive period.

The best option is to switch to LED bulbs, which for an equivalent 160 light display have a footprint of just 5kg CO₂. LED bulbs consume around 10% of the energy used by incandescent bulbs and have a lifespan

of 20,000 hours – more than enough for Christmases well into the future. The Energy Saving Trust estimates that if all 26 million UK homes switched from standard to LED fairy lights over the 12 days of Christmas, more than 26,000 tonnes of CO₂ could be saved – assuming we remember to turn them off at night of course. Swift recommends extension cords with foot switches, making it easy to turn off the fairy lights and all other nearby appliances at once.

At the centre of the celebrations is, of course, the Christmas tree, but should you plump for a real tree or an artificial one? Setting aside the question of which looks and smells nicer, the type of Christmas tree we choose and, importantly, how we dispose of it, also has a significant impact on our overall Christmas carbon footprint. The Carbon Trust estimates the footprint of a 2m artificial tree to be 40kg CO₂e, with most of those emissions generated in the production of the PVC film used to make the trees. By contrast, the footprint of a real tree is just 3.5kg CO₂e, as long as it's replanted, burnt, or chipped and spread on the garden. You would need to reuse an artificial tree for at least 11 years to achieve a comparably low impact. However, if your real tree ends up in landfill, its footprint jumps to 16kg CO₂e due to the methane released as it decomposes. Careful disposal is the key. If your council offers kerbside collection, ask them what they do with the trees. Alternatively, many Christmas tree growers will now collect and replant your tree, ready to be used again next year.

Going the extra mile

Christmas is an opportunity for families to get together and for many that invariably means long car journeys. Unsurprisingly, the additional travel miles racked up over the festive period are a major contributor to our overall carbon footprint. The SEI estimates that over the three main days of Christmas, the average person in the UK will drive 363 miles visiting family and friends – five times further than they would travel normally – resulting in an additional footprint of 96kg CO₂e. That scenario changes dramatically if cars are taken out of the picture. If those same miles are covered by train instead, the footprint drops to 36kg CO₂e. Alternatively, if everyone stayed at home and simply phoned each other, the carbon footprint of Christmas travel drops to zero!

With a little forethought, it is possible for most of us to reduce our carbon footprint this Christmas without too much hardship. As Berners-Lee points out, the easiest way to do this is simply to buy less, which has other benefits. "You've got hard-up households getting further into debt because they feel they need to buy expensive stuff," he says. "Everyone would be happier if we didn't feel that pressure." Swift agrees that reducing our Christmas footprint doesn't have to make the festive season less enjoyable. Many of the high-carbon activities associated with Christmas, such as overspending and waste, add nothing to anyone's good cheer, he says. "People talk about decoupling growth from carbon. In this context, it's about decoupling carbon from fun."

Peter Brown is a freelance journalist.



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Institute of Environmental
Management & Assessment

MARY PERSUADED
HER COLLEAGUES TO
SWITCH OFF THE LIGHTS
AND SAVED HER
COMPANY £20,000



**People
like Mary
say:**

I'm an Energy Manager and I've been looking at our wider sustainability strategy to introduce a more holistic approach. It's a shift from thinking about environment as a compliance issue to ensuring that sustainability is at the heart of what we do.

We've been massively creative in our approach and linked our sustainability performance to our bonus scheme. We basically said "Turn off the lights, print on both sides of the paper, take the train and you'll

get a share of the savings." Along with a range of other initiatives – some of which were suggested by staff members – we're making a real difference. It's a brilliant way to raise awareness of how every individual can have a positive impact within a business and can make change happen.

It's definitely working. Just one of the changes I've introduced - re-using the card cores within our product packaging - has saved £30,000!

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Taking the lead role

Sarah-Jayne Russell learns how the Ambassador Theatre Group is bringing the curtain down on its environmental impacts

As thousands of excited families yell “He’s behind you!” at pantomimes this Christmas in the New Alexander Theatre in Birmingham, the Bristol Hippodrome or the Liverpool Empire, little will they know that some of the actors are being lit by low-energy LED lights, that none of their empty ice cream tubs or plastic cups will end up in landfill, or that the toilet they visit in the interval is likely to be water efficient.

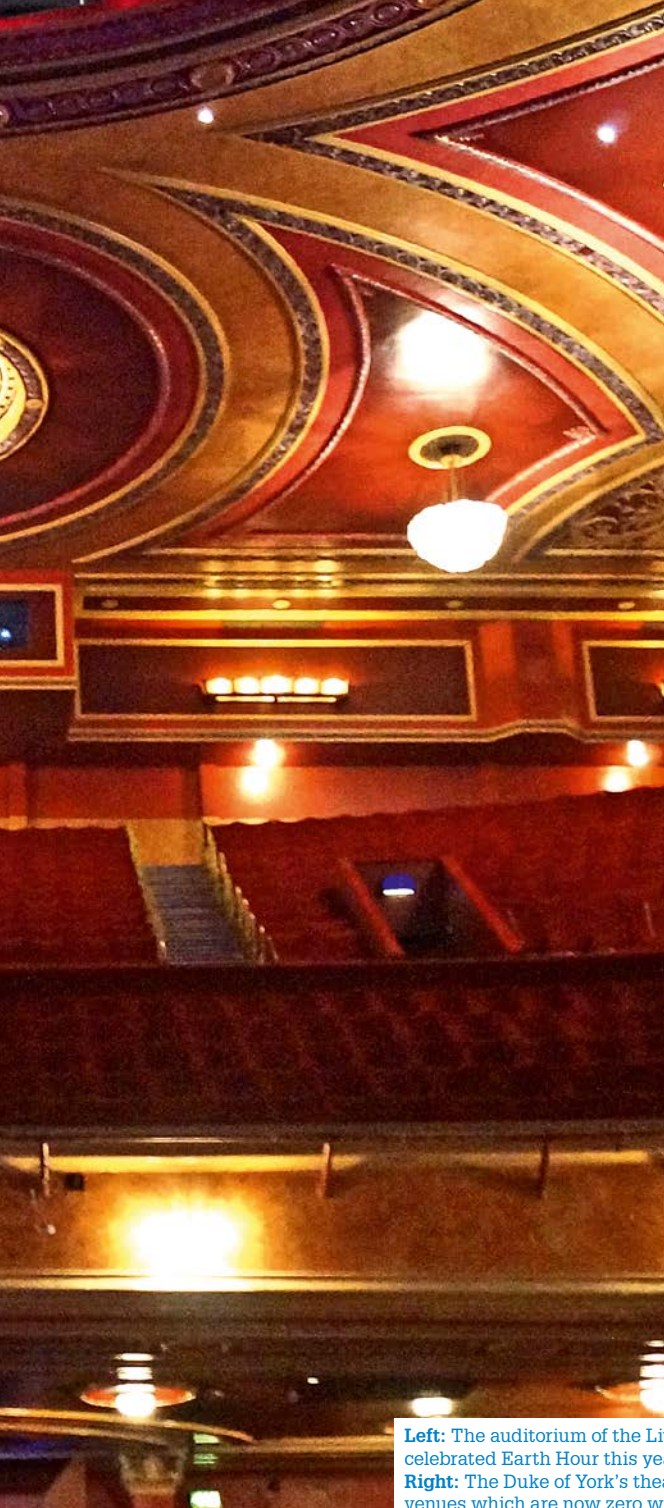
The Ambassador Theatre Group (ATG) is the largest theatre operator in the UK, running 39 venues across the country, including famous West End theatres, such as the Duke of York’s, the Lyceum, the Piccadilly and the Harold Pinter, as well as regional theatres in cities from Torquay to Glasgow. The group employs 3,500 staff, produces hundreds of theatrical shows each year and over the past two years has transformed its approach to dealing with its environmental impacts, cutting overnight energy use by 15% and becoming zero waste to landfill.

The first act

In November 2011, Juliet Hayes was appointed as ATG’s safety and environmental adviser. Hayes had been an ATG theatre manager for 12 years and became increasingly interested in environmental issues. “I’d attended green networking events for years before I started this job,” she remembers. “We talked about what to put on your ‘to do’ list, and I got to the point where I couldn’t do that anymore. I had to start doing something because my list was just getting bigger! Now, in this role, I can make those changes.”

Hayes’ first task was to understand where she needed to start in an organisation with so many sites. “I realised early on, that I’m just one person and I can’t tackle everything in one go,” she says. “It is a case of analysing what the biggest environmental impacts at ATG are, prioritising those and then working my way down the list. If I always remember that, then I’m alright.”

ATG’s most significant impacts are its energy use, specifically electricity, and its waste; in



Left: The auditorium of the Liverpool Empire theatre, which celebrated Earth Hour this year with a minute's darkness.
Right: The Duke of York's theatre in London, one of ATG's 39 venues which are now zero waste to landfill.



2011/2012, its 39 theatrical venues consumed more than 19 million kWh of electricity and generated approximately 2,300 tonnes of waste. Early on, Hayes was given responsibility for ensuring the group was compliant with the carbon reduction commitment (CRC) scheme and for submitting the necessary reports to the Environment Agency – no simple task when you're dealing with data from more than 100 energy meters and a switch of suppliers half way through the year.

"It was an arduous task," acknowledges Hayes. "But it was really rewarding because at the end of it, I had all this valuable data, which gave me a starting point for reducing electricity use across the group and the reason for doing it. We needed to improve our energy efficiency to cut our CRC bill."

By working with ATG's utilities broker, LSI, Hayes began to build up a more accurate and comprehensive system of reporting. "In my first meeting about the CRC, I realised that I was dealing with a lot of estimated data, and that in other cases venues were emailing meter

readings to our accounts team who then passed it on to LSI. There was clearly room for information getting lost," she remembers.

Hayes knew that she had to move to data from actual bills, and during 2012 secured the funding to upgrade meters. Now each of the venues has half-hourly electricity meters and both Hayes and the venue managers receive regular reports. With an accurate handle on how much electricity the group was using, the next challenge was finding a way to cut consumption. "I've worked in the theatre all my life and I knew that daytime use is very hard to control. Show producers hire the venues and they have control of the auditorium; they can have rehearsals five days a week and leave the lights on all day, if they want.

"What we can control is overnight usage and so I set a target to reduce ATG's overnight energy use by 20% in a year, without really knowing if that was possible." After identifying the eight venues that were the highest overnight users, Hayes launched "project



A green army

Each of the 39 venues in the Ambassador Theatre Group (ATG) appoints an environment ambassador, a safety ambassador and an access ambassador. They act as champions on their issue, helping to raise awareness, engage staff and manage initiatives.

Juliet Hayes, safety and environmental adviser at ATG, had been an environment ambassador in her previous role as a theatre manager and knew that re-establishing the roles across the group would help each venue improve its environmental performance. "When I took over responsibility for environment management, I realised I couldn't do it on my own," she says "Our environment ambassadors are my green army."

Ambassadors are volunteers and have to fit in their extra responsibilities, such as promoting environment initiatives, around their day jobs. After re-energising the initiative, Hayes sent all of the green ambassadors on a one-day environment management course. "I needed them to understand how our activities impact the air, land and water on a basic level," she explains. "Now they have a skillset they didn't have before and they know we are willing to invest in them."

Becky Charles (pictured) is a theatre and ticketing administrator at the New Alexandra Theatre in Birmingham. She became the venue's green ambassador two years ago and was named ambassador of the year at ATG's annual safety, environment and technical awards in May. "While it's not always easy, being an ambassador is really interesting and immensely rewarding," she says.

Tackling waste in the theatre's offices was the first initiative Charles got involved in. "We didn't have anything in place for recycling, so I started introducing bins and putting up posters to remind people to be greener," she says. "It's amazing what you can achieve with small changes." She has since started a partnership with a local charity, Birmingham Trees for Life, and has arranged events at the theatre to raise money and awareness with staff and customers.

Since January, when all ATG venues began receiving weekly reports on their electricity consumption, Charles has been monitoring the theatre's electricity use and works with the technical team to investigate any anomalies. "I look to see what the issue might be and if something's happened that shouldn't have, like a light being left on. Then we make sure it doesn't happen again."

This hands-on approach enabled Charles to spot when one of the theatre's meters was faulty and report it to the supplier, potentially preventing months of incorrect bills. She is also working with her technical team to trial LED stage lights at the Birmingham venue. "The technical team has the expertise to suggest ways of cutting our energy use and then when we trial them I monitor the impact on our consumption. It's a real team effort," she says.

blackout". She visited each venue after it closed for the night and carried out a torchlight survey with the venue's manager, its environment ambassador (see panel, above) and a member of the technical team, such as a chief electrician or technical manager, who could answer questions on why any equipment may be left on.

"On our visits, we go into every room in the building, every storeroom, office and backstage area, in the pitch dark. It's the quickest way to see if anything has been left on," she explains. "We make notes and afterwards the venue gets a feedback form with recommendations on what they should be switching off at night."

"Some of the common things left on are fridges and coffee machines," she says. "A large coffee machine



In taking part in Earth Hour, all of ATG's theatres dimmed their external lighting and had staff raising awareness with customers about the event and environmental sustainability.

can use the same amount of power as five oil heaters overnight, so they should definitely be switched off."

Emergency lighting was another challenge, because some venues believed it had to be left on when the building was empty in case of an emergency call out. "What you actually need is a safe way of getting back into the building and turning lights on," says Hayes. "You do a lot of myth busting with an exercise like this, helping people to understand that just because something has always been done a certain way, doesn't mean that it is the right way now."

Hayes approach has worked, with the group cutting overnight electricity use by 15% in 12 months, and cutting its electricity CRC costs by £6,000 year on year. "Project blackout has now become the tagline for energy management," says Hayes. Alongside cutting energy use, the ATG has committed to sourcing its power sustainably, with its electricity coming from 100% renewable, biomass sources through supplier Haven Power.

Waste ye not

In addition to getting to grips with the theatres' energy use, Hayes started to look at what was happening with ATG's waste. "I started looking at it for fun," she said. "I would often find myself by the stage door looking at the bins and I started thinking about where our waste was going. I discovered that we had 12 different waste contractors, providing different levels of service at different costs. Aside from any environmental concerns, it didn't make financial sense."

Hayes told her senior management team that ATG could save money and improve its environmental credentials by moving to a single supplier for the whole group. She was given the go ahead to put the contract out to tender and made a decision early on that the new contractor would not send any waste to landfill. "In my first month, I was sent on the NEBOSH general certificate in environment management course and I had to draw a through image of a landfill dump showing what goes on underneath the ground. I went home that night and dreamt about landfill," she recalls. "I came back from the course and told the senior management

THEATRE



Engaging with Earth Hour

With more than 3,500 employees spread across the country, keeping environment issues at the forefront of people's minds is an important concern for Juliet Hayes, the Ambassador Theatre Group's (ATG) safety and environmental adviser (pictured). "We launched our 'always think green' initiative at our annual awards day in May 2012, which really raised everyone's awareness of environmental issues and how serious ATG was about tackling them, but I knew that we needed to keep doing things to maintain interest," she recalls.

Hayes considered how ATG could participate in Climate Week or Earth Day, but realised both would take a lot of resources, so she focused on Earth Hour – where organisations across the world switch their lights off for an hour. "In London, there's a tradition that when a famous actor passes away, the theatres dim their external lights for two or three minutes as a mark of respect. I thought that we could do that for an hour," she explains.

The idea was approved first by ATG's property director David Blyth, and then won the backing of the group's co-founder and joint CEO Rosemary Squire. "Once you get that level of endorsement, an initiative works," she says. "I sent instructions to the venues telling them that we'd signed up to participate and that there was a press release going out – I didn't really give them a choice!"

In 2013, Earth Hour fell at 8.30pm on Saturday 23 March, and the first challenge Hayes faced was reassuring venues that she wasn't asking them to interrupt shows or turn off all their lights onstage. "I knew that all the box offices would be closed, so they wouldn't be relying on the illuminated signage to attract walk up trade, and the audience would be in the auditorium. Most theatres have an interval at that time, but I only asked venues to dim non-essential external lighting, so I knew we wouldn't be creating any safety issues. It was a challenge, but every venue participated," she reports.

Earth Hour and WWF sent t-shirts and posters, so each venue had at least two members of staff raising awareness with customers about the event. A number of the venues did a lot more than Hayes was expecting. "The Liverpool Empire was a great example," she says. "The show at the time was The Blues Brothers and it started at 8.30pm. Catherine Duffy, the venue's environment ambassador, decided to start the show with a minute's darkness. She got the buy-in of the show's producers – and that's really hard – and had the staff hand out 400 LED tea-lights to the audience, which illuminated the auditorium for the minute.

"The event became this all-encompassing engagement exercise with everyone at the theatre that night. To engage people you've got to inspire them, and that's what we were able to do."

Alongside putting in place a new integrated health, safety and environment policy, the group will be going for an environmental standard or certification and designing its own environment training course for all theatre staff. "The course is going to be aimed specifically at the operational staff in the theatre and what they really need to know about our environmental impacts," says Hayes, who is tasked with developing the course. "It's really exciting because we've never had something like this before I don't think anyone in our sector has.

"People think they know about the environment, but they don't. They disregard recycling and energy-efficiency initiatives because they think it doesn't matter. It's really important to educate them, so we can all work together to be green."

team that we could not be associated with landfill sites anymore because they are so bad for the environment."

With the backing of the ATG leadership, Hayes began an audit of the different waste contracts the group held. "We had recycling in a lot of our venues, but it was quite haphazard. Our London venues, for example, had four types of bags for waste and separated the waste themselves, but it inevitably went wrong when people got confused between the glass waste bag and the plastic bag, for example. In total, around 25% of our waste was being recycled."

In April 2013, ATG started a new waste management contract with First Mile, a small London-based company that sends no waste to landfill and offsets its carbon emissions. Now the recycling process is simpler, with just one or two bags for dry mixed recyclables, and all venues are recycling at least 69% of their waste, with the remainder being used to generate energy. Some venues, like those in London and the New Alexandra Theatre in Birmingham, have achieved recycling levels of 97%.

First Mile provides each ATG venue with a monthly report on how much waste is being collected, recycled and used for energy. Becky Charles, the environment ambassador at the New Alexandra Theatre, says: "Each report also tells us how many trees we are saving by recycling our waste, which is important to us because we support a local tree charity."

After getting a handle on where the theatres' waste has been going, one of Hayes' next projects is to work with her procurement team on getting to grips with ATG's supply chain and preventing as much potential waste as possible coming into the theatres. "We had to get the infrastructure in place first," she says, "but now I've started by breaking our supply chain down into categories. First, I'm concentrating on our retail suppliers, who provide our drinks and snacks, and looking at packaging."

Hayes is also supporting the group's business development director and head of learning and access, to develop ATG's corporate social responsibility credentials. 2014 is looking to be another busy year for the ATG.



Closing up shop

Michelle Purcell provides an insight into the decommissioning of industrial sites in Ireland

September 2008 marked the beginning of the deepest recession in Ireland since the 1980s. Since then, an air of uncertainty has lingered, jobs continue to be lost and countless businesses have closed. The economic shift profoundly affected how environment consultancies meet the needs of their clients, as well as how they operate, attract and, more importantly, retain business. At URS, there has been an noticeable increase in the number of licensed industrial sites requiring decommissioning expertise.

Licensed activities

In Ireland, the Environmental Protection Agency (EPA) is the competent authority for granting and enforcing integrated pollution control* (IPC) licences for specified industrial and agriculture activities listed in the first schedule to the Environmental Protection Agency Act 1992 (as amended).

Since 2007, there has been a significant change in the profile of IPC licensees. Prior to that year, the majority of IPC licences issued by the EPA were for industrial processing facilities. Fast forward to 2012, and 95% of IPC licences were issued for activities in the intensive agricultural sector. And, in 2012, the EPA did not issue a single IPC licence to a newly operating industrial facility; the only licences issued were revisions to existing ones. This is a sign not only of Ireland's economic woes but also those affecting Europe, where many large-scale Irish industrial facilities export their goods.

Conversely, the number of IPC-licensed sites notifying the EPA of their closure has soared. No single sector in particular has been affected; it is a problem across the board, from large facilities to small sites.

The decommissioning stage in the lifecycle of a site is often overlooked or dismissed, and sometimes lacks the excitement of the commissioning phase.

However, a closed, vacant site can present a great risk to the environment if remaining residuals are not appropriately dealt with. There is a real danger that the "out of sight, out of mind" attitude will proliferate.

Risks can be both seen and unseen. Unbunded barrels of waste oils are an example of an obvious, visible risk. What is not so obvious, however, is what is going on beneath the surface of the site, in the soil and groundwater. Contamination associated with the site's historic or more recent operations is a common occurrence that can have significant implications for the local environment and human health.

There are a number of options available to the licensee in Ireland upon cessation of the licensed activity. After the activity stops, the licensee has up to three years to restart the activity, providing some breathing space to allow for activities to begin again if business picks up. If the activity recommences within three years, it can be accommodated under the existing IPC licence; if not, the licence ceases to exist as a legal authorisation. This does not, however, mean that the IPC licence conditions are no longer a legal requirement. To restart the activity after three years, the licensee has to apply for a new IPC licence.

A second option is to transfer the IPC licence to another interested party. This can occur if the site in question is sold and the buyer intends to carry out the licensed activity. This process transfers all responsibilities, liabilities and obligations provided for under the licence to the buyer.

The third option open to the licensee is to surrender the IPC licence. This route is only considered when the licensed activity will never recommence and is the route chosen by most closed IPC-licensed sites in Ireland. This process completely removes the IPC licence and its associated obligations.

** The integrated pollution prevention and control (IPPC) licensing regime in Ireland was recently renamed as integrated pollution control (IPC) with the introduction of the Industrial Emissions Directive*



Image credit: Flickr, Stefan Ray

Shutting down

The process of surrendering an IPC licence can vary significantly in complexity and involves a number of defined stages, all overseen by the EPA. Before the agency will consider the prospect of a site surrendering its IPC licence, the licensee must decommission the site to the EPA's satisfaction.

URS has been involved in numerous decommissioning projects in Ireland and has found that their successful completion is dependent on the thorough assessment of a site's previous operational activity and history. Aspects that must be reviewed include the storage and handling of materials, chemicals used, previous incidents, waste management practices and emission characteristics. This enables environmental scientists to identify potential risk areas onsite and tailor the decommissioning measures accordingly. Equally important is a meticulous approach to record keeping so that details of all activities at the site, such as waste movements, emissions monitoring and tank testing, are documented.

The first step in closing an IPC licensed site is to activate the decommissioning management plan (DMP). A DMP, which is prepared by the licensee during operation, sets out the tasks to be completed upon the cessation of activities or closure of the site. All plans require EPA approval before they can be implemented.

A key aspect of the DMP is the establishment and underwriting of the financial provision available for site decommissioning – this is the sum the licensee pledges to put aside and use for site decommissioning activities only. Financial provisions are often underwritten in the form of a bond or a parent company guarantee. Establishing a viable financial provision can prove problematic, especially when a business is struggling to stay afloat. It is, however, a vital mechanism for

ensuring that all remaining environmental liabilities on a site are addressed during the decommissioning phase.

Once decommissioning activities are complete, an independent closure audit is required. This must be conducted by an objective third party, often an environment consultant or scientist. A report detailing the findings is then completed and submitted to the EPA for review. The key objective of the independent audit is to determine whether the site, in its state at the time of the inspection, poses a risk to the environment and whether all environmental issues have been satisfactorily addressed and closed out. If this has not been achieved, then the onus shifts back to the licensee to address the outstanding issues.

When the EPA is satisfied with the independent audit report, it will complete an exit audit and thoroughly examine and assess the decommissioning activities undertaken. It is at this stage that the agency will decide whether the site is in a condition likely to pose further environmental risks. If a satisfactory outcome is reached, the licensee can then make an application to surrender the IPC licence. This will be accepted, unless there are outstanding issues.

The unfortunate reality in Ireland is that the majority of formerly IPC-licensed sites that have achieved successful licence surrender will sit idle for years. Many become dilapidated and rundown. Very few of these sites find a new buyer and, in the majority of cases, the most economically advantageous option is demolition. This situation is not likely to improve in the near future in Ireland and presents an ongoing challenge to industry, environmental scientists and regulatory agencies.

Michelle Purcell is an environmental scientist at URS and an Affiliate member of IEMA.

Ireland's EPA did not issue a single IPC licence to a new industrial site in 2012; the only licences issued were revisions to existing ones

Creating a new pecking order

Niall Enright argues that it is time to rethink the conventional five-stage waste hierarchy

Notions that some ways of dealing with waste are preferable to others have been around for a long time. In the 1980s, the “Three Rs” – reduce, reuse and recycle – became commonplace. This sets out a hierarchy for dealing with waste – reduction is preferable to reuse, which in turn is better than recycling. Such ideas gained extra significance when they started to form the basis of regulation. In the US, the Three Rs were introduced into federal waste rules in the 1990s, while in 2008, the EU Waste Framework Directive (2008/98/EC) formalised a five-stage waste hierarchy: prevention, prepare for reuse, recycle, recover (for example, extracting energy from waste) and disposal.

These hierarchies convey the idea that waste is a valuable resource, rather than a burden. Reducing waste in the first instance avoids the cost of raw materials that would have ended up in the waste. For waste that cannot be avoided, you may as well generate some income by recycling it, rather than paying the costs associated with disposal. This concept of “waste as value” has been remarkably successful and there is now a huge and thriving area of economic activity based on extracting value from a wide range of waste streams.

Moving on

Because the waste hierarchy is such an important part of environment regulation, it is worth revisiting in light of contemporary thinking on sustainability, lifecycle assessment and the circular economy. Three developments come to mind:

- Consideration of the upstream effects of resource use is now as important as the downstream impact of waste arisings and end-of-life disposal. This more holistic approach is generally called resource efficiency, where extraction and issues of scarcity determine the selection of materials, as much as disposal considerations.
- The linear “take-make-waste” model is being rejected in favour of a “cradle-to-cradle” approach. The idea is that materials, once removed from the environment, should be managed in such a way that they circulate permanently in the economy. Ideally, materials are never returned to the natural environment, but if they are, they should serve as a nutrient to improve the environment.

- Broadly speaking, individuals and organisations are more willing to do things on the basis of environmental benefits than because they generate financial value.

When we take these three trends into account, what emerges is an updated version of the hierarchy, called the resource efficiency hierarchy or, more simply, the “Seven Rs” (see right). At first glance, little seems to have changed. At the top of our hierarchy sits the “prevent” approach, though now in two ways: remove and reduce. By creating a “remove” method, product design and formulation are more clearly signposted as a means of cutting out resource need altogether. Remove is a reminder that the first questions to be asked about whether to use a particular resource should be: Why do we need this resource? What function does it fulfil? Can we design this requirement out? Can we deliver the service this product provides in a different way?

Below reduce there is a new method, to “re-source”. It means that once a resource has been removed or minimised, we should then consider alternative sources or materials with a lower ecological impact. For example, if the resource is electricity, we should start by employing every practical option to reduce its use. Only when those options have been exhausted should we move on to find out if we can source the electricity from an alternate supply, such as a renewable source. Using harvested rainwater instead of communities’ treated supplies is another example of re-sourcing.

Some organisations behave as if the resource choice is the only method they should use, so they will buy 100% renewable energy and declare the problem solved. But, because they are not affecting demand and because substitute sustainable sources are often more expensive, this approach is often the least cost-effective option. Also, in a world where renewable supplies do not satisfy total demand, the extra resource that one organisation gets from renewable sources reduces that available to others. Regrettably, this approach persists because it is seen as involving less effort than the alternatives, especially where the resources involved are a small part of the organisation’s total costs.



Eliminate demand altogether – prevention



Use less resource to meet the need – minimisation



Change materials or sources



Reintroduce into same flow



Use in a different flow



Capture some value (eg in an energy-from-waste plant)

Return to form

After re-source, we return to the traditional hierarchy. Reuse of materials or goods in the same process is usually better in value and environmental terms than recycling or “down-cycling” – turning waste into new material of a lesser quality – into a different process. Proponents of the circular economy would argue that all products should be designed with reuse in mind. Products should be taken back by their manufacturers, be easy to disassemble and be reincorporated into the next batch of products.

Where recycling is not possible, it may be possible to recover some part of the resource. Examples include converting embedded energy into heat by burning waste or extracting nutrients from the waste by composting. This reduces the need for virgin resources – gas or fertilisers in these cases.

Finally, we can return the waste to the environment. Here, the use of language reflects updated thinking. The old term, disposal, has connotations of discharge, dumping or throwing away, whereas “return” addresses circular-economy thinking – we are borrowing a resource and then carefully returning it to nature. Ideally, the material returned will be a nutrient to enhance natural capital. If the waste is not a nutrient, it should at least be inert. If this is not possible, then it must be contained, treated or diluted to remove its effect on the environment.

Return in an environmentally benign way

Following the sequence

Traditionally, the resource efficiency hierarchy is applied in sequence, so the use of the resource is

first minimised, then some material is recycled and the remaining waste returned to the environment. It is becoming increasingly clear, however, that we need to think more in terms of the overall system, rather than just one individual waste stream. For example, the novel, infinitely reusable material used to make the book *Cradle to cradle*, by Michael Braungart and William McDonough, may require more inputs to produce than conventional paper, but the ability to reuse the material repeatedly leads to much less waste overall. We should not think about the single journey of an isolated waste stream, but the overall flow of many materials over many cycles.

It is sometimes helpful to look at organisational policies around waste to align these with the resource efficiency hierarchy. For example, audits in the US and Europe by French cosmetics firm L'Oréal revealed that it was company policy that any non-product materials that left its sites were categorised as waste. L'Oréal is to be applauded for using such a strict definition of waste in its reporting to encourage sites to eliminate all forms of waste; however, it had the unintended effect of making it preferable to burn waste onsite in a biomass boiler, as emissions to air are not counted in its waste reports. Prior to adopting this definition, the waste from the shampoo lines was sold in bulk to nearby carwash companies, displacing the need for virgin detergents. This form of recycling is higher up the resource efficiency hierarchy, but L'Oréal's strict definition of waste unwittingly led to the lower recovery choice being favoured.

Although a bit clumsy, the Seven Rs provide an important reminder that reducing demand is always a better tactic than improving the quality of supply of a resource or, indeed, providing end-of-pipe solutions. The best resource to use is no resource at all. Environmental scientist Amory Lovins coined the term “negawatt” to describe this most valuable resource – a watt of power avoided.

Niall Enright is a sustainability consultant. For more information visit sustainsuccess.co.uk.

An eighth R?

In devising this new hierarchy, an additional “R”, remediate, was considered for inclusion at the bottom of the inverted triangle. This reflects the harmful return of waste to the environment and the obligation to put that right. However, it was rejected because it could imply that dumping, followed by remediation at a later date, was a legitimate waste management method. Niall Enright is interested in hearing practitioners' views on whether remediate should be part of the new resource hierarchy – send your comments to environmentalist@lexisnexis.co.uk.



Coco Smits, a graduate environmental scientist and consultant at international engineering and project management business Royal HaskoningDHV, was named as the winner of the Institute's annual graduate award for 2013 at the Sustainability Leaders Awards in London on 21 November.

Recognised for her professionalism and exemplary work on Royal HaskoningDHV's trans-Adriatic pipeline project as well as her work on multiple international projects, Smits received the £1,000 prize and trophy from IEMA's executive director of policy, Martin Baxter, and Neil Pennell, head of sustainability and engineering at Land Securities, which sponsored the award.

Each year, the IEMA graduate award seeks to find and celebrate the environment profession's most outstanding graduate practitioner who is achieving remarkable things in his or her first role. The four judges of the 2013 award selected three finalists, identifying Smits as this year's winner in recognition of the commitment she has demonstrated to her demanding specialism, Arctic governance, as well as her knowledge and work on multiple international projects.

Commenting on the winner Baxter said: "Smits represents the very best of early-career environmental talent; she demonstrates how the right mix of knowledge, dedication and skills – the kind typical of experienced environment and sustainability professionals – can transform a project's success. I'm delighted to be able to co-present her with this year's prize and welcome her into membership of the Institute."

Through her studies at Radboud and Wageningen universities and internship with Royal HaskoningDHV, Smits has successfully developed a specialist interest in the Arctic region. On graduating

from her master's in social and political science of the environment in 2012, Smits secured a permanent position at Royal HaskoningDHV where she now contributes to environmental impact assessments, audits, strategic studies, surveys and research across key projects. These have taken her to Greenland, Norway, Russia, Albania and Greece. Her multiskilled and multilingual approach to

work led to her being nominated for this year's graduate award.

Smits, who is on secondment to the trans-Adriatic pipeline project in Greece, said she was delighted to have won the 2013 graduate award. "In particular, it has been great to get recognition for my work on Arctic oil and gas, as it is a subject I care passionately about," she said. "I am really fortunate to be able to work on



Coco Smits, second left, receives her award from Neil Pennell, Martin Baxter and compere of the Sustainability Leaders Awards, Miles Jupp



Smits (left) with fellow finalists, Hanna Hayward and Lee Collier

amazing projects like the trans-Adriatic pipeline, and I am thankful to both IEMA for honouring me in this way and to Royal HaskoningDHV for giving me the opportunity to do a job that I love.”

Smits was nominated for the graduate award by her mentor Charles Haine, director and project specialist, environment industry, at Royal HaskoningDHV. “Smits has all the attributes of a top-flight junior consultant,” he commented. “She has pursued a wide range of initiatives related to her specialist area of knowledge. She is very professional and one of the few graduates who is ready-made to be actively involved in the interface with clients, stakeholders and the public.”

Paul Suff, editor of *the environmentalist* and a judge for this year’s award, said he was particularly impressed by Smits’ go-ahead attitude. “We learned that she proactively lobbied to attend the Arctic Frontiers conference in Tromsø in January, and while she was there presented a poster exhibition on geopolitics and marine production in a changing Arctic. That’s real dedication.”

This year’s graduate award runners-up were Lee Collier, energy and environment adviser at Linklaters LLP, and Hanna Hayward, London region sustainability adviser at BAM Construction. Both Collier and Hayward received a year’s free IEMA graduate membership to provide ongoing career support, guidance and professional development opportunities.

Collier, an environmental science graduate from the University of Greenwich, was chosen as a finalist by the judges because of his energy and initiative, and ability to take on responsibility for projects and to work at a high level. He was also praised for his technical aptitude, which has helped to improve energy efficiency at Linklaters. The judges selected Hayward as a finalist because of her dedication and “above and beyond” attitude, leadership skills, rapid development and her ability to handle and understand complex issues across multimillion-pound operations. She gained a first class BSc honours in environmental geoscience from Cardiff University in July 2011.

Further information about the 2013 finalists can be found at iema.net/2013-award-finalists. IEMA would like to thank Land Securities, in particular Neil Pennell, the judges and Edie-Sustainable Business for their invaluable support of the graduate award.

All jobs greener course works for housing group



IEMA's Jonathan Nobbs (left) joins, from left to right, Andrew Fletcher (ESP), John Martin (whg), John Sharpe (ESP), Jane Preece and Steve Davis (both whg)

IEMA’s “all jobs greener” training scheme (see training focus, p.iii–vi) took another step forward on 13 November as the first “working with environmental sustainability” course took place.

The course, which aims to equip the entire operational workforce of any organisation with the kind of environmental knowledge that allows them to contribute to its sustainability targets, was run for the first time by Walsall Housing Group (whg). Ten employees from the housing provider subsequently became the first to receive the City & Guilds qualification at whg’s head office in Walsall, and they are all now using their new knowledge to help the group achieve its environmental ambitions.

IEMA’s head of partnerships, Jonathan Nobbs, who attended the course to meet the first delegates, said: “It was really satisfying to see these 10 people not only get a qualification through our ‘all jobs greener’ scheme, but gain useful and practical knowledge about how their role can positively impact on whg’s environmental goals. I think whg have demonstrated some real leadership in supplying the right training for their staff.”

Nobbs also praised consultancy ESP (Environmental Solutions through Partnership), whose director of environmental systems and training, Andrew Fletcher, delivered the course. “I’m very pleased that the Institute has been able to work with ESP to deliver the course at whg,” said Nobbs.

The “working with environmental sustainability” course is a level 2 qualification (equivalent to a BTEC first diploma) and is offered by whg’s skills centre, which is based in Leamore and runs several City & Guilds accredited vocational qualifications.

Jane Preece, director of organisational development at whg, commented: “We are delighted that the skills centre has been accepted to deliver this qualification, which is the first of its kind in the UK. It shows our commitment to partnership working with IEMA and ESP, and is in line with our corporate aim to reduce the environmental impact of our work year on year.”

Visit iema.net/all-jobs-greener to find out more about the scheme and how the training could benefit the workforce in your organisation.

Policy update



Greening UK infrastructure

The infrastructure carbon review, published last month (see also p.9), set out a series of actions to be taken by the government and industry to reduce carbon emissions from the construction and operation of the UK's infrastructure assets. The recommendations have the potential to abate 24 million tonnes of CO₂ and cut costs by £1.46 billion a year by 2050.

Perhaps what's most striking about this report is not the significant savings that can be derived from better design, construction and maintenance of UK infrastructure, but that it was published by the Treasury. This shouldn't come as a surprise. After all, it is Treasury policy to use market mechanisms to achieve environmental outcomes at the lowest cost; building competitive advantage for those who take a low-carbon approach.

The policy was set in the 2011 budget, which stated: "The government is committed to being the greenest ever. A simple, efficient and cost-effective policy framework will meet environmental objectives, while supporting growth and maintaining a sound fiscal position. Market-based solutions to price carbon are at the heart of this approach, achieving objectives at the lowest possible cost. The government will increase the proportion of tax revenue accounted for by environmental taxes."

The Treasury defines environmental taxes as those which:

- are explicitly linked to government environmental objectives;
- have the primary objective of encouraging environmentally positive behaviour change; and
- are structured in relation to environmental objectives – the more polluting the behaviour, the greater the tax levied.

It is critical that government sticks to this policy and provides long-term certainty for business and investors to achieve carbon and cost savings.

Martin Baxter is executive director of policy at IEMA.

Revising Full membership



To streamline the application process and ensure future access to IEMA's professional membership levels remains fair, the Institute is set to introduce a revised Full membership standard at the end of March next year.

IEMA's professional standards committee (PSC) approved the proposed changes at the end of November following a review of the Full membership standard over the past year. Changes to the required competencies and the interview method for those applying for Full and Dual (Full and CEnv) membership will now be implemented from 31 March 2014, with online support available from February.

Key alterations to the standard include:

- clarity on required competencies;
- closer alignment between Full membership and CEnv;
- greater scope to explain achievements in the submitted paper; and
- a simplified, more convenient application and interview process.

Each change is intended to provide greater clarity, consistency and accessibility to upgrading to Full membership and ensure that IEMA can meet the growing demand for MIEMA without diluting the standard.

Gillian Gibson, chair of the PSC, commented: "A major aim of the review was to clarify exactly what the applicant is required to demonstrate through the documents they submit and at interview. The review of the standard included substantial input from a working group of volunteer members,

whose recommendations helped ensure the revised application and assessment processes are clear, achievable and equitable."

She explains that the core of the standard remains the requirement that an applicant demonstrate how, through work and volunteering, they have used their environmental and sustainability knowledge, alongside skills – such as, leadership, tenacity and strategic thinking – to drive forward the environmental sustainability agenda.

"The revised standard will enable applicants to produce higher quality papers and be better prepared for interview," said Gibson. Josh Fothergill, IEMA's acting head of professional standards added that: "The revisions will provide a modern and straightforward process, while retaining the high quality of standards intrinsic to IEMA's vision for the profession."

As the preparations for introducing the revised standard are now taking place, anyone thinking of applying for Full or Dual is encouraged to wait until the changes apply because administrative restrictions mean the Institute must limit the number of applications it can accept before 31 March. If this affects your plans for upgrading in early 2014 call +44 (0)1522 540069 to speak to the IEMA professional standards team who can advise you of the best approach.

Further details of the changes can be found in this month's training focus supplement (pp.ix–xii), at iema.net/full or from full.membership@iema.net.

Changes to fees for Chartered environmentalist status

The Society for the Environment (SocEnv) has announced that its fees for Chartered environmentalist (CEnv) renewals and applications will change from 1 January 2014.

The initial registration fee for all new CEnv applications will increase from £67.50 to £75. This fee will apply to any IEMA members upgrading to dual membership (MIEMA and CEnv) or existing Full or Fellow members who apply

to become a Chartered environmentalist during 2014. Existing CEnvs will be subject to a 50p increase in their annual renewal fee, making it £38 from 1 January.

The administration fee charged by IEMA to process CEnv applications remains unchanged at £12 (£10 administration plus VAT).

For full details about applying for CEnv status visit iema.net/chartered-environmentalist.

More successful IEMA members

IEMA would like to congratulate the following individuals on recently upgrading their membership.

Associate

Maryam Abdulla, RasGas
Christine Akwero, Lewisham Homes
Anthony Armitage, Norland Managed Services
Neil Atkinson, Hargreaves Industrial Services
Ian Austin, BAE Systems
Andrew Ball
Thomas Barrow, Grant Thornton UK LLP
Natalie Bombak, JTI
Frank Bradley
Sue Brookbanks, BAE Systems
Stephen Burkin, Babcock Rail
Roy Calver, LRQA
Andrew Collins, Bibby Distribution
Nigel Couchman, Clearsprings Management
George Craig, De La Rue
Ben Cross
Claire Curtis
David Davies, URENCO UK
Inga Doherty, Oxfordshire County Council
Rob Domeney, RSK
Kirsten Donaghy, Coca Cola Enterprises

Patrick Gavin
Marc Geeson
Zebrina Hanly, IEMA
Jodie Horner, Leo Group
Greg Irvine, Ramboll UK
David Izzard
Joanne Johnstone, Centrica Energy
John Moore, Anglo Beef Processors UK
Ali Saleh Al Mukhaini, Oman Natural Liquefied Natural Gas
Jennifer Offord, Planning Potential
Andrew Panting, Alfa Laval
Laura Maria Perez Camacho
Katherine Rowe, Reckit Benckiser
Isaac Rowland
William Shaw, Academies Enterprise Trust
Siobhan Sherry
Chris Smith, VolkerRail
Jess Smith
Michael Sudds, UK Power Networks
Steve Tainton, Wincanton Group
Paul Tucker, AQA
Simon Turner, Sodexo Healthcare
Richard Walker, De La Rue, Security Papers
Ken Whyte, DNV Certification
Andrew Wilkes, Brockmoor Foundry Company
Ian Williams, Cristal Pigment UK

Mike Wing

Full and CEnv

James Blake, RSK
Gaetano Cristiano, Urbaser
John Gillard
Naomi Hayes, Cooperative Group
Thomas Hibbert, NSA
Nicholas King, Magnox
Klara Kovacic, URS
Nicola Laurence, VW Group
G Jamie, MacDonald
Christopher Peacock, HOW
Rachel Rae, Eli Lilly
Hywel Roberts, Mouchel
Yvonne Rowse, Hunter Environmental
George Royston-Bishop, Sellafield
Christopher Shearlock, Cooperative Group
Jennifer Wade, Jacobs Engineering
Paul Warrington, Environment Agency
Simon White, Environment Agency, NEAS
James Wyse, EEF

If this has inspired you to progress your membership, then visit iema.net/upgrading-your-membership for more information or call +44 (0)1522 540069.

IEMA events

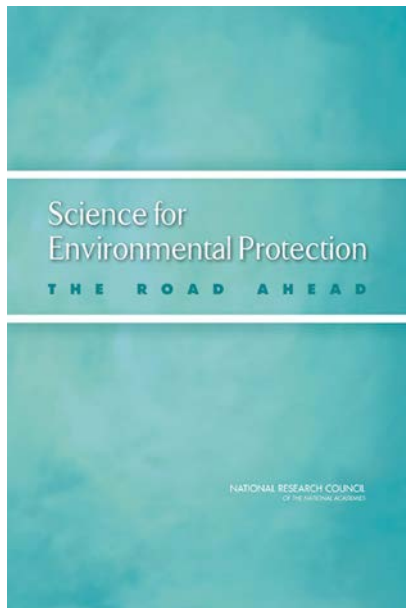
Date	Region/Time	Topic
18 Dec	South West	Christmas social (Exeter)
27 Feb	Scotland	Dust in the environment and at work (Glasgow)

Webinars

19 Dec	12.30–1.30pm	The significance of GHG emissions in EIA
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External professional events

Date	Region/Time	Topic	Further information
16 Jan	London	Lean, green and mean: meeting energy efficiency targets	lexisurl.com/iema17029
21 Jan	London	Corporate water risk 2014: managing reputation, revenue and resilience	sb-water.net
22 Jan	London	Carbon Trust waste standard	lexisurl.com/iema17028
6 Feb	Nottingham	Best practice in odour control management	lexisurl.com/iema17026
25 Feb	London	Smarter sustainability reporting	sb-reporting.net
2–3 Apr	Manchester	Activated sludge: past, present and future	lexisurl.com/iema17027
8 Apr	London	Climate change adaptation	lexisurl.com/iema17025

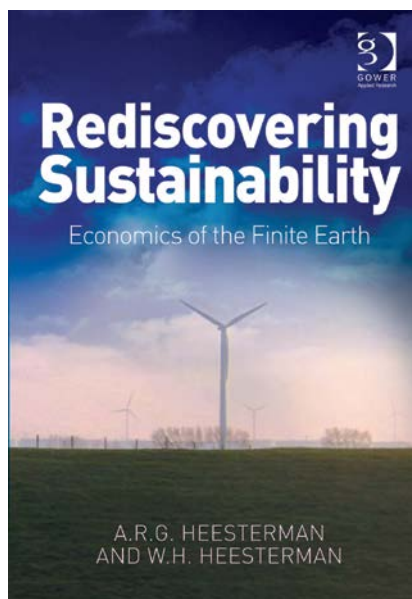


Science for environmental protection

The National Academies Press / paperback £32 / ISBN 978-0-3092-6489-1

The authors are advisers to the US government so this book focuses on the future of environment protection in America. This is a shame because it misses the fact that many of the examples it cites as future good practice are already established in Europe. That said, this is a highly readable book that provides strategic guidelines for future environment protection through sound understanding of the issues and the appropriate deployment of emerging tools and technologies. It is heartening to see human health placed at the centre of the evaluation of future activities and recognition that some environment problems arise as a result of a failure to appreciate the tensions between health and ecology. The authors recognise the need for “big data” to solve “wicked problems” in the future. Such data may come from crowdsourcing or collaborative computing and should enable a bigger, more integrated picture to be used in environmental policymaking. The authors are in favour of “systems thinking” – considering the links across and between lots of contrasting systems, such as economics, biology and physics. Integrated and collaborative systems should lead to better cost-benefit analyses based on the “whole picture” rather than pet areas for funding, they argue. The authors discuss the need for integrating social, economic and behavioural science skills, while avoiding the use of the terminology “sustainability”. This is a great read for those starting their career to see how it may look in 20 years’ time, and for those involved in policymaking who are looking to develop better informed policies and identify future opportunities.

Gillian Gibson, FIEMA CEnv, is an environmental scientist

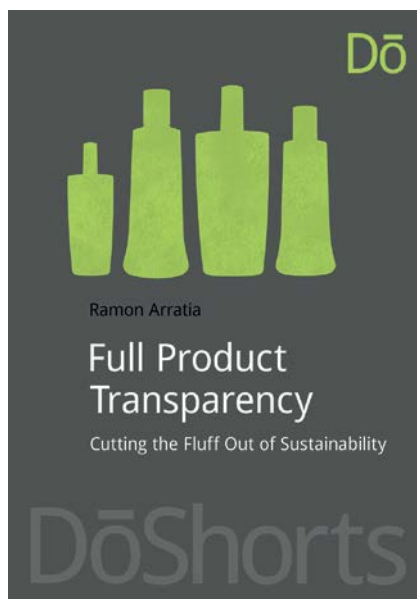


Rediscovering sustainability

Heesterman and Heesterman / Gower / hardback £60 / ISBN 978-1-4094-4456-5

This book is a good introduction to how sustainability is dealt with by current economic approaches. The authors make a compelling critique of how environment resources are valued, concluding that existing price structures are flawed because the cost of goods and services fail to adequately account for the depletion of natural capital. They also argue that traditional cost-benefit analysis techniques are inappropriate for assessing environmental costs in policymaking, and that a move away from unsustainable growth is needed. Split into three sections, the book outlines a theoretical view of the markets in relation to sustainability; explores real markets and how they differ from the theoretical models; and investigates the trade-off between achieving affluence now or in the future, as well as the merits and pitfalls of evaluation techniques and policy instruments. Using a clear and engaging, the book explains concepts for those without detailed environment or economics knowledge, while delivering a level of detail that will appeal to more experienced readers. There are good references to primary texts and other sources, and real-life examples put the issues into context.

Darren Chadwick, AIEMA, is a director at Brite Green



Full product transparency

Ramon Arratia / Do Sustainability / ebook £30 / ISBN 978-1-9092-9322-9

This ebook looks at the flaws of “green labelling” and argues for a more transparent footprint of products’ environmental impacts throughout their entire lifecycle to better inform consumers. The author suggests that there is a lot of “fluff” in the sustainability industry that companies are using to look good rather than paying attention to performing well. He says that firms should start using comparative benchmarks, which measure the environmental and social impacts of products common to an industry, not just focus on impacts that have been cherry-picked by a company. This approach, he says, will force companies to compete on all aspects of the production process, including environment issues. The book includes a good example of an approach to partial product transparency from the automotive industry. The easily understandable metric of CO₂ produced per km travelled allows consumers to make informed decisions, and legislators to tax high-emitting cars more than low-CO₂ vehicles. This is a thought-provoking read, particularly for those in companies that have focused on reducing the environment impacts of their operations rather than looking at the wider impacts associated with their supply chains. This ebook heralds a new era for reporting.

Alex Butcher, AIEMA, environmental adviser at Cable and Wireless

Changing tracks

Tertius Beneke describes how his work at Network Rail is endeavouring to embed sustainability across all the UK's major rail infrastructure projects



Some might scoff at the idea of one organisation aiming to improve sustainability across a whole sector, but I've always enjoyed a challenge. I became the head of sustainable development at the infrastructure project arm of Network Rail six months ago, after working for the organisation for nine years, including time as an environment manager on the Crossrail programme.

In my new role, I lead the environment discipline and advise and coordinate sustainability for Infrastructure Projects (IP), which is responsible for delivering Network Rail's infrastructure developments – a total of 3,000 projects a year, including major programmes such as Thameslink and the King's Cross St Pancras redevelopment. IP employs more than 4,500 people and delivers around 80% of Network Rail's capital expenditure, which is approximately £5 billion a year.

There is considerable momentum in Network Rail and across the rail industry around sustainable development. It is important to build on this and give direction and focus to existing and new initiatives; as such, an ISO 14001-certified environment management system (EMS) was a minimum. It is our aim to demonstrate that we can deliver projects on time, to budget and to a very high sustainability standard.

We set the target of gaining 14001 certification within eight months, and we have revised our integrated management system, put all our environment managers who will be implementing the new EMS through training, and booked in our certification audits for March and June. It's been about laying down the challenge to our people and then giving them the tools to meet it.

The second aspect of our new sustainability approach has been the setting of some really ambitious targets in our next five-year business plan, which begins in April next year. The first of these is to "advance the standard of environment management in infrastructure projects", not simply within Network Rail projects or IP, but across the industry. This is about the contribution we can make to environment management in our sector, in terms of systems, processes and people.

Crucial to this are the skills and competence of our staff and that of our suppliers. Alongside training our people, we are working to ensure best practice is spread across the company and developing user-friendly tools to support staff in making the most sustainable choices. Examples of such tools include our environmental appraisals and action plans (similar to mini impact assessments), templated site inspection sheets and heat maps. We have pockets of absolute brilliance in Network

Rail, with individual projects developing excellent ways of cutting waste to landfill or protecting biodiversity, for example, and it's about sharing those ideas and making sure they're scalable. We are setting targets for our projects on reducing pressure on water systems, optimising resource use, cutting carbon emissions and having a positive effect on biodiversity, but we aren't dictating how projects meet those targets.

Taking this approach a step further, we are developing requirements for our principal contractors on the level of competence and skill we expect their environment managers and specialists to have. If a project is worth £20 million, for example, we expect a certain level of experience, IEMA membership or an equivalent, and a degree or similar. We've started to talk to our suppliers about the new requirements and, so far, the reaction has been really encouraging; no one has been negative about it. All our suppliers appreciate why the sustainability agenda is important; it's a case now of understanding how many staff they have trained in environment management and at what level of skill. It's going to be a big challenge, but that's where IEMA and its courses can help.

We've also created a procurement charter, which aligns with our 12 key sustainability priorities and challenges our supply chain to meet these in the tender process. Currently, 5% of tender evaluation is decided purely on sustainability and we're looking to extend that score in the future.

We have this saying at Network Rail that "safety is in the line". It means that every single person in the organisation is responsible for safety, so if they see something dangerous they report it. Everybody contributes. Ultimately, that's where I want to take sustainability. I want it "in the line"; a part of everybody's day job, so it becomes par for the course without them thinking about it. And it's not just about our staff. By upskilling the whole supply chain, we hope to improve the quality of environment management across all major infrastructure projects.

I became a sustainability professional because I'm passionate about the environment and want to make a difference. In this role, I have an amazing opportunity to make that difference. If we require our whole supply chain, as well as our own people, to be more aware of the environment and to do things better, we will have a big impact across the UK. It's an immense challenge, but one I know we can meet.

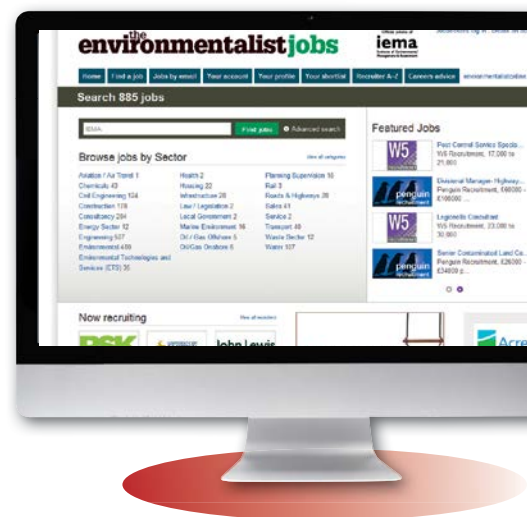
Tertius Beneke, MIEMA CEnv, head of sustainable development, Network Rail – Infrastructure Projects.

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