

Adding up UK EIA

Authorities reveal the number of environmental assessments carried out across the country

Compliant reports

One year on from the launch of mandatory carbon reporting, what do annual reports reveal?

Taking it all back

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the environmentalist

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October 2014



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October

News

- 4** Global carbon price edges closer
MPs criticise lack of scrutiny
Business plans Cisco, Toyota, Sainsbury's, Lloyds Bank, Rabobank, Marks & Spencer, Kyocera, Kingfisher, IKEA, Tetra Pak, PepsiCo
- 5** Health benefits of CO₂ cuts
Efficiency's "hidden" rewards
- 6** Managing water key for shale sites
NGOs set out greener UK plans
In parliament Catherine Bearder on ensuring the new European commission puts the environment first
- 8** Climate action good for economy, finds study by leading economists
Online news A selection of news stories from environmentalistonline.com
- 10** **The big conversation** Environmentalists on a single measure of sustainability

Legal brief

- 11** **Recent prosecutions** £250,000 fine for Thames Water reflects new guidelines; Costco receives \$335,000 penalty; US court finds BP guilty of "gross negligence"
Case law LexisPSL experts on recent court cases contesting permission for wind farms
- 12** **New regulations** Built environment; water; energy; finance; hazardous substances; planning; marine
- 13** **Latest consultations** Reservoirs; water reuse; community energy; marine plan; Minamata convention; REACH authorisations
Guidance IPCC sector guides; carbon accounting for SMEs
- 14** **Laying down the law** Simon Colvin says firms facing enforcement action need to understand how regulators and courts operate

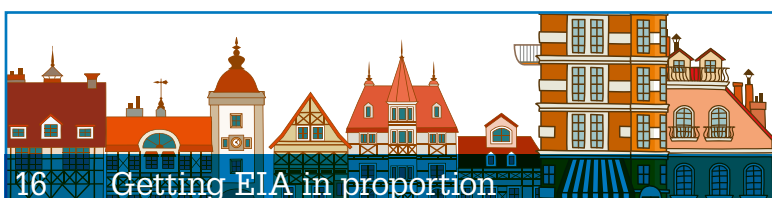
Insight

- 37** **Reviews** *Negotiating climate change; Health and safety, environment and quality audits; The hydropolitics of dams*
- 38** **My career** Sandra Lee, group environment manager at Atkins

IEMA news

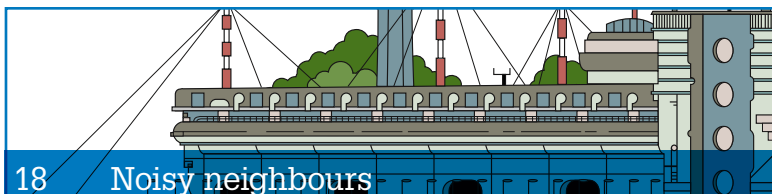
- 34** Members approve new governance structure at annual general meeting
Policy update Josh Fothergill reflects on how members are collaborating on sustainability IEMA events
- 36**

Features



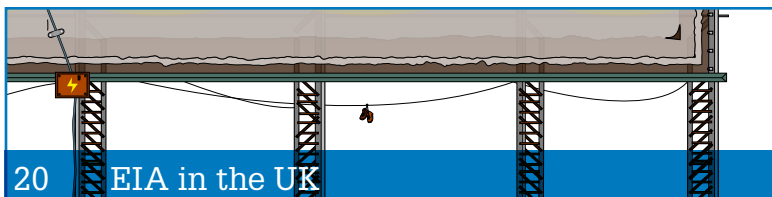
16 Getting EIA in proportion

With environmental statements increasing in complexity, Tom Smeeton and Peter George set out how to ensure a balance to the outputs from EIAs



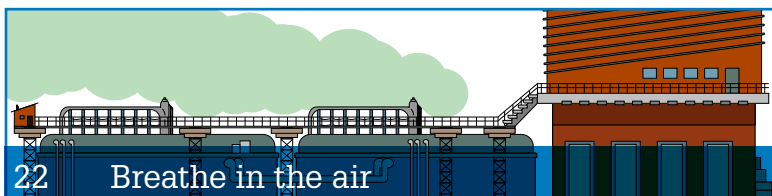
18 Noisy neighbours

Martin Broderick and Graham Parry summarise new guidelines from IEMA on addressing noise when carrying out environmental impact assessments



20 EIA in the UK

This month's datafile uses data from local authorities across England and from the devolved administrations to reveal the extent of EIA in the UK



22 Breathe in the air

Jon Pullen, air quality expert and co-author of new guidance from the IAQM, on how best to carry out an odour impact assessment for planning purposes



26 What a difference a year makes

One year on from the introduction of mandatory GHG reporting for listed companies, *the environmentalist* looks at how it is altering company reports



31 HP squares the circle

Lucie Ponting visits Hewlett-Packard to see how its planet partners return and recycling scheme provides materials to reuse in its ink and toner cartridges

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Working together in partnership

The smart money

The irony of the Rockefeller Brothers Fund, which was built on oil money, divesting from fossil fuels will not be lost on environmentalists. But it's a sign of the times. Increasingly individuals and institutions are moving their money out of stocks in oil and coal companies. Ahead of the UN climate summit last month, the global Divest-Invest coalition announced that more than 800 investors – including the heirs to the Rockefeller fortune – had pledged to switch funds totalling \$50 billion from fossil fuels to clean energy technologies. In a statement, Stephen Heintz, an heir of Standard Oil tycoon John D Rockefeller, said: “We are quite convinced that, if he were alive today, as an astute businessman looking out to the future, he would be moving out of fossil fuels and investing in clean, renewable energy.” And there's the nub of the argument: more money is likely to be made in the future from sustainable energy sources than from dirty, polluting fossil fuels.

Analysts are increasingly sceptical that investments by the oil and coal industry in new reserves are financially viable. Risk experts at the Carbon Tracker Initiative warned ExxonMobil recently that its relatively poor stock market performance reflects its choice to invest more in capital-intensive, high-carbon projects, including tar sands, heavy oil and Arctic developments. The initiative says that in 2007, such projects accounted for 7.5% of ExxonMobil's proven gas and oil reserves and around 15% of its liquid reserves, but that by the end of 2013 these had risen to 17% and 32% respectively. In 2012, Australian listed companies spent an estimated AU\$6 billion on developing more coal reserves. Yet research by the Smith School of Enterprise and Environment at the University of Oxford has warned that China's changing policy on coal – it recently announced a ban on coal imports with an ash content higher than 40% and sulphur content higher than 3% in an effort to improve air quality in the country – will put coal assets in Australia increasingly at risk. It concluded: “China's coal demand patterns are changing as a result of environment-related factors and consequently less coal will be consumed than is currently expected by many owners and operators of [Australian] coal assets ... This would result in coal assets under development becoming stranded or operating mines only covering their marginal costs and subsequently failing to provide a sufficient return on investment.”

As the world edges closer to busting the carbon “budget” required to keep global temperature rise below the important 2°C threshold, more stringent regulation will be introduced to curb greenhouse-gas emissions, leaving many fossil fuel reserves untapped. That's why the smart money is going elsewhere.

As the world edges closer to busting the 2°C budget for “safe” temperature rise, more stringent controls on GHG emissions will be introduced, leaving many fossil fuel assets stranded



Paul Suff, editor

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IEMA

Saracen House
Crusader Road
City Office Park
Tritton Road
Lincoln LN6 7AS
tel: +44 (0) 1522 540069
fax: +44 (0) 1522 540090
info@iema.net | iema.net

Editor

Paul Suff
paul.suff@lexisnexis.co.uk

Deputy editor

Catherine Early
catherine.early@lexisnexis.co.uk

Managing editor

Louis Wustemann
louis.wustemann@lexisnexis.co.uk

Sub-editors

Mike McNabb, Brenda Morris
Angela Partington

Advertising sales executive

Sean Collins
tel: +44 (0) 20 8212 1989
sean.collins@lexisnexis.co.uk

Recruitment advertising

Sam MacKenzie
tel: +44 (0) 20 8212 1913
sam.mackenzie@lexisnexis.co.uk

Marketing campaign manager

Victoria Newman
victoria.newman@lexisnexis.co.uk

Design

Jack Witherden
jack.witherden@lexisnexis.co.uk

Advertisement production

John Woffenden
john.woffenden@lexisnexis.co.uk

Publisher

Chris Jones
chris.jones@lexisnexis.co.uk

IEMA communications coordinator

Katrina Pierce
k.pierce@iema.net

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Businessplans

Communications equipment business **Cisco** has reported that between 1 August 2013 and 31 July 2014 it eliminated more than 86 tonnes of material from its packaging through 30 "Pack it green" projects. These include bulk-packing products, integrated product shipments, reusing packaging materials and expanding opportunities for customers to "opt out" of physically delivered products. Cisco says the initiative saved it \$6.1 million over the 12-month period.

Toyota's Burnside engine factory at Deeside, north Wales now boasts a solar array consisting of 13,000 panels. Designed and installed by British Gas, the array can produce up to 3,475,000 kWh a year and reduce the plant's annual carbon emissions by more than 1,800 tonnes.

Sainsbury's has agreed a "green" loan with **Lloyds Bank** and **Rabobank**, which the food retailer claims is the first commercial loan to be structured specifically to support environmental and sustainability initiatives. The £200 million deal will fund clean energy generation, energy efficiency and water saving projects.

Marks & Spencer, meanwhile, has agreed to purchase 35,000mWh of biomethane certificates from Future Biogas in a move to reduce its annual carbon footprint by more than 6,400 tonnes. Biomethane gas for the grid will be produced at the Vulcan anaerobic digestion plant near Doncaster using secondary break crops. Under the deal, M&S funds the production of the gas and receives carbon reduction certificates in return.

Kyocera has announced the start of construction on the world's largest floating solar photovoltaic (PV) installation at Nishihira Pond in Kato City, Japan. The 1.7MW facility is part of plans by Kyocera to build 60MW of PV plants on reservoirs across the country over the next few years.

B&Q and **Screwfix** owner **Kingfisher** is partnering with **IKEA** and **Tetra Pak** on a two-year project to develop a method to assess the impacts of FSC forest management certification.

PepsiCo has unveiled Hydro-BID, a data management and modelling tool to estimate the availability of freshwater use in water-scarce regions throughout Latin America and the Caribbean.

Global carbon price edges closer

Leading businesses are gearing up for a global price on carbon, according to research by the Carbon Disclosure Project.

It names BSKyB, BP, Marshalls and the National Grid as among the 150 companies incorporating an internal carbon price into their business decisions. The prices range from \$6 to \$80 a tonne, reports the CDP, with BSKyB, for example, applying a price of \$19.44 and BP adopting £40. "Companies are already advanced in their use of carbon pricing. They are ahead of their governments in planning for climate change risks, costs and opportunities," it says.

The research reveals that nearly 500 companies that disclose to the CDP are already part of a carbon-trading scheme, and that more than 200 companies are actively engaged with policymakers in discussions on carbon-pricing legislation.

The CDP report came as the World Bank called at the UN climate summit for the introduction of a global carbon price and China announced plans to establish a national market for carbon permit trading in 2016, which would create the world's largest emissions trading system.

The World Bank says that 40 national and more than 20 sub-national jurisdictions have already implemented or scheduled emissions trading schemes or carbon taxes.



Together, these territories account for more than 22% of global emissions, it reports.

Meanwhile, more than 340 global institutional investors representing more than \$24 trillion in assets have called on government leaders to provide stable, reliable and economically meaningful carbon pricing that helps redirect investment commensurate with the scale of the climate change challenge, as well as develop plans to phase out subsidies for fossil fuels. "Gaps and delays in climate change and clean energy policies will increase the risks to our investments as a result of the physical impacts of climate change and will increase the likelihood that more radical policy measures will be required emissions," said the 2014 global investor statement on climate change.

MPs criticise lack of scrutiny

The government needs to do more to embed sustainable development across government, according to MPs.

The environmental audit committee investigated the government's performance on environmental issues during this parliament. It concluded that satisfactory progress has not been made in any of the 10 areas it examined. MPs highlighted in particular biodiversity, air pollution and flooding as areas where there has been deterioration in performance or progress is too slow. The report, *An environmental scorecard*, highlights a lack of scrutiny of the government's overall record on the environment since the 2011 abolition of the sustainable development commission.

An overarching environment strategy could set out strategic principles to guide the action needed by both local and central government, the committee advises. This should also include an assessment of the

state of the environment and identify work needed to fill gaps in data.

MPs also recommend that the government reconsider the scope for ringfencing environmental taxes to pay for environmental programmes. Business plans from central government departments should be scrutinised for potential environmental harms, they said.

The committee advocates the establishment of an independent office for environmental responsibility to oversee this work. However, during the inquiry environment minister Dan Rogerson said that this was not something the government had considered and that there were already several bodies tasked with checking progress on the environment, including the committee. "It is something we could consider but I do not think I would see it as something that is going to create a huge leap forward in what we are doing," said Rogerson.

Research highlights health benefits of CO₂ reductions

Policies that tackle climate change as well as poor air quality can lead to cost savings up to 10 times the cost of implementing them, according to a study by US researchers and published in the journal *Nature Climate Change*.

Researchers compared the health benefits with the costs of putting into effect three climate policies. Introducing rigid fuel-efficiency requirements for vehicles is the most expensive, costing more than \$1 trillion, with health benefits recouping only a quarter of those costs. A cap-and-trade programme would cost \$14 billion. However, it would lead to savings on healthcare costs worth up to 10 times this much, the researchers concluded. The price tag of a clean energy standard fell between the two other policies. But the health benefits only just higher than costs, at \$247 billion versus \$208 billion.

"If cost-benefit analyses of climate policies don't include the significant health benefits from healthier air, they dramatically underestimate the benefits of these policies," said lead author Tammy Thompson from Colorado State University. She warned, however, that health benefits decline as carbon policies become more



stringent, so additional emissions reductions will not translate into greater improvements.

Meanwhile, research by consultancy Cambridge Econometrics has also highlighted how climate change mitigation policies could simultaneously improve air quality. Benefits include a more productive workforce and reduced healthcare expenditure, it said.

The World Health Organisation has also recognised the links between climate and health. It says that health benefits from actions to reduce greenhouse-gas emissions could substantially offset mitigation costs. For example, sustainable urban transport could cut the heart disease and stroke incidence by up to 20%.

Efficiency's 'hidden' rewards

The benefits of energy efficiency go well beyond the simple scaling back of demand, says a report from the International Energy Agency, which outlines how it has the potential to support economic growth, enhance social development and advance environmental sustainability.

The report, *Capturing the multiple benefits of energy efficiency*, argues that, because energy efficiency is routinely and significantly undervalued, two-thirds of the economically viable potential available between now and 2035 will remain unrealised. It says that, if IEA countries implement all economically viable energy efficiency investments, cumulative economic output could rise by \$18 trillion over the next 20 years.

Describing energy efficiency as a "hidden fuel", the agency advises governments to move away from focusing on energy savings to measure the viability

of energy efficiency measures and adopt a multiple benefits approach that includes, for example, improvements in local air quality and public budgets.

"When the value of multiple benefits is calculated alongside traditional benefits of energy demand and greenhouse-gas emissions reductions, investments in energy efficiency measures have delivered returns as high as \$4 for every \$1 invested," says the agency. The report reveals that, when the value of productivity and operational benefits to industrial companies were integrated into their traditional rate-of-return calculations, the payback period for energy efficiency measures dropped from 4.2 years to 1.9.

The agency's executive director, Maria van der Hoeven, said governments needed to invest more time in measuring the impacts of energy efficiency policies and in understanding their role in boosting economic and social development.

Short cuts

Offset gives cash boost

Every tonne of carbon offset can deliver up to \$664 in economic, social and environmental benefits outside carbon reduction, according to research by the International Carbon Reduction and Offset Alliance (ICROA) and Imperial College London. The survey asked 72 businesses that buy carbon offsets about their motivations and barriers. It found that, although co-benefits of carbon offsetting were a major consideration for companies deciding what type of project to support, 82% of companies buying offsets wanted more quantification of these. This would help communication with customers and employees and improve the business case for offsetting, they said. The study quantified the co-benefits of 59 carbon offset projects. It found that they contributed around \$3 per tonne (pt) in benefits to the local economy during development and while operational; \$52 pt in fuel savings; and around \$609 pt from conserving natural ecosystems. Two-thirds of companies who buy carbon offsets revealed their main motivation to be reputation and brand image.

Biodiversity hotspots

Pilot projects are under way to assess how wildlife habitat along transport corridors can be enhanced at the same time as protecting road and rail networks from the impacts of climate change. The pilots are located in the nature improvement areas (NIAs) in the Humberhead Levels in Yorkshire and Morecambe Bay in Lancashire. They are a collaboration between Natural England, the Highways Agency, Network Rail and the local NIA partnerships. Consultancy ADAS used geographic information systems to investigate land management methods along road and rail networks. Five methods will now be trialled in the pilot areas for three years. The project partners hope to use the results to inform a national roll-out. The Highways Agency manages 30,000 hectares of land, while Network Rail manages more than 20,000 miles of track and 650 hectares, including 200 sites of special scientific value.

In parliament



Putting Europe's environment first

According to a recent survey, 95% of EU citizens say protecting the environment is important to them personally, and many believe more could be done. Yet too often politicians neglect the environment in favour of the endless pursuit of economic growth, conveniently ignoring the fact that, unless our economies grow sustainably, they will inevitably collapse. So when the new president of the European commission Jean-Claude Juncker initially failed to mention the environment in his list of priorities for the next five years, I was disappointed but not surprised. Since then, I've been working with like-minded MEPs to secure a proper commitment from the commission towards green growth and leading the global shift to sustainability. Fortunately, Juncker has now changed his tune and has described the sustainability of the environment and the preservation of natural resources as key policy objectives.

The earliest opportunity to hold the new commission to account will take place in the coming weeks when, as a member of the European parliament's environment committee, I will be grilling Juncker's proposed environment and fisheries commissioner, Karmenu Vella from Malta. One thing I want to ask Vella is how he will ensure that the radical reforms of the EU's common fisheries policy, spearheaded by Chris Davies, former MEP and columnist on the *environmentalist*, are properly implemented so that Europe makes the transition to sustainable fishing. I also want to ask him what he will do to stop the illegal shooting of migratory birds in his own country. And, I'd like a clear answer on how he will ensure protecting the environment is mainstreamed into all EU policy areas and is not treated simply as an add-on. That way, we can ensure that, in the coming years, the EU responds to the concerns of its citizens and puts the environment first.

Catherine Bearder, Liberal Democrat MEP and a member of the European parliament environment committee.

Managing water key for shale sites

Effective management of water at shale gas exploration sites is now the main concern of water companies rather than its availability, following engagement between the two industries.

A memorandum of understanding was signed by Water UK and the UK Onshore Operators Group (UKOOG) last November to ensure cooperation because extracting shale resources requires large amounts of water for drilling and hydraulic fracturing (known as fracking). Since then a task group from both industries has been meeting regularly to discuss issues around fracking and water, a spokesman for Water UK said.

As a result, the providers believe that the main challenge will be ensuring surface water is not polluted when it returns from underground fracking operations. "We feel that we understand the risks a lot better now," he said. "We feel the main area of risk is making sure they are no spills on site."

Last month, the World Resources Institute published a report warning that companies developing shale resources are likely to face serious challenges in accessing freshwater in many parts of the world. It highlighted water stress in areas of the UK where shale gas resources have been



identified, such as the Bowland area in Lancashire and the Wessex-Weald area in the South East. Companies developing shale resources in the UK could face regulatory and reputational risks if they do not actively engage with local stakeholders on water security, the institute warned. Competition with other industrial water users and residents could cause costs to rise, it warned.

Globally, the institute found that 38% of shale resources are in areas that are either arid or under high extreme levels of water stress; 19% are in areas of high or extreme seasonal variability; and 15% are in locations exposed to high or extreme drought, the report states.

NGOs set out greener UK plans

A coalition of environment groups, including the Green Alliance and WWF, have set out proposals for achieving a "greener" Britain, ranging from measures to support the natural world to regenerate to policies aimed at building a more resilient economy.

The groups acknowledge that Britain has achieved much in terms of environmental policy over the past few years, most notably in reducing its carbon emissions, but argue that progress has been slowed by the economic recession. In a new report, they identify the priorities on which the next government should focus to create a country that is regarded as a global leader in the transition to a low-carbon economy and in protecting the natural environment.

To establish its credentials as a leader on tackling climate change and biodiversity loss, the report advises the UK to set a decarbonisation target for electricity generation and create a new marine reserve.

To "walk the walk" on a global climate deal and ensure the UK attracts enough investment to support a low carbon manufacturing supply chain, the government set a carbon intensity target for the electricity sector of 50gCO₂/kWh by 2030, it says. The report argues that, because the UK is responsible for 14 overseas territories, many of which are rich in wildlife, it is uniquely placed to play a global leadership role in safeguarding the world's oceans. It wants the next government to establish an additional protected ocean in the south Atlantic.

It also argues that more needs to be done to reverse the significant decline in the extent and variety of habitats and species in the UK over the past 50 years. Creating a more wildlife-rich future in which the degraded natural environment can be recovered will require fundamental changes in how we value, use and invest in nature, says the report.



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Climate action good for economy, finds study

The additional cost of investing in cleaner, greener technology over the next 15 years will largely be offset by savings from constructing more energy efficient buildings and transport systems, and reduce energy use in industry, concludes a study by leading economists.

The Global Commission on the Economy and Climate estimates that more than \$89 trillion will be invested globally by 2030 on upgrading infrastructure, which it says presents a unique opportunity to secure low-carbon economic growth and avoid dangerous climate change.

“The decisions we make now will determine the future of our economy and our climate,” said Lord Nicholas Stern (pictured), co-chair of the commission, and author of the 2006 report on the economics of climate change. “If we choose low-carbon investment we can generate strong, high-quality growth – not just in the future, but now. But if we continue down the high-carbon route, climate change will bring severe risks to long-term prosperity.”

The commission acknowledges that the annual cost of investing in more climate-friendly upgrades is around £270 billion higher than investing in established approaches. But it says that, when the economic benefits of cleaner air, more energy efficient buildings and reduced fossil fuel dependency are taken into account, these upgrades are in effect cost neutral. It also calculates that, if its recommendations are fully implemented, they could achieve up to 90% of the emissions reductions needed by 2030 to prevent temperature rise heading towards more than 2°C above pre-industrial levels.

The economists identify investments in cities, land use and energy that they say can improve the global economy and tackle climate change. Building better connected, more compact cities based on mass public transport can save more than \$3 trillion in investment costs over the next 15 years, improving economic performance and quality of life with lower emissions, they argue.



The commission estimates that restoring just 12% of the world's degraded lands can feed a further 200 million people and raise farmers' incomes by \$40 billion a year as well as cut emissions from deforestation.

It also recommends phasing out the £600 billion spent worldwide on subsidising fossil fuels to boost energy efficiency and divert more investment to renewable energy, which will reduce dependence on highly polluting coal.

From environmentalisonline.com this month...

2°C cap unlikely

The world will soon pass the point at which it is possible to limit climate change to a 2°C rise in temperatures, according to a report by the Global Carbon Project (GCP), an international collaboration of researchers. It estimates that total future CO₂ emissions cannot exceed 1,200 billion tonnes if global temperature rise is to be kept below the “safe” 2°C level. The scientists warn that, if emissions continue at the current rate, this remaining “quota” of emissions may be used up in one generation. This calculation does not take into account continuing increases in emissions, and a further 2.5% rise is predicted for 2014. The GCP also reports that China's CO₂ emissions per person overtook emissions in the EU for the first time in 2013 and have now surpassed those emitted from the US and EU combined. However, 16% of China's emissions are for goods and services that are exported.

environmentalisonline.com/2degreesC

Efficiency index

Resource-efficient companies are likely to grow more, face fewer risks and deliver better investment returns than less efficient companies, according to a new tracker launched by financial analysts at VIS Essential Investments. Its index comprises more than 150 companies in the energy, food and water sectors listed on stock exchanges in OECD countries that are judged to be “best placed” to generate long-term growth with lower environmental damage. Since 1 January, the VIS energy, food and water efficiency index has generated almost 6% higher returns compared with the MSCI World Index, the global equity benchmark. Australian oil and gas company Woodside Petroleum is ranked number one on the index, followed by Coca-Cola and Mexican baking multinational Grupo Bimbo. The index is based on data for companies' water and energy consumption and greenhouse-gas emissions.

environmentalisonline.com/resourceindex

Priorities for EU

The candidate for the new post of environment, maritime affairs and fisheries has been asked to consider the merger of the habitats and birds directives as a priority by new European commission president Jean-Claude Juncker. Karmenu Vella, a member of the Maltese Labour party, has been nominated for the post of commissioner for environment. Juncker has asked Vella to focus on five issues. The first is to carry out an in-depth evaluation of the birds and habitats directives and “assess the potential for merging them into a more modern piece of legislation”. The other priorities are the negotiations on an air quality strategy; assessing the state of play of the circular economy package and its consistency with the EU jobs and growth agendas; implementing the reform of the EU common fisheries policy; and engaging in shaping international ocean governance in the UN.

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The big conversation

Should the profession develop a single measure of sustainability and practitioners be able to declare organisations sustainable? Those questions were recently posed on IEMA's LinkedIn page – iema.net/linkedingroup – by Richard Lupo, senior sustainability consultant at Sustainable Homes. It drew a huge response – 77 comments at the time of going to press. Below is a selection of what people said.

A single measure of sustainability?

“Two metrics we've used recently have been One Planet Living's global hectares and environmental profit and loss. Global hectares works well for non-business audiences as you can express a firm in a 'number of planets' perspective, which is easily understood. EP&L works well for a financially-literate audience. Both are quite new approaches so better for showing a general overview and trends rather than absolute numbers.”

David Symons, MIEMA CEnv, director, WSP

“The ecological footprint is a well-recognised resource accounting tool that takes into account a wide range of indicators. It may need some refinements but is far superior in my opinion to measurement of carbon footprint, which does not account for multiple other significant implications of human existence.”

Jessica Fleming, senior environmental coordinator, The Landscape Partnership

“I've played with the idea of sustainability as a 'privative' – that is, a thing measured by its opposite – from Susan Krumdieck's work on sustainability. For example, we think of 'cold' but it is actually an absence of heat we measure. It doesn't matter that we can't agree on a definition of what a sustainable business would be, but we know the opposite, what unsustainability looks like and we can work on that.”

Julie Winnard, AIEMA, doctoral engineer, University of Surrey

“Energy is a perfectly acceptable unit [of measurement]: kWhs can't be fooled around with and are easy to measure and calculate. Energy works fine as a measure of sustainable business as every activity uses it in some amount per person per unit compared with the global available baseline.”

Frank Inglis, affiliate IEMA and GACSO, consultant coordinator

“Given that it is only in the past two decades that consideration for the global environment has taken root, we are still at an early understanding of many of the issues. Wellbeing seems to be an equally elusive concept. We still have widely varying concepts of wellbeing, which need to be reconciled across a variety of environments. Even if we could find a balance, we face the issue of distribution of natural resources.”

Nigel Carter, MIEMA CEnv, principal consultant, En-Venture

“I believe there cannot be a single definition or single measure for sustainability. For a business, sustainability has to do with the sustainability of the business, while for the planet it is about the ability of the existing order on Earth to survive.”

Roger Horne, AIEMA, consultant, Horne Partnership

“I'm not sure there can be a single measure of sustainability as it means something different to different people. This means that there will be disagreement about any initially agreed measurement, which will then lead to the addition of other metrics, or a different measure of sustainability altogether – all of which will lead to a whole industry of people employed just to do the measuring.”

Clare Topping, AIEMA, energy and sustainability manager Northampton General Hospital

“Milestones are measurable indicators for short, medium or long term to be part of disclosure – that is, sustainability reports. Such disclosed information is set by frameworks (GRI, for example) and therefore subject to auditing and public awareness.”

Angel Gunther Vega, AIEMA, sustainability manager, AAM-AIMC

What Richard Lupo says

Isn't it about time that we develop a single measure of sustainability? And shouldn't environment professionals, using a well-researched methodology, be able to declare a company or organisation “sustainable”, just like accountants can declare companies “profitable”?

I think it can be done, both rigorously and to an auditable level. It will take time but we should start. The methodology must take in all aspects of the environment, not just carbon emissions, and link closely with the emerging wellbeing agenda. After all, we protect the environment so that humans can maximise their wellbeing.”

Responding to some participants' proposal to use environment metrics to measure sustainability, Lupo says he recognises that there are already various environmental indicator tools, but believes we need to go further and make a direct, quantifiable link with improved human wellbeing. He advocates an approach in which a country or organisation measures first its wellbeing and then subtracts any decrease in it – which he calls “ill-being” – caused by its environmental impacts.

Sustainability lexicon

The Global Association of Corporate Sustainability Officers (GACSO), which amalgamated with IEMA in April, is seeking input from environment practitioners to help define and establish a lexicon of sustainability. The call came after GACSO published its white paper, *Defining corporate sustainability* (available at gacso.org), which aims to stimulate debate on the developing language used by the profession.

GACSO wants contributions from not only environment and sustainability professionals, but from other occupations, such as HR practitioners, to build understanding of what it describes as a “business critical” agenda.

In court



£250,000 fine for Thames Water reflects new guidelines

Thames Water has been fined £250,000 for allowing untreated sewage to enter a brook running through a nature reserve. The scale of the penalty imposed by Reading crown court reflected the new sentencing guidelines for environmental offences that came into force on 1 July.

The 143-acre nature reserve near Newbury, known as The Chase, is owned by the National Trust. Thames Water pleaded guilty to allowing sewage to enter the brook from an emergency overflow pipe at its Broad Layings sewage pumping station on 2 September 2012. The Environment Agency said the discharge had been caused by a blockage in the pumps at the station on 29 August 2012 and that Thames Water had failed to act on the alarms system to attend and unblock them.

The raw sewage had a severe impact on aquatic life in a 600-metre stretch of Chase brook. "Water quality testing revealed that there were high levels of both ammonia and e-coli in the brook," said agency officer Matthew Rice. Ammonia is toxic to aquatic organisms and low dissolved oxygen levels starve creatures of oxygen.

Under the new sentencing guidelines, there are four categories of offence, which relate to the level of harm caused, with offences causing the greatest harm likely to attract a larger fine. The seriousness of an offence is also related to the offender's culpability – that is, was it deliberate, reckless or negligent, or was the offence committed with little or no fault on the part of the organisation.

In this case, the judge, recorder Arbuthnot, said: "The parties agree that the level of culpability is negligence and with which I agree. With regards to harm I find that this is a category 3 offence but at the severe end." The starting point for fines for negligent, category 3 offences – generally those that have a minor or localised impact – committed by firms with a turnover of at least £50 million is £60,000, rising to £150,000. The courts, however, can impose financial penalties outside this range for large companies by considering whether the fine is proportionate to the means of the offender. If a company has a large profit margin relative to its turnover, for example, courts can increase the penalty. The agency reports that Thames Water's profit for the year ending 31 March 2014 was £346.7 million.

Rooma Horeesorun, prosecutor for the agency, said of the penalty imposed on Thames Water: "In addition to the culpability and harm factors, the judge took into account the financial circumstances of the defendant."

Thames Water has since replaced both pumps at its Broad Layings station and sealed the emergency overflow pipe into Chase brook. A spokesperson said: "We very much regret this incident and have since carried out a thorough clean-up of the watercourse and funded an ongoing post for a National Trust warden."

Costco receives \$335,000 penalty

US retailer Costco has agreed to cut its emissions of ozone-depleting and greenhouse-gas chemicals from refrigeration equipment as part of a settlement with the US Environmental Protection Agency (EPA) and department of justice. The firm will also pay \$335,000 in penalties for violating the Clean Air Act. The EPA reports that Costco violated the Act by failing to repair leaks of the refrigerant R-22, a powerful ozone-depleting substance, between 2004 and 2007. Costco also failed to keep adequate records of the servicing of its refrigeration equipment, which is a requirement under the Act to prevent harmful leaks.

BP guilty of 'gross negligence'

BP has been found guilty of gross negligence for its role in the Deepwater Horizon disaster in 2010. The decision by the Eastern district court in Louisiana means the oil company faces civil penalties of up to £18 billion under the Clean Water Act because the gross negligence ruling allows authorities to quadruple BP's fine from \$1,100 to \$4,300 for every barrel of oil spilled. The US government estimates that 4.2 million barrels of oil were spilled into the Gulf of Mexico during the incident. BP said it strongly disagreed with the court decision. "The law is clear that proving gross negligence is a very high bar that was not met in this case," it said.

Case law

Wind farms take centre stage in legal battles

Applications to construct onshore wind farms continue to face resistance, with campaigners increasingly resorting to the courts. The most recent example is the high court's decision to quash planning permission for a 34m turbine at Glaschw in Wales. Permission for the turbine had been granted by Powys county council, but campaigners complained that the turbine was "inappropriate for such an unspoilt location".

The Powys case follows similar successful legal challenges. In *Christopher James Holder v Gedling borough council* [2014] EWCA Civ 599, the court of appeal held that an objector to a 66m wind turbine in the Nottingham greenbelt had permission to appeal on the grounds that: permission could set a precedent for other wind turbine developments nearby; the turbine would not generate a significant amount of electricity; and the proposal would only benefit the applicant financially. And, in *Victoria Glynne Gregory and Welsh ministers* [2013] EWHC 63 Admin, the high court agreed with campaigners that Anglesey county council's decision to grant permission for a 40m turbine in an area of natural beauty was ill-considered and unlawful.

There are many common concerns in these decisions, including damage to landscape quality and the precedent for further applications. In the Powys case, campaigners also argued that the council had an overwhelming obligation to protect the area for "future generations". Yet wind farms and other forms of renewable energy are essential for future generations because they will help reduce greenhouse-gas emissions and mitigate climate change.

Keith Davidson

Lexis®PSL

New regulations



In force	Subject	Details
31 Jul 2014 	Built environment	The Building (Amendment) (Wales) Regulations 2014 will amend provisions of the 2010 Regulations concerning the energy efficiency of buildings. It allows ministers to impose target primary energy consumption rates for new buildings (other than dwellings) and target fabric performance values for new dwellings. lexisurl.com/iema17527
31 Jul 2014 	Water	The Groundwater (Amendment) Regulations (Northern Ireland) 2014 amend the 2009 Regulations. They revise provisions on groundwater chemical status. A schedule provides threshold values for assessing groundwater chemical status and the risk to wetlands. lexisurl.com/iema26210
1 Aug 2014 	Energy	The Electricity Market Reform (General) Regulations 2014 support the introduction of the contract for difference (CfD) regime. The Contracts for Difference (Definition of Eligible Generator) Regulations 2014 detail the technologies eligible for CfDs. These include biomass conversion, hydro generation, wind, wave, landfill gas and solar photovoltaic generating stations. The Contracts for Difference (Electricity Supplier Obligations) Regulations 2014 impose levies on electricity suppliers in Great Britain to finance the scheme. The Contracts for Difference (Allocation) Regulations 2014 set out the information required from applicants for CfDs. The Contracts for Difference (Standard Terms) Regulations 2014 define standard terms that are to be included in CfDs. The Contracts for Difference (Counterparty Designation) Order 2014 appoints the Low Carbon Contracts Company as a designated counterparty for CfDs. lexisurl.com/iema26217 ; lexisurl.com/iema26218 ; lexisurl.com/iema26220 ; lexisurl.com/iema26221 ; lexisurl.com/iema26222 ; lexisurl.com/iema26223
1 Aug 2014 	Energy	The Electricity Capacity Regulations 2014 support the introduction of the capacity market, which provides payments in return for the maintenance of adequate contingency electricity generation. The electricity market reform delivery body is required to prepare the first capacity report by 1 June 2015. Capacity agreements will then be allocated through annual auctions. lexisurl.com/iema26224
7 Aug 2014 	Finance	The Capital Allowances (Environmentally Beneficial Plant and Machinery) (Amendment) Order 2014 amends the 2003 Order, which provides 100% first year capital allowances for specified water saving equipment. This amendment adopts the new water technology criteria and water technology product lists. Similarly, the Capital Allowances (Energy-saving Plant and Machinery) (Amendment) Order 2014 amends the 2001 Order Capital Allowances (Energy-saving Plant and Machinery) Order 2001. The amendment adopts the new energy technology criteria and energy technology product lists. lexisurl.com/iema26213 ; lexisurl.com/iema26214
7 Aug 2014 	Hazardous substances	A European commission decision authorises the use of Bis(2-ethylhexyl) phthalate (DEHP) by Rolls-Royce in the bonding and manufacture of aero engine fan blades. The authorisation permits the continued use of DEHP under REACH (Regulation 1907/2006) and is valid until 21 February 2022 to permit the research of suitable alternatives. lexisurl.com/iema28689
8 Aug 2014 	Planning	The Planning Act 2008 (Commencement No. 2) (Wales) Order 2014 brings into force two sections of the Planning Act 2008. It enables the high court to return any development-related strategy, plan or document to the preceding stage in its production process and empowers Welsh ministers to set fees for appeals against planning enforcement notices. lexisurl.com/iema26228
14 Aug 2014 	Marine	Directive 2014/93/EU amends 96/98/EC on marine equipment, updating references to international conventions and testing standards. Various classes of equipment are affected, including for pollution prevention. lexisurl.com/iema28688

This legislative update has been provided by Waterman's Legal Register available at legalregister.co.uk

Latest consultations



30 October 2014

Reservoirs



Provisions in the Reservoirs (Scotland) Act 2011 aim to better protect Scotland from flooding by reservoirs. As part of its implementation of the new regime, the Scottish government is consulting on proposals for the creation of a new register of controlled reservoirs and a draft framework for the risk designation process – both to be established by the Scottish Environmental Protection Agency. The government says these are key steps in the implementation of the Act and have to be in place before reservoirs can be fully brought under the new regime, as planned, in 2016.

lexisurl.com/iema28750

7 November 2014

Water reuse



Policy options for optimising water reuse in the EU have been put out for consultation by the European commission. Feedback will help the commission to prepare an impact assessment covering all key areas of potential application of water reuse, such as agriculture, urban, industrial, and recreational uses (such as golf courses) as well as groundwater recharge.

lexisurl.com/iema27148

10 November 2014

Community energy



The Scottish government is consulting on a draft national community energy statement. The Edinburgh administration reports that Scotland is moving towards its target to establish 500MW of community and locally-owned renewables by 2020. It now wants community energy to now encompass the whole energy system – from energy efficiency and demand reduction to low-carbon energy supply and distribution and heat systems and energy storage. The draft policy statement covers projects directly owned by communities, as well as facilities that are owned jointly by communities and developers.

lexisurl.com/iema28749

10 November 2014

Marine plan



The Welsh government is developing a national marine plan, covering inshore and offshore waters. It aims to provide information and guidance to those wishing to use or undertake development in Welsh waters. The draft vision and related objectives, including the proposed sustainability appraisal, are now out for consultation.

lexisurl.com/iema28745

14 November 2014

Minamata convention



The European commission is consulting on implementing the Minamata convention on mercury in the EU. The commission says feedback from the consultation will be used to prepare an impact assessment covering specific key areas where EU legislation may need to be amended. These include: import restrictions on metallic mercury from countries not party to the convention; an export ban for certain products containing mercury; the use of mercury in new products and processes; and establishing environmentally sound storage of non-waste mercury stocks.

lexisurl.com/iema27144

30 November 2014

REACH authorisation



Recommendations from the European Chemicals Agency for new substances to be added to the REACH authorisation list are out for consultation. They include two substances obtained from coal tar; seven lead substances; four boron substances; seven phthalates; 4-Nonylphenol, branched and linear, ethoxylated; and 1-Bromopropane (n-propyl bromide).

lexisurl.com/iema28856

New guidance

IPCC sector guides

The Institute for Sustainability Leadership at the University of Cambridge (CISL) has published a series of guides for business on the implications of climate change. The 13 briefings are based on the fifth assessment report from the Intergovernmental Panel on Climate Change (IPCC) and have been compiled by CISL and Cambridge Judge Business School, in partnership with the European Climate Foundation and sector-specific organisations. The guides contain infographics and key facts, and summarise the likely impacts of climate change on: agriculture (lexisurl.com/iema28754); buildings (lexisurl.com/iema28755); cities (lexisurl.com/iema28756); defence (lexisurl.com/iema28757); employment (lexisurl.com/iema28758); energy (lexisurl.com/iema28759); finance and investment (lexisurl.com/iema28761); aquaculture and fisheries (lexisurl.com/iema28762); extractive and primary industries (lexisurl.com/iema28760); tourism (lexisurl.com/iema28763); and transport (lexisurl.com/iema28764). They also examine the capacity for these sectors to adapt to climate change and to contribute to emissions reductions. The series also includes an overview of the IPCC findings (lexisurl.com/iema28765) and a briefing on climate science (lexisurl.com/iema28766).

Carbon accounting for SMEs

ACCA, the global accountancy body, has published a technical factsheet (lexisurl.com/iema28770) for small businesses on carbon accounting. It concentrates on a reasonably simple form of carbon accounting that is suited to entities with turnovers of up to £7 million and provides guidance on setting up and operating carbon accounting, and on the associated tax advantages. The factsheet covers accounting for business activities, such as gas heating, electricity consumption and business travel. It also contains sections on reporting carbon emissions and ways to reduce such emissions. Appendices focus on conversion factors, UK tax incentives and a template letter of engagement for carbon accounting services.



Laying down the law

The rules of the game

Simon Colvin says businesses facing enforcement action need to better understand how regulators and the courts operate



How often have you heard of a business that has suffered an environmental incident receiving “assurance” that everything will be “all right” if they cooperate with the regulator only to learn that this is not the case? Once the immediate impact of the incident has been addressed, a formal interview under caution follows, and then a prosecution. The company might object, arguing that it was told cooperation would satisfy the regulator. Unfortunately that objection will not prevent the regulator pursuing a prosecution and it is very unlikely to persuade a court that it should not continue with the court proceedings.

Similarly, how often have you heard of regulators taking many months to reach a decision in relation to enforcement action and a possible prosecution?

So when will a regulator’s assurance that it will be “all right” be enough to persuade a court that it would be unfair to continue with the proceedings and to issue a permanent stay? Or, in what circumstances will a delay on the part of a regulator to pursue an investigation or enforcement action be enough to persuade a court that it would be unfair to continue with a prosecution and to stay the court proceedings? The answer is hardly ever.

Justice for all

A court’s ultimate objective is to ensure the accused receives a fair trial. This is in line with art 6 of the European Convention on Human Rights and the principles of natural justice that have been developed in England. To stay court proceedings and bring them to an end, a court must be satisfied that it would be unfair for the accused to stand trial.

Case law (*Derby crown court, ex parte Brooks* – see panel) has established that abuse cases fall into one of two categories:

- those in which the prosecutor can be said to have manipulated or misused the rules of procedure; and
- those in which there has been inordinate and inexcusable delay which has actually prejudiced the defendant.

There are generally two key questions that have to be considered when deciding whether a delay or the actions of the regulator amount to an abuse:

- Have the actions of the regulator undermined the rule of law and the administration of justice?
- What is the extent of the prejudice to the accused?

It is for the accused to demonstrate on the balance of probabilities that there was an abuse. Even though the standard of proof is the balance of probabilities (as opposed to beyond all reasonable doubt), the courts have made it clear that trials will go ahead unless there are compelling reasons for them not to.

For a delay to amount to an abuse of process it must be unjustified and it must result in genuine prejudice and unfairness. Again, case law (*Bell v DPP of Jamaica* [1985] AC 937) has established that there are certain factors to be considered in order to decide whether a delay amounts to an abuse. These are the length of the delay, the reason for the delay, and the prejudice suffered by the accused.

If the delay has been months or even years and there is no justifiable reason for this – for example, the completion of wider investigations – and the accused has suffered prejudice, perhaps because they can no longer call an eye witness or because evidence is no longer available, they might be able to successfully raise an abuse argument on the basis of delay.

Legitimate expectation

In some circumstances, it can be argued

that “assurance” given by the regulator at the time of an incident gives rise to a “legitimate expectation” that no further action will follow.

Case law suggests that breach of an assurance is not likely to constitute an abuse unless there has been an unequivocal representation by the regulator that the defendant will not be prosecuted and that acting on that advice has been to the detriment of the defendant.

Clients often describe situations that would fall into the legitimate expectation category of abuse. But without clear evidence it is hard to successfully raise such arguments. The need for an unequivocal representation highlights the importance of keeping contemporaneous notes of any conversations with regulators. A common ground for suggesting there has been reliance to the detriment of the accused is where they have cooperated and shared information with a regulator in the mistaken belief that no action will follow. Where a business takes such an approach, it would be worth communicating the reasons for cooperating to the regulators in writing at the time.

In the long run, it is up to individuals and their businesses who might find themselves subject to enforcement action to understand the “rules of the game”.

Abuse of process – *Derby crown court, ex parte Brooks*

This case ([1985] 80 Cr App R 164) focused on a court’s power to halt a prosecution as an abuse of process. In his ruling, Sir Roger Ormrod said: “The power to stop a prosecution arises only when it is an abuse of a process of the court. It may be an abuse of process if either (a) the prosecution have manipulated or misused the process of the court so as to deprive the defendant of a protection provided by the law or to take unfair advantage of a technicality; or (b) on the balance of probability the defendant has been, or will be, prejudiced in the preparation or conduct of his defence by delay on the part of the prosecution which is unjustifiable.”

Simon Colvin is partner and national head of the environment team at Weightmans LLP. Follow him on twitter @envlawyer



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Getting EIA in proportion

Tom Smeeton and Peter George set out how to ensure a balance to EIA outputs

Proportionality in the assessment of environmental effects and the development design process is often cited but rarely delivered. Research by IEMA has indicated that the main text of many environmental statements run to more than 350 pages, while those relating to nationally significant infrastructure projects are often nearer double that figure.

So how can proportionality be achieved at key stages of the environmental impact assessment (EIA) process and what are the perceived barriers to delivering an effective, concise and proportionate EIA?

Cumbersome and unwieldy

EIA reports the predicted significant effects that a development proposal will have on the environment, enabling a decision to be made about whether to grant consent. However, many EIA environmental statements (ESs) have become large, cumbersome and unwieldy documents, and feedback from stakeholders reveals that this often makes them inaccessible.

Reasons for the seemingly ever-expanding statements include the fear of challenge or the risk of litigation, resulting in a temptation to scope in topics with little consideration of whether the anticipated impacts are significant. Some legal teams have a tendency to insist information is included despite it adding little value to the document or whether it is materially relevant to the decision-making process. As a result, many ESs become less effective in communicating a clear, concise message to inform those taking the decision on whether to grant consent.

The reporting requirements of the EIA Regulations do not differentiate between significant adverse environmental effects and beneficial effects, and too many ES authors focus on the adverse outcomes, often forgetting that there may also be significant benefits.

Scope out

Effective scoping underpins a proportionate approach to EIA, increasing efficiency and reducing the potential for unnecessary work. A common pitfall is the perception that all of the “normal” or “traditional” environmental topics need to be assessed and reported, when in many cases they can be scoped out.

Analysis by IEMA of 100 UK ESs indicates that, on average, they include nine topic chapters and 85% contain sections on ecology, noise, landscape, transport and water (including flood risk). Experienced professional judgment should be employed during the scoping stage to focus the initial assessment work. Early engagement with statutory consultees is key to agreeing the scope and methods to be used.

Scoping should also be a dynamic process, subject to regular review and potential change throughout the life of the EIA. It should be adaptable enough to consider new environmental aspects as they arise, to review the potential need for detailed assessment, and also to scope out issues if it subsequently becomes apparent that they are not likely to give rise to significant effects.

Practitioners should not refrain from exercising their professional judgment to explain why a new aspect should or should not be included within the scope of the EIA.

Proportionality in EIA and design

To provide fit-for-purpose appraisals, it is important that the scoping and assessment are proportionate. These must be tailored to the scale of the development, the spatial and temporal scope and the likely impact of the project’s effects on the environment. It therefore follows that the design and mitigation response should also be proportionate and based on the scale of anticipated impact.

This approach ensures that the relevant key issues are assessed and, where practicable, they are



mitigated effectively – but without entailing excessive costs and are communicated to the decision maker clearly and concisely.

By its very nature, the design of any development is iterative, with refinements made throughout the project lifecycle from inception through to detailed design and construction. EIA is also an iterative process and should be undertaken at key points during the design process. The two processes share many common elements. For example, the first stage of the design process – project preparation – typically involves a site survey, constraints mapping and consultation exercise. Similarly, the first steps in the EIA process include baseline surveys, desktop reviews and statutory and non-statutory consultation.

The traditional model is to undertake EIA at key points in the design – for example, when the design is sufficiently developed to understand the effects of the development on the environment. The design needs to be sufficiently “fixed” for its impact to be assessed effectively. However, this approach can come across as clunky and sometimes be disjointed from the design process, resulting in mitigation measures being “shoehorned” into an advanced and inflexible design.

A more integrated approach, which embeds the environment professional in the design team, is preferable. This can truly integrate into the design the initial environmental findings and the approach to mitigation. In this way, environmental assessment is not viewed as a process that merely reports back at the end of the design process. Rather, EIA is considered as a fully integrated and iterative process that is interdependent with the evolution of the design.

Role of the EIA coordinator

The EIA coordinator has a central role in the development cycle, and they must be able to communicate effectively with stakeholders and the design and wider project teams. This relationship is crucial to avoid and reduce the project’s effects on the environment and to ensure that mitigation is proportionate and integrated into the design.

Effective communication is also vital so that the developer and decision maker understand the environmental impacts. This includes understanding how the results of the assessment have influenced the design, as well as how avoidance and reduction strategies are necessary before compensatory measures are considered. Clever design avoids the impact or reduces the effect on the environment as part of the scheme.

The appointment of an EIA coordinator early in the development process can ensure that environment and sustainability principles are integral to the project’s objectives. This will also help to ensure the scope of the EIA is proportionate, to enhance potential efficiencies in the design and assessment, and ultimately to reduce the risk of consent being declined, with the inevitable impact this would have on project cost. The coordinator needs a diverse range of skills to manage the interface between the environmental topic teams, design engineers and wider project team, as well as

stakeholders and other interest groups. He or she must be conversant with engineering and construction issues, while also having an in-depth understanding of environmental assessment techniques, making it possible to engage with multiple project stakeholders with diverse viewpoints.

The benefits of having an embedded EIA coordinator in the core development project team include:

- communication – a conduit between the engineering design team and environmental specialists, allowing them to liaise on a technical level to integrate mitigation and enhancement into the emerging design;
- technical – an understanding of the key issues relating to the environmental baseline of the study area in order to inform the design process;
- design management – a thorough understanding of the environmental implications of design decisions and their potential for adverse impacts or potential contravention of legislation. It is essential for the coordinator to be experienced and confident enough to respond promptly to the evolving design;
- design advice – an ability to influence the design as it evolves, including adding mitigation; and
- impartiality – an ability to challenge conventional thinking or status quo design assumptions.

Rising demand

EIA has always been an iterative process running in parallel with design, but it has evolved to become much more integrated, resulting in improved design and environmental feedback. Better integration of environmental mitigation and sustainability enhancements earlier in the design process and more effective communication across the spectrum of project stakeholders have also improved the process.

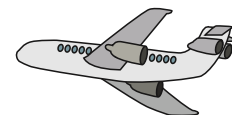
More work needs to be done by EIA practitioners to guide and advise clients and legal practitioners on the scope of assessments, moving ESs away from being information dumps to shorter, more concise documents that provide decision-makers with robust evidence on environmental impacts. Embedding EIA practitioners in project design teams will lead to better education about environmental issues and a more holistic approach to impact assessment.

The EIA coordinator therefore has a key role to play, not only in terms of the assessment process but also the wider design development. This role will become increasingly important with the changes to the EIA Directive and the requirement for competent environmental professionals to be used, so the demand for competent practitioners is likely to rise. IEMA Quality Mark organisations and individuals with relevant professional qualifications and experience – such as registered EIA practitioners, MIEMA and CEnv – should have the required level of competence.

Tom Smeeton is principal consultant and **Peter George** is technical director at Temple Group.

Noisy neighbours

Martin Broderick and Graham Parry outline new IEMA guidelines for noise and EIA



Most new developments, regardless of scale, will generate noise. Noise has the potential to affect people's health and quality of life, property, such as historic buildings, and locations valued for their tranquility and wildlife.

While standards and guidance on addressing noise are readily available, none has been developed to assist with undertaking a noise impact assessment. Consequently, there is no guidance on how to undertake one. The IEMA guidelines for noise environmental impact assessment, which were published on 6 October, are intended to fill this gap, and are the result of work carried out by a large group of acousticians over several years.

The guidelines set out good practice standards for the scope, content and methodology of noise impact assessments to facilitate greater transparency and consistency between assessments.

Noise and EIA

Noise impact assessment needs to be viewed in the context of the UK planning system and particularly the UK Environmental Impact Assessment (EIA) Regulations. These implement the EIA Directive 2011/92/EU, which has recently been amended by Directive 2014/52/EU, but which has yet to be transposed into UK law.

The EIA process ensures that likely significant effects on the environment, including noise, are identified before the development is given consent. EIA provides a mechanism by which the interaction of environmental effects resulting from development can be predicted, allowing them to be avoided or reduced by influencing the project design and developing mitigation measures. As such, it is a critical part of the planning and decision-making process.

The EIA Directive refers to the need to consider effects across a range of factors, including population, human health, biodiversity and cultural heritage. Assessment needs to consider the likely significant positive and negative effects at all stages of the project. This must cover all effects, whether they are direct or indirect, secondary, cumulative, short-, medium- or long-term, permanent or temporary. The assessment must also cover the measures envisaged to avoid or mitigate significant adverse effects. Developers also need to consider both intra- and inter-project cumulative impacts.

Noise is an important environmental effect, as most developments will generate noise during construction,

operation, decommissioning and restoration. In the UK, most developments will be close to receptors that are sensitive to noise. The effect on humans is usually the predominant consideration in assessing noise impacts. However, noise can also have a significant effect on wildlife, for example.

In the UK, EIA has been implemented through secondary legislation, which links into a number of other consent regimes. As a result, nearly two thirds of all assessments undertaken are related to applications for planning permission.

Since the EIA Regulations are mainly procedural, a failure to comply fully with the process can leave a development open to a legal challenge.

Policies and guidance

The planning system attempts to mediate between conflicting interests in the use and development of land. In the UK, planning and noise impact assessment take place in a complex, land use planning decision-making process. At a national level, each of the UK administrations has relevant policies and guidance:

- England – the national planning policy framework (NPPF) sets out how policies should be applied across the country. Planning practice guidance is also available in England. It supports the NPPF and provides useful clarity on the practical application of policy.



- Scotland – the national planning framework (NPF) sets the context for development.
- Wales – planning policy Wales (PPW) sets out the policies of the Welsh government.
- Northern Ireland – the draft strategic planning policy statement (SPPS) sets out the government's regional planning policies.

Planning law requires that applications for planning permission must be determined in accordance with relevant development plans of the local planning authority unless “material considerations” indicate otherwise. The NPPF, NPF, PPW and SPPS are such a consideration in planning decisions. In addition, planning policies and decisions must reflect and, where appropriate, promote relevant EU obligations and statutory requirements.

Where a development is deemed to be a nationally significant infrastructure project (NSIP) – for which particular considerations apply in England and Wales – the policies are determined in accordance with the decision-making framework set out in the Planning Act 2008, as well as relevant national policy statements for major infrastructure. Other matters that are considered important, and these may include the NPPF and PPW, are also relevant.

England, Scotland and Wales have their own noise policy, as well as guidance and advice documents.

- The noise policy statement for England (NPSE), introduced in 2010, provides clarity on current policies and practices to enable noise management decisions to be made.
- Planning advice note 1/2011, *Planning and noise*, explains the role of the planning system in Scotland in helping to prevent and limit the adverse effects of noise. The Scottish government has also published an advice note on the technical assessment of noise and aims to assist in assessing the significance of impact.
- In Wales, technical advice note 11, *Noise*, provides advice on how the planning system can be used to minimise the adverse impact of noise without placing unreasonable restrictions on development.

There is currently no explicit technical advice document for noise in Northern Ireland.

IEMA guidance

Within this regulatory and planning context, the new IEMA guidelines define the key principles of

noise impact assessment, in particular how it fits in the wider EIA process through: scoping of noise assessments; the issues to be considered when defining the baseline noise environment; prediction of changes in noise levels as a result of implementing development proposals; and evaluation of the significance of the effect of changes in noise levels.

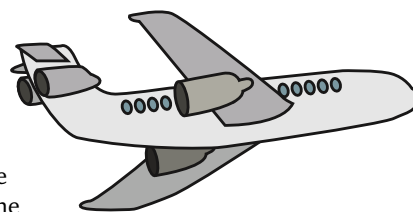
The guidelines from IEMA are intended for a wide audience, not just environment practitioners, and include:

- professionals who work in the field of acoustics and noise control;
- regulators, including environmental health officers, members of the planning inspectorate, planners and others in local and national government and associated agencies;
- developers and those responsible for contributing to and managing projects, such as architects, planners and engineers;
- anyone interested in the outcome of noise impact assessments; and
- academics and students.

They define the different noise impact assessment methods and techniques, outlining their limitations. The guidelines are applicable to all stages of a project, from construction and operation to decommissioning and restoration. The principles in the guidelines are relevant to all types of project, including small developments, which do not require EIA; developments within the scope of the EIA Regulations 2011; NSIPs captured under the Infrastructure Planning (EIA) Regulations 2009 (amended); and other major infrastructure subject to, for example, hybrid parliamentary bills, the Transport and Works Act (the usual way of authorising a new railway or tramway scheme in England and Wales) or the EIA Decommissioning Regulations.

The guidelines are applicable in all parts of the UK and EU, although practitioners will need to factor in specific legislation, regulations, policy and advice relevant to the project when applying the principles, methods and techniques outlined.

Martin Broderick is a research associate at Oxford Brookes University and **Graham Parry** is owner of ACCON (UK). They are joint authors of the IEMA guidelines for noise environmental impact assessment. The guidelines are available to order at iema.net/noise.



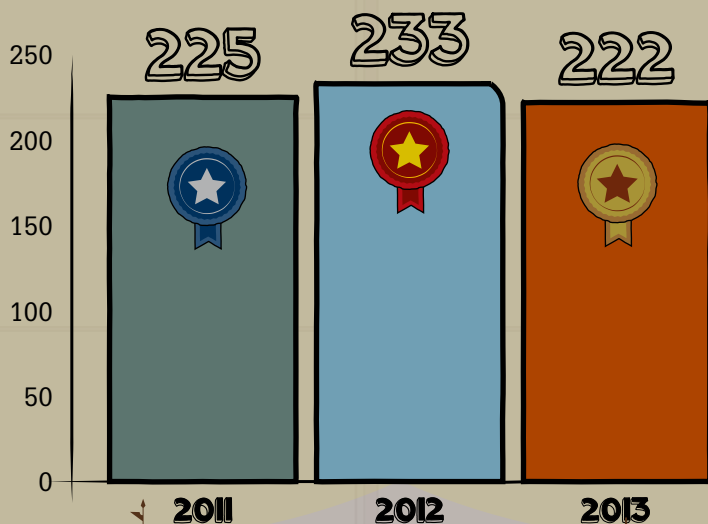
EIA in the UK

What is the true extent of environmental impact assessment across the country?



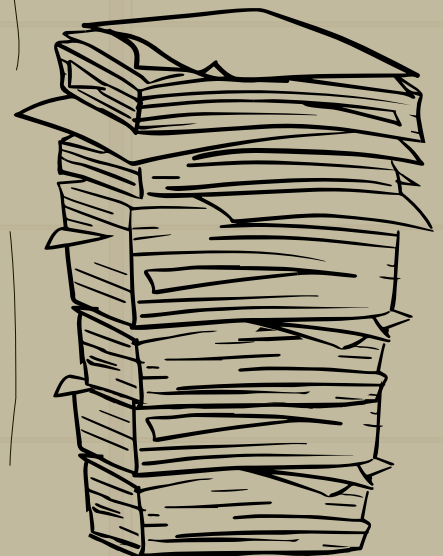
★ IEMA EIA QUALITY MARK ★

The number of UK environmental statements submitted to IEMA each year alongside an application for Quality Mark registration since 2011, when the scheme launched.



184

Environmental statements submitted to ministers in Scotland by Scottish planning authorities in 2013.



SCOTLAND

453

Environmental statements submitted by local planning authorities – not including non-planning consent regimes – in England between 1 April 2013 and 31 March 2014. These authorities received 471,889 planning applications over the 12-month period.

Just 142 of the 337 authorities that could have received an environmental statement did, meaning that almost 60% did not receive one during that period.

Twenty four authorities received five or more statements in the 12-month period – the highest being Cornwall, which received 21. The authorities received 215 statements in total, equivalent to 47% of all statements submitted in England.

PREVIOUSLY ...

A study in 2010 for the European commission reported that the average number of screenings per year in the UK between 2005 and 2008 was 2,745, while the average annual number of EIAs was 598. UK officials subsequently reported new EIA figures – 724 (2005), 544 (2006), 505 (2007), 482 (2008) – or 2,255 over the same period. The UK figures are estimated to be short by between 30 and 60 EIAs, however, because some data remained unavailable.

33

Environmental statements submitted through the planning regime in Wales between 1 April 2013 and 31 March 2014.



WALES

36

Environmental statements received by the planning division of the Northern Ireland department of the environment in 2013.



N. IRELAND

ENGLAND

Sources: Dclg – planning applications, table 134; Scottish government – planning and architecture division; Welsh government – planning division; Northern Ireland department of the environment; GHK study for European commission (September 2010); IEMA.

Breathe in the air

Jon Pullen on new guidance from IAQM on odour impact assessment for planning

The national planning policy framework (NPPF) in England requires the effects of pollution on health, the natural environment or general amenity to be taken into account in planning decisions. The NPPF definition of pollution specifically includes odour. "Pollution can arise from a range of emissions, including smoke, fumes, gases, dust, steam, odour, noise and light," states the framework.

Case study – RPS and Climate Energy Homes



Supported by funding from the Greater London Authority, Climate Energy Homes has built 51 highly energy-efficient "passive house" affordable properties for Circle Housing at the site of a former Carpetright outlet off the A1306 New Road in Rainham, Essex. A sewage treatment works is located a few hundred metres north of the development. To support the planning application, RPS carried out a multi-tool assessment of odour impacts in accordance with the new IAQM guidance. A combination of desktop assessment – analysis of complaints data and inspection of dispersion modelling results from the water company – and onsite monitoring using "sniff testing" demonstrated there would be no significant adverse effect on future residents. The development received consent in 2013 and the first occupants moved in this year.

However, until now, there has been limited guidance on how best to carry out an odour impact assessment and none at all on how to assess the significance of the effects for planning purposes. The Institute of Air Quality Management (IAQM) – the UK professional body specifically for air quality practitioners – has now issued guidance that addresses both of these needs.

Detecting odour

What is perceived as odour is actually a person's physiological response to one, or (more often) to a complex mixture of airborne chemicals that they detect in their olfactory organ at the base of the brain when they breathe air through their nose. Their evaluation of the intensity, character and pleasantness of the detected odour takes place quickly, over a matter of seconds, and involves many socioeconomic and psychological factors – for example, particular memories and associations. Adverse effects of exposure to odour can be disamenity (see next page), annoyance or nuisance.

There are two general scenarios where an assessment of the impact of odour may be required for planning applications:

- the proposed land-use activity is potentially a significant source of odours, such as wastewater treatment, waste management, food and drink or industrial and agricultural activities; or
- a sensitive use – such as a residential development – is being proposed near an existing odorous activity.

The air quality section of the national planning practice guidance (NPPG) for England advises: "Assessments should be proportionate to the nature and scale of development proposed, and the level of concern about air quality, and because of this are likely to be locationally specific."

The IAQM guidance helps to put some flesh on these bones by summarising what an odour impact assessment for planning purposes should cover and the

different assessment tools that can be used, highlighting their applications and limitations.

Typical assessment tools include qualitative predictive assessments, detailed atmospheric dispersion modelling and odour monitoring by so-called “sniff tests”. The IAQM guidance requires the air quality professional to justify that the assessment approach is suitable and proportionate.

Odour-sensitive receptors

The impact of the odour – exposure determined by the amount, pattern and character of the odour available for perception by an individual – can lead to an adverse effect on people. The magnitude of this will depend partly on the sensitivities of the receptor – that is, how responsive the surrounding land users are to the smell.

The adverse odour effect of most relevance to planning is disamenity, which is “impaired amenity”. The government’s planning portal defines this as a negative element or elements that detract from the overall character or enjoyment of an area, while the *Oxford English Dictionary* defines disamenity as “the unpleasant quality or character of something”.

Properly categorising receptor sensitivities is crucial to a robust assessment of odour effects. The IAQM has developed a sensitivity classification scheme based on the concept of reasonable expectation of amenity (see panel, right).

For something as subjective as odour, the significance of the effect is a matter of judgment that cannot easily be defined by scientific methods alone. On the one hand, a high sensitivity receptor subject to a large odour exposure will experience a substantial adverse effect. On the other, a low sensitivity receptor subject to a small odour exposure will experience a negligible effect. However, between these extremes the various combinations will give rise to a gradation of effects for which no descriptor terms have been universally agreed.

The IAQM guidance proposes a general framework of descriptors for the magnitude of effects resulting from the odour impact on a receptor of a particular sensitivity. This general relationship between the level of odour exposure (impact) experienced by a receptor of a given sensitivity and the magnitude of adverse effect that is likely to result will hold irrespective of the particular tool or method – for example, modelling, qualitative assessment or sniff-test monitoring – that has been used to estimate that odour exposure.

Where the overall effect is greater than “slight adverse”, it is likely to be considered significant.

Categorising receptor sensitivity to odours

High sensitivity receptor

Surrounding land where:

- users can reasonably expect enjoyment of a high level of amenity; and
- the people would reasonably be expected to be present here continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land.

Examples may include housing, hospitals, schools or education facilities and tourist and cultural sites.

Medium sensitivity receptor

Surrounding land where:

- users would expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home; or
- people would not reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land.

Examples may include places of work, commercial and retail premises, and playing fields and recreation areas.

Low sensitivity receptor

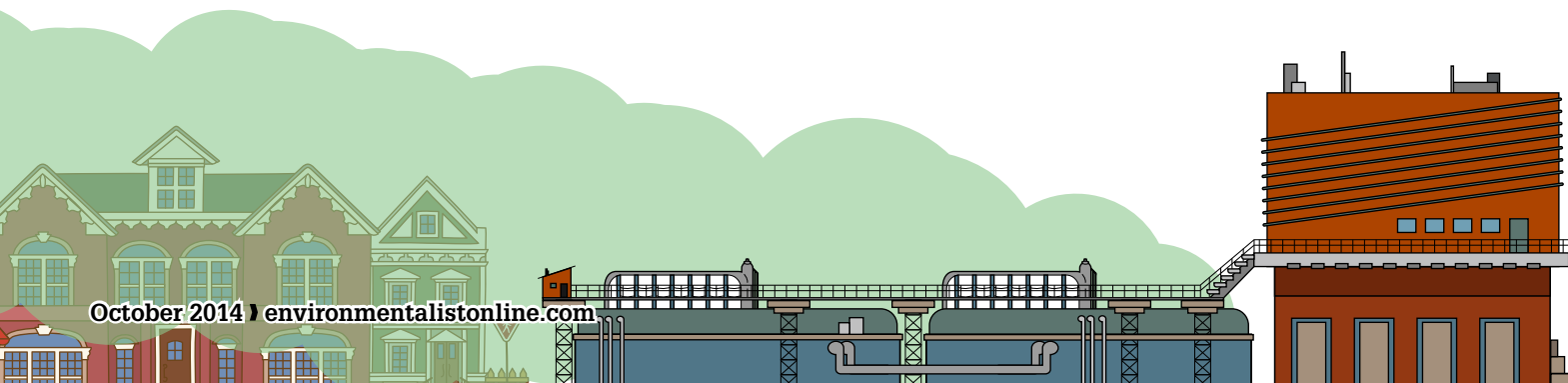
Surrounding land where:

- the enjoyment of amenity would not reasonably be expected; or
- there is transient exposure, where the people would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land.

Examples may include industrial facilities, farms, footpaths and roads.

Concluding that the odour effect is significant should not mean a development proposal is unacceptable and the planning application should be refused. Rather, it should lead to careful consideration against the wider environmental, social and economic benefits that the proposal would bring.

Dr Jon Pullen is operational director at RPS planning and development and leads its air quality and odour team. He is co-author of the IAQM odour guidance, which is available at iaqm.co.uk.







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What a difference a year makes

the environmentalist looks at how the mandatory reporting of GHG emissions is changing companies' annual reports

Mandatory reporting of greenhouse-gas (GHG) emissions for UK incorporated companies that are listed on the main market of the London Stock Exchange – or in an European Economic Area state or admitted to trading on either the New York Stock Exchange or NASDAQ – came into force last year through the Companies Act 2006 (Strategic Report and Directors' Report) Regulations 2013.

They require "quoted companies" to disclose in their directors' reports all scope 1 and 2 emissions they are responsible for; if they operate outside the UK, this includes their global emissions. In addition to carbon, the reporting requirements cover the other five primary GHGs under the Kyoto protocol: methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride. These can be reported in tonnes of carbon dioxide equivalent (CO₂e) from the combustion of fuel, such as from boilers, and the operation of a facility.

The regulations require all reports produced in relation to financial years ending on or after 30 September 2013 to disclose GHG emissions. The first ones have been published over the past few months, leading *the environmentalist* to ask whether reports are changing. And, if so, how?

Moving numbers

The government estimated that around 1,100 companies would initially be subject to the 2013 regulations. Around two-thirds of affected firms already reported their emissions in some way before the regulations came into force. Nonetheless, research last year by carbon management company Carbon Clear revealed that, by July 2013, only 52 companies in the FTSE 100 had included their carbon footprint in their annual report.

An analysis of the most recent reports from some of the UK's largest listed companies, comparing the content with that of previous reports, provides a snapshot of what firms are doing to comply with the regulations.

A comparison of the 2012 and 2013 annual reports from pharmaceutical business Shire provides an example of one approach. The 2012 report contains no information about the firm's GHG emissions. The 2013



report, however, covers the calendar year to the end of December, and so comes within the scope of the 2013 regulations. By contrast to its approach in the previous year, Shire's 2013 report includes GHG data and details of the assessment parameters the firm adopted to calculate its emissions.

Fashion company Burberry provides global GHG data for the financial year to the end of March 2014 in its 2013/14 annual report – information which was absent from the company's 2012/13 report. Similarly, Tullow Oil, which describes itself as Africa's leading independent oil company, includes GHG data for the first time in its annual report and accounts in 2013, stating that it is now reporting in line with the revised Companies Act 2006 by disclosing its carbon emissions, including new disclosure on the firm's scope 2 emissions. Aberdeen Asset Management is another company that has quantified its global GHG emissions for the first time in its latest annual report.

A question of format

For many companies, however, mandatory reporting has not involved a significant change. Instead, it has led them to make existing information available in a greater number of formats.

Fashion retailer Next is disclosing GHG figures in its annual report for the first time this year (financial year to January 2014), having previously published the data in its corporate responsibility reports. Next's 2013 annual report and accounts had merely highlighted the firm's 2015 environmental targets for the UK and Ireland. Marks & Spencer has regularly included details of its Plan A sustainability strategy in its annual report and financial statements; however, the latest edition (2014) contains, for the first time, the company's headline GHG data, summarising the detailed information on emissions found in its 2014 Plan A report.

A comparison of the 2013 and 2014 reports and financial statements from J Sainsbury reveals a similar picture. Details of the food retailer's performance against its 20x20 sustainability plan commitments are a feature of both reports, but the 2014 annual report includes more detail of its GHG footprint.

Early compliance

Tesco, meanwhile, introduced GHG data into its annual report ahead of the legislation. Its 2013 annual report and financial statements, covering the financial year to 23 February 2013, includes the information as one of the retailer's key performance indicators. Accompanying the table of GHG data is the statement: "This is a new addition to our annual report ahead of the upcoming UK legislation on mandatory greenhouse-gas emission reporting." Media group Pearson said in its 2012 report that the company was preparing for mandatory reporting, while its latest report complies with the legislation, disclosing GHG emissions for the 2013 calendar year.

Away from the FTSE 100, drinks company Britvic opted for a similar approach to Tesco, including a table detailing GHG emissions in its 2013 report covering the period ending on 29 September 2013. "The directors are

making this disclosure for the first time, ahead of the new requirements for companies to disclose their GHG emissions," Britvic says in a statement.

Speciality chemicals manufacturer Croda has switched in its annual report from giving only a summary of performance against its environment targets, which were set in 2010, to presenting details of its GHG emissions in line with the reporting requirements. These were previously found only in its sustainability report. Until the latest edition, the annual report and accounts from facilities management business Mitie contained details of its carbon emissions (in tonnes per employee). This information remains in the 2014 report, but it is supplemented by details of Mitie's GHG emissions, which are taken from the company's sustainability report.

Greater detail

Several companies operating globally have had to gather and report data from their worldwide operations, in addition to previously disclosed emissions information from UK sites, to comply with the 2013 Regulations.

Ahead of the legislation, engineering group Babcock acknowledged in its 2013 annual report and accounts that the way in which the company reported its GHG emissions would be changing in future reports, to include emissions for the entire business, including its overseas operations. Babcock's 2014 report for the 12-month period to March therefore contains more detailed GHG information.

Intertek has also expanded the coverage of its emissions data. The provider of quality and safety services included figures for its operations worldwide in its 2013 report, having the previous year reported only the emissions of its largest 25 countries by headcount.

Lloyds Banking Group, which has voluntarily reported its carbon emissions in its annual accounts since 2009, has applied a different methodology for its 2013 report. It states: "Previously, reported scope 1 emissions covered only the emissions generated from the gas and oil in UK buildings where the group holds the supply contract direct with the utilities supplier, along with emissions generated from company-owned vehicles used for business travel; and reported scope 2 emissions covered only the emissions generated from the use of electricity in UK buildings where the group holds the supply contract direct with the electricity supplier." However, additional emissions included in the 2013 edition relate to UK sites where the group does not hold the supply contract directly with the energy supplier (shadow sites); energy consumed in international locations (non-UK sites); and gas emissions arising from the use of air conditioning and chiller/refrigerant plant (fugitive emissions).

Having previously disclosed its UK emissions through the carbon reduction commitment scheme, Oxford Instruments in 2014 published its global GHG emissions in its report and financial statements. The manufacturing and research business also confirms that, in addition to the mandatory reporting of GHG, it will in future make a voluntary report on its emissions to the Carbon Disclosure Project.



Brewer Greene King has amended how it reports environmental data in its latest report to reflect the new obligations. For example, its 2013 report details its natural gas consumption in terms of megawatt hours (Mwh), whereas the 2014 edition states the CO₂e emissions from such sources.

Similarly, the environmental metrics cited in the 2012 report and accounts from Meggitt, the engineering company, included a calculation of overall carbon, as well as consumption in Mwh of both electricity and gas. In Meggitt's 2013 report, total carbon emissions are broken down into those from the combustion of fuel and operation of facilities (scope 1) and those from electricity, heat, steam and cooling purchased for its own use (scope 2).

Scope 3 emissions

Global advertising and marketing business WPP is another that has changed how it reports GHG emissions. The 2013 annual report and accounts, which cover the 12 months to the end of December, breakdown the firm's scope 1, 2 and 3 emissions in tonnes of CO₂e. While WPP has long reported its emissions, previous annual reports and accounts, such as in 2012, contained figures for the company's carbon footprint based on tonnes of CO₂ per person. This data is also in the 2013 report, alongside details of its scope 1, 2 and 3 emissions.

WPP is an example of a company that is reporting more than is necessary under the 2013 regulations. Under these, quoted companies must report on their GHG emissions from activities for which they are responsible, thus requiring scope 1 and 2 emissions to be reported as set out in the GHG protocol standard. Although companies are not required to report on other emissions associated with inputs into their business, such as those from their supply chain and business travel, the Defra guidance suggests that firms should consider also disclosing such scope 3 data because it would provide a wider picture of the organisation to investors and shareholders.

WPP is not unique in revealing its scope 3 emissions, although the companies doing so tend to be those that already made such data available in another format,

for example, in sustainability reports or online. Tesco is one such firm. Its 2014 annual report and financial statements contain details of its scope 3 emissions, in terms of business travel and for those related to transmission and distribution, in addition to so-called "well-to-tank" (from extraction to vehicle) emissions.

Lloyds Banking Group, meanwhile, says its reported scope 3 emissions relate to business travel by UK-based staff using rail, privately owned and hire vehicles, and air travel. Emissions associated with joint ventures and investments are not included in the emissions disclosure, however, because the bank says these are outside the scope of its operational boundary.

Normalising the data

The 2013 regulations require companies to calculate their scope 1 and 2 emissions as an intensity ratio or ratios by dividing the emissions by an appropriate activity metric – for example, by units produced by the number of full-time equivalent staff or by financial turnover. "Normalising" the data in this way can help readers of reports to compare organisations over time and across sectors, says the environment department.

Medical technology business Smith & Nephew gives both a financial (per \$ million of revenue) and staff (per full-time employee) intensity ratio in its 2013 annual report. Tesco, by contrast, discloses an overall carbon intensity based on total net emissions per square foot of store space and distribution centres expressed in CO₂kg. Mining business Rio Tinto publishes two intensity ratios: tonnes of CO₂e per tonne of product; and its own intensity index, which is the weighted emissions intensity for each of firm's main commodities, relative to the commodity intensities in its 2008 base year (set to 100). This index incorporates about 95% of Rio Tinto's emissions from managed operations.

Oil and gas business Petrofac is another that has adopted tCO₂e per \$ million of revenue as its intensity ratio, saying that it chose this a metric because it is the most representative across its whole business. Meggitt, which has disclosed in its annual report for a number of years a measure of intensity, continues to apply tonnes per £ million of revenue as its metric.



Challenging times?

Most organisations with experience of collecting and reporting data on their environmental impacts have had little problem complying with the 2013 Regulations. Caroline McCarthy-Stout, head of reporting, awards and communications strategy at Lloyds Banking Group, told *the environmentalist* that the business met the requirements of mandatory reporting with minimal additional work. “We have made some changes and improvements to our data gathering to meet the expanded requirements of the mandatory GHG reporting legislation,” she said, adding that the bank will continue to develop its environmental data gathering and reporting.

The 2013 report from Lloyds notes, for example, that the dates covered by its GHG data are different from those covered by its financial accounts. “The reporting period for emissions (October 2012 to September 2013) differs to that of the directors’ report (January 2013 to December 2013). However, in line with the new regulations, the majority of the emission reporting year falls within the period of the directors’ report.”

Other companies acknowledge that collecting GHG is a challenge. Babcock states in its 2014 report, for example, that: “We recognise that reporting on environmental performance for such a large and diverse company is a complex undertaking.” It also says that the company will in future be looking to streamline and standardise its processes for collecting and collating data to ensure greater accuracy and transparency.

Observers have detected several trends from the first reports under the mandatory reporting legislation. Lois Guthrie, executive director at the Climate Disclosure Standards Board, which is reviewing the first-year reports, has observed much variation: “You’d expect that, as companies explore how best to disclose the necessary information.” She also says many firms have taken advantage of the proviso in the regulations to report only emissions for which they are responsible, in order to limit the amount of detailed information they have published.

Richard Morley, commercial director at Ecometrica, which provides software to measure

firms’ environmental impacts, says generally the bigger companies are publishing more information and a broader narrative on emissions, whereas the “mid-” and “small-cap” companies tend to disclose the bare minimum. Nonetheless, investment analyst Seb Beloe, head of sustainability research at WHEB Asset Management, believes that it is important that “mid-cap” companies that did not previously disclose are now doing so. “Many will not have reported in the past because they did not regard themselves as big energy users,” he says. “But emissions data can provide the investment community with really useful information about how a business is managed.”

External assurance is absent from the requirement to disclose GHG data. Financial auditors simply have to assess whether the information in the business review is consistent with the financial statements. Chris Whitehead, group head of sustainability and innovation at infrastructure company Balfour Beatty, maintains that GHG data published in annual reports will be meaningful only if it is subject to independent verification. “Mandatory external audit, similar to the audit that companies commission on their financial data, would sharpen everyone up,” he says.

Some companies remain reluctant reporters, however. One such company is temporary power generation company Aggreko, which has complied with the mandatory reporting requirements in its annual report and accounts for 2013 (as it did for the first time in 2012). Nonetheless, it has expressed doubts over the value of the data, stating: “We are somewhat sceptical of the reporting on GHG emissions. Our issue is not with the principle of reporting; it is with attempting to impose spurious levels of accuracy and pretending that the numbers produced are accurate. They are not: they are an aggregate of many hundreds of more or less wild guesses. By way of example, in our reporting, 84% of our GHG emissions comes from our customers burning fuel in our engines. But ‘best practice’ dictates that we add 18.5% to this number to ‘account for’ the assumed GHG gases expended making the fuel and getting it to site, irrespective of whether fuel gets to our engine down a pipeline or in a truck.”

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HP squares the circle

Lucie Ponting discovers how HP is transforming discarded printer cartridges into new ones

Discussing Hewlett-Packard's sustainability plan at an event in New York in September 2013, the company's president and chief executive, Meg Whitman, warned the audience "business as usual is not an option for anyone". The framework, which promises to drive human, economic and environmental progress, is the latest example of HP's pioneering approach to social responsibility and the environment. In 1957, long before corporate citizenship became a fashionable phrase, the company's founder, David Packard, stated: "The betterment of our society is not a job to be left to the few. It is a responsibility to be shared by all."

Key to efforts to reduce both its own and its customers' environmental impact is HP's "closed loop" recycling process, which uses plastic from recycled HP printer cartridges and other post-consumer sources to create new cartridges. By April 2014, the company's planet partners return and recycling programme, which started in 1991 and covers more than 50 countries, had taken back and reprocessed 566 million ink and toner cartridges. No part of a returned HP cartridge is sent to landfill, with every piece recycled or used in energy recovery.

Half again

Using recycled plastic from returned HP cartridges together with plastic from other post-consumer sources, including bottles and clothes hangers, to create new ink cartridges began in 2005 with a recycled polyethylene terephthalate (rPET) initiative. The process took five years to develop and refine. In 2010, work started on a second initiative involving recycled polypropylene (rPP). This process started full commercial production earlier this year.

In April, HP announced that the rPP programme, combined with the existing rPET initiative, had led to more than 75% (by sales volume) of its ink cartridges now containing recycled plastic, a rise of 50% over the previous year. In addition, 24% of HP laserjet toner cartridges, which are also part of a closed-loop process, now contain recycled plastic. Individually, the ink cartridges with recycled content have 50–70% recycled plastic, while the laserjet toner cartridges contain 10–20%. The laserjet cartridges use only recycled plastic



Closing the loop in numbers

By reusing engineered plastic and other materials, HP has contributed to the "circular economy" by:

- keeping 566 million returned HP cartridges out of landfills since 1991;
- using 2.5 billion post-consumer plastic bottles to manufacture new HP ink cartridges since 2005;
- incorporating 499,000kg of recycled clothes hangers into the most recent expansion of its recycling process – since October 2013;
- manufacturing more than 2 billion original HP cartridges made with recycled content, as of the first three months of 2014; and
- delivering recycled plastic from HP's PET "closed loop" recycling process for ink cartridges with a 33% lower carbon footprint and 54% lower fossil fuel consumption in its production than new plastic.

Data and assumptions drawn from a 2014 lifecycle assessment performed by Four Elements Consulting and commissioned by HP.

HP takes back computers and printing supplies

HP offers hardware reuse and recycling, and ink and toner cartridge recycling programmes, including through its planet partners return and recycling programme. There are take-back schemes in 70 countries and territories, including in developing regions.

Since the inception of its hardware take-back scheme in 1987 (and the launch of the planet partners programme in 1991), the company claims to have recovered a combined 1,525,000 tonnes of computer

hardware (for reuse and recycling) and printing supplies (for recycling).

Consumers and commercial customers can return used HP ink and laserjet toner cartridges to authorised retail and other collection sites through planet partners at 9,000 dropoff points in around 50 countries. For some products and in selected countries, HP offers free return options, including postage-paid printable labels, shipping envelopes and collection boxes, as well as pickup of bulk supplies.

In 2013, HP collaborated with the German Investment and Development Corporation and East African Compliant Recycling Company to open a recycling facility in Nairobi, Kenya. This is the first large-scale recycling facility in East Africa and the first take-back system for end-of-life products in Kenya. It dismantles and separates used electronic equipment into parts, including plastics and metals. As of April 2014, there were four collection points across the country.

from returned HP cartridges and virgin material; no other recycled plastic is added.

HP claims that its inkjet rPET plastic has a 33% lower carbon footprint, uses 75% less water and has a 54% lower fossil fuel consumption in its production than virgin plastic, even taking into account the environmental impacts associated with collecting, transporting and processing used cartridges and plastic bottles. Shelley Zimmer, environmental marketing manager of printing supplies at HP, says that, in 2013 alone, manufacturing ink cartridges with rPET instead of virgin plastic reduced greenhouse-gas emissions by 6,900 tonnes and saved more than 26 billion litres of water. It also conserved more than 42,000 barrels of oil.

The focus of HP's efforts is on developing recycled plastic to produce new cartridges. It never refills or reuses its cartridges because it does not believe this delivers the quality and reliability customers expect. According to Zimmer, HP-commissioned research has highlighted particular problems with wasted pages generated by poor quality remanufactured cartridges.

Magic in the mix

The closed-loop process begins when customers return printer cartridges through the planet partners programme. Customers can return used cartridges by taking them to one of 9,000 dropoff locations worldwide or directly to HP using freepost. The programme is constantly expanding, recently adding Morocco to the list of participant countries. But Bruno Zago, HP's environment manager for UK and Ireland, says it is "not as easy as people might imagine" to bring a programme to life in a particular country. "There is no individual return available in Italy [for example] because by law you are not allowed to put waste into the postal system," he notes, "and as you are returning cartridges to HP to be recycled, they are deemed waste."

Once the boxes of returned cartridges are received at regional recycling plants (for ink cartridges in the Europe, Middle East and Africa region, this is at Thurnau in Germany), they are sorted and prepared for recycling. The packaging is also recycled. Returned

ink cartridges are either disassembled or shredded. Disassembly is a relatively new process at HP in which labels, lids, foam, metal and bodies are separated first, rather than being shredded together and then separated. Some metals are smelted and reused, while the plastic lids and bodies go to provide raw material for new cartridges. HP is working on finding new ways of disposing of waste ink, but most of it, together with foam, is processed through energy recovery.

All the recovered waste plastic then goes to a Lavergne group site in Montreal, which specialises in producing high-quality engineered resins from post-consumer and post-industrial recyclable materials. According to Zimmer, this is "where the magic takes place". Under the rPET programme, the returned polyethylene is blended with flaked material from post-consumer plastic bottles (together with specialist additives), compounded and extruded into plastic strands that are cut into pellets and tested to ensure they meet HP's quality standards.

Several of HP's key suppliers are co-located at the company's Liffey Park technology campus just outside Dublin, and it is here that the closed-loop process enters the next stage. Plastics specialists MGS provides injection moulding of the cartridges, using the formulations provided by Lavergne, while manufacturer Celestica assembles the new products.

Upcycling value

"The rPP is an innovation," says Zimmer, adding that HP had to find another post-consumer product it could use as a source for recycled PP cartridges. More than a dozen potential candidates were tested, including Starbucks cups and American Airline's coffee cups, before Lavergne decided clothes hangers were the most suitable. Hangers have the added advantage that they are already returned in large numbers by clothes retailers, so the supply is relatively secure. HP is not working with any specific retailer or other partners in sourcing either the bottles or hangers; Lavergne makes these decisions further down the supply chain.

In using the waste bottles and hangers, "we're actually upcycling", says Zimmer. This is in effect



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turning commodity grade into engineering grade plastic, so increasing the value. “We’re turning hangers into more valuable and technical materials,” she explains. A broader economic and social argument for HP’s programmes is that they help support wider recycling infrastructures, which cannot exist if there is no customer for returned waste. “Companies have to create a demand,” says Zimmer, “and through using water bottles [for example], we’re helping support the municipal infrastructures.”

It is a complex process to develop recycled plastic formulations that work for each type of cartridge that can be successfully and commercially moulded, and which meet the necessary technical and quality standards. This is evidenced by the fact that the rPET initiative took five years to come to fruition and the rPP three years. HP’s experience so far of developing these solutions has helped identify several key factors it believes are key to success:

- creativity and invention – there are few precedents and no roadmap to follow;
- patience and persistence through the development process – senior management must provide the development team with the time and resources; and
- partnering with innovative suppliers – collaboration with expert supplier partners produces comprehensive solutions.

There were several challenges during the most recent rPP development programme – mainly due to the specific properties of the material and design of the cartridge. These included overcoming moulding problems with the initial resin, which entailed refinements and tweaks, so that it could be moulded across HP’s manufacturing facilities, and issues with the laser marks on the cartridge, which could not be read initially, so the resin had to go back to Lavergne for adjusting. HP also had to develop new tests to identify chemical contaminants to ensure inks do not react with the recycled plastic, which could have a detrimental effect on print quality or damage printers. In addition, it created a new plastic and foam separation process.

Although HP does not have a specific goal to reach a point where every cartridge contains some recycled material, it is working on developing new plastic compounds or cartridge designs to bring in the 25% of ink cartridges that still only contain virgin plastic. “Different types of cartridge use different plastic, so we need find ways to develop the right formulations,” explains Zimmer. She adds, however, that the breakthrough with rPP allows HP to focus on its other cartridges that contain PP. “Because we’ve already figured out how to develop rPP, it’s now a matter of adjusting it for the cartridge design.”

Hedging costs

Shaun Daly, an HP engineer responsible for the plastics recycling programme, says the company is using the lessons learned and technical expertise gained from the rPET and rPP initiatives to bring other inkjet cartridges into the closed-loop process. However, HP is also transferring knowledge to the hardware side of its business, so that recycled plastic can be used in more printers and computers. Ongoing technical barriers to expanding recycled plastic in hardware include finding consistent sources and meeting stringent functional and cosmetic quality standards.

Zimmer acknowledges that the work HP is doing on the closed-loop programme represents a cost that so far is not offset by the raw material cost savings. But she emphasises that “we’re doing it because it is the right thing to do”. She also suggests that the economic argument is likely to become stronger in future as resources become increasingly scarce and costs rise. “There is an economic argument for using recycled plastic in our materials,” she says, referring to a 2013 paper by the Ellen MacArthur Foundation, which argued that sourcing from waste can help to “create a hedge for future raw material prices”.

“For us, it’s really about making sure we’ve always got a supply of material, whether that is virgin or recycled,” stresses Zago. “Given the volume of products we make, we need to ensure a stream of supply – that there is enough plastic in the marketplace – so the more we can get back, the better it is for us.”

Image key

- ① Printer cartridge manufacturing
- ② Finished recycled printer cartridges
- ③ Recycled plastic for new printer cartridges
- ④ Printer cartridge assembly process

Policy update



Collaboration on sustainability

Over the past month, I have engaged with hundreds of IEMA members to discuss how organisations are embedding sustainability and environmental capabilities into their ways of working and those of their supply chains. The workshop sessions allowed members to reflect on the increasing expectation that organisations demonstrate their commitment to sustainable practices when tendering for contracts. It was also great to hear examples of the positive business impacts being generated by suppliers who are taking a lead and engaging clients in their own environmental initiatives.

The clear message from these sessions is that professionals want to discuss with their peers what sustainability measures work, with whom they work and in what order, not just to discuss comparative financial or carbon savings. An emphasis emerged on reflecting on successes and failures and identifying trends, barriers and responses that can help others to achieve similar progress more rapidly in the future. As such, the workshops provided a valuable opportunity for collaborative learning and sharing our experiences of barriers and the approaches we have taken to overcome them.

The workshops have also made a valuable contribution to the development of IEMA's forthcoming position statement on skills for a sustainable economy, which will be launched in December at the House of Commons. Members discussed the opportunities that can help us address the major barriers to making progress on sustainability, such as short-termism in business decision-making and regulatory uncertainty. However, the main outcomes from the workshops focused on organisational approaches to embedding sustainable thinking and the role of the value chain as a system to drive innovation, collaboration and more rapid progress than merely acting in isolation can produce.

Josh Fothergill is policy and engagement lead at IEMA; j.fothergill@iema.net

Members approve new governance structure at annual general meeting

Proposals on an improved governance structure for IEMA were passed after a members voted in favour at the 2014 annual general meeting last month.

Dr Diana Montgomery (pictured), chair of the IEMA board, presented the new articles of association for the Institute at the meeting on 17 September. She told members that the revised articles are to "to ensure that the governance structure is better able to support the deliverability of Vision 2020 and provide greater added value and accountability for our members".

During the past year, the board, together with the council and professional standards committee, has reviewed the feedback from members on IEMA's governance structure, as part of the 2013 consultation on Vision 2020. This revealed that existing articles could potentially inhibit the Institute's ability to achieve its 2020 objectives. As a result, the board and council proposed to update the articles of association, ensuring that the governance structure is better able to support the deliverability of Vision 2020 and to provide greater added value and accountability for members.

The revised articles include updated terms of reference for the board, council, professional standards and nominations committees, the finance sub-committee and the regional steering groups. Essentially the changes mean that members are better represented across each of IEMA's committees, and that the representative council will now provide strategic advice and foresight relevant to the environment and sustainability profession. Its purpose will be to provide a key strategic advisory role, allowing the board to focus on achieving IEMA's strategic objectives.



The new articles will allow the Institute to progress and react at the right pace to changing member needs. They reflect current best practice, fit the ambition of IEMA, and grant the board fiduciary responsibility for the organisation. Overall, the articles allow each governance group to use and deploy their expertise in the most impactful and positive way.

The successful adoption of the new articles of association follows some other changes to how IEMA is working to build better connections and maximise opportunities for members to be appropriately represented. For example, IEMA chief executive Tim Balcon is now the chair of the committee of regional steering group chairs, providing improved links between the Institute's governance groups, its headquarters and its members. The articles also guarantee that the chairs of the council and the professional standards committee both have a seat on the board.

As well as approving the new articles, the AGM approved the Institute's 2013 accounts and directors' report, and the appointment of new auditors.

Members can find out more about the new articles of association and terms of reference at iema.net/about-governance.



Martin Baxter @mbaxteriema Sep 18

Many thanks to @iemanet members who unanimously supported governance changes at AGM - best practice framework for an ambitious profession!



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More successful IEMA members

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

Associate

Chelsey Barker, Kronospan
Gulbakhyt Bekbauova, KMG Kashagan
Tair Bissaliyev, KPO BV
Laura Blair, Ricardo UK
Andrew Cairns, Cofely Workplace
David Carlyon, Climate Consulting
Claire Challen, University of Central Lancashire
Declan Conley
Felicity Crawford
Peter Daum, Marshall of Cambridge Aerospace
Joshua Davies, URS Infrastructure and Environment UK
Dave Dodman, Magnox
Alistair Downie
Nisha Doshia, Knowledgepool
Jon Durrans, ERM Consultants

Martin Evans, Johnson Matthey
Adeniran Fadeyibi, Nigeria LNG
Marina Filippova, KPO BV
Mark Frost, OCS
Brian Gallagher, BAE Systems
David Georgeson, Ocean Kinetics
Elena Gonzalez, Carillion
Neil Goulding, BAM Nuttall
Lucy Harper
Sian Hepworth, The Seafood Restaurant
Adrian Honeywell, Interserve Construction
Richard Houlihan, Health and Safety Laboratory
Nicholas Hunter, Atkins
James Jaulim, Nathaniel Lichfield and Partners
Joanna Jones, Cammell Laird
James Keegan, Costain
Kuanysh Khassan, NCOC BV
Talgat Khassanov, KPO BV
Arman Kopbayev, KPO BV
Marcin Lorek, Gestamp Tallent
Samuel Macdonald-Walker, credit360

Craig Manson, City Building (Glasgow) LLP
Amy Marshall, Cordeck
Aina Mukangaliyeva, KPO BV
Douglas Myall, Capita Symonds
Garry Newby, RM Solar
Ellie Noble
Gulnara Nurpeissova, North Caspian Operating Company
Barry O'Riordan, Roadbridge
Oleg Pakhomov, KPO BV
Tomasz Parzyk, Coca Cola Enterprises
Simon Pollard, EON Killingholme Power Station
Cheryl Preston, Babcock International
Brian Pyle, AEI Cables
Dave Reynolds, Morgan Advanced Materials
James Richardson
Michael Richardson, MWH Global
Sally Rotherham, RSK Group
Jodie Rothwell, RSK Group
Joely Slinn, Biogen (UK)
Alison Spreadborough, Environment Agency

Thomas Stokes, RPS Group
Grant Andrew Thompson, GL Industrial Services UK
Ilina Todorovska, Hampshire County Council
Almagul Turegaliyeva, NCOC BV
Sebastian Ulrichs, RSK Group
Akin Ustun, Cemex UK Cement
Rosalind Venables, KPMG Sustainability Advisory Services
Melvin Walker
Laurence Wardell, Dextra Group
Joss Watson
Kirstie Watson, Starkold Building Services
Peter Weddell, MBDA UK
Paul Whittingham, Carnell Contractors
Sarah Wilson
Joanna Wooles, MMO

Fellow

Craig Ashton

To upgrade go to iema.net/membership-upgrade or call +44 (0)1522 540 069.

IEMA events

Date	Region/Time	Topic
19 Oct	South West	Social (Exeter)
6 Nov	South East	Social (London)
13 Nov	Wales	Open forum and social (Cardiff)
19 Nov	South West	Social (Exeter)
4 Dec	South East	Social (London)

Membership workshops

21 Oct	West Scotland	ISO14001 revision
28 Oct	South East	Sustainable manufacturing
7 Nov	Midlands	ISO14001 revision

Conferences

16 Oct	Leeds	IEMA resource and waste management
26 Nov	London	EMS national forum

External professional events

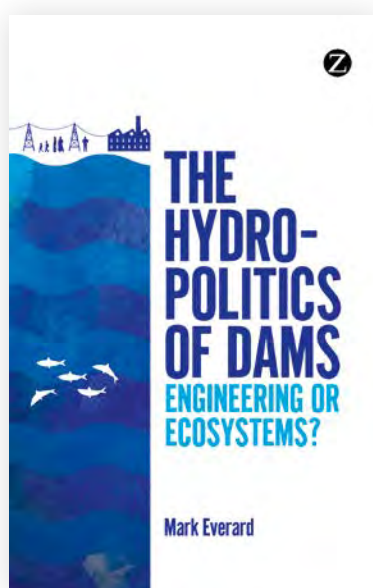
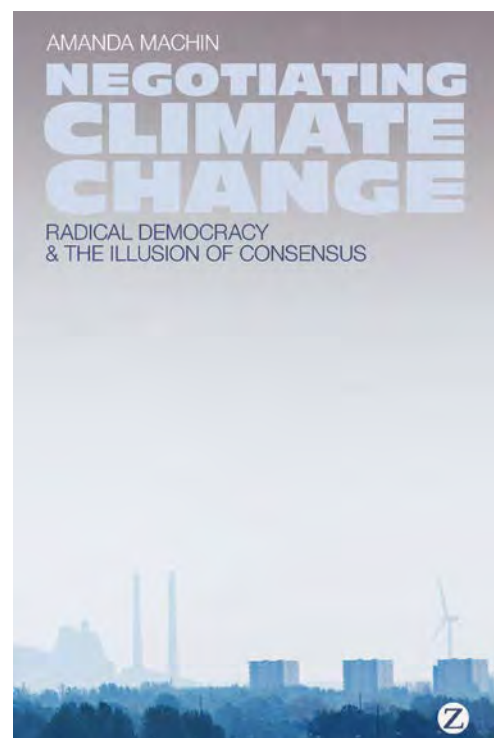
27–28 Nov	London	Shale gas environment summit	lexisurl.com/iema29378
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Negotiating climate change: Radical democracy & the illusion of consensus

Amanda Machin / Zed Books / Paperback / £18.99 / ISBN: 978-1-78032-397-8

Amanda Machin's short and fascinating book builds on recent debates highlighting the ways that people understand what we mean by climate change – depending on their education, faith and values, and where they live and what they do. The core of the book is a rebuttal of four types of response to climate change: the technology optimists – whose 'magical' solutions may be counterproductive by encouraging self-interested behaviour; those who clamour for a change in our individual ethical values – but cannot explain how harmonious decisions will be achieved; those who desire a green community – but do not explain how to decide what counts as the common good; and the deliberative democrats who seek new forms of decision making – but do not see that better-informed citizens may disagree on action. Machin's conclusion is that we should encourage the environment to be seen as a place for disagreement. From the unavoidable clashes of opinion brought by climate change will come more decisive solutions; it is by acknowledging the need for debate that decisions will have more legitimacy and impact, even if there is no guarantee that these will always be palatable to the green advocate. This is a book about political science and does not pretend to scan the range of potential policy solutions to climate change. Nor indeed does it say how one should think about positioning the power of scientific evidence in a way that could be credible or convincing to different audiences; and that, while somewhat frustrating, is perhaps the point: you have to think about it and argue about it.

Mike Peirce is deputy director at the University of Cambridge's programme for sustainability leadership.

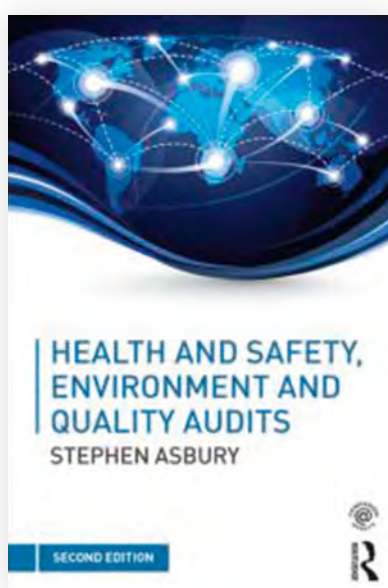


The hydro-politics of dams – engineering or ecosystems?

Mark Everard / Zed Books / Paperback £21.99 / ISBN: 978-1-78032-540-8

In this perceptive and accessible book, Mark Everard charts the history of "our cavalier disregard for rivers and their ecosystems" and builds his case for a more integrated approach to water management that rises above the simplistic "engineered versus green dichotomy". Based on his practical experience and using informative case studies from China, the US, India and South Africa, Everard aims to bridge the gap between two clashing cultures – the technocentric and ecocentric approaches to developing water resources – arguing that, in practice, we need both. The inconvenient truth, he notes, is that neither a heavy engineering approach nor ecosystem-based management offer the answer if considered in isolation. There is, he suggests, no "right technology" choice, but there are ways for thinking through the options. With its clearly argued central theme, well-researched summaries of technically complex areas, and "real world" emphasis, this book should help.

Lucie Ponting is a writer on health, safety and the environment.



Health and safety, environment and quality audits (2nd ed.)

Stephen Asbury / Routledge / ISBN: 978-0-41550-811-7 / Paperback / £34.99

Health and safety, environment and quality audits is far more than a guide to auditing following the requirements of ISO 19011. It encourages readers to reflect on business culture, practices and management approaches, and to appreciate the potential risks to achieving business goals, including high standards of HSEQ performance. The subtitle to this book is "A risk-based approach" and, if auditors follow the guidance provided, they will reduce their risks of failing to add value through the audit process. Once the organisational context for auditing has been established, the book provides a wealth of guidance on auditing techniques and approaches, from planning to reporting findings. The chapter on conducting the audit is full of detail, with plenty of examples taken from the author's obviously extensive practical experience. Asbury successfully lifts what can be a very dry topic by carefully structuring and presenting the material in a manner that is easy to follow and understand. This is an enjoyable and thought-provoking book, which probes deeply into auditing practices and auditor behaviour. The many tips, case studies and "A-factors" – essential nuggets of information for auditors – add to the value and usefulness of this excellent guide.

Nigel Leehane, MIEMA, CEnv, is an environment management consultant and principal environmental auditor.

Sandra Lee

Group environment manager, Atkins



Career file

Qualifications:

MIEMA, CEnv, Chartered Quality Assurance, Chartered Quality Professional

Career history:

2012 to now Environment manager (group), Atkins
2008–2011 QSE regional manager, water and environment, Atkins
2007–2008 Environment manager (corporate), Atkins
2002–2007 QSE Manager, highways and transportation, Atkins
1990–2002 Quality manager, Northamptonshire county council
1985–1990 Emergency planning support, Northampton county council
1978–1981 CID support, Northamptonshire Police

Why did you become an environment professional?

I grew up in the countryside and was fortunate to live in the style of “The Good Life”. We grew our own vegetables, kept chickens, rabbits and bartered. The environment became a passion.

What was your first environment/sustainability job?

I was the quality manager at Northamptonshire county council and started working closely with the environmental staff in relation to construction. The Rio Earth summit in 1992 and its output, Local Agenda 21, added to the impetus to look at environment and sustainability in our contracts and in the way we worked.

How did you get your first role?

I was headhunted to my first official environment role at Atkins. The role allowed me to pilot ISO 14001 on two contracts and to expand my knowledge and abilities.

How did you progress your environment career?

I received lots of encouragement from my mentor, the head of the QSE team and framework contract manager, and support from the then corporate environment manager. My role working on the highways contract at Atkins allowed me to look at a diverse range of areas, from design to maintenance, and help to find solutions. I used the European Foundation for Quality Management model on a contract, which enabled me to promote and encourage sustainability on this and other contracts over a three-year period. Following that success, I became the environment manager. However, the opportunity to work closely with environment professionals in all disciplines came up and I spent three years auditing, training and looking after specialists. Moving back to the role of environment manager has proved invaluable in enabling me to link experts in the company. My career has focused on maintaining and developing the environment management system (EMS) in all its aspects and promoting sustainability.

What does your current role involve?

I am a generalist and work with all parts of the business to support them through the EMS. My role involves a lot of influencing. The sustainability initiative I am responsible for covers our UK offices. Participation is voluntary, so explaining and encouraging offices and people to join is key. I am currently reviewing our risk profile to ensure the EMS, training and support systems continue to meet business needs.

How has your role changed over the past few years?

I have moved from an operational role back to a more strategic one. This involved a massive learning curve due to the diversity of businesses and the different ways in which they operate.

What's the best and hardest part of your work?

Meeting staff and making sure they are able to easily access the right information, and supporting them so that consideration of the environment is a natural part of their role. Finding, communicating with and influencing the right people in a way that works for them in a large organisation is the hard part.

What was the last training course you attended? A biodiversity offsetting course run by the Construction Industry Training Board.

What did you bring back to your job? Working on an example of offsetting provided a much clearer understanding of its challenges and pitfalls.

What are the most important skills for your role and why?

Being able to communicate and influence at all levels. I have no direct management responsibility but I need to support the business and change behaviours.

Where do you see the profession going? I would like the environment and sustainability to be regarded by organisations as important as health and safety. The profession needs enthusiastic, knowledgeable and

commercially aware practitioners. The profession needs to be influencing policy and making information easily available to senior management.

Where would like to be in five years' time? I really enjoy my work. I want to achieve IEMA Fellow status and ensure I have a good work-life balance.

What advice would you give to someone entering the profession? Be actively involved. Read widely, talk to other experienced people, watch what is happening in the world and bring it back and use it in both your home life and at work. Do not limit your options; there are so many interesting areas where environment is relevant.

How do you use IEMA's environmental skills map? I use it with the people I mentor and I am about to use it to help map internal training.

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A global food processing company is looking to appoint an Environmental Advisor to their operation based near Dartford in Kent. The role will be working on a high-risk facility, where you will be responsible for driving the development of the HSE culture and SSOW. Candidates must have had previous exposure to a manufacturing environment and a recognised environmental qualification is essential.

Regional Sustainability Manager

MANCHESTER £38K + CAR L06121

An international construction services company is currently recruiting for a Regional Sustainability Manager. Within this role, you will provide sustainability expertise to the project teams in order to support the long term vision of the company. Candidates must have experience and understanding of environmental legislation within the construction industry and knowledge of ISO14001.

Environmental Advisor

LONDON £33-35K + CAR ALLOWANCE + BENEFITS L06111

A leading construction contractor is currently looking to recruit an Environmental Advisor to provide environmental support on a major rail project in London. You will assist with environmental risk assessments and investigation of incidents. Candidates must have an environmental related degree and a minimum of three years environmental experience.

Environmental Advisor

WALES £30-35K + CAR L06025

A leading civil engineering company are currently recruiting for a high calibre Environmental Advisor. This role will see you establish, implement and maintain the environmental management system and will also see you take the role of CEEQUAL assessor across the project. Candidates must have an IEMA membership, 3 years' environmental management experience and a relevant environmental degree – 2:1 minimum.

Environmental Advisor

LONDON £NEG L06156

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I am pleased to announce the continued growth of our Environmental Division and introduce you to our newest team members, Tom Nicholls and Lucy Pereira.

Whilst Shirley Parsons Associates has always worked with environmental professionals, I was asked to join in July 2013 to help develop this division further. Over the last year, I am pleased to say that our Environmental Division has gone from strength to strength, providing Environmental and Sustainability Recruitment across all sectors from Graduate to Director level.

Due to the increased demand we have experienced from our clients, Tom and Lucy have joined me to help even more Environmental and Sustainability professionals make their next career move. We welcome conversations with anyone involved in the sector, so please get in touch, we'd be happy to help.

Thanks, Lisa

You can contact Lisa on 01296 611338, Tom on 01296 611321 and Lucy on 01296 611308.

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