

Systems

20

Resources

24

Regulation

29

## Coming together

How the high-level structure for 14001 and 9001 may help firms integrate management systems

## A circular Europe

An illustrated guide to the new European commission package to improve resource efficiency

## Looking forward

Our annual review of the major legal and policy developments that are due over the next year

# the environmentalist

[environmentalisonline.com](http://environmentalisonline.com)

January 2016



# Tricks of the trade

## The great emissions swindle

# A New Year Gift . . .



For all subscribers to **The Environmentalist** we are offering a 10% discount on all LRQA public training courses throughout February and March 2016.\* Our training rooms are always full and vibrant with people like you, and we would love for you to join us in 2016.

LRQA offers environmental and energy training for the novice, starting with Appreciation and Interpretation which provides a basic understanding of your chosen management standard, right through to Lead Auditor training which will enable the delegate to audit against energy management system requirements.

Our success is based on your achievements; every day organisations rely on LRQA to optimise business performance through their environmental management systems. We focus on training that is relevant to your industry and how your business works.

## EMS Core Training

- ISO 14001 Appreciation and Interpretation
- Internal EMS Auditor
- EMS Auditor / Lead Auditor
- EMS Auditor / Lead Auditor Conversion
- ISO 50001 Energy courses
- New Environmental Systems Manager
- Environmental Legislation - Getting Started
- Practical Implementation of an EMS

## ISO 14001:2015 Transition Training

With the publication of ISO 14001:2015 those involved with the implementation of the new standard will be starting to plan and prepare for their transition journey. Our suite of ISO 14001:2015 transition training is tailored to your organisation, your people and your systems ensuring a successful transition to the new standard.

## ISO 14001:2015 Transition courses

- ISO 14001:2015 What's it all about then?
- Preparing for ISO 14001:2015
- ISO 14001:2015 for Internal Auditors
- ISO 14001:2015 Lead Auditor Transition
- ISO 14001:2015 New Standard Summary

**Quote 10ENV for 10%\* discount**  
**Call us today on 0800 328 6543**  
**or email [lrqatraining@lrqa.com](mailto:lrqatraining@lrqa.com)**  
**[lrqatraining.co.uk](http://lrqatraining.co.uk)**

\*Usual terms and conditions apply. Discount applies to all public EMS courses running between February and March 2016. Not to be used in conjunction with any other offer or public training already booked.



Lloyd's Register  
LRQA

Improving performance,  
reducing risk

# January

## News

- 4 Truss confirms flood review  
PINS issues new EIA guide
- 5 Businesses keen to put Paris deal into practice
- 6 Firms lack innovation and skills  
Mobiles helping to cut CO<sub>2</sub>
- 7 Waste targets too low, say MEPs  
Capital gain from circularity  
**Business plans** Unilever, Kingfisher, Ford, Kia, GM, Sainsbury's, Arsenal football club

## IEMA news

- 8 2015 EMS forum: the changes to 14001
- 10 IEMA working to produce framework for soil in environmental impact assessment  
**Policy column** Martin Baxter looks ahead on several fronts, including post-COP21

## EIA news

- 11 Airport expansion delayed for EIA  
**Practice update** IEMA's Josh Fothergill  
**EIA research** EIA and climate change

## Political insight

- 12 Business interest in solar drops after cuts  
**In parliament** Alan Whitehead on treating energy technologies differently

## Legal brief

- 13 **In court** South West Water fined £300,000; CRC offences; Shell fined in Canada  
**Case law** Court of Appeal backs waste recovery option, reports LexisPSL experts
- 14 **New regulations** Environment protection; ecolabels; water; energy; climate change; hazardous substances
- 15 **Latest consultations** National planning policy; VAT on energy products; substance authorisation; natural capital protocol; invasive species; onshore oil and gas  
**Guidance** Countryside stewardship; GRI and human rights; sustainable drainage; sustainable procurement

## IEMA members

- 35 **My career** Rufus Howard, director of renewables and marine development, Royal HaskoningDHV
- 36 More successful IEMA members

## Features



### 16 Testing times

In the wake of the Volkswagen emissions scandal, Farah Alkhalisi reports on how car manufacturers can exploit flaws in the current testing regime



### 20 A coming together

Marek Bidwell finds out whether the high-level structure for management systems will make it easier for organisations to integrate 14001 and 9001



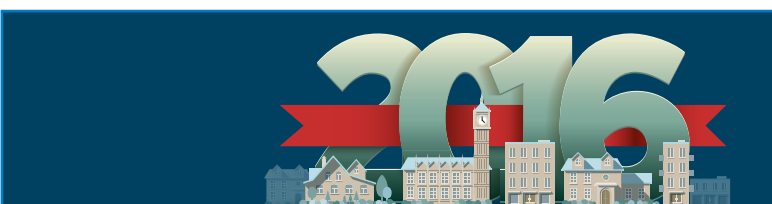
### 24 The circular economy package

The European commission has unveiled its new circular economy package. This month's datafile illustrates the main targets and planned legal changes



### 26 Understanding the Modern Slavery Act

New legislation requires firms to report on how they are tackling modern slavery. Legal expert Colleen Theron outlines the steps they need to take



### 29 Looking to 2016

*the environmentalist* highlights some of the major legal and policy changes due over the next year, from plans to improve air quality to new standards



**INDEPENDENT VERIFICATION AND CERTIFICATION.**  
WE TAKE THE PERSONAL APPROACH TO DOTTING THE 'I'S AND CROSSING THE 'T'S.

we'll give you the knowlEdge

Lucideon is a leading global expert in verification and certification services. We offer independent verification of greenhouse gas or carbon emissions for voluntary and mandatory reporting schemes. Using our team of auditors, we provide impartial management system and product specific certification.

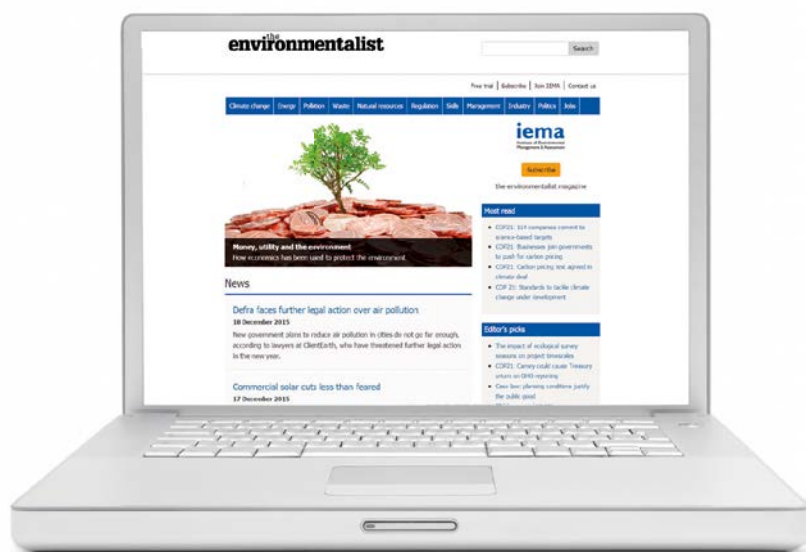
- EU ETS
- Carbon Footprinting (CDP, ISO 14064-1)
- OFGEM Sustainability Audit
- ISO 9001, 14001 and 50001
- OHSAS 18001
- V-MARQ – certification of manufacturing origin

Juliet James, Business Support Manager, Assurance  
David Robinson, Assurance Services Manager

Find out more at  
[www.lucideon.com/assurance](http://www.lucideon.com/assurance)

**LUCIDEON**  
insight creating advantage

## Read the latest news daily at [environmentalisonline.com](http://environmentalisonline.com)



### ONLINE OFFERS

As an IEMA member you can access:

- daily news updates
- exclusive opinion articles
- searchable archive of *the environmentalist* articles
- links to the latest regulations and consultations
- daily updates of the latest jobs
- best practice articles on EIA
- training centre listings

Accessible anytime, anywhere,  
you need never be without the UK's  
leading environment management magazine

**the  
environmentalist**



[www.environmentalisonline.com](http://www.environmentalisonline.com)

**iema**  
Institute of Environmental  
Management & Assessment

# Happy new year

January is naturally the prime time to set out your intent for the year ahead, so I want to begin this new year by letting you know that IEMA has some big plans for 2016.

Quite simply, you are going to see a lot of big changes this year. In a post-COP21 world, IEMA members have more to do, say and deliver than ever before. Now that the Paris pledges have been made, it is up to our profession to turn the talk into real action. That may mean we have to be as disruptive as we are creative – and I know IEMA members can really own that space. Let's shake things up to make our actions more impactful than ever!

We will be working hard in 2016 to further raise the profile of the profession to ensure business and citizens everywhere know where the expertise is to realise the COP21 commitments. We will use our collective expertise and voice to influence the right areas and educate the media, and ultimately start to transform the economy to one that is sustainable.

Most exciting is our plan to introduce a new structure to the IEMA membership in the months ahead as part of that shake-up to make the institute and the profession fit for the future. The new structure will underpin the broadening of our scope into sustainability, while absolutely safeguarding environmental management as a principle, as a profession and as a core thread in IEMA's fabric. The new structure, which will have modern and globally relevant standards at its heart, will be more attractive to businesses, recruiters and educators worldwide. It will make your professional expertise relevant to your employers' organisational goals. It will result in growth of our network and greater recognition for you. You can expect to see details soon but I can assure you that what we are doing will be exciting and truly innovative.

We are also doing exciting things to power up our networks – the regional, topical and industry-specific groups that will be the catalyst for some dynamic and member-led activity in 2016 and beyond. There are already lots of opportunities to get involved in the networks but this year you should see them really take off. Be sure to take advantage of the opportunities that will arise over the next 12 months.

It's going to be a year that sees your IEMA do some brave and impressive things. I can't wait to work with you to make change happen.

**A new IEMA membership structure will underpin our broadening scope into sustainability, while absolutely safeguarding environmental management as a profession and core thread in the institute's fabric**



**Tim Balcon,**  
CEO of IEMA

The Institute of Environmental Management & Assessment (IEMA) is the professional home of more than 15,000 environment and sustainability practitioners from around the globe. We support individuals and organisations to set, recognise and achieve global sustainability standards and practice.

We are independent and international, enabling us to deliver evidence to governments, information to business, inspiration to employers and great stories to the media that demonstrate how to transform the world to sustainability. Join us at [iema.net](http://iema.net).

## IEMA

City Office Park, Triton Road  
Lincoln, Lincolnshire  
LN6 7AS  
tel: +44 (0) 1522 540069  
fax: +44 (0) 1522 540090  
[info@iema.net](mailto:info@iema.net) | [iema.net](http://iema.net)

## Editor

Paul Suff  
[paul.suff@lexisnexis.co.uk](mailto:paul.suff@lexisnexis.co.uk)

## Deputy editor

Catherine Early  
[catherine.early@lexisnexis.co.uk](mailto:catherine.early@lexisnexis.co.uk)

## Managing editor

Louis Wustemann  
[louis.wustemann@lexisnexis.co.uk](mailto:louis.wustemann@lexisnexis.co.uk)

## Sub-editors

Mike McNabb; Angela Partington

## Display and recruitment advertising

Harry Toomey  
tel: +44 (0) 20 8212 1989  
[harry.toomey@lexisnexis.co.uk](mailto:harry.toomey@lexisnexis.co.uk)

Jordan Bamford  
tel: +44 (0) 20 8212 1913  
[jordan.bamford@lexisnexis.co.uk](mailto:jordan.bamford@lexisnexis.co.uk)

## Marketing campaign manager

Rakhee Patel  
[rakhee.patel@lexisnexis.co.uk](mailto:rakhee.patel@lexisnexis.co.uk)

## Design

Jack Witherden  
[jack.witherden@lexisnexis.co.uk](mailto:jack.witherden@lexisnexis.co.uk)

## Advertisement production

John Woffenden  
[john.woffenden@lexisnexis.co.uk](mailto:john.woffenden@lexisnexis.co.uk)

## Publisher

Chris Jones  
[chris.jones@lexisnexis.co.uk](mailto:chris.jones@lexisnexis.co.uk)

## IEMA PR and communications manager

Katrina Pierce  
[k.pierce@iema.net](mailto:k.pierce@iema.net)

## Advertising, subscription and back-copy enquiries to

Customer services,  
tel: +44 (0) 845 370 1234  
The 2016 annual rate is £142.

## Printing

Headley Brothers Ltd, Ashford, Kent

## Published by

LexisNexis, Quadrant House,  
The Quadrant,  
Sutton, Surrey  
SM2 5AS.  
[lexisnexis.co.uk](http://lexisnexis.co.uk)

© IEMA 2016

LexisNexis aims to provide authoritative and accurate information at all times. Its publications are, however, for guidance only and are not an official information source. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical or otherwise, without the prior written consent of the publisher and editor.

ISSN 14727625



the environmentalist is printed by ISO 14001 certified printers on 55% recycled paper stock and despatched in biodegradable polywrap

LexisNexis®

## Short cuts

## Materials marketplace

Some 2.4 million tonnes of material was placed in the first phase US materials marketplace between June and August 2015, and the pilot programme has been extended to March 2016. The materials marketplace was established by the US Business Council for Sustainable Development, the Corporate Eco Forum and the World Business Council for Sustainable Development (WBCSD) to test the feasibility of a national exchange where traditional and non-traditional industrial waste streams could be matched with new product and revenue opportunities. Analysis of phase one reveals that 23 companies participated across 78 facilities, with 150 materials placed in the marketplace over three-months. Companies participating in the initiative included Alcoa, BASF, CH2M, Dow Chemical, GM, Nike, Novelis and P&G. Overall there were 59 materials sought, 19 transactions developed and 68 recommended matches. The three founding organisations said the long-term aim is an expanded, cloud-based marketplace, involving hundreds of companies reusing their material flows to help pave the way to a future circular economy in which landfills become obsolete. "The project is a key step toward the shift to a circular economy – one where waste becomes the new engine for creating value. Unlocking business-to-business reuse opportunities ensures effective waste management and delivers integrated benefits," said Peter Bakker, president and CEO of the WBCSD.

## Risk assessments

Integrated environmental risk assessment was the focus in the December issue of *Science for Environment Policy* from the European commission's environment department ([bit.ly/1Pjyqsu](http://bit.ly/1Pjyqsu)). It focused on some of the challenges, including predicting combinations of risks that can have an impact on various environmental dimensions, such as climate and eutrophication, to enable effective priority-setting. Another challenge covered in the publication was the inclusion of socio-economic aspects in environmental risk assessment.

## Truss confirms flood review

Environment secretary Liz Truss has confirmed that the government is reviewing national flood resilience after 16,000 properties in England were flooded in December and early January.

She told parliament that the review would look at forecasting and modelling, resilience of key infrastructure and the way decisions are taken about flood expenditure. Truss said it would also seek to further develop the catchment-based approach Defra is now using for its environment planning, including slowing the flow of water upstream. She also said the Natural Capital Committee (NCC) would look at catchment-specific solutions. "That is a very important part of how we become more resilient as a country," Truss told MPs.

In a paper published on 5 January, Dieter Helm, chair of the NCC, said the floods offered the government an opportunity for a radical rethink of defences. He described the existing approach to flood defence as, at best inefficient and occasionally counterproductive, encouraging the sorts of land use and land management decisions that could exacerbate the problem in the medium term: "[The government] can muddle on with the existing model and add some immediate



© Ian Hinchliffe/REX Shutterstock

'sticking plasters'. It can increase the funding and try to improve the agency's modelling and management. Or, it can seize the opportunity to radically rethink and restructure flood defences in the UK."

Meanwhile, the Association of Drainage Authorities has called for more funding to maintain flood defences, as well as greater investment in water level and flood risk management innovation. Chief executive Innes Thomas said: "We need to invest in proper resources and skills to manage water and think much more innovatively about how we work with water and all the component parts of a river catchment to provide that additional flood (and drought) resilience needed."

Confirmation of the government's flood review came as the Met Office said December was the wettest month in the UK since records began in 1910, and that 2015 was the sixth wettest year.

## PINS issues new EIA guide

The Planning Inspectorate (PINS) has published guidance to help environmental impact assessment (EIA) practitioners assess cumulative impacts for major infrastructure applications.

Planning policy requires developers to assess the effects of nationally significant infrastructure projects (NISPs) alongside other developments nearby. PINS suggests that developers first establish the area likely to be affected by the project, known as the zone of influence (ZOI), and create a long list of other development within it. This should be whittled down to a shortlist, and information gathered on these projects. The cumulative effects of all these developments can then be assessed. The guidance also lists the types of project that need to be considered alongside a NSIP, ranging from those already under construction to those identified as probable future projects.

Assessing cumulative impacts is known to be a particularly tricky element of the EIA

process. In 2012, Centrica's Docking Shoal 540MW offshore wind farm was rejected by the secretary of state due to concerns over the risk to birds from the proposed facility along with other wind farms being developed nearby. Guidance on the issue is available but there is no single document, a spokesman for PINS explained. He said the guide should be used together with information published by PINS in 2012.

The new guidance stresses that the main aim of the assessment is to inform the decision-making process rather than catalogue every possible impact. Josh Fothergill, policy and practice lead at IEMA, said that it would help developers focus on what was important. "It provides scope to say that a risk that is far away is quite limited, which should keep the assessment proportionate," he said. Angus Walker, partner at Bircham Dyson Bell, said the guide should help developers identify which projects to assess alongside their own.

# Businesses keen to put Paris deal into practice

The Paris climate change agreement gives companies a clear incentive to look closely at how they are positioned for a low-carbon future, business groups have said.

A deal was finally struck at UN COP21 negotiations in the French capital in December. Nearly 200 countries agreed to keep the global average temperature rise to “well below 2°C above pre-industrial levels” and to “pursue efforts to limit the increase to 1.5°C”. The agreement also states that emissions should be net zero in the second half of the century. Greenhouse-gas emission reduction pledges made ahead of the talks are predicted to keep the temperature rise to within 2.7°C, so the parties have agreed to review progress and enhance plans every five years.

Businesses were heavily involved at COP21, showcasing initiatives on issues such as carbon reduction, energy efficiency and deforestation. Ikea and Coca-Cola are among 116 firms that have now pledged to develop targets to reduce emissions in line with the 2°C objective. The World Resources Institute will be verifying the companies targets, along with WWF, the CDP and the UN Global Compact.

Eliot Whittington, deputy director of the Prince of Wales Corporate Leaders’ Group (CLG), said businesses were always looking to see what the likelihood of new legislation was and that Paris sent a strong signal. “The agreement will help them be more ambitious than they would have been otherwise,” he said, claiming a couple of companies he had spoken to were already considering tightening their targets. “The end point has been positioned as getting rid of all



emissions. This says to businesses they need stronger targets,” he said.

Nick Molho, executive director of the Aldersgate Group, said many of its members had been emboldened by the outcome of COP21. However, many wanted a clearer signal from the UK government on how it would meet its carbon budgets. This would provide firms with the confidence to invest, Molho said, but he warned that future policies on energy subsidies, energy efficiency and low carbon heat and transport were unclear. Clear policy in these areas would be important for businesses that were yet to be fully engaged in climate change mitigation. “If there is a clear plan for the fourth and fifth carbon budget and it is clear that the government intends to meet it, that will spur business,” Molho said.

Whittington agreed that government policies were essential to encourage further action by businesses. “The UK government needs to set out very clearly how plans and policies will achieve its targets. I don’t think that clarity exists at the moment,” he said.

## Short cuts

### Record-breaking fine

Thames Water has been ordered to pay £1 million for polluting a canal in Hertfordshire, the highest fine imposed on a water company in a case brought by the Environment Agency. The agency took legal action after Thames Water repeatedly polluted the Wendover Arm of the Grand Union Canal with sewage from its Tring treatment works between July 2012 and April 2013. The case was referred to St Albans Crown Court for sentencing after the company pleaded guilty at Watford Magistrates’ Court to two offences under the Environmental Permitting (England and Wales) Regulations 2010. The company must also pay £18,113 costs and a victim surcharge of £120. Judge Andrew Bright QC said the courts must now make clear that, if very large organisations do not implement the environmental improvements they promise, sentences should be sufficiently severe to have a significant impact on their finances. The court was told that poorly performing inlet screens caused equipment at the works to block. The agency said that since the incident the firm had spent £30,000 replacing the screens and had improved its environmental performance.

### Natural infrastructure

The natural infrastructure for business online platform ([bit.ly/1meSqkk](http://bit.ly/1meSqkk)) went live last month and aims to raise awareness of the business opportunities of investing in ecosystems or natural infrastructure to encourage more action. Developed by the World Business Council for Sustainable Development with consultancy CH2M, the Nature Conservancy and more than 30 companies, the platform outlines the business case for investing in natural infrastructure by demonstrating cost-efficient solutions with compelling co-benefits for society and environment. It also includes case studies from industries – including agriculture, cement, chemicals, oil and gas, and wastewater treatment – that have used ecosystem services and tools to guide business decision-making, such as a one for cost-benefit analysis.

### Financial markets react to deal

Barclays has told clients that the COP21 deal will boost the long-term prospects for low-carbon power, while weakening those for fossil fuels.

The bank also highlighted the extra scrutiny of companies’ exposure to climate policies and carbon-pricing after Bank of England governor Mark Carney’s announcement that a taskforce would be established to develop consistent disclosure on these issues.

Barclays added that the Paris deal would give further impetus to growing

investor initiatives around portfolio decarbonisation. Stock markets reacted immediately to the deal, with shares in renewable energy firms, such as wind turbine manufacturer Vestas rising, according to Reuters.

Brian Ricketts, general secretary of European coal trade association Euracoal, said in a blog that the fossil fuel industry would be “hated and vilified in the same way that slave traders once were”, and urged members not to acquiesce to the “climate bandwagon”.

## Short cuts

## New ecological guide

Guidance on conducting ecological impact assessments for developments in terrestrial, freshwater and coastal environments has been published by the Chartered Institute of Ecology and Environmental Management. The document ([bit.ly/1OEBkaG](http://bit.ly/1OEBkaG)) aims to help practitioners identify, quantify and evaluate the potential effects of proposals on habitats, species and ecosystems. It covers scoping; establishing the baseline; identifying important ecological features and functions; assessing their impact, including cumulative effects; designing measures for avoidance, mitigation, compensation and enhancement and monitoring the success of these. The guidance can be used for projects of any scale, including environmental impact assessments (EIAs). Josh Fothergill, policy and engagement lead at IEMA, welcomed the guide's emphasis on proportionality and transparency, the revised approach to scoping and its expanded coverage of mitigation, compensation and enhancement. More than 90% of UK environmental statements include the findings of an ecological impact assessment, he said.

## Clearance for support

UK energy intensive industries (EIIs) will be compensated for the policy costs of the renewable obligation and feed-in tariffs after confirmation of state aid clearance from the EU competition commissioner to the business department (BIS). Business secretary Sajid Javid had been lobbying the EU over the issue in order to protect EIIs, and in particular steel, from energy costs he claimed were worth hundreds of millions of pounds. The government is due to publish guidance this month on which sectors will qualify for compensation. Payments will be backdated to 14 December, when the state aid clearance was confirmed. In the autumn statement, chancellor George Osborne announced that EIIs would eventually become exempt from the costs instead of merely compensated for them. Under the new arrangement, the cost of the scheme will move from the exchequer to all other energy users.

## Firms lack innovation and skills

Innovation is often missing from strategies developed by European companies to respond to climate change, new research has found.

The study by Climate-KIC, the public-private innovation partnership, found that almost two-thirds (63%) of the 115 European business leaders it polled believed responding to climate change would drive growth as demand for environmentally sound products and services increased. To address the identified risk and opportunity, most (59%) said they had put in place a strategy to respond to help keep the global temperature rise below 2°C.

However, only 29% believed there were ample opportunities to respond to climate change using innovative technologies and ways of working. Even less (14%) believed there was sufficient scope to evolve their business model to reduce resource consumption and carbon emissions.

Climate-KIC also found that many research and development departments lack the skills and resources to meet the challenges of a carbon constrained world, with just 38% believing they had sufficient expertise. The lack of carbon skills was more marked in other functions, with only 10% of accounting and finance



teams, which are critical to forming corporate strategy, having climate change expertise. Just 6% of human resources staff, who are responsible for hiring people with skills to respond to climate change, understand the subject.

Bertrand van Ee, chief executive at Climate-KIC, said: "Many European business leaders have been lulled into the false illusion that their operations can transition into the new economy incrementally. The reality is that the huge leaps we require must be powered by both radical innovation and by people with the skills and capabilities to trigger this innovation within business."

Mobiles helping to cut CO<sub>2</sub>

Mobile communications technology saves more than 180 million tonnes of CO<sub>2</sub>-equivalent emissions a year across Europe and the US. This is greater than the total annual emissions of the Netherlands and five times higher than those of mobile networks themselves.

The finding comes from a Carbon Trust report for the Global e-Sustainability Initiative (GeSI), a partnership of information and communication technology companies. The study also forecasts that, given current projections for the increase in deployment of machine-to-machine (M2M) technologies, total annual carbon emissions abatement from mobile communications technology in Europe and the US will reach 500 million tonnes by 2020. M2M technologies are devices that can communicate automatically with each other without human intervention. They help reduce emissions, for example, by enabling more effective monitoring and

management of electricity use, heating and cooling in buildings, and by improving logistics, and vehicle use and efficiency.

Overall, 70% of current abatement comes from the use of M2M technologies in the buildings, transport and energy sectors, but some of the greatest potential savings lie in other areas, such as agriculture. In addition, mobile technology will help to unlock technological advances projected to have a significant future impact but not yet widely available, such as smart grids and driverless cars.

GeSI said there were now more than 7 billion mobile connections in the world, compared with just over 2 billion in 2005. Chair Luis Neves said: "We are just at the beginning of an accelerating adoption curve, where businesses, governments and society recognise the wealth of possibilities offered by the technology to do things differently, helping us to shape a more sustainable world."

# Waste targets too low, say MEPs

Recycling and landfill targets proposed by the European commission have been slammed as too low by MEPs.

The commission wants 65% of municipal waste to be recycled by 2030 as well as 75% of packaging waste. It also wants to limit the amount of all waste sent to landfill to a maximum of 10%.

The figures are central to its circular economy package, unveiled in December (pp.24–25), to boost EU competitiveness, foster sustainable economic growth and create jobs. “It sets a credible and ambitious path for better waste management in Europe with supportive actions that cover the full product cycle,” said commission first vice-president Frans Timmermans.

The package replaces proposals put forward in July 2014 by the previous administration but which were scrapped when the new commission took office. It included an 80% recycling target for packaging and a ban on sending waste to landfill by 2030. Confirming in December 2014 the withdrawal of the earlier package, Timmermans promised a “broader and more ambitious” set of measures.

However, many MEPs claim the revised package fails to deliver on that pledge. The Alliance of Liberals and Democrats in Europe (ALDE) described the new plans as much less ambitious. ALDE’s shadow rapporteur for the circular economy, Gerben-Jan Gerbrandy, said: “Weakening most binding EU waste targets is not progress.” Bas Eickhout, vice-president and environment spokesperson of the Greens/EFA bloc in the European parliament, said the package was undermined by lowered ambition. “This is contrary to the commitment by the commission to come forward with a more ambitious proposal. A year on from the initial decision to withdraw the original proposals, we have lost both time and ambition in the push to stimulate the circular economy at EU level.”



© FLPA/REX Shutterstock

Meanwhile, the UK waste management industry cautiously welcomed the package. “The overall direction of travel seems right: better product design, more reuse and recycling, and less landfill. And there is a welcome emphasis on implementation,” said Peter Gerstrom, chair of trade body Environmental Services Association. “However, the proposals must also address the demand side and that should be a key focus for the discussions that will now follow – markets for secondary raw materials are currently weak, with little or no sign of recovery.”

Liz Goodwin, chief executive at waste body Wrap, said she was reasonably optimistic, singling out for praise the commission’s commitment to support the reparability, durability and recyclability of products through the Ecodesign Directive. But she warned that, although the package was an important framework, it was not a panacea. “If we want to maximise opportunities for a circular economy then we all have a role to play: governments, industry and businesses,” she said.

Ian McAulay, chief executive at waste firm Viridor, described the commission’s package as balanced. “Importantly, it provides a practical framework for boosting British recycling, designing in recyclability and designing out waste, promoting sustainable sourcing and green public procurement,” he said.

## Business plans

New sustainability commitments from **Unilever** include becoming carbon positive by 2030. The fast-moving consumer goods company said all energy across its operations would come from renewable sources by 2030, and that all electricity purchased from the grid would be from renewable sources by 2020.

**Kingfisher**, which operates B&Q in the UK, has unveiled plans to invest £50 million in renewable energy as part of a strategy to reduce its energy consumption from the national grid by 10% in the next two years. The money will be spent on a range of renewable technologies, with the immediate roll-out of photovoltaic solar panels in the UK and France on distribution centres and selected stores.

**Ford** is to invest \$4.5 billion by 2020 in electrified vehicle solutions, adding 13 electric models, including the new Focus Electric. This will have fast-charge capability, delivering an 80% charge in about 30 minutes and have a projected 100-mile range. Meanwhile, Korean motor manufacturer **Kia** has announced that it will invest \$10.2 billion in developing a range of eco-friendly models and building facilities to reduce the company’s CO<sub>2</sub> output further. By 2020 the number of “green” models will rise from four to 11, hydrogen fuel cell vehicle production will be introduced within five years, and average fuel efficiency will improve by 25% against 2014 levels.

**GM** has announced that the manufacturing sites of **Opel** and **Vauxhall** are now landfill-free, meaning its European subsidiaries recycle, reuse or convert to energy all waste from daily operations.

Supermarket chain **Sainsbury’s** and Premier League football club **Arsenal** were among the 10 gold winners of the London mayor’s business energy challenge in 2015. The accolade is for businesses that significantly cut their energy consumption. Arsenal made a series of energy-friendly upgrades at its Emirates Stadium ground, while the installation of environmentally friendly technologies, such as LED lighting and solar panels, has reduced Sainsbury’s energy consumption over the past 10 years even though the retailer increased its square footage across the UK by 51%.

## Capital gain from circularity

A big expansion in circular economy activities could generate thousands of new jobs in London, a report by the waste body Wrap has found.

According to *Employment and the circular economy* the capital already supports 46,700 jobs in this sector, most of which are in waste collection and recovery, and reuse, mainly in repairing

goods. However, more extensive circular economy activity could create more than 40,000 new jobs by 2030 and reduce unemployment in the capital by around 12.5%. The report says the jobs would be generated by higher levels of recycling, more repair and reuse of products, advances in remanufacture and greater “servitisation”, such as renting goods.

## 2015 EMS forum: the changes to 14001

**Paul Suff** reports from Manchester on the annual IEMA event on environment management systems



**T**he revised environment management system standard, ISO 14001, could prove a “trojan horse” to allow more organisations to pursue far-reaching change, according to Martin Baxter, chief policy advisor at IEMA.

He told the Institute’s annual forum on environment management systems (EMS) in December that the standard could present the profession with a huge opportunity to improve supply chain environmental compliance.

“There are around 325,000 organisations worldwide with 14001 certifications,” he said. “If each one transitions to the new standard and they all demand that suppliers follow suit it could really make a difference.”

Baxter, who led the UK’s input on the working group that revised the EMS standard, made the comments in his keynote presentation. He also talked about the links between the new and revised clauses, describing 14001: 2015 as a “spider’s web”, linking strategy, risk, resilience and improvement. He used the analogy of the UK cider industry, which might have to adjust to a changing climate by producing more of the drink but also growing different types of apple better adapted to warmer weather.

But it was the changes to the standard that were the focus of the event as delegates discussed how the new version could help improve business performance.

### Improving performance

Nigel Leehane, environment director at environment and sustainability consultancy GHD, which sponsored the conference, said the revised clauses had several objectives. These were that an environment management system:

- adopts a lifecycle perspective;
- considers the broader principles of sustainability;
- involves wider business functions;
- takes a strategic approach, and addresses operational issues;
- helps drive genuine improvements in performance; and
- adds value to the business.

Leehane, who chaired a BSI committee that worked on the 14001 revision, said use of the terms risks and opportunities in an EMS would be new to many environment managers. “Using risk to denote both potentially negative consequences and to convey the concept of uncertainty of the outcome, together

## iema

### Institute of Environmental Management & Assessment

with opportunities, which is about potential beneficial effects, is a big change from the previous standard,” he said. “Environmental practitioners traditionally would use the terms ‘threat’ or ‘hazard’ to denote the negative. The emphasis now on opportunities should encourage users to consider the value that can be added through addressing environmental aspects.”

Leehane reminded delegates that the clause on risks and opportunities is closely linked to another of the new requirements in 14001: 2015; understanding the organisation and its context. He said context combines environmental conditions with external cultural and socio-economic conditions, for example, as well as the internal characteristics of the organisation. This would require organisations to have a high level, strategic understanding of such issues in order to be able to develop an effective EMS, which can then take account of risks and opportunities throughout its operations and lifecycle.

“Risk to the environment might be pollution or habitat loss, while risk to the organisation would include the effects on it from environmental conditions,” said Leehane. “There are also risks associated with an ineffective EMS, such as a failure to innovate or improve performance,” he said. The annex to 14001 illustrated how a poorly performing EMS might hamper efforts to improve overall organisational performance, Leehane added. Issues include environmental spillage due to literacy or language barriers among workers; increased flooding due to climate change that could affect premises; and a lack of available resources to maintain an effective EMS due to economic constraints.

He advised environment managers to develop a process for identifying, evaluating and prioritising risks and opportunities by answering three questions:

- What functions need to contribute?
- At what organisational level(s) should risks and opportunities be considered and plans made?
- How should the output be integrated or disseminated into business planning to ensure it is prioritised?

### Auditing 14001: 2015

In a workshop, Doug Milne and Steve Williams from certification bodies DNV GL and LRQA respectively, offered tips on what external auditors would be looking for.

In terms of complying with the clause on risks and opportunities, they said organisations would be expected to expand their “aspects or risk register” and auditors would examine its credibility, such as whether the register was driving objectives and targets. To gauge conformance with the leadership requirements in the standard, auditors would definitely be looking to speak with senior managers, said Milne, operations manager at DNV GL. Williams, governance manager at LRQA, said auditors would test the veracity of any claims in other parts of the organisation. Internal auditors too would need to be in a position to question the senior team.

Milne reported that UKAS, the accreditation service, expected “transition” audits to last longer than assessments under the previous version of 14001, but the duration of subsequent audits would probably be no longer. The certification bodies that are part of the Independent International Organisation for Certification (iioc), including DNV GL and LRQA, are re-examining the rules on audit duration, Milne said.

Both speakers agreed that assessors would rely on section 3 of 14001: 2015, which includes definitions of an organisation, top management and interested parties, as well as annex A, which provides guidance on how to implement the standard, to guide them. Williams advised environment managers to look at these as well as make full use of the revised version of 14004 (EMS – general guidelines on implementation), which is due to be published in March.

Milne said practitioners ought to engage senior management now with the revised standard and informed delegates that some iioc members had posted helpful resources on the organisation’s website.

Both speakers agreed that clause 4 (context of the organisation) would be one of the most challenging. “If you get clause 4 right the rest of the standard will flow reasonably easily,” said Williams.

## Policy update



Looking ahead  
on several fronts

Inevitably, there were mixed views on the Paris UN climate agreement. For some, actually getting political agreement from 195 countries to take action and set a long-term direction to tackle climate change was a significant achievement. For others, lack of a robust, legally binding framework to prevent global average warming passing beyond 1.5°C represents a failure. Whatever your opinion, one thing is clear: we have to support national policymakers to implement their obligations quickly and provide supporting evidence to demonstrate that reducing greenhouse-gas emissions and implementing climate change resilience actions will enhance their economies, protect communities and deliver the long-term success for communities and businesses. Identifying and articulating “co-benefits” – for example, linking the transition to low-emission vehicles to human health – will be important.

At home, the UK government needs to make a decision on the fifth national carbon budget. Anything less than accepting the advice of the Committee on Climate Change to achieve emissions reductions of 57% by 2028-2032 compared with the 1990 baseline would be contrary to the Paris agreement.

The European commission's circular economy package has been published (p.7). Although it fails to live up to the commission's stated ambition to be “more ambitious” than the proposals put forward by the previous administration, the lack of detail on precise implementation measures offers an opportunity to steer things forward.

The UK referendum on whether to remain in the EU will be a major focus of domestic policy and debate. In our evidence to the Environmental Audit Committee's inquiry into UK and EU environmental policy, we made the point that the UK had made significant contributions to EU environmental protection measures – an important point that is often missing from the debate.

**Martin Baxter** is senior policy advisor at IEMA; @mabxteriema on Twitter.



## IEMA working to produce framework for soil in EIA

Last month IEMA announced it would partner with the professional committee of the British Society of Soil Science (BSSS) and Natural England to develop a framework for assessing the significance of soil in environmental impact assessment (EIA) projects in the UK.

IEMA will be working with the BSSS committee to produce the new framework, with expert technical advice from Natural England. The framework proposes to plug a gap in available guidelines in the UK for assessing the significance of effects of EIA development on soil, including agricultural land.

The move to produce the much-needed framework comes after recent substantive amendments were made to the Environmental Impact Assessment (EIA) Directive (2011/92/EU).

Project lead Rob Askew, an IEMA member and soil expert, said: “Given that the amendments must be transposed into UK law by May 2017, and that they require a greater consideration of the effects of development on land, human health and biodiversity, a framework to support EIA professionals is now essential.”

To kickstart development of the framework, a significance of soil working group has been created, with members

from the BSSS professional committee and IEMA's Impact Assessment network. The group will advise on:

- how to characterise both the impact and the receptor;
- how to determine a likely effect; and
- how to apply professional judgment to justify the evaluation of a specific effect's significance. This follows the approach of existing guidance on EIA topic assessment, produced by IEMA and other professional bodies, including landscape, ecology and noise.

The significance of soil framework will focus on agricultural land and the production of food and fibre – a key soil function. It will also provide guidance on assessing other key soil functions, including its role in carbon sequestration, as a store of physical and cultural heritage, and as a biological habitat. BSSS noted last year that healthy and productive soils were central to achieving many of the UN's new sustainable development goals, including promoting sustainable agriculture and improving water quality.

Development of the framework has started and is set for publication on World Soil Day 2016 on 5 December.

# Airport expansion delayed for EIA

The government has delayed a decision on where to expand airport capacity in south-east England to investigate further potential environmental impacts.

The government had been expected to announce its decision by the end of 2015 after the Airports commission in July shortlisted three options – two at Heathrow and one at Gatwick. However, on 10 December, it said further work on the environmental impacts and mitigation measures of each option was needed.

The transport department (DT) said the assessment work would include testing the commission's air quality analysis against the latest projected future concentrations of nitrogen dioxide and developing measures



© your.heathrow.com

to mitigate impacts on local people and the environment. The DT expects this work to be completed in the summer.

"The case for aviation expansion is clear, but it's vitally important we get the decision right so that it will benefit generations to come," said transport secretary Patrick McLoughlin. "We will undertake more work on environmental impacts, including air quality, noise and carbon."

## EIA research

### Assessment and climate change

IEMA published a free guide to environmental impact assessment (EIA) and climate change resilience and adaptation in November 2015. New research in *Environmental Impact Assessment Review* reveals how climate change is being considered in EIA in Spain, and Austria and Germany. The authors of the Spanish study, from the Universidad Nacional de Educación a Distancia, analysed 1,713 environmental records of decisions (RODs) of projects submitted for EIA to see how climate change had been considered in assessments. They found that just 14% of the RODs included references to climate change, and in more than half it was a mere citation. Climate change was more likely to be considered in assessments for thermal power plants, which are subject to specific GHG regulations. By contrast, transport infrastructures, which are important contributors to climate change, had a very low consideration. The authors said all the references were related to the project's contribution to climate change, while consideration of the effects was minimal. They concluded that it would be highly desirable to include in EIA regulations the obligation to consider climate change, but said this would need to be accompanied by practical guidance and training for practitioners and evaluators.

The second study involved researchers from several organisations, including the University of Natural Resources and Applied Life Sciences in Vienna and the University of Liverpool. They investigated the extent to which EIA contributed to an early consideration of climate change consequences in planning processes. The research included interviewing staff from infrastructure companies and institutions in Austria as well as EIA assessors and EIA authorities there and in Germany. They found that the groups considered climate change to different degrees. Interviewees said a lack of data as well as general uncertainty on how far climate change should be considered in the process without reliable information were barriers to integrating climate change in assessments.

[bit.ly/1U2BM2M](http://bit.ly/1U2BM2M); [bit.ly/1IEju6O](http://bit.ly/1IEju6O)

## EIA practice update with IEMA's Josh Fothergill

### The amended EIA Directive

On 8 January, I will represent IEMA members at a stakeholder roundtable hosted by the communities and local government department on its plans to transpose the amended EIA Directive, which must be completed by May 2017. The "mood music" in Whitehall is focused on streamlining EIA as much as possible – although this may be difficult to achieve within alterations required by the 2014 amendments. IEMA expects all government departments and devolved administrations to consult this year on amending the UK EIA regulations, so expect a busy year of reviewing and responding to changes – consistency will be critical to avoid chaos come May 2017.

### IA Network in 2016

IEMA launched its IA Network in 2015 and its activities will become increasingly prominent this year, with an active steering group and multiple sub-groups exploring: heritage, soil, traffic, health, scoping, proportionate IA, evidence plans, environmental and social impacts (ESIA), greenhouse gases and EIA post-consent. The network will also be gathering organisational

experiences and case studies related to two new guides from IEMA. They are:

- *Climate change resilience and adaptation* – produced in partnership with Mott MacDonald – available at [iema.net/eia-cc](http://iema.net/eia-cc).
- *Shaping quality development* – produced in partnership with LDA Design – available at [bit.ly/1IJcoOg](http://bit.ly/1IJcoOg).

To be kept informed about the network or to get involved email [ia@iema.net](mailto:ia@iema.net).



### IA webinars in 2016

Changes are coming as the IA Network steering group takes charge of the webinar process, supported by head office. The webinar series will have a forward plan and webinars will be delivered at different times each month. In terms of topic focus, there will be a split between exploring specific aspects of the amended EIA Directive and topics beyond UK EIA. Alongside the webinars, the Network's sub-groups (IA Network 2016 above) will engage members in their activities. Finally, IEMA head office will still be on hand to deliver critical IA webinars related to formal consultations on topics, including EIA, SEA and ESIA.

# Business interest in solar drops after cuts

Businesses are dropping plans to install solar photovoltaic (PV) panels on the roofs of offices and factories after the government confirmed cuts to renewable energy subsidies on small-scale schemes.

In December, the energy and climate change department (Decc) published new rates for feed-in-tariffs (FITs) for small-scale PV, wind and hydro installations. Although the cuts were not as severe as originally proposed in the August 2015 consultation, the solar industry said the changes would challenge the viability of commercial rooftop schemes. From 8 February, projects with a capacity of 10-50kW will receive 4.59p/kWh instead of the current rate of 10.9p/kWh. Those over 1MW will receive 0.87p/kWh, down from 5.94p/kWh. The rates target a return on investment of 4.8%, Decc said.

The department is also introducing a quarterly cap on the capacity of new solar projects installed from 8 February. The cap will limit annual government spending on FITs to £100 million. Those who miss out will have their FITs applications frozen until the next cap opens, Decc said. However, pre-accreditation, which allows applicants to pre-book their FIT rate, will be reintroduced from 8 February after Decc recognised that removing it created too much uncertainty for businesses, which may need a few months to make investment decisions.



Renewable energy advisers said that the changes were already having an impact on business interest in solar projects. Chris Jennings, strategic development manager at energy and carbon consultancy Sustain, said: "We have observed a distinct drop in demand for our solar PV modelling services since the cuts were announced – particularly in our stockwide PV capacity studies." One of the consultancy's largest clients had shelved all plans for solar PV as a result of the cuts, he added. Payback times for housing association schemes had increased from 11 to 17 years, the firm estimated.

Phil Horton, managing director at renewable energy firm Dulas, agreed the changes would increase the payback times for solar projects, so firms would now

need regard any subsidies they receive as bonuses. "We're still quoting for large, blue-chip clients as their drivers, such as meeting their own CO2 reduction targets, tend to differ from those of smaller firms," Horton said. Solar projects were also important for businesses that wanted to guarantee their future price of energy.

The annual cap in particular has caused great uncertainty, said James Robinson, an energy specialist at consultancy Carter Jonas. No-one will go ahead with new projects until they see how the cap works in practice, he warned. "The fear is that the caps will be met immediately. If there's a big rush in applications then you'll be on the waiting list," he said. Commentators agree that solar schemes might still be viable for energy intensive industries.

## Making energy choices

The new feed-in tariffs (FITs) for solar and wind is a cut of "only" 63% instead of the 91% originally proposed.

There is no doubt, however, that the new subsidy levels for renewable deployment will severely damage roll-out. The government is justifying the cut on the ground that subsidies should not be in perpetuity. With solar and onshore wind close to market parity in terms of cost per hour of electricity produced and with money for subsidies tight, it is as well that the industries do without significant subsidy now rather than later.

I can buy part of that argument. It always was the case that FITs were supposed to fall as costs for technologies came down. Solar panel prices have nosedived in recent years, and arguably the initial tariffs were set too high, but a more sensible continuing tariff depression

would keep in line with this initial understanding, while not terminally frightening off investors and installers.

The part I don't buy is the selectivity being levelled at renewables under the guise of the "stand on your own feet" argument. The truth is that pretty much all forms of energy are subsidised, and largely not on a degressing basis. The planned nuclear power station at Hinkley Point in Somerset will receive around £24 billion over 35 years. In the same week as the cuts to FITs were announced, the government held a second capacity auction – intended to ensure that power stations will be available to provide electricity when required. They will be subsidised to do this and be able to keep the profit from the power produced. Gas-fired and coal-fired power stations as well as existing nuclear power plants all will receive substantial standby payments.

I can also buy part of the argument for capacity auctions: paying to keep plants online makes sense.

But the deployment of renewables – which generally can be faster than building large, conventional power plants – also contributes to keeping that capacity gap open. To tell one sector it must do without subsidy while another receives money betrays where the government's energy priorities lie, rather than acting as a sound argument about subsidies. So the other truth right now is that in effect you pay your subsidy and you take your choice: and the choice of the government's energy policy is to not prioritise renewable and low-carbon energy.



**Alan Whitehead**, MP for Southampton Test and energy and climate change committee member.

# In court



## South West Water fined £300,000 for sewage spill

South West Water has been fined £300,000 by Plymouth Crown Court for polluting a stream in Devon with poorly treated sewage. It is the largest fine imposed on the water company, which was also ordered to pay prosecution costs of £14,421.

The court was told that the problem, which was spotted first on 11 September 2013, was due to a combination of equipment failure and poor management at the firm's Ashill sewage treatment works, near Cullompton. One that occasion, officers from the Environment Agency, which brought the prosecution, discovered sewage fungus in Craddock stream, near the treatment works. They also found excessive sludge in the treatment process and blocked filters. Sewage fungus from the outlet channels of the works extended for 400 metres downstream and affected river life.

A biological survey of the stream found that the sewage had been poorly treated for at least a month, and further investigation by the agency revealed that South West Water knew of the poor condition of the watercourse. The quality of the sewage was still poor when agency officers visited the site on 12 December 2013.

Judge Ian Lawrie said sewage fungus was evidence the pollution was a relatively long-term problem and not due to a passing release of effluent. He said the company had failed to keep an effective watch on the maintenance and operation of the site since the problem was discovered in September 2013. "[South West Water] should have made more effort to ensure the site ran properly and that its maintenance programme was sufficient," he said.

Mischka Hewins, a spokesperson for the agency, said: "We carried out regular checks on the watercourse in 2013 and saw pollution on two occasions. An ecological survey revealed that there was a detrimental impact on the invertebrate fauna of the stream as a result of the sewage treatment discharge and significant changes to the wider ecology of the stream."

A spokesperson said South West Water regretted the incidents and the court was told that the company planned to invest heavily in upgrading the Ashill works, including installing an additional septic tank, a new humus tank and a dry weather flow gross storm overflow.

The offences contravened regulations 12 and 38 of the Environmental Permitting Regulations 2010. The order came just a few weeks after South West Water was fined £214,000 by the same court for a similar offence at its Camel's Head treatment works in Plymouth.

### Penalties for CRC offences

Four firms have received civil penalties for failing to comply with their obligations under the carbon reduction commitment (CRC) scheme. Retailer Poundworld must pay £45,000 for failing to register for phase 2 of the scheme, from 1 April 2014, contrary to the CRC Energy Efficiency Scheme Order 2013.

Meanwhile, financial services business PSC Nominee 1 (formerly RB Investments), Geraud (UK), the British arm of Groupe Geraud, an Anglo-French company, and Basingstoke-based Pentair SSC UK (formerly Pentair Flow Control (UK)) received penalties for failing to submit a CRC annual report for the 2013/14 compliance year by the deadline, 31 July 2014. PSC must pay £4,740, Geraud £5,000 and Pentair £13,500.

### Shell in Canada fined for odour

Shell Canada, a subsidiary of Royal Dutch Shell, has been ordered by the government in Ontario to pay C\$825,000 for discharging a contaminating odour from its Sarnia refinery in 2013.

In a statement, the Ontario ministry of the environment and climate change said Shell had pleaded guilty to one offence of permitting a discharge of an odour containing mercaptan into the natural environment, causing an adverse effect and contrary to Canada's Environmental Protection Act (EPA). The ministry said mercaptan's foul odour affected numerous people in the nearby Aamjiwnaang First Nation (AFN) community. The firm was fined C\$500,000 and ordered to pay C\$200,000 to the AFN as well as a C\$125,000 victim surcharge.

## Case law

### Court of Appeal backs waste recovery option

The Court of Appeal has granted an appeal by Lafarge (now Tarmac) against a decision of the secretary of state. In the November 2015 issue of *the environmentalist* it was reported that the High Court had rejected the aggregates company's application to appeal against a Defra inspector's decision not to overturn a refusal by the Environment Agency of a standard rules environmental permit for the use of inert waste in restoration work. The company had wanted to use recovered materials as backfill to reinstate a public footpath at a quarry in Leeds, the restoration of which was a condition of planning consent.

The case hinged on whether the proposed operations were "waste recovery" under art 3(15) of the revised Waste Framework Directive and therefore eligible for a standard rules permit, or "waste disposal", which required a bespoke permit.

In *R (on the application of Tarmac Aggregates Ltd (formerly Lafarge Aggregates Ltd) v Secretary of state for environment, food and rural affairs*, the Court of Appeal held that the backfill operation ought to have been classified as waste recovery. It said the operation was a legitimate function to comply with a planning condition, and if waste material was not used then primary materials would be required. The main objective of the operation was to use the waste to secure ecological improvement of the site rather than to dispose of the waste, said the court. As a result, the claimant's appeal was allowed and the inspector's decision was quashed. It was replaced with a determination that the agency should issue a standard rules environmental permit in relation to the restoration work.

Hayley Tam

Lexis®PSL

# New regulations



In force	Subject	Details
11 Nov 2015 	Environment protection	The Flood Reinsurance (Scheme and Scheme Administrator Designation) Regulations 2015 designate the flood reinsurance scheme and the scheme administrator. <a href="http://bit.ly/1NX4iUz">bit.ly/1NX4iUz</a>
12 Nov 2015 	Environment protection	The Environmental Regulation (Enforcement Measures) (Scotland) Order 2015 provides the Scottish Environment Protection Agency (Sepa) with the power to: impose fixed monetary and variable monetary penalties; and accept enforcement undertakings to better tackle environmental non-compliance. <a href="http://bit.ly/1IGKcLW">bit.ly/1IGKcLW</a>
18 Nov 2015 	Ecolabels	European commission decision 2015/2099 revises ecological criteria for growing media, soil improvers and mulch. When a qualifying product satisfies three criteria it can use the EU ecolabel. 2015/2099 replaces criteria on growing media, soil improvers and mulch established under decisions 2006/799/EC and 2007/64/EC, which expire on 31 December 2015. Ecolabel licences awarded under criteria set out in these decisions remain valid until 18 November 2016. <a href="http://bit.ly/1Y4BEjX">bit.ly/1Y4BEjX</a>
28 Nov 2015 	Water	The Private Water Supplies (Amendment) Regulations (Northern Ireland) 2015 amend the 2009 Regulations to transpose the provisions of Directive 2013/51/EURATOM. The Directive requires the protection of public health from radioactive substances in water intended for human consumption. Radon has been added as a parameter, new monitoring and risk assessment requirements introduced, and sampling requirements updated. <a href="http://bit.ly/1RbQztw">bit.ly/1RbQztw</a>
1 Dec 2015 	Energy	The Renewables Obligation (Scotland) Amendment Order 2015 implements policy decisions in relation to the reporting requirements and sustainability criteria for stations using solid biomass and biogas feedstocks to generate electricity. The amendments include: making mandatory compliance with the sustainability criteria for generating stations of at least 1MW that use solid biomass and biogas; tightening the greenhouse-gas (GHG) emissions targets for 2020 and 2025; and averaging GHG emissions over the year. <a href="http://bit.ly/1Nk43gT">bit.ly/1Nk43gT</a>
4 Dec 2015 	Climate change	The Greenhouse Gas Emissions Trading Scheme (Amendment) Regulations 2015 amend the 2012 Regulations by setting out measures to support small emitters and installations that previously served hospitals moving into the full EU emissions trading system (ETS). When joining or rejoining the ETS, these organisations will be required to trade and surrender allowances for their emissions and may receive a free allocation of allowances. <a href="http://bit.ly/1SPP3Lm">bit.ly/1SPP3Lm</a>
8 Dec 2015 	Hazardous substances	EU Regulation 2015/2067 imposes minimum competency requirements for persons and companies working on systems containing fluorinated greenhouse gases (F-gases) except electrical switchgear. EU Regulation 2015/2068 establishes the format of labels attached to products and equipment containing F-gases. Labels must be legible and provide details of the gas held – name of the gas, charge weight in kg and the corresponding global warming potential in tCO <sub>2</sub> e. The label must also record whether the unit is hermetically sealed. If the equipment is electrical switchgear, the label must also state whether the tested annual leakage rate is below 0.1% – units with a greater rate may require periodic testing. Additional Information is needed when F-gases are intended to serve particular uses or are recycled. Foams and pre-blended polyols that contain F-gases must not be placed on the market unless they are identified with a label using the accepted industry designation or the chemical name if no designation is available. <a href="http://bit.ly/1QgUvsM">bit.ly/1QgUvsM</a> ; <a href="http://bit.ly/1OUTEdZ">bit.ly/1OUTEdZ</a>
31 Dec 2015 	Ecolabels	European commission decision 2015/2056 extends EU ecolabel criteria for televisions, footwear, wooden furniture, and notebook and personal computers until 31 December 2016. <a href="http://bit.ly/1OT5HKV">bit.ly/1OT5HKV</a>

# Latest consultations



25 Jan 2016

## National planning policy

 Proposed changes to national planning policy in England are the subject of a consultation by the communities and local government department. They include measures aimed at supporting “sustainable” new settlements, development on brownfield land and small sites, and delivery of housing agreed in local plans. One proposed change is to amend the exception site policy to make it clearer that planning applications can be rejected only if there are overriding design, infrastructure and local environmental (such as flood risk) considerations that cannot be mitigated. [bit.ly/1RbXIdk](http://bit.ly/1RbXIdk)


3 Feb 2016

## VAT on energy-saving products

 Under European legislation, the UK can have two reduced rates of VAT. It has just one reduced rate at 5%, which applies to the installation of energy-saving materials (ESMs) in residential accommodation, such as care settings. The European commission has argued that this was not consistent with EU law. The Court of EU Justice agreed. HM Revenue and Customs is now consulting on amending UK legislation in the 2016 Finance Bill. [bit.ly/1YYFopt](http://bit.ly/1YYFopt)


18 Feb 2016

## Substance authorisation

 The European Chemicals Agency is consulting on including 11 new substances in the REACH authorisation list. They are: dihexyl phthalate and 1,2-benzenedicarboxylic acid, dihexyl ester, branched and linear (plasticiser in PVC); HHPA and MHPA (hardener for epoxy resins); trixylyl phosphate (in lubricants, hydraulic fluids and plastics production); two boron compounds – sodium perborate; perboric acid, sodium salt and sodium peroxometaborate (in detergents and bleaching products); and four lead compounds – orange lead (lead tetroxide); lead monoxide (lead oxide); tetralead trioxide sulphate; and pentalead tetraoxide sulphate (batteries and rubber production, in adsorbents). Substances may be placed on the market or used only after a specified date if an authorisation is granted. [bit.ly/1XcIs3G](http://bit.ly/1XcIs3G)

26 Feb 2016

## Natural capital protocol

 The Natural Capital Coalition is consulting on a draft framework for businesses to measure and value their impacts and dependencies on natural capital. The framework would standardise companies' reporting of natural capital.

The first version of the protocol is due to be published in July 2016.

[bit.ly/1XpQHEn](http://bit.ly/1XpQHEn)


28 Feb 2016

## Invasive species

 The Infrastructure Act 2015, which received royal assent last February, grants the secretary of state, Natural England, the Environment Agency and the Forestry Commission powers to require site owners to carry out control operations against invasive non-native species or allow them to do so themselves if an owner has refused to act or allow access. Defra is now consulting on a draft code of practice setting out how these provisions should be applied in England. The Welsh government is to consult separately on a draft code. [bit.ly/1PTEwkB](http://bit.ly/1PTEwkB)

3 Mar 2016

## Onshore oil and gas

 The Environment Agency is consulting on its approach and the standards it is proposing for the onshore oil and gas sector in England. The guidance is for oil and gas companies and consultants and sets out which environmental permits are needed for exploration and extraction operations. [bit.ly/1QJ533P](http://bit.ly/1QJ533P)

## New guidance

<b>Countryside stewardship</b>	The latest edition of the Countryside stewardship manual has been published and applies to all multi-year agreements from 1 January 2016 ( <a href="http://bit.ly/1Ucpgso">bit.ly/1Ucpgso</a> ). The countryside stewardship scheme provides incentives for land managers to look after their environment. It is open to eligible farmers, woodland owners, foresters and other land managers through a competitive application process.
<b>Sustainable drainage</b>	Ciria has published a revised version of its manual ( <a href="http://bit.ly/1NmDx6x">bit.ly/1NmDx6x</a> ) on sustainable drainage systems. The manual covers the planning, design, construction and maintenance of systems to assist with their effective implementation in new and existing developments. It looks at how to maximise amenity and biodiversity benefits, and deliver the key objectives of managing flood risk and water quality.
<b>GRI and human rights</b>	The connections between the G4 Reporting Guidelines (G4) and key concepts of the UN's guiding principles on business and human rights, such as due diligence, grievance mechanisms and impact assessments, have been set out in a new publication from GRI ( <a href="http://bit.ly/1HSYXLo">bit.ly/1HSYXLo</a> ). The document aims to provide stakeholders with an understanding of existing opportunities and the potential for companies to integrate and adhere to the guiding principles when using G4.
<b>Sustainable procurement</b>	Defra has published a revised edition of its official government buying standards (GBS) for construction and refurbishment projects ( <a href="http://bit.ly/1lAGkCd">bit.ly/1lAGkCd</a> ) as well as these products (all available at <a href="http://bit.ly/1NmGofK">bit.ly/1NmGofK</a> ): air-conditioning units; central heating systems; combined heat and power; condensing units; domestic gas and non-domestic boilers; lighting control gear; lighting systems; paints and varnishes; rainwater harvesting equipment; showers, taps, toilets and urinals; vehicle wastewater reclaim units; water-efficient industrial cleaners; windows; and wood products.



# Testing times

The recent Volkswagen scandal has heightened concerns about vehicle emissions and the testing regime. **Farah Alkhalisi** looks at the implications

**V**olkswagen's admission in September 2015 that it had used a software algorithm known as a "defeat device" to artificially lower nitrous oxide emissions from diesel vehicles during testing made headline news. The Volkswagen Group has subsequently had an executive reshuffle, reported financial losses, suffered share price falls, instigated a large-scale recall, and had its credit rating cut. "Dieselgate" has since diversified: poorer-than-certified CO<sub>2</sub> emissions are now being investigated in a wider enquiry involving petrol engines and other manufacturers too.

Accusations were quickly made. Bob Lutz, former General Motors vice-chair and product czar, wrote a column for *Road and Track* magazine in which he blamed the management culture at VW for the diesel-emissions scandal. He described "a reign of terror and a culture where performance was driven by fear and intimidation". Lutz argued that, whether or not senior managers at the German motor manufacturer knew of the rogue software, Volkswagen engineers were under extreme pressure to lower emissions – at any cost.

## Fault lines

Whether fault lies with the company culture or a few rogue engineers undoubtedly Volkswagen, like many of its rivals, has found cutting emissions a challenge.

However, Transport & Environment (T&E), a Brussels-based think-tank and lobby group, has long campaigned for reforms in the emissions testing regime (see panel, p.18). Clean vehicles manager Greg Archer points to imperative benchmarks from legislative and marketing perspectives – meeting criteria for particular

tax bands, for example. "Manufacturers are regulated on this basis, and what they are therefore doing is exploiting loopholes in the test methodology to produce the lowest possible results," he says. The NEDC – new European driving cycle – tests were last updated in 1997 and are, says Archer, "not fit for purpose and the procedures open to exploitation."

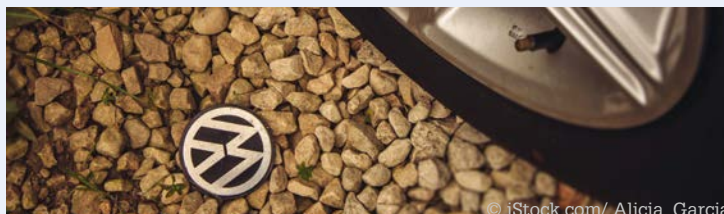
## Designing for test

Yet manipulating poorly regulated testing frameworks is only part of the story: concerns are growing about legal technologies that perform far better under the artificial conditions of a laboratory test than in real-life driving.

Besides rendering official claims for CO<sub>2</sub> emissions (and fuel economy) misleading, these can bias the market towards particular innovations. Stop-start – automatic engine cut-out when idling – is one. "Technologies like stop-start perform really well on the NEDC cycle because, during that test procedure, the car is stationary for 20% of the time," says Archer. "In most driving, you don't have the vehicle stationary for as long, so you get much less benefit."

He also singles out turbocharged direct-injection petrol engines, often fitted in a downsizing strategy, which, he says, again "show quite wide variations between test and real-world performance". London-based Emissions Analytics, which has put some 1,000 vehicles through its own PEMS (portable emissions measurement system) on-road testing in Europe and the US, backs up T&E's thinking. "There are quite a few technologies that don't deliver much real-world improvement, but do deliver a much higher NEDC figure," says Nick Molden, founder and chief executive.

## Volkswagen scandal: the story so far



On 11 September 2015, the Volkswagen Group was proud to be named the world's most sustainable carmaker in the Dow Jones Sustainability Indices. It was hailed as an industry leader in terms of environmental reporting and achieved top marks for its codes of conduct, compliance and anti-corruption.

Days later, the US Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) announced an investigation prompted by a study in 2014 at West Virginia University. Sponsored by the ICCT (International Council on Clean Transportation), researchers found discrepancies in NOx emissions of up to 35 times the required US standard in tests of a Volkswagen Jetta and Passat.

Volkswagen issued a public apology at the end of September, admitting that "a particular software" in its four-cylinder Type EA189 engines, built between 2009 and 2015 and fitted in some 11 million vehicles worldwide, had caused "a noticeable deviation between bench test results and actual road use". Volkswagen Group chief executive Martin Winterkorn resigned, and a recall of cars with the EA189, including those sold by its Audi, Škoda and SEAT brands, was announced – around 8.5 million vehicles in Europe. Class action lawsuits were launched in the US against VW as well as Bosch, supplier of Volkswagen's software, claiming that the world's largest auto supplier had "aided and abetted" VW to cheat tests.

In early November, the EPA and CARB announced their finding of defeat device use in Volkswagen's 3.0-litre V6 diesel engine, and fitted in Audi and Porsche models too. EU authorities confirmed this. Volkswagen initially admitted "irregularities in CO2 levels". However, after further testing, the company issued a statement on 9 December: "The suspicion that the fuel consumption figures of current production vehicles had been unlawfully changed was not confirmed. During internal remeasurements slight deviations were found. The deviations found in the figures for only nine model variants amount to a few grammes of CO2 on average."

On 10 December, VW chair Hans Dieter Poetsch blamed the scandal on a chain of errors and said the automotive firm had agreed steps to improve oversight of engine software development to avoid future emissions test manipulations. "We are talking here not about a one-off mistake but a chain of errors," he said. "Based on what we know today, it was a very limited group which acted irresponsibly."

The European parliament announced on 16 December the launch of an inquiry into the scandal. MEPs will look into the failure by the European commission and national authorities to prevent the use of defeat devices to cheat emissions tests.

Since the EPA and CARB revelations in September, Germany's vehicle regulatory body, the Kraftfahrt-Bundesamt (KBA) has tested more than 50 diesel cars from brands including BMW, Mini, Mercedes-Benz, Volvo, Ford, Land Rover, Fiat, Honda, Hyundai, Peugeot, Nissan, Renault and Toyota, as well as VW. Tests by German environmental lobby group Deutsche Umwelthilfe (DUH) on the Renault Espace and Opel Zafira 1.6 litre diesel models have also found excessive NOx emissions (25 times the Euro 6 limit in the case of the Espace), though both manufacturers dispute the results.

He agrees with Archer on stop-start and notes that, for turbocharged engines on the NEDC cycle, "the turbocharger's not on for most of the test, whereas in real driving it's on for a lot of the time". Molden points out that the starkest differences are typically by engine size. "There's a clear relationship: the smaller the engine, the bigger the variance," he says, pointing to the case of sub-one litre engines that have to work so hard in everyday driving.

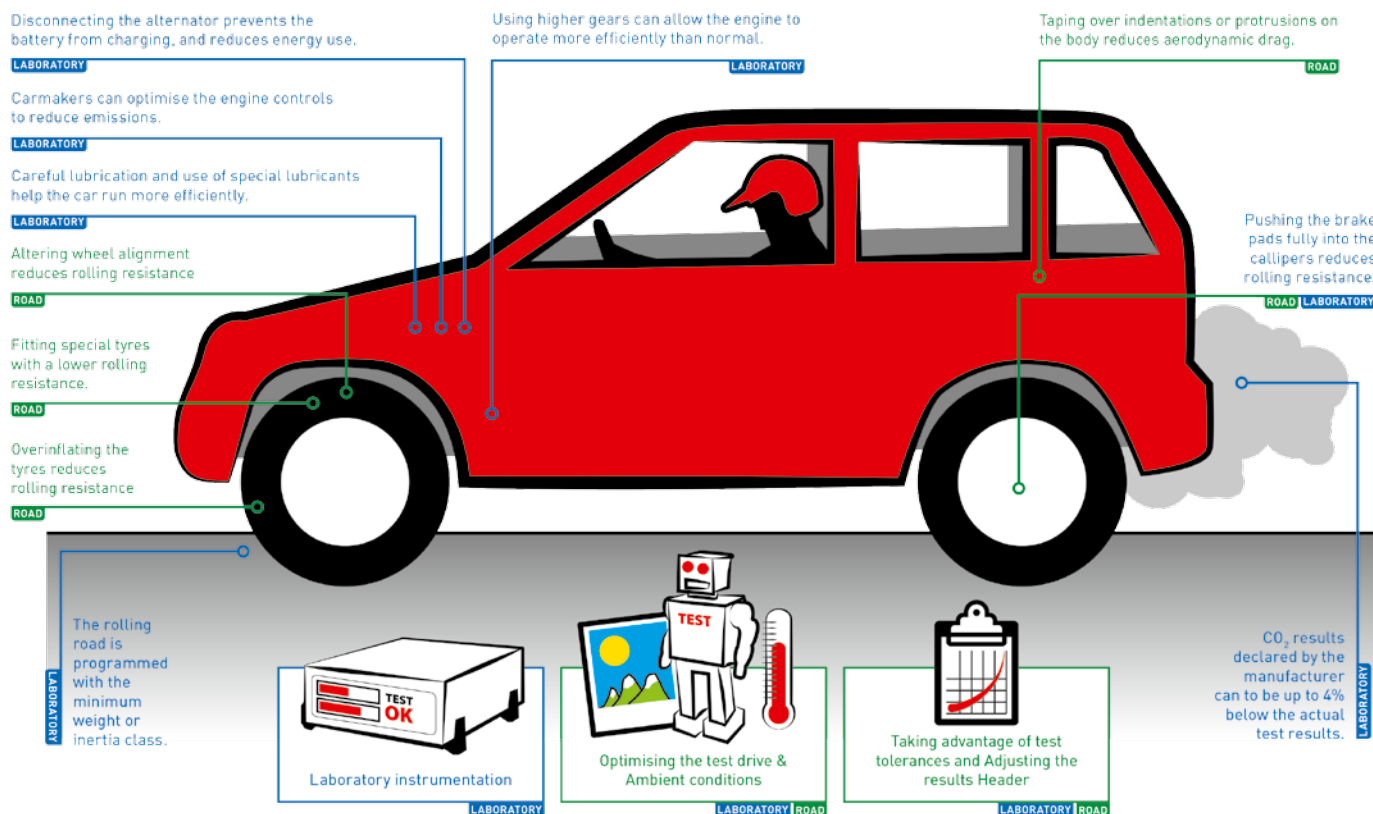
Some diesel models specifically marketed for their low emissions and fuel consumption have also consistently performed poorly in independent testing. In 2014, German motoring organisation and testing body ADAC shamed the Peugeot 208 e-HDI diesel (automatic) and Volvo V40 D2 1.6 in a survey for the UK's Consumers' Association. And testing last year by Italian body Altroconsumo found a Volkswagen Golf 1.6 TDI emitted some 50% more CO2 and burned some 50% more fuel than its NEDC figures suggested.

NEDC-defined nitrous oxide (NOx) levels are routinely exceeded too. The Norwegian Transport Ministry (TØI) and Finland's VTT found that, although particulates were well contained, the Euro 6-compliant diesel passenger cars it tested showed between four and 20 times the current standard's NOx limit in city traffic and during cold weather. Emissions Analytics has also found NOx to be on average four times higher than certified from diesel vehicles it has tested.

### Reforming the regime

The NEDC is due to be replaced in 2017 by the harmonised world light duty test cycle and procedures (WLTP or WLTC). Nonetheless, this may still not give an accurate picture.

Archer says: "It has higher speeds during the test, it has a more dynamic driving pattern, but it probably won't produce results as representative as are currently being produced in the US." He notes that prototype rather than production vehicles will be tested without equipment such as heaters or air-conditioning activated.



## Legislative loopholes

Transport & Environment (T&E) first highlighted the gap between real-life vehicle emissions and official test results in 1998, and its subsequent reports have identified ways in which the test regime and its procedures could be manipulated.

“There are about 20 loopholes that we’ve identified and published,” says Greg Archer, T&E’s clean vehicles manager. These include taping over cracks in doors and grilles to reduce aerodynamic drag; fitting lower rolling-resistance tyres or overinflating tyres; adjusting wheel alignment and brakes; using special lubricants; disconnecting alternators to prevent energy use for battery-charging; and testing at altitude, at high temperatures or on super-slick tracks. Auxiliary equipment fitted to vehicles, such as satellite navigation systems and heated seats, is not switched on during testing either.

Most notably, however, T&E has long described so-called “cycle-beating”. This is an additional tactic to optimise the engine management system, and can involve activating selective catalytic reduction (to reduce NO<sub>x</sub> emissions) or the artificial lowering of CO<sub>2</sub> during selected parts of the engine map. Engine software can predict and detect when testing (on a rolling road) is being carried out.

T&E’s annual *Mind the gap* report uses ICCT-compiled data from eight sources in Germany, the UK, the Netherlands and Switzerland, including user-reported databases such as the German Spritmonitor survey. *Mind the gap 2015* identified an average “gap” of 40% between test and real-world CO<sub>2</sub> emissions (compared with 8% in 2001).

Vehicles from Mercedes-Benz showed the widest variance – more than 50% for the A-Class, C-Class and E-Class tested vehicles. The BMW 5-Series, Peugeot 308, Renault Megane and Volkswagen Golf diverged from their official outputs by more than 40%. T&E concludes that the system of testing fuel economy and CO<sub>2</sub> emissions is “utterly discredited” and that, although “such gaps do not prove the use of ‘defeat devices’ by any manufacturer ... they do make it imperative to extend the scope of investigations into the use of this illegal technology to cover CO<sub>2</sub> tests”.


“From our point of view you need to make sure vehicles are tested as they will be used on the road, and that includes switching on some of these auxiliary and other systems. So WLTP is a step forward, but it’s not going to address all the problems in its own right.”

Molden agrees: “The drive cycle is better than the NEDC, but it still falls short of what I would call real-world driving. The devil will be in the detail of the protocol, how air-conditioning and cold start and the like will be treated. If the protocol is too weak and there are too many grey areas, we could find the gap is not closing by very much.”

A report, published in September for the Committee on Climate Change by Element Energy and the ICCT (International Council on Clean Transportation), echoed this. It concluded that the gap between test and real-life results could widen further as manufacturers found new ways to “optimise” their vehicles.

However, in tandem with a further measure, WLTP could prove more powerful: the proposed RDE (real driving emissions) tests, on-road analyses using PEMS, are intended to tackle NO<sub>x</sub>. The ICCT sees RDE as “fully justified and much needed”, but a real challenge. NO<sub>x</sub> emissions from the Volvo, Hyundai and Renault diesel models it analysed early in 2015 were found to be particularly poor and highly unlikely to meet RDE standards. Lobbying from the auto industry has pushed back the date for RDE compliance to 2019, and details of the protocols have yet to be finalised.

Recommendations have been made, however. “What we need is to have a European type approval authority so that the tests are carried out in a truly independent way, and the manufacturers are not paying those who are undertaking the tests for them,” says Archer. Similar calls have been made by bodies including the IIGC (Institutional Investors Group on Climate Change), which states: “Either strengthen requirements for national type approval authorities to conduct mandatory real driving



emissions test procedures for non-CO2 pollutants, including random on-the-road testing, or establish an independent European type approval authority.” It adds that CO2 standards should be set “at an ambitious level that is fully in line with the EU’s 2030 and 2050 climate-energy objectives” in order to trigger a “step-change in innovation across vehicle classes”.

### Diesel disincentives

Although the planned reforms to testing have been welcomed, it will be a long time before the impact of WLTP and RDE can be accurately assessed. In the meantime, nitrous oxides remain dangerous pollutants linked to air quality and health issues while vehicle CO2 output is not only continuing to add to greenhouse gases but is making emissions targets on organisational, national and international levels less achievable.

Fleet managers need to make decisions on vehicle procurement while taking into account financial matters. The current UK taxation system – based on official CO2 outputs – favours diesel vehicles, but could be revised in future in light of Dieselgate, and changes in policy could bring a parallel rise in duty on diesel fuel. Volkswagen has also recently warned owners and operators that CO2 figures for vehicles under investigation are now only “provisional”. Despite the admission, HMRC has said it has no plans to reclassify affected cars so they are placed in less advantageous tax bandings. Nonetheless, further disincentives include the prospect of banning diesels in city centres – being considered in London, Leeds, Birmingham, Southampton, Derby and Nottingham for 2020 – or higher-cost parking permits, as have been introduced in the London borough of Islington. Some used car market analysts are already predicting a fall in residual (resale) values of diesel cars in general, but especially for VW Group models.

Gerry Keaney, chief executive of the British Vehicle Rental and Leasing Association (BVRLA), advises: “It is too early to report on any long-term implications of the VW crisis. What we can say is that, while 75% of the BVRLA member fleet runs on diesel, we expect its gradual decline in market share to gather pace. This trend pre-dates the VW emissions crisis, as fleet managers started to favour a new generation of small, turbocharged petrol engines. “Furthermore, electric vehicles are becoming more attractive thanks to greater awareness of their lower running costs. Diesel will remain a vital part of the fleet mix for some time yet, however. It is still the most energy-efficient fuel type and often the most appropriate powertrain for long-distance journeys or non-urban freight transportation.”

Dieselgate may not, after all, prove to be disruptive. However, it does highlight that there is no cause for complacency on emissions under current or upcoming legislative regimes. And it could support arguments for taking a more radical organisational approach, whether switching to EVs, using on-demand, shared or car club vehicles to reduce unnecessary mileage, or introducing mobility management schemes and incentivising active travel instead.

**Farah Alkhalisi** is a motoring journalist.

### A new approach

PSA Peugeot Citroën and the Brussels-based think-tank and lobby group Transport & Environment have agreed to work together to measure and publicise real-world fuel economy figures by this spring. By spring next year, this will cover other pollutants, including nitrous oxides (NOx) for Euro 6.2 passenger vehicles. The procedure will measure real-world fuel economy for each of PSA’s main passenger vehicle models with tests on open, public roads near Paris in real travelling conditions, including urban, extra-urban and motorway driving.

The French automotive company says the procedure will be included in its quality processes, with the results of tests audited and validated by an internationally recognised independent third party, possibly Bureau Veritas.

Jos Dings, director at T&E, says: “Real-world measurements of CO2 emissions and fuel economy will help drivers choose the most efficient models, benefiting consumers, public health and the environment. We are confident that the work we plan to undertake with PSA can generate transparent, robust results that everyone can rely on.”

# A coming together

**Marek Bidwell** finds out whether the new structure for ISO standards is driving further integration of management systems

**E**ver since organisations started implementing multiple management systems, the subject of integration has been on the agenda. Changes to the environment (ISO 14001) and quality (9001) management standards last year should make integration easier. Both apply the same structure, text and common terms and definitions for management system standards developed by the International Organisation for Standardisation (ISO) in 2012. The forthcoming occupational health and safety management system, 45001, which is due out in October, will follow the same approach.

ISO said the new framework for a generic management system – known as annex SL – would ensure consistency among future and revised management system standards, and make integrated use simpler. So, is harmonisation of standards helping organisations to fuse their management systems?

## Examples of core text in annex SL

### 5.1 Leadership and commitment

“Top management shall demonstrate leadership and commitment with respect to the XXX management system by...”

### 9.2 Internal audit

9.2.1 “The organisation shall conduct internal audits at planned intervals to provide information on whether the XXX management system:...”

Where the text XXX appears the appropriate reference should be inserted, such as quality or environment. Additional text and clauses may be added specific to the discipline.

This text can be downloaded free from ISO’s website and is found on pp.127–37 of *ISO/IEC directives, part 1 consolidated ISO supplement – procedures specific to ISO* ([bit.ly/1IRF1hM](http://bit.ly/1IRF1hM)).

To answer that, *the environmentalist* spoke with senior staff from three companies, each at a different stage on their journey to integration.

### Starting point

Precision metal fabricator Hydram Engineering, whose clients include Caterpillar and Herman Miller, has certification to 14001 and 9001 as well as OHSAS 18001, the current standard for occupational health and safety. “We are about 25% integrated already,” says health, safety and environment (HSE) manager Andrew Robertson. “This includes integration of common processes, and in some instances sharing procedures between systems such as training, internal audit, document control and management review.”

As well as the integration of high-level system procedures, Hydram includes health, safety, environmental and quality (HSEQ) requirements in standard operating instructions, ranging from the type of protective equipment to be worn for a task to waste disposal arrangements. Staff, therefore, have one key document to refer to during production.

Wood Group Industrial Services, which provides a range of services from protective coatings to asbestos removal, has integrated its policy statements and systems manual, but Mark Glasper, group quality manager, wants to go further: “When I joined the business everyone was referring to our management system as an IMS [integrated management system], but when you dig a bit deeper it is a set of procedures located in the same place. However, some specific processes such as vendor assessment, which lend themselves towards integration, are joined up.”

Project development and construction company Skanska UK is composed of several distinct business streams, including the core disciplines of buildings and infrastructure, as well as more specialist services such as piling. “Historically, each of the business streams in the UK had its own set of management

## Annex SL – the 10 common clauses

Clause 1:	Scope
Clause 2:	Normative references
Clause 3:	Terms and definitions
Clause 4:	Context of the organisation
Clause 5:	Leadership
Clause 6:	Planning
Clause 7:	Support
Clause 8:	Operation
Clause 9:	Performance evaluation
Clause 10:	Improvement

systems,” says Nigel Sagar, senior environmental compliance manager. “So about four years ago we wrote a system for the whole of the UK called ‘Our way of working’. It is structured around how we work [rather than one particular standard]. This was done over the space of a year, and bringing everyone together was quite a big cultural change for the business.”

Skanska’s approach takes the form of a funnel. At the open end it starts with strategic development and marketing; as the funnel narrows there is tendering, contract award and pre-construction; and finally design and build, and an operational phase if applicable. “So, although the group provides a diverse range of services, all use a common process, and that includes common forms,” says Sagar. “Our way of working is as integrated as we can make it, covering all parts of our UK business and across 9001, 14001 and 18001.”

### Driving closer integration

The 2015 versions of 14001 and 9001 were restructured around the same 10 sections (see panel, above). Given where the three companies featured are with developing integrated management systems, do they think annex SL will result in more widespread harmonisation?

“Annex SL is an exciting development because it is something we have been wanting to do for a long time, and I believe this is the catalyst that will lead us down this route rather than be forced into it,” says Barry Edgar, quality manager at Hydram Engineering. “Because the same clauses are used in each standard, we will be able to integrate further and make the systems slicker.”

Glasper agrees: “I certainly think it can help. A few years ago integration guidelines were published in the form of PAS 99 [a specification for integrated management systems], but annex SL makes it easier.”

Although Skanska UK has already integrated as much as it can, Sagar says: “Annex SL is fantastic. It is just common sense and it’s good to see standards now coming together like this.”

On the benefits of system integration for Skanska UK, he says: “We have process maps on the intranet

where everyone can access system information. Reporting forms are harmonised, making it much easier for the environment department to identify trends in performance across Skanska’s business streams. And because different parts of the business often work together on joint ventures, an integrated approach provides managers with instantly recognisable documents in different parts of the business.”

Glasper recognises that closer integration of assurance activities at Wood Group would bring benefits. “We do a lot of project audits and walk-arounds, and health and safety tends to be the top of most clients’ agendas and takes the lead,” he says. “But we could benefit from dovetailing these with environmental checks along with common requirements such as calibration and competence. This would open up new audit trails.”

The only barriers Glasper foresees to closer integration of systems would be time and resources. “If top management think the systems are working well as they stand, they may say: ‘if it ain’t broke don’t fix it.’”

All of those interviewed agree that there are specific elements of HSEQ that do not readily lend themselves to integration, and remain separate in their systems. Hydram Engineering carries out quality risk assessment for many of its processes, which is known as process failure mode effect analysis (PFMEA). This uses a specific methodology and scoring system but the company sees no benefit in attempting to combine it with HSE risk assessments. Wood Group specialises in coatings, and employs dedicated technicians who carry out a range of quality controls checks during each application.

### New requirements

Many of the requirements in annex SL are new for both 14001 and 9001. These include context of the organisation, interested parties, risk and opportunities, ecodesign and more prescriptive requirements for outsourcing. Is there merit in addressing these new requirements in an integrated way?

Project engineer Peter McAuley has been working on the transition to 14001: 2015 at Hydram Engineering. On understanding the organisation and its context, he says: “The main tool we have used is SWOT [strengths,

### Defining integration

In the context of management systems, integration can mean:

- Integration of common processes between systems, such as health and safety, environment and quality.
- Integration of processes between different sites or parts of an organisation.
- Integration of health and safety, environment and quality requirements with core business processes – it is a requirement for top management to do this in clause 5.1 of ISO 14001: 2015 and 9001: 2015.

weaknesses, opportunities and threats] analysis. The environment, health and safety manager and myself sat down with the managing director and identified a range of issues that are just as applicable to health and safety and quality as they are to environment. For example, there is an opportunity to grow the business into new markets, but this presents potential challenges in terms of assuring quality for things we haven't worked on before, along with new environmental and health and safety risks. A potential threat is the use of the rare earth element tungsten for tooling. If there was a lack of tungsten available, it would certainly affect quality, but also potentially have safety and environmental implications."

Robertson adds: "The action plan for mitigating these risks and driving improvements at Hydrum is integrated across the three standards and with our business planning process, as we have a continual improvement manager."

Although Hydrum Engineering is not intending to transfer to 9001: 2015 for a year or two, the quality manager expects that this planning process will directly contribute to the 9001 transition, subject to a review and update.

Skanska believes it is in a good position as a result of its five-year business plan. Sagar says: "Over the past 12 months there have been various people working on it, including the environmental team. We carried out PESTLE [political, economic, social, technological, legal and environmental] and SWOT analysis that identified a range of environmental risks and opportunities and stakeholders. The identification and management of risks and opportunities is also integrated at a project level using the construction project environmental risk register, which considers issues ranging from the quality of raw materials to the presence of asbestos."

More generally, Sagar sees 14001: 2015 as an opportunity to engage more with the rest of business, from procurement to design. Before the revised standard for environment management systems was released, Skanska had developed an environmental

design tool, called the Skanska "color palette", to measure and guide the company's performance on its sustainability strategy (see *the environmentalist* October 2011 for more details – [bit.ly/1Nr7FzL](http://bit.ly/1Nr7FzL)).

The framework is used to guide project teams on integrating environmental sustainability and focuses on four priority areas: energy, carbon, materials and water. The palette informs the procurement process for materials. "To move across the green section of the colour palette, the first stepping stone for sustainable materials is product transparency, and that is asking the product or material supplier a range of questions," says Sagar. These questions include: What's in it? Where did it come from? What are the impacts?

The company has prioritised the materials and products that it looks at. These include timber, steel, aggregates, concrete, cement, plasterboard and high-quality stone. To embed the use of sustainable materials throughout the business, Skanska has developed training courses on use of the palette as well as lifecycle costing.

However, for the procurement process as a whole, environment is just one of many considerations that include value and performance. "We can use concrete with a very high recycled content. We take the highest we can source without having an impact on performance and durability," says Sagar.

Hydrum Engineering has identified that the enhanced focus on the control of outsourced processes in the 2015 versions of both the environment and quality standards will require the firm to review and update its process for outsourcing metal preparation and finishing work. "There is a lot of work to do on that, and the changes to 9001 and 14001 will drive us down that route," says Edgar.

### Realignment

The alignment of the ISO management standards received a unanimous welcome from the five professionals *the environmentalist* interviewed. All of them say the changes will aid their goal of closer integration between HSEQ (and potentially other) systems or reinforce work they have already done.

They reveal encouraging examples of the integration of HSEQ requirements, such as continual improvement, design and purchasing, with core business processes and engagement with non-HSEQ personnel. Perhaps it is a sign that management systems are coming of age and becoming recognised and accepted by directors as a tool for achieving business objectives.

**Marek Bidwell**, MIEMA CEnv, is the director of environmental training at consultancy firm Bidwell Management Systems.

# INTEGRATED SYSTEMS CERTIFICATION

**We provide UKAS accredited IMS certification to help you:**

- Harmonize audit reporting
- Reduce audit fatigue
- Increase audit efficiency and reduce related costs

**Find out how much you save - contact us for a no obligation quote.**



NEVER STOP IMPROVING

**Contact us: 0800 052 2424   info@nqa.com   [www.nqa.com/ims](http://www.nqa.com/ims)**

# The circular eco

The European commission unveiled new targets and legislative changes in December to deal with waste

## LEGISLATION

The circular economy package includes the revision of six directives:

**2000/53/EC** – end-of-life vehicles

**2006/66/EC** – batteries and accumulators and waste batteries and accumulators

**2012/19/EU** – waste electrical and electronic equipment

**2008/98/EC** – waste

**94/62/EC** – packaging and packaging waste

**1999/31/EC** – landfill of waste

The commission will also develop product requirements under the Ecodesign Directive (**2009/125/EC**) to make products more durable and easier to repair and recycle

## 2013 FACTS

**2.5 billion tonnes**  
of waste were generated in the EU

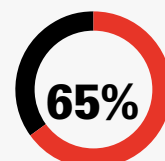
**1.6 billion tonnes**  
were not reused or recycled

**600 million tonnes**  
more could have been recycled or reused

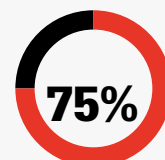
**43% of municipal waste recycled**  
31% was sent to landfill and 26% went to incineration

# conomy package

## 2030 TARGETS



Common EU target of 65% for recycling municipal waste



Common EU target of 75% for recycling packaging waste



Binding landfill reduction target of 10%

## FUTURE CLAIMS

A circular economy could create more than 170,000 direct jobs in waste management in Europe by 2035



By 2030, a circular economy could reduce the amount of materials required by about 20% and boost annual EU GDP by 3%



Better ecodesign, waste prevention and reuse could bring net savings to firms in the EU of up to €600 billion or 8% of their annual turnover by 2030



Developing a circular economy could avoid more than 500 million tonnes of GHG emissions between 2015 and 2035 – directly by cutting those from landfills and indirectly by recycling materials that would otherwise be extracted and processed



# Understanding the Modern Slavery Act

New legislation requires companies to be transparent and report on how they are tackling modern slavery. Colleen Theron explains the steps they must take

**W**orldwide, it is estimated that 21 million people are victims of forced labour, part of supply chains that become more nebulous the further one travels back from product to source. The statistic, from the International Labour Organisation, can be split between 11.4 million women and girls and 9.5 million men and boys, whose toils generate \$150 billion in illegal profits a year. Although global efforts have been made to tackle and punish human trafficking – witness the adoption in 2000 of the Palermo protocol now ratified by 169 nations and the US state department's *Trafficking in persons* report last year – millions of people continue to work in appalling circumstances, exploited for the enrichment of others.

The reality is that long and complex supply chains that rely on sub-contractors impede traceability, making it difficult to verify the goods and services bought and sold.

Also, the problem of human trafficking is not bound to particular countries and sectors. It exists in formal and informal labour markets and in both lawful and illicit industries. A study published last October by the London-based Ethical Trading Initiative reveals that 71% of companies believe there is a likelihood of modern slavery occurring at some point within their supply chains.

## The UK Modern Slavery Act

The Modern Slavery Act (MSA) came into force on 26 March 2015. It sets out provisions for supply chain transparency in clause 54, which requires companies covered by the legislation – commercial organisations with a turnover of at least £36 million – to prepare a slavery and human trafficking statement for each financial year. The purpose is to ensure that major businesses are open about what they are doing to tackle modern slavery.

Commercial organisations are defined as those carrying out all or part of their business in the UK that supply goods or services. As long as companies meet the £36 million turnover threshold, the Act does not restrict the requirements to listed or large companies. Unlike the California Transparency in the Supply Chains Act 2010, which is restricted to retail and manufacturing businesses, the TISC clause is not limited by sector or product.

The Modern Slavery Act 2015 (Transparency in Supply Chain) Regulations came into force on 29 October 2015, setting out the reporting timescales. The first statements will be made by firms whose financial year ends on 31 March 2016.

Despite the MSA's intentions, there is no single definition of either slavery or human trafficking. However, in October the home office published guidance stating that the term "modern slavery" encapsulates both offences in the act: slavery, servitude and forced or compulsory labour; and human trafficking. The guide defines:

- **slavery** in accordance with the 1926 convention, which is the status or condition of a person over whom all or any of the powers attaching to the right of ownership are exercised;
- **servitude** as the obligation to provide services. This is imposed by the use of coercion and includes the obligation for a "serf" to live on another person's property;
- **forced or compulsory labour** as involving coercion, comprising either direct threats of violence or more subtle forms of compulsion; and
- the offence of **human trafficking** as when a person arranges or facilitates the travel of another person with a view to being exploited.

For businesses, the lack of a single, clear definition may be a concern. We know from the challenges in the environmental legal framework that trying to ascertain a uniform definition of "sustainable development", "sustainability" or what makes a "sustainable business" has complicated matters for some companies.

### The slavery statement

The legislation does not prescribe what needs to be covered in the statement, which must be signed off by those responsible for the business, such as the board of directors. Section 54(5) suggests the statement may include the following:

- information about an organisation's structure, business and supply chains;
- its policies on slavery and human rights in relation to its business and the supply chain;
- due diligence processes in relation to human trafficking and slavery in the business and supply chain;
- areas of risk and steps taken to assess and manage those risks;
- the effectiveness of policies and steps taken, including key performance indicators; and
- training to be made available and provided to staff.

## Slavery map 2014



Source: Global slavery index 2014

### The questions organisations need to ask

- Does the organisation have a turnover equal to or more than £36 million?
- Does the organisation have a human rights policy? If so, does it contain a reference to human trafficking, forced labour or slavery?
- Has the organisation taken steps to embed the policies and develop processes?
- Has it mapped its supply chain and identified areas of risk?
- Has it considered developing a code of conduct, especially a supplier code? Or does the code in place need to be revised in light of possible developments?
- Does the purchasing policy address trafficking and broader human rights risks?
- What training is available to managers and employees in the organisation to raise awareness of and tackle modern slavery?
- If a statement is published yearly stating that no action on the issue is required, how would this reflect on the organisation?

The Home Office guidance provides further information on the types of activities that could be included in each heading.

It points out that the statement must be easily accessible and published where it can be clearly seen. This might seem unproblematic, but for some large companies there is the question of whether the statement has to appear on the main home page of its website. The guidance also suggests that there should be some signposting on linked pages if subsidiary companies are featured on the home page of a large business.

If a business does not have a website it must provide a copy of the statement to anyone who requests one in writing within 30 days.

### Non-compliance

The difference between the legal weight of the Companies Act 2006 and the MSA is clear.

Under the former, company directors can be held liable for negligence should they provide false or misleading information. Similarly, those who fail to take steps to complete a strategic report can also be guilty of an offence. Neither of these enforcement options exists under the MSA.

The government expects the risk of suffering reputational damage to act as motivation for businesses to comply with the legislation

© iStock.com/ Liuser



Police raid against human trafficking, Essen, Germany

© iStock.com/ Action Press/REX Shutterstock

The secretary of state can bring civil proceedings in the High Court for an injunction (or, in Scotland, civil proceedings for specific performance of a statutory duty under section 45 of the Court of Session Act 1988) requiring the organisation to comply. The government expects the risk of suffering reputational damage to act as motivation to comply, however. As the guide states: “A failure to comply with the provision, or a statement that an organisation has taken no steps, may damage the reputation of the business. It will be for consumers, investors and non-governmental organisations to engage and/or apply pressure where they believe a business has not taken sufficient steps.”

### Issues for business

Businesses with complex group structures will have to work out whether only the parent company has to report or whether subsidiaries are also caught. There is some confusion over the extent to which subsidiaries or parent companies abroad are caught by the Act's provisions. Arguably, if overseas operations are a critical part of an obligated UK company's supply chain, the statement should cover the steps the business is taking to address these.

The MSA has significant implications for procurement functions. The Danish Institute for Human Rights says it is crucial that companies understand and monitor their supply chains to determine whether there is a risk of human trafficking and slavery. Each enterprise needs to ensure it does not contribute to any forced labour or bonded-labour practices. These include compelled overtime, human trafficking and denial of free movement. One mechanism to monitor and enforce good practice is the inclusion of requirements or indicators in contracts.

The reporting obligation will apply only to companies with a financial year end on or after 1 April 2016. That is not a long time for businesses to prepare for the new obligations. Larger companies and those with complex supply chains will want to start considering the requirements of the MSA now. In any case, directors will need to decide what their approach will be to compliance: to make no statement or to take steps to identify key supply chain risks.

Colleen Theron, MIEMA and GACSO, is director of CLT Envirolaw.

### Next steps

- Consider whether the organisation is defined as a “commercial organisation” under the MSA.
- Consider whether a response to the legislation would fit within strategic organisational objectives, such as adopting an approach to the UN guiding principles on business and human rights.
- Understand the countries in which the organisation operates – some will pose a higher risk to slavery than others – and understand the organisation's operations.
- Work with relevant staff to map the company's operations and supply chain.
- Develop or update policies to address human rights issues, including slavery, forced and bonded labour, and human trafficking.
- Develop or update checklists and purchasing policies.
- Develop or update supplier codes of conduct, tender requirements or any request for proposal, and supplier contracts to account for the issue of slavery and human trafficking, including requirements on minimum labour standards in the supply chain.
- Develop or update due diligence procedures to incorporate the risk of slavery and human trafficking.
- Ensure that all employees are made aware of the policy.
- Make training on slavery and human trafficking available to staff.



# LOOKING TO

## *the environmentalist* highlights some the major legal and policy changes due over the next 12 months

**L**ast year was a momentous one for the environment and sustainability. On the global front, COP21 at the end of the year delivered a new climate deal (p.5). In Europe, the commission finally unveiled its circular economy package in December (p.7 and pp.24–25). Domestically, the election of a majority Conservative government in May heralded the end of schemes to support the development of renewable energy and more energy-efficient buildings. This year may not be so hectic on the legislation and policy front, but there are still some major developments planned of which practitioners should be aware.

The great unknown is the UK referendum on EU membership. The date of the poll has yet to be decided but, whether it is this year or next, discussion on the ramifications of Brexit will undoubtedly become more intense during 2016. Given that around 80% of UK environmental legislation originates from Brussels, any withdrawal could have widespread consequences.

### Air quality

In April 2015, the Supreme Court ordered the environment department to produce a meaningful plan by the end of the year to ensure that the limits on nitrogen dioxide (NO<sub>2</sub>) emissions are met as soon as possible. In 2013, 38 of the 43 air quality zones in the UK exceeded the annual NO<sub>2</sub> limits set by the EU ambient air quality Directive, which came into force in 2010. Defra issued a consultation in September 2015 on **proposals to improve air quality** in each of the 38 areas, including the establishment of a national framework of local clean air zones, possibly restricting access to some vehicles. The final plan was published in December and included the creation clean air zones in five cities (Birmingham, Derby, Leeds, Nottingham and Southampton), which will cover old diesel buses, coaches, taxis and lorries. A consultation on the zones will be held this year. The government is also extending the plug-in car grant beyond March 2016 to support the transition to cleaner vehicles.

The Scottish government consulted on a draft **low-emissions strategy for Scotland** in 2015 to set national standards for the introduction of low-emissions zones in the country. The draft provides a summary of air quality today and why more action is required to reduce levels of pollution further. Under the draft, local authorities are required to take several actions this year, including taking into account the objectives and policies in the strategy in preparing development plans and when undertaking development management.

### Biodiversity and natural capital

The European commission's "fitness check" of the **Birds** (2009/147/EC) and **Habitats** (92/42/EEC) directives is part of its regulatory fitness and performance programme (REFIT), which aims to make EU law "simpler and to reduce regulatory cost". A public consultation to gather views and opinions on the directives and their implementation to date closed on 26 July 2015. The commission received 552,470 responses – the largest for an online consultation. The consultation followed an evidence-gathering exercise among business bodies and NGOs. Emerging findings were released at a stakeholder conference in November and the final results will be published in the second quarter of 2016.

A **red tape review** of construction rules, announced on 2 December by business secretary Sajid Javid, includes environmental requirements, including the Habitats Directive as well as wider EU environmental permit requirements. The review will look at how the law is enforced and whether the rules themselves are proportionate and fit for purpose.

Environment secretary Liz Truss announced in October a 25-year strategy and framework to embrace the natural capital agenda. The **"open environment"** strategy covers recommendations made by the Natural Capital Committee for the government to work closely with businesses and NGOs towards a comprehensive plan to provide the building blocks, investment and necessary financing to secure England's natural capital long-term future. Truss said open environment would include smarter regulation, involve voluntary organisations more and make better use of data and technology. As part of the strategy, by next summer Defra will open to the public its 8,000 datasets, including at least 2,000 on the natural environment.

Meanwhile, Defra confirmed in September that the **Natural Capital Committee** (NCC), established in 2012 to provide advice on the state of England's natural assets, would continue its work throughout this parliament. The **Natural Environment Bill**, which received its first reading in the House of Lords in September, seeks to maintain the NCC as well as set biodiversity targets for 2040. At the end of November 2015, the **Natural Capital Coalition** issued its draft protocol to harmonise several methods of accounting for natural capital risks. Consultation on the draft protocol (p.15), which is being piloted in more than 50 organisations, ends on 26 February and IEMA is holding a workshop next month to provide feedback. The coalition hopes to launch the final version in July.

### Built environment and EIA

The former Labour and coalition governments were committed to **zero-carbon homes** from 2016 and **zero-carbon non-domestic buildings** from 2019. However, the Treasury announced in July 2015 that policy on zero-carbon buildings, combining energy-efficiency measures and “allowable solutions”, was being scrapped for domestic properties. Its report, *Fixing the foundations*, stated: “The government does not intend to proceed with the zero carbon allowable solutions scheme or the proposed 2016 increase in onsite energy efficiency standards.” The report made no mention of the 2019 deadline for non-domestic properties, but industry bodies believe that target has also been axed.

The decision leaves the European **Energy Performance of Buildings Directive** (EPBD) as the only policy driving energy efficiency in the built environment. That Directive requires all new buildings in the private sector to be “nearly zero-energy” from 1 January 2021 and from January 2019 in the public sector. As part of its implementation of the EPBD, the government must review minimum energy-efficiency standards by 2017.

The **Energy Efficiency (Private Rented Property) (England and Wales) Regulations 2015**, which came into force on 1 April 2015, introduce measures to improve the energy efficiency of domestic and non-domestic private rented property. From 1 October 2016, a minimum energy performance certificate band E will apply to these properties.

Decc announced in July 2015 that it would end its funding of the Green Deal Finance Company, in effect closing the firm set up to fund **Green Deal** providers. The government said it would bring forward a new scheme to support energy efficiency in the built environment.

**Wales** remains committed to meeting the nearly zero-carbon targets. A consultation on an energy-efficiency strategy for Wales closed in January 2015 and the Welsh government published its response in June. A consultation on the draft closed in September. New energy standards for buildings have applied in **Scotland** since October 2015.

Revisions to the **EU Directive on environmental impact assessment** (2011/92/EU) (EIA) were agreed in March 2014 and must be transposed into domestic legislation by spring 2017. Changes include requiring EIA reports – the revised term for environmental statements – to be prepared by “competent experts”, and that all design modifications, additional mitigation measures and monitoring proposals related to significant adverse effects be incorporated into the planning consent. Draft regulations for consultation are expected from the communities department and the devolved governments between March and September.

### Carbon and energy

Around 10,000 companies are covered by the **energy savings opportunity scheme** (ESOS), but the Environment Agency said 40% had submitted compliance notifications by the 5 December 2015 deadline. However, in October, the agency said it did not plan to enforce non-compliance until the end of January 2016, as long as companies explained by the

original deadline why they had failed to comply. They were also expected to provide evidence of efforts towards compliance, including proof of appointment of an independent assessor. The agency also confirmed that firms had until 30 June 2016 to achieve certification to the energy management standard ISO 50001, which is an alternative to basic ESOS compliance.

The Treasury-led consultation on improving the effectiveness of measures to boost **business energy efficiency**, which IEMA responded to, closed on 9 November 2015. It proposed that businesses should be covered by a single tax and reporting scheme rather than the existing overlapping policies, which include the carbon reduction commitment (CRC), ESOS and the climate change levy (CCL). The Treasury’s stated aim is that a revised system would cut costs for government and businesses and protect energy-intensive enterprises. Any changes will be announced in the 2016 budget statement on 16 March.

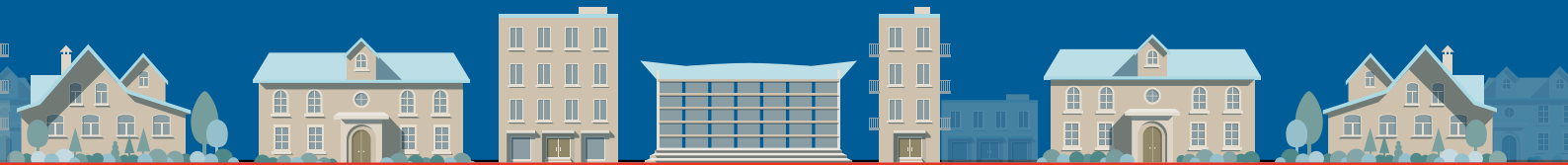
**Climate change agreements** (CCAs) are voluntary and made between industry and the Environment Agency to reduce energy use and carbon emissions. The second CCA target period ends on 31 December and data must be submitted to the relevant sector association by 1 May 2017.

The **Energy Bill** received its first reading in parliament on 5 November 2015. Its contents include: establishing the Oil and Gas Authority (OGA) as an independent regulator; the introduction of provisions to charge industry for the offshore oil and gas environmental regulator’s services; removal of the need for the secretary of state’s consent for large onshore wind farms (over 50MW) under the Electricity Act 1989; and ending public subsidies for new onshore wind generation in Great Britain under the **Renewables Obligation** (RO) from 1 April 2016. In June 2015, Decc announced that the RO would be closed to new onshore wind energy generating stations from 1 April 2016 (subject to a grace period for those with consent and an offer of a grid connection).

In his 2015 autumn statement, chancellor George Osborne announced that **energy-intensive industries** would be exempt from the policy costs of the RO and feed-in tariffs. He said this would ensure they have long-term certainty and remain competitive. **Feed-in tariff** rates for low-carbon generation change from 8 February.

The European commission’s 2016 work programme brings forward the bulk of the items foreseen in the **Energy Union framework strategy**, agreed on 25 February 2015. The strategy sets out key actions to secure Europe’s energy supply and reduce import dependency, integrate national energy markets, promote energy efficiency, decarbonise the economy, and promote research, innovation and competitiveness. It also includes carbon goals, including reducing Europe’s energy use by 27% or greater by 2030; building on the EU’s target of emitting at least 40% less greenhouse gases by 2030; and making the bloc the world number one in renewable energy and in leading the fight against global warming.

Communities secretary Greg Clark will decide whether to allow drilling for **shale gas** in Lancashire. Cuadrilla’s appeal against Lancashire County Council’s



decision in June 2015 to reject its plans for fracking will be heard in February. The planning inspector will write a report, make a recommendation and hand it to the government to have the final say. In his autumn statement, Osborne announced that up to 10% of the tax receipts from shale gas operations would be put into a sovereign wealth fund to be spent by local communities. In December, MPs voted to allow fracking under national parks and other protected areas.

### Hazardous substances

The third and final registration deadline under the **EU REACH Regulation** (1907/2006) is 31 May 2018. Registration in 2018 applies to chemicals that are manufactured in the EU or imported into the bloc in quantities of between 1 tonne and 100 tonnes a year. It estimated that up to 70,000 substances will be registered. In January 2015, the European Chemicals Agency (ECHA) published its 2018 registration roadmap, which includes measures that will be put in place this year to aid registration. Among them are: establishing a single point of entry for questions to the agency; improving ways to locate co-registrants; providing online training for data-sharing negotiations; and completion of updated guidance by the June deadline, including a simplified guide for SMEs. The agency also plans in 2016 to publish revised registration tools, including IUCLID (version 6) and REACH-IT.

The ECHA has prepared a draft **community rolling action plan** (CoRAP) for 2016-18, and 138 substances are listed for evaluation over the three-year period. The agency expects the final plan to be adopted in March. Substance evaluation is one of the three types of evaluation processes under REACH and is triggered as a result of risk-based concerns. The latest REACH **candidate list** (June 2015) contains 163 substances. The agency's draft recommendation for inclusion in the seventh authorisation list ends on 18 February. Just one substance, trichloroethylene (21 April), is subject to a sunset date under REACH this year. It means the substance may be placed on the market or used only if an authorisation has been granted. In September 2015, the ECHA agreed its **nanomaterials** workplan for 2016-18. Although there are no explicit provisions on nanomaterials in REACH, the regulation and its provisions do cover substances in nanoform. With the next REACH registration deadline just two years away, the agency intends to launch a consultation on the guidance on several issues related to nanomaterials in the first half of 2016. The UN started a review in 2014 of the criteria underpinning the **globally harmonised system** (GHS) to assess their applicability to nanomaterials. The review is due to be completed by the end of 2016.

In November 2015, the 197 parties to the **Montreal protocol** agreed to work this year on an amendment that would eventually eliminate hydrofluorocarbons.

### Regulation and compliance

A consultation on charges imposed by **Natural Resources Wales** (NRW) ended on 26 November. It proposed maintaining baseline charges, but

introducing a "second-tier" multiplier for poor performing waste sites covered by the environmental permitting charging scheme from 1 April. It would apply to sites in compliance bands D, E and F for the previous two years. The multiplier of a site in the lowest band F for two full years, for example, would rise from 300% to 500%.

The Scottish Environmental Protection Agency (Sepa) is introducing a **new charging system** on 1 April 2016. The **Environmental Regulation (Scotland) Charging Scheme 2016** will replace five others – covering 90% of Sepa's chargeable income – with a single system, which the regulator says will prioritise its efforts to areas of activities that have potential to cause most harm and where poor practice is more likely.

The **Environmental Permitting (England and Wales) (Amendment) (No. 3) Regulations 2015** came into force on 30 October 2015, amending the 2010 Regulations by giving the Environment Agency and NRW more powers. Regulators can now serve a suspension notice if they consider that there has been a contravention of an environmental permit condition and there is a risk of pollution. They can also arrange for the removal of risks of serious pollution at permitted or exempt facilities.

An **Environment Bill** is progressing (at stage 2) through the Welsh assembly and includes measures for:

- planning and managing Wales's natural resources at a national and local level;
- providing NRW with a general purpose linked to the statutory principles of sustainable management of natural resources defined in the Bill;
- enhancing the powers available to NRW to undertake land management agreements and experimental schemes;
- providing a requirement for public authorities to maintain and enhance biodiversity; and
- creating a statutory framework for action on climate change, including targets for reducing emissions of greenhouse gases.

The bill is expected to receive royal assent in the spring and the measures, including a new marine licensing fees and charges regime, will be introduced by the end of the year. The legislation will set a separate 80% greenhouse-gas emissions reduction target by 2050 for Wales, with interim targets set between 2016 and 2020. These will feed into Welsh carbon budgets.

Sepa consulted in 2015 on changes to its **compliance assessment scheme** (CAS), which was introduced in 2009. Sepa said the aim was to make CAS fairer and more consistent and proportionate for those it regulates, with greater focus on breaches that cause most harm to the environment. The scheme covers around 10,000 sites. Sepa had intended the revised scheme to begin on 1 January 2016, but has delayed its introduction for 12 months to 1 January 2017.

The **Environmental Regulation (Enforcement Measures) (Scotland) Order 2015** came into force on 12 November 2015 and provides Sepa with the power to impose fixed monetary penalties (FMPs) and variable monetary penalties (VMPs), and to accept enforcement



undertakings to better tackle environmental non-compliance. The Order sets the amount of an FMP for each “relevant offence” at £300, £600 or £1,000, while the maximum VMP is set at either the maximum fine that may be imposed on conviction or £40,000.

Sepa is also rolling out over the next two to three years a new approach to **collecting information** on the activities that it regulates. The regulator says the approach builds on the system it uses to collect information on industrial and waste sites, and will: provide a consistent approach; allow it to make better use of resources; improve the information available for making decisions; and ensure that operators take more responsibility for monitoring compliance with their licence conditions. The new method will require operators of some activities to monitor their discharges and report the information on these to Sepa.

The Regulatory Reform (Scotland) Act (which received royal assent in February 2014) creates a legal framework for implementation of **primary authority** arrangements relating to the devolved regulatory responsibilities of local authorities in Scotland. Primary authority allows a business operating in various council areas to form a partnership with a single local authority in order to receive tailored support in relation to regulation. A consultation on primary authority arrangements closed in June 2015 and the Scottish government published its analysis of responses in November. It found mixed views on some aspects of primary authority partnerships, such as powers to direct and dispute mechanisms. Respondents also highlighted the importance of Scotland’s approach being consistent with the existing UK scheme. The government has said it will bring forward proposals for a scheme to meet the needs of local communities and businesses in Scotland.

### Reporting

Defra is seeking feedback on reforms to its **guidance and information requests** ([bit.ly/1QrrbQz](http://bit.ly/1QrrbQz)). Stakeholders are invited to share by 10 February their recent experience of using online guidance as well as reporting information to the department and its agencies. Defra says responses will help shape its understanding on the scale of costs and benefits to businesses.

The **Climate Change (Reporting on Climate Change Duties) (Scotland) Order 2015** came into force on 23 November 2015 and requires public bodies in Scotland to produce an annual climate change report for the previous financial year.

In Wales, the **Wellbeing of Future Generations Act 2015** received royal assent in April 2015 and comes into force on 1 April 2016. The act aims to improve wellbeing in accordance with the sustainable development principle – ensuring that the needs of the present are met without compromising the ability of future generations to meet their own needs. It covers 43 public bodies, including local authorities and Natural Resources Wales, and has seven overarching wellbeing goals. Public bodies are required to publish wellbeing objectives and statements, and produce an annual report that details progress made towards achieving them.

Member states must transpose Directive 2014/95/EU on the **disclosure of non-financial and diversity information** into domestic law by 6 December 2016. The commission must publish guidance on how to report such information by the same date.

### Resource management

The European commission unveiled its **circular economy package** on 2 December. This includes implementing an action plan this year to create a single market for the reuse of materials and resources, and support the move away from a linear economy (see p.7 and pp.24–25). It comprises commitments on ecodesign, the development of strategic approaches on plastics and chemicals, a major initiative to fund innovative projects under the umbrella of the EU’s Horizon 2020 research programme, and targeted action in areas such as plastics, food waste, construction, critical raw materials, industrial and mining waste, consumption and public procurement.

Actions in 2016 include emphasising the principles of the circular economy in future product requirements under the ecodesign Directive (2009/125/EC); measures to combat false green claims; a review of EU ecolabels; more “green” public procurement; and better enforcement of the revised Waste Shipment regulation.

The circular economy package includes the revision of six directives – 2000/53/EC (end-of-life vehicles); 2006/66/EC (batteries and accumulators and waste batteries and accumulators); 2012/19/EU (waste electrical and electronic equipment); 2008/98/EC (waste); 94/62/EC (packaging and packaging waste); and 1999/31/EC (landfill of waste).

The commission plans to promote the reparability, upgradability, durability, and recyclability of products by developing product requirements relevant to the circular economy in its future work under the **Ecodesign Directive**. An ecodesign working plan will elaborate on how this would be implemented. Specifically, the commission has developed and will propose to member states mandatory product design and marking requirements to make it easier and safer to dismantle, reuse and recycle electronic displays, such as flat computer or television screens. The European parliament gave the package a cautious welcome and its environment committee is appointing rapporteurs on the various pieces of planned legislation.

IEMA is working with BSI and other sustainability professionals to develop **BS 8001**, a guidance standard on integrating into organisations the concepts behind the circular economy. The draft standard is expected to be ready for consultation in the autumn.

A revised **waste duty of care code of practice** is planned by Defra and the Welsh government after a consultation closed in September 2015. The code, which is statutory guidance issued under section 34 of the Environmental Protection Act 1990 (EPA), has been unchanged since 1996 and the revision is intended to ensure the safe management of controlled waste. It applies to organisations that import, produce, carry, keep, treat or dispose of controlled waste.

A consultation on a draft **public sector waste and resource efficiency plan for Wales** ended in December. It covers four main areas: waste prevention, with the aim of reducing the ecological and carbon footprint of waste in the sector and establishing sustainable procurement practices; preparation for reuse – by improving, promoting and developing items for reuse and redistribution; recycling – improving the separation of the most valuable resources; and other recovery and disposal – including recovery of the energy and value of resources that cannot be recycled. The Welsh government says the plan will help public bodies deliver on their duty under the Wellbeing of Future Generations (Wales) Act 2015 to make decisions in a sustainable way.

The Welsh government is reviewing its **Towards zero waste strategy** and will report the outcome in June.

The standard and lower rates of **landfill tax** in England, Northern Ireland and Wales will increase to £84.40 and £2.65 respectively from 1 April 2016.

## Standards

Revisions to **ISO 14001**, the international standard for environment management systems (EMS), were finalised in September 2015. Voting on a new version (FDIS) of **ISO 14004**, which provides guidance on establishing, implementing, maintaining and improving an EMS, started on 3 December 2015. The final version is due to be published on 1 March 2016 and will help organisations make the transition to 14001: 2015.

Work on updating **BS8555**, the British standard on the phased implementation of an EMS, begins this year and will take into account the changes to 14001.

ISO/TC 207/SC1, the sub-committee responsible for EMS standards, started work in November 2015 on **14008**, covering monetary valuation of environmental impacts from emissions and use of natural resources. It is expected to launch in 2018.

Also being developed by ISO are revisions to the standards on environmental labels and declarations: **14021** (self-declared environmental claims (type II environmental labelling) – currently an FDIS; **14024** (type I environmental labelling); **14026** (communication and footprint information); and **14027** (type III environmental declarations). In addition, a new standard, **14034**, on environmental technology verification is likely to be published in 2016 after a draft (DIS) was published for public comment in June 2015. The international standards on managing greenhouse gases are also being revised: **14064-1** (part 1: specification with guidance at the organisation level for quantification and reporting of greenhouse gas emissions and removals); **14064-2** (part 2); and **14064** (part 3). A future standard, **14080**, is being developed to provide guidance on a framework for developing new methodologies as well as on the use of existing ones for climate action and their review, revision and management to meet stakeholder needs.

Meanwhile, the committee that developed the energy management standard, **50001**, is working on two more: **50007** – activities relating to energy services: guidelines for the assessment and improvement of the service to

users (currently a DIS); and **50008** – commercial building energy data management for energy performance: guidance for a systemic data exchange approach.

## Sustainable development

The UN unveiled its **sustainable development goals** in September 2015. Each of the 17 has specific targets (169 in total) to achieve by 2030. The goals and targets came into effect on 1 January.

The European commission's 2016 work programme lists as a priority developing a new approach to **ensuring economic growth and social and environmental sustainability** beyond 2020. The commission says the approach will take into account the Europe 2020 review (the bloc's long-term growth and jobs plan) and the internal and external implementation of the UN sustainable development goals.

## Trade

The European commission says concluding the **Transatlantic Trade and Investment Partnership Agreement** (TTIP) with the US remains of primary importance for 2016. In November, the commission published a new strategy to make trade policies like the TTIP more responsible by ensuring sustainable development, labour and environment provisions were included. The strategy aims to establish high standards for labour and the environment.

## Transport

The European commission will develop in 2016 an effort-sharing proposal for sectors outside the **emissions trading system** (ETS), such as buildings, agriculture and road transport. "We will be promoting the use of non-discriminatory road charging schemes based on the polluter-pays and user-pays principles and efforts to create a single European transport area, allowing a more efficient use of the existing road infrastructure and a more flexible use of fleet capacity," it said.

In October 2013, the International Civil Aviation Organisation (ICAO) Assembly agreed to develop a global market-based mechanism (MBM) to address **international aviation emissions** by 2016 and to apply it by 2020. In response, the EU decided to limit the scope of the EU ETS to flights within Europe until 2016. The ICAO is expected to agree an MBM at its 2016 assembly in Montreal in September.

The International Maritime Organisation will consider this year whether to establish a total-sector reduction target for GHG emissions from international shipping, which was proposed by the Marshall Islands in 2015.

## Water

**Draft Prevention of Pollution (Oil Storage) (Wales) Regulations** were published in September 2015 as part of a consultation and will come into force in 2016. They aim to reduce and prevent water pollution from oil storage facilities. Key requirements will be for the storage container to be fit for purpose and to have a secondary containment system. Similar measures are already in place in the rest of the UK.

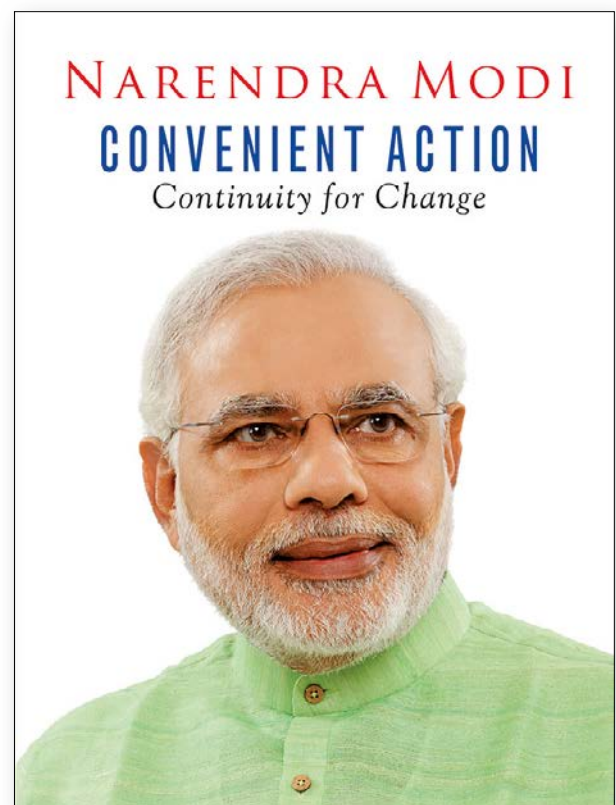
# Convenient Action Continuity for Change

*Convenient Action – Continuity for Change*, written by the Prime Minister of India, Mr. Narendra Modi, contains initiatives taken by his government at the national level.

The book gives a snapshot of all the latest developments in India relating to climate change, including a brief on India's Intended Nationally Determined Contributions (INDCs).

This signifies a big leap forward in the multi-dimensional efforts that India has been taking to transform itself into a low-carbon economy.

The book connects with an international community and provides a great deal of inspiration in joining the global drive to deal with the challenges of climate change.



Price: £18.50  
Publication date: November 2015  
Product code: CACFC  
ISBN: 9789351436553

**Buy your copy today**

Visit: [www.lexisnexis.co.uk/modi](http://www.lexisnexis.co.uk/modi)

Phone: **0845 870 1234**



# Rufus Howard

Director of renewables and marine development, Royal HaskoningDHV



**Why did you become an environment/sustainability professional?** I grew up on the Isle of Wight in an area of outstanding natural beauty and spent my youth exploring the beaches, cliffs, woods and downs. I have always felt that we need to conserve, manage and provide responsible stewardship over our natural environment.

**What was your first environment/sustainability job?** As a park warden in Robin Hill Countryside Park, which is now famous as the home for the annual music festival, Bestival. I spent the year after my A Levels maintaining paths, fencing and forestry.

**How did you get your first role?** After my BSc, I stayed at the University of Kent to do a master's in environmental law and policy. This training helped secure my first professional role as an environmental consultant at Amec.

**How did you progress your environment/sustainability career?** In addition to working hard, I have always sought professional accreditation to validate and demonstrate my competence. I decided to join IEMA as the leading institute for EIA practitioners, starting with the Associate exam, then a registered auditor, Full member (MIEMA), registered EIA practitioner, Chartered environmentalist and a principal EIA practitioner. I am now chair of the impact assessment steering group as well as a member of IEMA's strategic advisory board.

**What does your role involve?** I lead a team of environmental professionals.

**How has your role changed over the past few years?**

My team has grown and the sectors under my leadership have increased. I am responsible for 40 staff in seven offices, with more than 80 live projects, from Oman to the Orkneys. This requires portfolio project management and systems management.

**What's the best part of your work?** It is very rewarding to receive positive feedback from clients when they recognise the skill, effort and dedication our teams provide. Likewise, when you successfully deliver a major project or win a major commission there is a tremendous team spirit of collective achievement.

**What's the hardest part of your job?** Unreasonable or poorly judged or informed decisions by stakeholders, government agencies, civil servants, clients, staff or occasionally by your own company. "The best laid plans" and "no plan survives contact with the enemy" are phrases that leap to mind. Major projects are often decided by how you deal with the inevitable adversity, problems and mishaps that occur along the way.

**What was the last event you attended?** A European commission conference looking at 30 years of the EIA Directive. I contributed to workshops on how to implement the new directive.

**What did you bring back to your job?** A good understanding of how the directive might be implemented in different EU countries.

**What is/are the most important skill(s) for your role and why?** Communication. More specifically understanding and communicating a problem, explaining the potential solutions, recommending and justifying one, then convincing the client/customer/decision maker (internal or external) to pay for or authorise implementation. In my role it is often about building a business case.

**Where do you see the environment/sustainability profession going?** I still see a role for specialists and niche skills such as ecology and social impact assessment. However, the underlying megatrends are the developing world, digital economy and low-carbon economy. The rising population, urbanisation, industrialisation

## Career file

### Qualifications:

BSc, LLM environmental law and policy, MIEMA, CEnv, PEIA, EA, MIOD

### Career history:

**2012 to now:** director of renewables and marine development, Royal HaskoningDHV

**2010 to 2012:** technical director: EIA, Royal HaskoningDHV

**2008 to 2010:** senior environmental consultant, Royal Haskoning

**2007 to 2008:** senior project coordinator, Environment Agency

**2004 to 2007:** environmental consultant, Amec

**1999 to 2000:** park warden, Robin Hill Countryside Park

and modernisation of the developing world will require a huge number of environmental professionals. The move to a digital economy will require consultants to embrace web-based EIAs, remote data collection by drones and satellites. The transition to a low-carbon economy will require consultants and environmentalists to tackle and adapt to the rapid changes required, such as smart meters and grids.

**Where would like to be in five years' time?** In a position to make a positive difference to the conservation, sustainable management and stewardship of our environment.

**What advice would you give to someone entering the profession?**

Be enthusiastic, work hard, look to add value/improve systems or processes. Take ownership of your tasks, no matter how small or trivial. Treat people with respect, learn from others, and have fun.

**How do you use IEMA's environmental skills map?** I give guest lectures on careers in consultancy at universities. I always include a slide on the IEMA skills map as it illustrates the breadth of experience and skills required.

## More successful IEMA members

IEMA would like to congratulate the following members on recently upgrading their membership as part of their ongoing commitment to learning and professional development.

**Associate**

**Kathryn Adams**, Ecodyn  
**Lidia Aleksinska**, Aqualogy UK  
**Raphael Eduk Antai**, Inter-Environments  
**Asuquo Etim Asuquo**, Ecobank Nigeria  
**Katie Atherton**, John Robson  
**Tom Atterton**  
**Lotte Aweimrin**, ARM  
**Mark Barker**, Kramba Associates  
**Brian Barrett**, Ferrovia Agroman UK  
**Chloe Batchelor**, The ACC  
**Nigel Belton**, GKN Aerospace  
**Jill Bennett**, Northern Lighthouse Board  
**John Bilham**, E2V Technologies  
**Andrew Black**, KnowledgePool Group  
**Alexandra Brennan**, NuGeneration  
**Denise Ann Buhagiar**, Bartolo  
**Rosie Bullers**, Byrne Bros  
**Philip Burke**, Knauf Insulation Group  
**David Cain**, Interserve  
**Stephanie Campbell**, Dounreay Site Restoration  
**Stuart Cochrane**, SC Consulting

**Kerryann Costello**, Baker Hughes  
**Stewart Crook**, E2V Technologies  
**Robert Davies**, Arcadis Consulting (UK)  
**Kathryn Ebrey**, Arcus Holdings  
**Raymond Ekins**, Carillion  
**John Ferrett**, Carillion  
**Mark Fisher**, Carillion Services  
**John Flint**, Carillion  
**Jenny Forester**, Saica Pack UK  
**Stephen Fowler**, Babcock International Group  
**David Galloway**, Registers of Scotland  
**Sarah Gilbert**, Oxfordshire County Council  
**Philip Gittings**, Versalis UK  
**Fanyeofori David Hart**, Cromwell Technologies  
**Audrey Heywood**, Alpha Group  
**Muhammad Imam**  
**Ekene Iyebor**, BGI Resources  
**Martins Munachi Izuogu**, MENA Water FZC  
**Paul Johnson**, Shoreham Port Authority  
**Martin Jones**, Albis UK  
**David Keir**, ABP Food Group  
**Andrew King**  
**David Knight**, Thames Water  
**Nicola Learmond**  
**Azubuike Madubuezi**  
**Nnamdi Menkiti**  
**Ian Mincher**, Aga Rangemaster  
**Iain Murison**, A Viroso  
**Paul Nicholas**, Costain

**Mercy Nworah**, Tricontinental  
**Natasha Oakley**, Rigby Group  
**Uchenna Odoemena**, Nigerian Ports Authority  
**June O'Hagan**, Volker Wessels  
**Phil O'Neill**, MyFresh  
**Sudha Nakka Papisetty**, Al Hosn Gas  
**Amber-Marie Pearce**  
**Manner Pepple**  
**Lynn-Marie Pooley**, EY  
**Louise Portelly**  
**David Prentice**, Carillion  
**Susan Raine**, Wardell Armstrong  
**Vincent Rhodes**, Interserve  
**Hollie Ridley**, J Murphy and Sons  
**Patryk Rucki**, Prysmian Cables and Systems  
**Dan Ryder**, GB Railfreight  
**Louise Sampson**, Thames Water  
**Nadia Santos**  
**Neil Selling**, Carillion  
**Emma Sheward**, Thames Water  
**Philip Simpson**, Barclays Bank  
**Fiona Spelllissy**, ESB Group  
**Richard Stow**, Weedfree  
**Tom Taylor**  
**Richard Thurston**, MOD  
**Lee Townsend**, Siniat  
**Liam Tucker**, Suttle Projects  
**Chinyelu Udeze**, Nestoil  
**Ikoro Udonna**, Rivers State University of Science & Technology  
**Phil Vale**, Mondelez International  
**Ellie Walshe**, Costain

**Laurie Winter**, Natural Power Consultants

**Full and Chartered environmentalist**

**Harshit Agrawal**, Shell Eastern Petroleum Pte  
**Elizabeth Allen**, Veolia Water  
**Katie Barlow**, RSK Group  
**Annamarie Compton**, Network Rail  
**Neil Earnshaw**, Network Rail  
**Zebrina Hanly**, Taylor Woodrow  
**Ruth Henderson**, Royal HaskoningDHV  
**Laura Mayhew-Manchón**, Skanska UK  
**Jason McGray**, TNEI  
**Rachel Mills**, GKN Aerospace Filton  
**Tolu Omidéyi**, EEF  
**Tania Palk**, ISS UK  
**Anne Richter**, William Hare  
**Georgina Stickels**, United Nations World Food Programme  
**Nathan Vear**, KAPAKITI

**Fellow**

**Bekir Andrews**, Balfour Beatty Group

Upgrading your IEMA membership is important in ensuring you gain the professional recognition you deserve, it can help you secure the job you want and achieve a higher salary. To progress your membership visit [iema.net](http://iema.net) or call IEMA on +44 (0)1522 540069 to discuss your options with an adviser.

## IEMA events

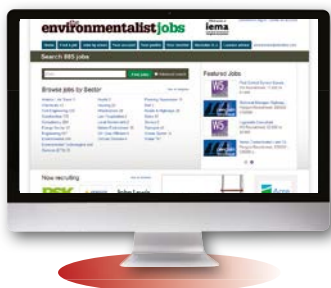
Date	Region/Time	Topic
28 Jan	Scotland West	Scottish waste management
3 Feb	South West	Altering perceptions of place and space: sustainability interventions

## Webinars

20 Jan	12:30 – 13:30 GMT	Specialist register application support
11 Feb	12:30 – 13:30 GMT	Views on internal EMS audits from a third party perspective

[www.jobs.environmentalstonline.com](http://www.jobs.environmentalstonline.com)

the  
**environmentalistjobs**



Official jobsite of  
**iema**  
Institute of Environmental  
Management & Assessment

To register for FREE job email alerts, go to  
[www.jobs.environmentalstonline.com](http://www.jobs.environmentalstonline.com)

Advertisers include:

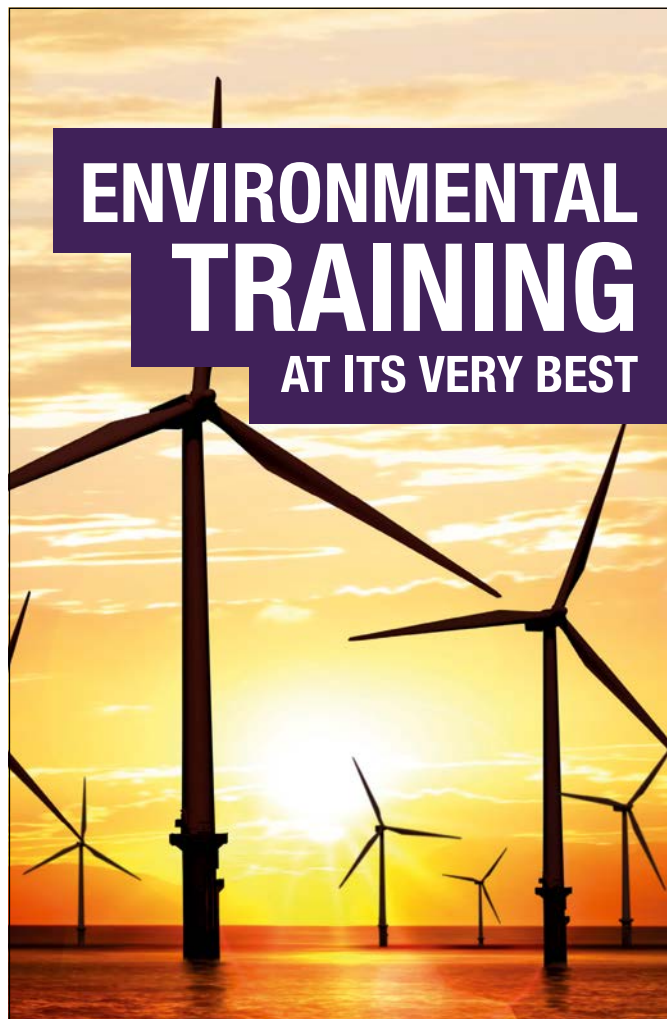


From the publishers of

the  
**environmentalist**

[www.jobs.environmentalstonline.com](http://www.jobs.environmentalstonline.com)

# ENVIRONMENTAL TRAINING AT ITS VERY BEST



## IEMA Courses

- Foundation Certificate
- Associate Certificate
- Lead Environmental Auditor
- Working with Environmental Sustainability
- Managing with Environmental Sustainability
- Leading with Environmental Sustainability

## NEBOSH Courses

- Environmental Award
- Environmental Certificate
- Environmental Diploma

**Classroom, Online, In-Company**

**RRC**  
INTERNATIONAL

[www.rrc.co.uk](http://www.rrc.co.uk)

+44 (0)20 8944 3100

info@rrc.co.uk



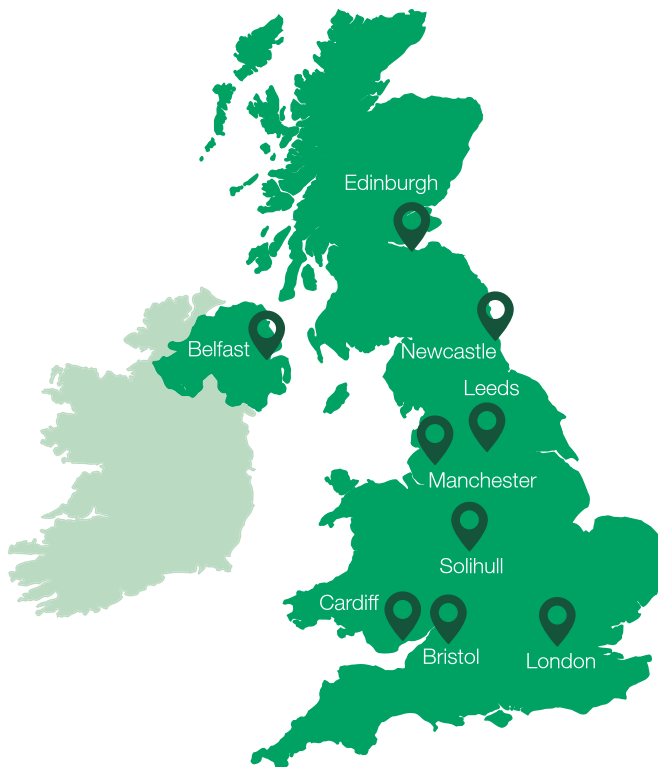
New opportunities available to join us in...

# Arup Environment Consulting

Develop your career on world class environmental projects such as High Speed 2 and the ecology masterplan for the Crown Estate's Wild West End; the visionary Garden Bridge and Thames Tideway Tunnel. We have new opportunities at all levels for environmental, EIA, ecology, air quality, archaeology, planning, contaminated land and waste consultancy professionals. Join us in growing our team across the UK!

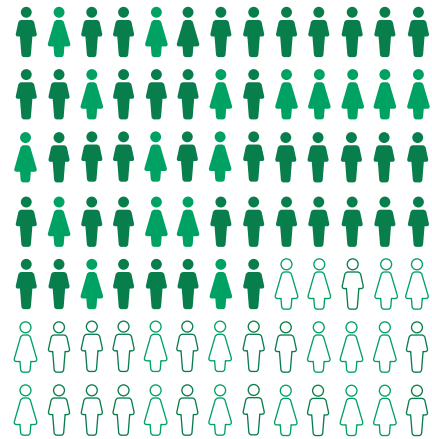
9

offices where you  
could join us



160+

world class environmental consultants,  
with many new opportunities for you  
to explore



1/3

of us are Chartered



100%

committed to equality  
and diversity



46

countries providing  
extensive opportunities  
for you



47

global skills networks to  
improve your technical  
capabilities



10,000

of the best ongoing  
global projects to work on



6

year average length of  
employment



10%+

profit, reinvested in  
business, employees  
and R&D



We are always looking for talented people.

To discover more about what you can do with us apply via:

[environmentjobs@arup.com](mailto:environmentjobs@arup.com)

[www.arup.com/careers](http://www.arup.com/careers)



ARUP