Roundtable 14
In the right place
Practitioners give their views on plans by IEMA to revise its statement on climate change

Datafile 20
The fourth degree
Worst-case scenarios forecast global warming of up to 4.8°C, so what will a 4°C rise mean?

Retrofit 24
Student challenge
The refurbishment of its head office helps the NUS to pursue its sustainability aspirations

the environmentalist
environmentalistonline.com
June 2014

Explosive liability

Does your firm have pollution covered?

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June

News

Legal brief

Insight

IEMA news

Features

Supplement

Training focus – summer 2014

- Q&A with IEMA CEO Tim Balcon
- Learning on an absolutely massive scale
- EM Highway Services targets its leaders

The Eco Technology Show Highlights for 2014

26–27 June 2014
The Brighton Centre. @ EcoTechShow

The Eco Technology show focuses on the practical business benefits of innovation and low carbon solutions. Entrance is free and includes over 70 talks and 140 exhibitors highlighting how you can save money and reap measurable benefits for your business, cities and communities on-going.

Some of the highlights for the two-day event will be a keynote speech by **Greg Barker MP**, Minister of State for Energy and Climate Change, on the **economic benefits** of **shifting** to a **lower carbon economy**.

There is a new **big debate area** situated at the heart of the show covering the big topics including: The benefits and opportunities arising from **shifting** to a **lower carbon economy**; Brighton & Hove city regions plans to develop a 'super-fused' economy using the City Deal, building on the creative, digital & environmental technology sectors, **Innovations** in **building** and **transport** and how they fit with the **Circular Economy**? **Our Energy Future: Fracking, biofuels** or **renewables**, and the **future opportunities** for **community energy**.

This spring saw the launch of the new **Domestic Renewable Heat Incentive (RHI)**, the Government financial incentive scheme that provides payments to encourage the installation of renewable heating technologies in homes. To help people understand the benefits of the scheme, The **Department of Energy and Climate Change (DECC)** is conducting a **series of talks** at the show to inform people about the potential **benefits** of **renewable heat** and the **RHI**. What's more, with **changes** to the **non-domestic RHI scheme**, make sure you visit the **DECC seminar area** to access the very latest information about both schemes.

A number of high profile case studies have been secured including: Setting up a **New Carbon Cutting Network**, with case studies from the **National Trust**, the **RSPB**, and the **RNLI** on how working with others is helping to save them valuable time, money and energy.

Hear how **Barts Health NHS Trust** have worked with ADSM to deliver results that include **improved skills** to their **workforce**, **savings** of over **480 million litres** of **water**, **cut costs** by **£960,000** & **391 tonnes** of **CO_2 saved**. Learn how **Skandia** has been working with **Sustrans** to **improve** the **sustainability** of **business travel** through the **'Commuter Challenge'** programme, and the benefits they have gained.

Plus a range of technical talks from our exhibitors & sponsors including the **benefits** of delivering **powered light** over the **IT network** with **Lighting as-a-service** by **Gareth Macnaughton**, Director, Innovation and Strategy, **Cisco UK&I**, and **Stephanie Gauthier**, Smart Energy Research Associate, **UCL Energy Institute**. Hear how the **ISO 50001 international standard** enables **organisations** to manage their **energy use more efficiently**, plus deliver **significant savings** on **costs** and comply with the new **ESOS scheme** and the **performance benefits** of **enhanced building photo voltaics** by **Exergy**.

Other highlights include The **Communication Hub** where you can get a quick answer to your questions from an expert. Plus attend one of the **networking sessions** held in this area over the two days and meet **likeminded individuals** around a range of topics including **Future Cities**, **Buildings**, **transport**, **Energy**, **Innovation**, **Water** & **Water** and **Community Energy**.

See an entire floor of the latest electric and **low-emission vehicles** in the **Transport Zone** including **BMW's electric i3** and **i8 hybrid supercar**, **Mitsubishi's Outlander** – the world's first plug-in SUV, the ground-breaking **Tesla Model S** and **Roadster**, Vauxhall's **Ampera**, plus a range of electric bikes. Fleetdrive Electric will also launch a new Smart EV app for mobile devices, designed for EV drivers to find the nearest charging points along a route.

"The programme has been designed to give visitors the most relevant, high-quality up to the minute information possible to enable them to make positive changes throughout their own organisation." said Nicola Gunstone, the Show Director.

The Eco Technology Show is an unmissable opportunity for visitors to get the latest on legislation & funding, come away armed with fresh ideas and most importantly meet others in their field. **Registration is free.** For more information or to register in advance to avoid the queues go to www.ecotechnologyshow.co.uk

The ECO 2014 TECHNOLOGY SHOW
26 - 27 JUNE, THE BRIGHTON CENTRE

Visit www.ecotechnologyshow.co.uk for more information.

Cleaning up America

Currently, there are no limits on the amount of carbon dioxide power plants in the US can pump into the air. Hopefully, that is about to change. Carbon pollution from existing US power stations will fall 30% against 2005 levels by 2030 under a clean power plan from the Environmental Protection Agency (Epa). The plan, made at the direction of president Obama and due to begin coming into force from June 2015, will also cut particle pollution, nitrogen oxides and sulphur dioxide by more than 25%. Power plants account for around 38% of domestic US greenhouse-gas (GHG) emissions, and the agency says its blueprint is designed to protect public health, move the country towards a cleaner environment and fight climate change.

Why is it significant? The US may soon slip behind China as the world's largest economy, but its electricity consumption per capita still dwarfs that of its competitor in south east Asia. According to data from the World Bank, US per capita electricity consumption in 2011 was 13,246KWh. The figure for China was 3,298kWh – 5,472kWh in the UK in case you wondered. That means the US remains the largest emitter of CO_2 per head of population. Carbon dioxide emissions per head across the world averaged 4.6 tonnes in 2010. The figures for the US and China were 18.1 and 6.3 tonnes, respectively.

The US may soon slip behind China as the world's largest economy, but remains the largest emitter of CO_2 per head, so Obama's clean power plan is a move in the right direction

Obama has pledged to cut US emissions by 17% against 2005 levels by 2020, 42% by 2030 and 83% by 2050, but his previous plans to take action on climate change have failed to overcome congressional barriers. The president is now using his executive powers to bypass the bicameral legislature and allow the Epa to regulate power sector emissions directly under the Clean Air Act.

But we shouldn't get carried away. Emissions from power plants in the US have already fallen by around 12% since 2005 due to the recession and the shift from coal to cheaper shale gas – though they are again moving upwards. And, given past experience, industry and some states are likely to challenge the federal limits, which could scupper their introduction from June 2015, putting them at risk from a post-Obama administration, which is due to take office in January 2017.

Still, having been consistently criticised in the past for failing to take action on climate change – with the low point being the decision by George W Bush to pull the US out of the Kyoto protocol – the clean power plan marks a change of direction for America. Bush argued that implementing the protocol would gravely damage the US economy. That is no longer the view of the White House. Announcing the clean power plan, Epa administrator Gina McCarthy said the US did not have to choose between a healthy economy and a healthy environment, arguing that the plan would sharpen America's competitive edge, spur innovation, and create jobs.

Paul Suff, editor

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Short cuts

BSI revises PAS 2060

BSI has published a new version of the PAS 2060, the specification for the demonstration of carbon neutrality. Originally created in 2010 to address uncertainty and confusion about the validity of methodologies for offsetting emissions, the specification aimed to offer a common, repeatable and transparent way of demonstrating carbon neutrality. The revised version, developed in collaboration with Taiwan's environmental protection administration, provides a new annex containing specific guidance on events planning and management. It also includes general information on presenting claims in promotional materials to boost confidence that no false claims are being made. "Some claims of carbon neutrality have in the past generated concerns and scepticism, for example over the accuracy of data used or the additionality achieved through offsetting," said Nick Blyth, IEMA policy and practice lead and a member of the PAS 2060 steering group. "Having clear and transparent guidance will have positive implications for business and also for their stakeholders and customers."

Funding for LIFE+

The European commission has approved funding of €282.6 million for more than 200 new projects under the LIFE+ programme, the EU's environment fund. Organisations in the 28 member states submitted 1,468 applications, of which 225 were selected for co-funding through the programme's three components: nature and biodiversity; environment policy and governance; and information and communication. The UK will receive €49.7 million for 11 projects. Five of them come under the policy and governance stream, including Scotland's LIFE SMART Waste project, which will develop innovative ways of understanding, tackling and reducing waste crime. The remaining six projects, covered by the nature and biodiversity funds, include LIFE Waders for Real, which seeks to reverse the decline of breeding waders in the Avon Valley.

CO_2 cut saves BT £25 million

BT cut its global operational carbon emissions in 2013/14 by 25.5%, saving the telecom giant £25 million. The firm's latest sustainability report also reveals that £3.1 billion was generated by products and services BT had identified as having a carbon abatement benefit for its customers.

As part of its "Better Future" programme, BT invested £27.2 million in 2013/14 to support its commitment to be a responsible and sustainable business. A key strand of the programme is the "Net Good" strategy. This is focused on helping society live within the constraints of Earth's resources through the telecom company's products and services. BT has set itself a 2020 goal to assist its customers in reducing their total carbon footprint by at least three times the "end-to-end" CO_2 impact of its business, which encompasses not only BT's operational emissions, but those from its entire supply chain and from the equipment it supplies. BT says during 2013/14 it helped its customers avoid carbon emissions by 1.3 times the end-to-end carbon impact of its business.

Consumer goods company Unilever, meanwhile, has retained its number one position in the latest sustainability leaders' survey from Globescan and SustainAbility. The 20th edition of the poll, reveals that

the Anglo-Dutch multinational increased its lead in 2014 over other sustainability "leaders", such as Patagonia, Interface and Marks & Spencer. "Unilever not only claims the top slot for the fourth year in a row, but also does so by its widest ever margin," states the survey report.

The latest results also reveal that stakeholders have largely lost faith in government-driven processes to advance sustainability, with survey respondents regarding technology and the private sector as the main current drivers.

Insulation gives rapid payback

UK businesses could save £370 million a year through cost-effective investment in industrial insulation, with a payback period of less than a year, according to the European Industrial Insulation Foundation (EiiF).

The UK statistics are contained in one of seven factsheets produced by the EiiF to demonstrate the annual energy savings and emission reduction potential of insulation in seven EU member states. They also reveal the initial investment required to achieve these savings, as well as the financial savings and likely payback times.

For the UK, the total potential energy savings – in petajoules (PJ) – amount to about 65 PJ, while the carbon savings are around 4.7 million tonnes of CO_2 a year. This translates into 46 PJ and 3.2MtCO_2 in industry, and 19 PJ and 1.5Mt O_2 in fossil fuel-fired power generation, and is equivalent to more than the energy consumption of 900,000 households.

The UK factsheet notes that insulating bare surfaces to cost-effective levels and repairing damaged insulation at industrial sites requires initial investment of about £80 million. This one-off investment would represent energy savings of about 75% of the potential, which would save industry £370 million a year.

Germany has the highest predicted savings for industry (€750 million a year), and Sweden the lowest (€150 million). Figures for France and Spain are slightly below the UK's (€420 million and €400 million respectively), while Italy can expect €500 million and Poland €200 million. All payback times are less than a year.

The latest factsheets use the same methodology as a 2012 report from Ecofys – which estimated annual potential savings for the whole of the EU at 620 PJ and 49MtCO_2 – but some input data, such as energy prices, have been altered to reflect recent developments.

2°C temperature threshold puts oil investments at risk

Shell says demand for fossil fuels will remain buoyant and continue to attract a high price

Investment worth $1.1 trillion in oil projects are at risk up to 2025 if the increase in global temperatures is to be kept below the critical 2°C threshold. Scientists believe that any rise greater than that caused by oil being being burned could trigger dangerous climate change.

The warning comes in a new report from financial specialists the Carbon Tracker Initiative (CTI). It says projects that require the price of a barrel of oil to be at least $95 over the next 10 years will be increasingly nonviable due to tougher climate policies and advances in vehicle technology, for example, that will cut demand for oil. Concern is raised mainly about projects that involve extracting unconventional types of hydrocarbons, such as shale oil and oil sands, or operating in physically-demanding environments, such as ultra deepwater and the Arctic. In his foreword to the report, CTI chief executive Anthony Hobley warns: "Either policy or technological tipping points will reduce demand … or we will face levels of warming described as catastrophic by many."

The CTI has developed a "carbon supply cost curve" to identify the oil projects most at risk. Its analysis assumes that oil will have a 40% share of a carbon budget necessary to keep the temperature rise below 2°C and builds on its previous work on "unburnable carbon". Assuming this share remains constant, the CTI estimates that total emissions from the oil industry will be pegged at 360 giga tonnes of CO_2, which is equivalent to 760 billion barrels of oil. If so, only oil that can be extracted for a market price of $75 per barrel or less will remain viable. To avoid wasted capital, the CTI advises investors to only finance projects at the low end of the cost curve. "There is a realisation that ignoring climate risk and hoping it will go away is no longer an acceptable risk management strategy for investment institutions," writes Hobley.

The CTI research places Shell fourth – behind Petrobas, ExxonMobil and Rosneft – in its list of oil companies with the highest total capital expenditure exposure over the next 10 years in projects above the $95 per barrel market price. However, Shell does not believe any of its proven reserves will be non-performing or become "stranded assets".

In a letter to stakeholders, Shell acknowledged the need to tackle climate change, but said: "Energy demand growth, in our view, will lead to fossil fuels continuing to play a major role in the energy system – accounting for 40–60% of energy supply in 2050 and beyond, for example. The huge investment required to provide energy is expected to require high energy prices, and not [a] drastic price drop."

CTI responded: "Shell does not explain how it is solving the contradiction between the predictions of high oil demand and its acceptance of the need to address climate change. [We] argue that high-cost production and growing oil demand assumptions are inconsistent with a more resilient global economy and stable global climate."

The House of Commons' environmental audit committee warned in March that global financial markets were in danger of creating a "carbon bubble" due to the over-valuing of fossil fuel assets. "Financial stability could be threatened if shares in fossil fuel companies turn out to be overvalued because the bulk of their oil, coal and gas reserves cannot be burned without further destabilising the climate," said Joan Walley, chair of the EAC.

The MPs said the government must ensure investors have all of the information they require to assess carbon risk.

Short cuts

Homeworking works

Supporting more staff to work from home could save UK employers 3 million tonnes of CO_2 and £3 billion in costs, according to the Carbon Trust. It estimates that, although 40% of jobs could now be performed from home as a result of technologies such as broadband internet and cloud computing, just 13% of the UK's workforce does so, and only 35% of businesses have policies allowing this. However, the trust says enabling staff to work from home two days a week can save on average 440kg of carbon each year from their commute alone, and that further savings are available if firms take the opportunity to rationalise their office space. Increasing desk use from 65% to 80% in an air-conditioned office in London, for example, can save 700kg of CO_2 and £195,000 a year. Despite the potential financial and carbon benefits, the trust also warns firms to consider the increase in emissions generated by staff in their homes when calculating carbon savings. On average, homeworkers will generate an extra 180kg of CO_2 through increased energy use.

US energy standards

The US energy department has announced two new energy efficiency standards for electric motors, and walk-in coolers and freezers. The department claims the standards will help reduce harmful carbon pollution by up to 158 million tonnes – equivalent to the annual electricity use of more than 21 million homes – and save businesses $26 billion on utility bills over the next 15 years. Updating a 2010 standard, the new criteria for electric motors will save consumers an estimated $16 billion and prevent 96 million tonnes of CO_2 emissions by 2030. About five million electric motors used in equipment, from industrial plant to escalators, were shipped in the US in 2013. The second standard, for walk-in coolers and freezers, revises a 2009 specification and should help cut energy bills by about $10 billion, delivering CO_2 emissions reductions of 62 million tonnes by 2030.

In parliament

Biogas is given 'official' backing

Labour's shadow energy minister, Caroline Flint, is now officially a convert to biogas. She said recently that biogas would be a priority for a new Labour administration, but that the committee on climate change and the National Grid would be tasked to report by the end of 2015 on the potential in the UK for gases produced by the breakdown of any organic matter.

I think this is potentially quite a significant statement. The debate on gas and its future has, over recent years, run along depressingly well-worn tramlines. On the one hand, we are told that gas is the fuel of the future, and that it will replace coal to generate power and reduce emissions. And, if we frack half of southern and north west England, we can substitute the UK's dwindling North Sea gas supplies and push down prices.

On the other hand, we are told we must foreswear gas. It may be cleaner than coal, but it still emits a lot of carbon, and if we mortgage our future energy supplies to gas we will certainly overshoot any decarbonisation targets. Also, most of the gas doesn't go into making power at all – but instead goes into the 44% or so of final energy consumption for heating homes and offices. So we'll probably be living with gas, at least as heating fuel, for a very long time yet.

Biogas works just as well and comes from many sources, though mainly from anaerobic digestion of waste. And, when I say waste I mean all kinds: vegetable, animal and human. There are tonnes of such waste around; it doesn't deplete, and, as a feedstock, it is broadly carbon neutral. Replacing domestic gas supply with biogas will mean fundamentally reorganising how we dispose of waste and crop residues, how we treat sewage, and what happens in farms up and down the country. But I think in the end, the shadow energy minister could be onto something of genuine use in the UK's future low-carbon energy mix.

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

Emissions carry on falling

Total emissions of direct greenhouse gases decreased by 26% in the UK between 1990 and 2012, according to the latest figures from Decc for the GHG inventory, the annual submission to the UNFCCC required by the Kyoto protocol.

Under the protocol, the UK is committed to reducing emissions of six GHGs – carbon dioxide; methane; nitrous oxide (N_2O); hydrofluorocarbons (HFCs); perfluorocarbons (PFCs); and sulphur hexafluoride (SF_6) – by 12.5% against 1990 levels during the first commitment period, which ran from 2008 to 2012.

According to the inventory, carbon dioxide emissions in 2012 totalled 475.7 million tonnes CO_2 equivalent ($MtCO_2e$), a 19.7% decline on 1990. At the same time, emissions of methane amounted to 50.8$MtCO_2e$ in 2012, down by 51.4% compared with 1990. Emissions of N_2O in 2012 were 36.1$MtCO_2e$, while emissions of F-gases (HFCs, PFCs and SF_6) totalled 14.7$MtCO_2e$. This means that UK emissions of these two GHGs have declined since 1990 and 1995 (the base line for F-gases) by 48.4% and 13.3% respectively.

The data reveals that most of the decline in total GHG emissions over the past 22 years is down to a fall in emissions from the energy sector, which has been

driven by fuel switching, structural change and improvements in end-use efficiency at power stations. However, the decline in emissions of individual GHGs is often due to specific circumstances. The decline in F-gases, for example, has been due primarily to the installation of abatement equipment by two of the three manufacturers of such gases in the UK.

Eurostat, meanwhile, estimates that CO_2 emissions from fossil-fuel combustion decreased by 2.5% in 2013 across EU countries. It says carbon emissions last year fell in 22 member states, including the UK (down 2.4%), though the largest emitter of CO_2, Germany, recorded a 2% rise.

Defra indicators reveal decline

Despite some notable successes in marine protection, many species and habitats are still in decline, according to Defra's 2014 indicators for the natural environment.

The latest assessment of 13 indicators shows that public engagement with the natural environment has also declined in recent years, with a fall in conservation volunteering from 2007 to 2012. The indicators were drawn up to track progress in implementing the government's 2011 natural environment white paper.

Across the assessments, which apply a traffic lights system, the overall picture is mixed. Each indicator is composed of one or more measures that, where possible, show trends over time. Seven measures (23%) show improvement in the long term; these include consumption of raw materials, water abstraction and forest carbon stock. Two measures (6%) have shown little or no change and a further nine (29%), mostly species related, have deteriorated.

Over the short-term assessment period, six measures (20%) show improvement, several of which are linked to the quality of habitat. The percentage of woodland under active management, for example, has increased. But eight measures (27%) show little or no change and nine measures (30%) show deterioration. Almost all species measures fall within the latter two categories, including breeding wetland and farmland birds, butterflies on farmland and in woodland, and a number of priority species that are stable or increasing.

Under the indicator for marine ecosystem integrity, fish class size is improving in the short term (2006–11) after a long-term decline (1983–2011).

Three indicators are still being devloped: national environmental accounts; integrating biodiversity and natural environment considerations into business activity; and ease of access to green space.

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Kayley, RRC Customer Services Manager

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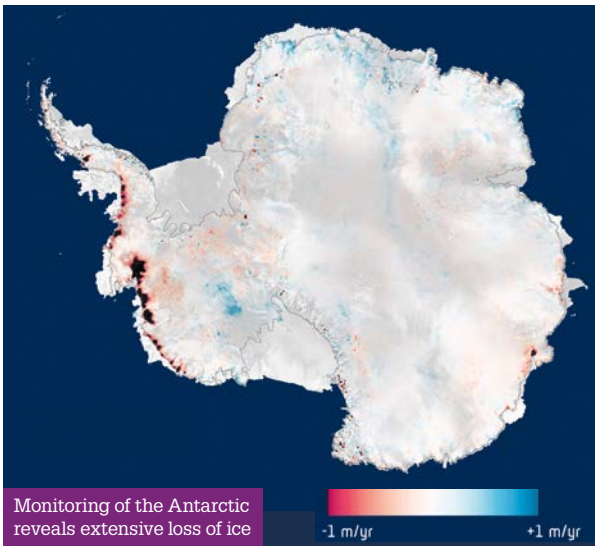
New research raises risks of flooding

New satellite images reveal that the Antarctic ice sheet is now losing 159 billion tonnes of ice each year – twice as much as when it was last surveyed.

The European Space Agency's CryoSat satellite has been monitoring the ice sheet for the past three years and the latest findings indicate that the losses will raise global sea levels by 0.45mm each year. The research found that, between 2010 and 2013, east and west Antarctica, and the Antarctic Peninsula lost 134, 3 and 23 billion tonnes of ice each year, respectively. It also discovered that the average rate of ice thinning in west Antarctica had increased compared to previous assessments. Now, the yearly loss in this area is one third more than previously measured.

"We find that ice losses continue to be most pronounced along the fast-flowing ice streams of the Amundsen Sea sector, with thinning rates of 4–8m a year near to the grounding lines – where the ice streams lift up off the land and begin to float out over the ocean," said Dr Malcolm McMillan from the University of Leeds and lead author of the study.

Researchers at Utrecht University, meanwhile, have found that land subsidence in many coastal and delta cities now exceeds absolute sea-level rise by up to a factor of 10. Without action, parts of Jakarta, Ho Chi Minh City, Bangkok and other coastal cities will sink below sea level, says the study, published in *Geophysical Research Abstracts*. The authors report that excessive groundwater extraction after rapid urbanisation and population growth is the main cause of severe land subsidence, which they say increases flood vulnerability.



Monitoring of the Antarctic reveals extensive loss of ice

Separate Dutch research reveals that extreme and catastrophic flooding in Europe, such as that seen in 2013, and which currently occurs about once every 16 years may increase to once every 10 by 2050. The study, conducted as part of the EU Enhance project, also suggests that annual average economic losses caused by extreme floods could reach almost five times higher than 2013 values.

According to the researchers, average annual economic losses due to flooding in Europe by the middle of the century will be in the region of €23.5 billion. They say that investing €1.75 billion now in better flood defences could stem the annual estimated losses by about €7 billion.

EIA update

iema

Amended EIA Directive comes into force

On 15 May the EIA Directive (2011/92/EU) was amended by Directive 2014/52/EU. Member states do not have to transpose the amended Directive into national regulations until 15 May 2017, so there is unlikely to be consultation on proposals for quite some time.

However, there are several changes that EIA practitioners should begin to prepare for. These include:

- considering how climate change, human health and resource efficiency can be assessed more effectively within EIA (art.3 and annex 4);
- enhancing the approach taken by developers to pre-assess proposals to enable a screening decision to be made (art.4);
- improving, potentially, the quality of the writing and review of environmental statements, by ensuring those who undertake the work have competent expertise to do so (art.5);
- considering how efficient and effective monitoring strategies can be created to track the delivery and success of design elements and mitigation that aims to avoid, prevent or reduce significant adverse effects on the environment (art.8a(1); and
- introducing penalties for infringements (art.10a), and providing a definition for cumualtive effects (annex IV).

A webinar from IEMA reviewing the likely impact of the amendments on UK EIA practice can be found at lexisurl.com/iema23217.

IEMA and Hong Kong Institute of EIA sign memorandum

At the end of May, IEMA agreed a memorandum of understanding (MOU) with the Hong Kong Institute of EIA. Under the MOU, the two institutes will work to improve quality in impact assessment. Initial activities being developed include plans for webinar sessions to exchange experiences of EIA practice and good practice techniques. If you are interested in getting involved contact j.fothergill@iema.net.

State of UK EIA practice 2014

The results of IEMA's annual state of UK EIA practice for 2014 were revealed on 12 June at the Quality Mark Forum. Full details of the findings will be in the July issue of *the environmentalist* and will be presented in a webinar later in the summer. The EIA Quality Mark scheme has entered its fourth year of operation, with 50 organisations now registered.

EIA webinars

Future EIA webinars from IEMA include:

- 26 June – Linking EIA and strategic environmental assessment.
- 31 July – Effective EIA: influencing renewable energy proposals
- 28 August – Effective EIA: managing community impacts

Book a place at iema.net/events.

Climate warning for the US

Higher temperatures and rising sea levels are just two of the future risks facing the US, according to the country's third national climate assessment (NCA).

Described by the White House as the most comprehensive scientific assessment of climate change and its impacts across every region of America, NCA 2014 reveals that, since 1991, temperatures have averaged 1°F to 1.5°F higher than the 1901–1960 average over most of the country, except for the southeast. It predicts that in the next few decades, warming will be between 2°F and 4°F in most areas, and, under a high emissions scenario, up to 10°F by 2100.

Heavy downpours are intensifying nationally, says the NCA, with the largest increases in the Midwest and northeast. More frequent and intense extreme precipitation events are projected for all regions. Most northern states are forecast to experience more precipitation in the winter and spring, while the southwest, including California, is projected to experience less, particularly in the spring.

According to the findings, 64 million people living in the northeast, from Maine to the District of Columbia will in future be affected by heatwaves, more extreme precipitation events, and coastal flooding due to sea level rise and storm surge.

In the southeast, from Virginia to Florida and Louisiana, the NCA forecasts that declining water availability will increase competition for it. This area will also be at greater risk of extreme weather events, including hurricanes, such as Hurricane Sandy, which hit the Atlantic coast states in 2012.

Renewables power green growth

The output of environmental goods and services per unit of gross domestic product (GDP) in the EU increased by more than 50% between 2000 and 2011, latest Eurostat estimates show. Over the same period, employment in this sector rose by about one-third across member states.

Although figures for individual countries are not strictly comparable, for most of the European countries that provided data, output by the end of the last decade ranged between 2.4% of GDP (Lithuania) and 6.2% (Finland).

When total output from the environmental goods and services sector (EGSS) is broken down into products relating to environmental protection (EP) and those associated with resource management (RM), the results show a sharp division. While EP output per unit of GDP increased by just 10% from 2000 to the end of that decade, RM output more than doubled.

According to Eurostat, the main driver for growth in RM was the increase in renewable energy activities (wind and solar power and biofuels), and energy- and heat-saving products. These areas were also responsible for driving the increase in employment in the EGSS; estimates suggest employment has risen from about three million to more than four million full-time equivalent employees within the EU since 2000.

The research also evaluates the income created by the EGSS in terms of gross-value added – the difference between output and intermediate consumption. In the EU states, the estimated share of EGSS gross value added in GDP has grown from 1.6% in 2000 to slightly more than 2% in 2011. Eurostat warns that this a conservative estimate, however, pointing out that it does not cover, for example, all RM activities, such as the management of forest resources and wild flora and fauna.

Just 16 countries provided voluntary data to Eurostat, and there are no figures for the UK or Ireland included in the analysis. The latest statistics from the UK's business department, which were published in July 2013, show that sales of low-carbon and environmental goods and services increased by 4.8% in 2011/12. Mirroring the wider EU trend, growth was greatest in areas relating to wind generation, carbon finance and solar photovoltaic power.

Business plans

Philips has announced that it is to install 380,000 LEDs within 8,000 of its ColorGraze lighting fixtures at the Allianz Arena, home of German football club Bayern Munich.
The Arena has a façade covering 29,000m², comprising the world's largest membrane outer shell on a stadium. This canvas will enable the new LEDs to provide coloured lighting patterns and animations. The LEDs are 60% more energy efficient than conventional lighting.

After a successful six-month pilot, **British Gas** says it will add 100 **Nissan** e-NV200s to its fleet by the end of the year. The trial, run in collaboration with Hitachi Capital Commercial Vehicle Solutions and Gateshead College, involved 28 of the all-electric vans. It was launched in November 2013 to assess how the e-NV200s performed in winter conditions during typical British Gas home services daily usage patterns. British Gas aims to have 10% of its fleet electric by 2017.

PC company **Dell** is introducing plastic packaging for its products based on **Newlight Technologies**' carbon-negative "AirCarbon" material, which is more sustainable and cost-effective than traditional oil-based plastics. Dell is also launching a closed-loop supply chain, which will turn plastics from recycled electronics into new products.

Swedish outdoor goods firm **Haglöfs** has appointed sustainability managers at all of its subsidiaries around the world. The move follows a decision in 2008 to integrate sustainability throughout the business. The managers are responsible for pursuing sustainability issues locally.

The UK's largest retailer, **Tesco**, has won a **Carbon Trust** award for cutting carbon emissions from its freight transport operations by 14% per case delivered over the past two years. Tesco had previously reduced such emissions by 50% between 2006 and 2012. The latest cuts have been achieved by reducing journeys made by road as well as by implementing the "F plan". This involves delivery lorries being fuller and driving fewer miles, which has improved their fuel economy. In 2013, Tesco lorries following the plan travelled 8 million fewer miles on UK roads.

Recent prosecutions

Inspector upholds annulment of permit for waste site

The Planning Inspectorate has upheld the Environment Agency's decision to revoke the environmental permit for a site in Northamptonshire operated by recycling firm Think Environmental. The agency cancelled the permit in May 2013 after the company failed to remove waste illegally buried next to its waste management centre at Blackbridge Farm in Burton Latimer.

In October 2012, Wellingborough magistrates' court fined the company £33,000 and ordered it to pay costs of £15,000 for failing to stop odour from its operations and for not removing waste that had been illegally buried on land next to the permitted site. The court heard that the agency had issued 10 formal warnings to the company to deal with smells from the site after it received 345 complaints in two years. It was also told that local residents had been forced to stay indoors because of the strength of the odours and that smoke from fires at the site led, on one occasion, to the closure of the nearby A6 and significant air pollution.

At the time of the 2012 court proceedings, Judge McGarva said: "The company was constantly warned and broke its promises. It was negligent, if not grossly negligent, and fell well below the required standard."

The £33,000 fine imposed by the court included £3,000 for failing to meet an enforcement notice to clear the illegally buried waste. It was buried in 2009 and raised the ground in the paddock next to the Think Environmental site by up to 2m. The company and one of its directors were fined a total of £30,000 in February 2011 over the illegal burial of the waste.

The continued failure by Think Environmental to remove the waste led the agency to annul the site's permit on 23 May last year. The inspectorate heard the company's appeal under the Environmental Permitting (England and Wales) Regulations 2010 in December 2013, but the decision to dismiss the appeal was revealed only recently.

"Given the sustained non-compliance and offending at the site and failure to comply with a raft of enforcement measures, I consider that the permit should be revoked," concluded inspector Isobel McCretton. "The revocation notice was issued after a sustained period of non-compliance with the permit. Advice, warnings, other enforcement action, voluntary agreements and post-conviction plans all failed to secure removal of the excess waste from the site."

The company claims on its website to provide "sustainable, cost-effective, flexible and reliable solutions to the commercial and industrial waste markets."

Director pays for illegal waste

The illegal disposal of 127,000 tonnes of waste at a quarry in Yorkshire and a further 72,000 tonnes at a site in Doncaster has resulted in a one-year prison sentence for a company director. In addition, Hull Crown Court disqualified Phillip Slingsby, who runs Slingsby Plant Hire and Slingsby Quarries, from being a director for six years. He is also subject to a confiscation order for £200,000 under the Proceeds of Crime Act 2002 (PCA), which was made at an earlier hearing.

The court was told that, between December 2008 and April 2009, officers from the Environment Agency observed tipping taking place on a large scale at the Middleton Quarry, Pollington. The site had no environmental permit and would not have been granted one given how close it was to three boreholes used for abstracting drinking water. In total 127,000 tonnes of waste were deposited at the quarry. Had it been sent for lawful disposal it would have cost more than £440,000, according to the agency.

Slingsby engaged in further illegal waste activity between January 2009 and October 2009 at a site in Doncaster, which was owned by Robert Spencer. The site also had no environmental permit, although its proximity to water sources and the lack of planning permission made it an unlikely candidate for one.

Spencer was sentenced to nine months' imprisonment, suspended for two years, and ordered to pay £20,000 in confiscation under the PCA.

Case law

Warning not to rely on pre-NPPF information

In *Gallagher Homes Limited v Solihull Metropolitan Borough Council* [2014] EWHC 1283, the High Court allowed a challenge against a local plan.

The claimant's sites for housing development were placed in the green belt in the planning authority's local plan. The plan proposed provision for new homes based on figures from its regional spatial strategy (RSS) for the area – in accordance with the national policy at the time via planning policy statement 3 (PPS3). This was replaced by part 6 of the National Planning Policy Framework (NPPF) in 2012. The housing figure derived from the RSS in this case did not identify a figure for "objectively assessed need", as required by the NPPF. The planning authority asserted that the NPPF had been satisfied because the figure it used had taken into account evidence of housing need as well as constraining policy factors – including policies relating to the green belt.

The court held, however, that the authority had failed to consider key requirements of the NPPF, particularly to base housing provision targets on an objective assessment of full housing needs as identified through a strategic housing market assessment. Although an inspector can depart from the NPPF if there is good reason to do so, in this case the inspector dealt with the issue of housing provision by purporting to apply the policies of the NPPF, not going outside them, said the court.

Planning authorities can still use data from a revoked RSS, but Justice Hickinbottom advises that using such figures should be done "with extreme caution – because of the radical policy change in respect of housing provision effected by the NPPF".

Jen Hawkins

Lexis®PSL

New regulations

In force	Subject	Details
9 Apr 2014	Built environment	The Domestic Renewable Heat Incentive Scheme Regulations 2014 introduce a renewable heat incentive scheme for domestic properties. To receive the incentive, equipment must meet specified eligibility criteria and have been installed on, or after, 15 July 2009. New-build properties – unless self-built – are excluded. lexisurl.com/iema22961
14 Apr 2014	Planning	The Town and Country Planning (Revocations) Regulations 2014 revoke a number of regulations relating to the costs imposed for holding planning inquiries. lexisurl.com/iema23109
23 Apr 2014	Environment protection	The Fluorinated Greenhouse Gases (Amendment) Regulations (Northern Ireland) 2014 amend the 2009 Regulations by altering the definition of an "offshore installation". They also make a technical change to the section on corporate offences. lexisurl.com/iema18897
28 Apr 2014	Planning	The Town and Country Planning (General Permitted Development) (Amendment) (Wales) Order 2014 extends permitted development rights for industrial and warehouse premises, offices, shops, financial services premises, hospitals, schools, colleges and universities. Additional permitted development rights are provided for refuse and cycle stores. lexisurl.com/iema22146
30 Apr 2014	Built environment	The Energy Efficiency (Building Renovation and Reporting) Regulations 2014 require the secretary of state to implement renovation strategies to improve the energy efficiency of buildings in the UK and report on progress annually to the European commission. A national energy efficiency action plan had to be submitted to the EU authorities by 30 April 2014 and will have to be updated every three years. lexisurl.com/iema22967
1 May 2014	Energy	The Energy Companies Obligation (ECO) scheme requires large energy suppliers to fund energy-efficiency improvements in certain domestic properties. The Electricity and Gas (Energy Companies Obligation) (Amendment) Order 2014 amends the ECO scheme. Changes include: transferring work conducted beyond targets under the preceding carbon emissions reduction target (CERT) and the community energy saving programme (CESP) between suppliers; and revising the ECO methodologies for solid-wall insulation and glazing. lexisurl.com/iema22969
1 May 2014	Waste	The Transfrontier Shipment of Waste (Amendment) Regulations 2014 amend the 2007 Regulations by, for example, making changes to the competent authorities designated for the purposes of EU Regulation 1013/2006. lexisurl.com/iema22144
6 May 2014	Natural environment	The Plant Health (England) (Amendment) Order 2014 prohibits the landing of elm for planting unless an authorised inspector receives pre-notification, and the removal of provisions concerning western corn rootworm (*diabrotica virgifera virgifera*). lexisurl.com/iema22959
16 May 2014	Environmental impact assessment	EU Directive 2014/53/EU amends the Environmental Impact Assessment (EIA) Directive 2011/92/EU. The amendment requires that EIAs consider further effects, including on human population and health, and biodiversity. EIAs must also consider expected effects arising from the project's vulnerability to accidents and disasters. lexisurl.com/iema22966
30 May 2014	Waste	The Controlled Waste and Duty of Care (Amendment) Regulations (Northern Ireland) 2014 clarify the status of waste arising as a result of councils and the department of regional development carrying out their duty to keep roads clean. Industrial wastes will continue to be classified as before when arising from road cleaning. lexisurl.com/iema23107

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

Latest consultations

4 Jul 2014
Water resources
A draft strategy to ensure local water resources are resilient, sustainable and managed in a way to bring benefits to the country and its citizens has been issued for consultation by the Welsh government. It sets out to balance the long-term needs of the environment with the need for sufficient, reliable water supplies and wastewater services.
lexisurl.com/iema22156

5 Jul 2014
Nanomaterials
As part of the communication on its second regulatory review on nanomaterials, the European commission has launched an impact assessment to identify and develop ways of increasing transparency and ensure regulatory oversight of nanomaterials. To assist that process the commission is seeking stakeholder views on the information available on nanomaterials that are already on the market.
rpaltd.co.uk/news-nanoconsult.shtml

7 Jul 2014
FITs and renewables
Decc has issued consultations relating to the feed-in tariff scheme (FIT). It is consulting on changes for solar photovoltaic (PV) installations under the FIT and the renewable obligation. The proposals include splitting the FIT for solar PV projects with generating capacities greater than 50kW into "standalone" (ground-mounted arrays) and "other than standalone" (building-mounted arrays). Under the proposals, the tariff for roof top arrays would be reduced at a slower rate than for ground-mounted projects. The energy department is also seeking views on FITs and community renewable energy projects, including plans to increase the maximum capacity ceiling for eligible projects from 5MW to 10MW, and enabling community groups to be able to claim both FITs and grants.
lexisurl.com/iema22978;
lexisurl.com/iema22977

18 Jul 2014
Ecolabels
The European commission is consulting on ways to evaluate the EU ecolabel scheme, the voluntary labelling scheme designed to promote products with reduced environmental impact. Under the 7th Environmental Action Programme, which sets a common agenda for European environment policy until 2020, both the Ecodesign (2009/125/EC) and Energy Label (92/75/EEC) Directives as well as the Ecolabel Regulation (66/2010) are to be reviewed with the aim of improving further the environmental performance and resource efficiency of products throughout their lifecycles.
lexisurl.com/iema23062

21 Jul 2014
Waste separation
Stakeholders' views on draft guidance on setting up separate collections for waste materials, such as paper, metal, plastic and glass, are being sought by the Welsh government. The guidance has been prepared under reg 15 of the Waste (England and Wales) Regulations 2011, which allows Welsh ministers to give guidance on the duties in regs 12 to 14. These changes bring into law in Wales arts 10 and 11(1) of the Revised Waste Framework Directive.
lexisurl.com/iema23068

31 Jul 2014
Emissions trading
Options for a system to avoid carbon leakage after 2020 are the subject of a consultation by the European commission. Carbon leakage refers to the greenhouse-gas (GHG) emissions generated by an EU business that transfers production activities to countries outside the bloc where less stringent GHG regulation applies. The commission is keen to avoid this occurring and is seeking to determine what the rules on the free allocation of EU emissions trading system allowances should be post-2020. The consultation forms part of its work to create the EU 2030 climate and energy policy framework. The commission also plans to hold stakeholder meetings later in the year to help determine the rules.
lexisurl.com/iema23063

New guidance

Pollution inventory data	The Environment Agency has revised its guidance (lexisurl.com/iema23065) on using the pollution inventory electronic data capture (PIEDC) application for operations covered by an integrated pollution control authorisation, a pollution prevention control permit or a waste management licence. In addition to general information about PIEDC, the document provides a step-by-step guide to data entry using online forms, including those to submit commercially confidential information.
WEEE	New guidance on the national protocols for waste electrical and electronic equipment (WEEE) and on WEEE evidence has been published by the Environment Agency (lexisurl.com/iema23066). The topics covered range from "what is WEEE evidence" to "completion of evidence notes" as well as best available treatment recovery, recycling techniques and the use of WEEE protocols.
Solar and biodiversity	Expert advice on how to optimise biodiversity on solar farms has been published by the BRE National Solar Centre (lexisurl.com/iema23070). It has been produced in partnership with wildlife groups, including RSPB, the Bumblebee Conservation Trust and Wiltshire Wildlife Trust, as well as the National Trust, the Eden Project and the Solar Trade Association. The guidance, which is aimed at planners, ecologists, developers, clients and landowners, outlines the options for maximising the potential benefits to species from solar arrays and the range of habitat enhancements that can be implemented, from beetle banks to winter food planting for birds.

Laying down the law

From our royal correspondent

Stephen Tromans says a court decision to reveal the content of communications between Prince Charles and government ministers will improve access to environmental information

In *R (Evans) v Attorney General* [2014] EWCA Civ 254, a journalist employed by the *Guardian* sought disclosure, under the Freedom of Information Act 2000 and the Environmental Information Regulations 2004, of several written communications between the Prince of Wales and various government departments in 2004 and 2005.

The departments refused disclosure and the information commissioner upheld those decisions. On appeal, the Upper Tribunal ruled that the communications should be disclosed because they were defined as "advocacy correspondence".

The attorney general then issued a certificate purporting to override the decision of the tribunal because, in his opinion, there was no failure on the part of the departments to comply with the Act and Regulations. The attorney general considered that the public interest favoured withholding the information to preserve the political neutrality of the Prince of Wales and ensure that he was not inhibited from corresponding frankly with ministers.

On appeal, the Court of Appeal focused on several issues, including the test for determining whether the attorney general had shown "reasonable grounds" for forming his opinion and whether the issue of a certificate to override a decision of the tribunal was compatible with EU law – in particular, the Environmental Information Directive (2003/4/EC) and art 47 of the EU Charter of Fundamental Rights.

Tell all

Lord Dyson, master of the rolls, gave the court's judgment in favour of disclosure. He stated that where the decision of the attorney general was contrary to the earlier decision of an independent and impartial body that had conducted a full examination, there had to be something more than a mere disagreement on the same material for it to be reasonable to overrule that decision.

In *R (Evans)* the attorney general did not have any additional material and it had not been suggested that the tribunal made any error of law or fact, and the decision was accepted to be a reasonable one. It was, therefore, not reasonable for the attorney general to issue a certificate merely because he disagreed with the tribunal's decision.

On the question of compatibility with EU law, the UK Act had to be read as not permitting the power to be exercised where, as in the present case, a tribunal had ruled that environmental information must be disclosed and the public authority against which the ruling was made had chosen not to appeal. Unless read in that way, the section would be incompatible with the Directive insofar as the information subject to the decision notice is deemed to be environmental information.

Final and binding?

Article 6(2) and (3) of the Directive require that an applicant is able to access a review by a court or another independent and impartial body, which should consider the acts or omissions of the public authority concerned. The decisions of the court or other body become "final" and "binding".

The existence in the UK of the right to seek judicial review of a certificate was not sufficient to meet the requirements of art 6(2), however. First, such a judicial review of a certificate was substantively different from a review by a court, or other independent body, of the acts or omissions of the public body concerned. Second, where a member state provided a procedure in accordance with art 6(2), it was incompatible with art 6(3) for the state to confer on the executive a right to override a decision made in accordance with that procedure. Such a right would necessarily mean that the decision was not final and binding.

Third, anyone whose rights under EU law were violated had the right to an effective remedy before a tribunal, which complied with the requirements of the Charter of Fundamental Rights. The scope of that right was equivalent to the right of access to a court under art 6 of the European Convention on Human Rights. For these reasons, the certificate was incompatible with EU law insofar as the information to which it related was environmental information.

While somewhat esoteric in terms of the princely subject matter, the decision has great significance in terms of the public's rights of access to environmental information and can expect to be widely cited in future.

The law in summary

The **Freedom of Information Act 2000** aims to provide public access to information held by public authorities. The Act covers any recorded information that is held by a public authority in England, Wales and Northern Ireland, and by UK-wide public authorities based in Scotland. Scottish public authorities are covered by Scotland's own **Freedom of Information (Scotland) Act 2002**.

Likewise, the **Environmental Information Regulations 2004** provide public access to environmental information held by public authorities, such as government departments, local authorities and the NHS. The Regulations cover any recorded information held by such bodies in England, Wales and Northern Ireland. Scottish public authorities are covered by the **Environmental Information (Scotland) Regulations 2004**.

EU Directive 2003/4/EC aims to ensure that environmental information is systematically available and distributed to the public across the bloc. The **EU Charter of Fundamental Rights** brings together in a single document individuals' fundamental rights and freedoms under six titles: dignity, freedoms, equality, solidarity, citizens' rights and justice.

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Adopting the right position

With IEMA reviewing its statement on climate change, **Paul Suff** hears the views of leading practitioners

In 2012, IEMA published its climate change position statement. It set out the policy directions IEMA would support and work to address through engagement with members, the government and other organisations. It also aims to help to build urgency across society for tackling global warming. IEMA is now reviewing this framework to ensure the Institute continues to promote effective action, best practice and thought leadership on climate change.

As part of the review process, *the environmentalist* hosted a roundtable to discuss and debate the key emerging themes and policy directions identified by IEMA members in recent workshops. The discussion focused on five areas:

- striking the right balance between adaptation and mitigation;
- communicating climate change risks;
- dealing with embodied carbon;
- updating the greenhouse-gas (GHG) management hierarchy (see p.18); and
- providing climate change leadership.

Two sides of the same coin?

Nick Blyth, policy and practice lead on climate change at IEMA, sets the context for the first part of the discussion, asking panellists whether the balance between mitigation and adaptation in the existing climate change position statement (CCPS) is the right one. "Should IEMA push mitigation over adaptation or are they two sides of the same coin?" **Blyth** asks, adding that a number of participants in the workshops had voiced concerns over the lack of prominence given to adaptation.

Anne-Marie Warris, a sustainability consultant and chair of both the UK emissions trading group and the ISO committee on environmental management systems, has some sympathy with that view. "We aren't doing enough on adaptation," she argues. "We've been busy talking about mitigation, but we haven't been talking about how we are going to cope now that global carbon dioxide levels are around the dangerously high level of 400 parts per million."

Nonetheless, **Warris** believes that adaptation and mitigation are two sides of the same coin, and that neither approach should have priority. **Anna-Lisa Mills**, head of sustainability at the Marishal Thompson Group, however, believes that, although there is a need for both, mitigation should take precedence. "IEMA should focus on mitigation. We're already on track for a 4°C rise in global temperature by the end of the century. If we change the focus to adaptation, that might mean a 5°C or 6°C rise."

The Environment Agency's **Kay Johnstone** points out that recent reports from the Intergovernmental Panel on Climate Change (IPCC) make it clear that neither mitigation nor adaptation are sufficient on their own. **Johnstone**, who works in the agency's climate ready team, agrees that the two-sides-of-the-same-coin metaphor applies in policy terms, but not necessarily for businesses, because an adaptation strategy differs from a mitigation strategy. **Warris** agrees, describing adaptation as a process of making decisions in the face of uncertainty, whereas mitigation is focused on wanting to reduce emissions.

Jae Mather, co-founder of the Carbon Free Group and non-executive director at Newform Energy, believes that more needs to be done to highlight the costs of combating climate change effectively, which he argues is absent from decision-making processes in both the business community and government. He blames this on the short-termism that dominates business and policy thinking. "Climate change involves taking a long-term view and none of our business and political leaders can do that because their futures are based on now," he explains.

Mather, a member of the all party parliamentary climate change group (APPCCG), recounts how no cabinet or department ministers were present at a recent APPCCG presentation by the IPCC on the findings of its fifth assessment. "They weren't even in the room," he exclaims. "The reality is that climate change is not a

TALKING POINTS

decision-making factor for them." **Jonathan Foot**, chief environmental strategy and compliance officer at EDF Energy, believes the level of engagement depends on the sector. He explains that EDF Energy takes a long-term perspective because its assets typically last for 30-plus years. "We look beyond one- and five-year timeframes, and plan for adaptation," he says.

Warris focuses on how the built environment will withstand the impacts of a changing climate. "How will our cities and infrastructure survive? If a rise in sea level floods our ports how will we import the goods we need to survive, given that 92% of all goods sold in the UK come by sea?" she asks.

Kirit Patel, environment manager for DHL Supply Chain in Europe, reports that Deutsche Post DHL has studied how a changing climate will have an impact on its business up to 2050 as part of its "delivering tomorrow" series. One of the five scenarios highlighted by the research was the rise of "megacities", which he describes as being super in size and largely self-sufficient. "In such a scenario, logistics companies like DHL would need to adapt to that reality and develop transport systems that connect these cities," he says.

Companies operating key infrastructure, such as energy firms and Network Rail, were required in 2011 to submit climate change adaptation reports to Defra under the Climate Change Act 2008. Several panellists believe these reports could be useful for companies not covered by a similar statutory duty, helping them to see how climate change relates to their operations and assets.

The environment department, however, is not using them for such purposes. This, says **Mather**, is because both Defra and Decc have little influence in government. "Both departments have weak leadership and their sway over policy has plummeted as the government's interest in the environment has waned," he argues.

Phil Cumming, group sustainability manager at Kingfisher, offers a word of caution, arguing that some adaptation measures will drive up carbon emissions. "Air conditioning will be key to the ability of people in some regions to adapt to climate change, but it's hugely energy intensive." Consultant **Ben Vivian** agrees that adapting effectively to climate change raises a number of contradictions, like the greater use of cooling equipment as temperatures rise. "It is going to be very difficult to articulate simply and effectively all the complexities of adaptation in the position statement," he warns.

The art of seduction

There is consensus across the panel about the need for IEMA to ensure it strikes the "right balance" in the position statement between mitigation and adaptation. **Blyth** reflects that this requires avoiding the "trap" of an adaptation trade off and instead using both agendas to build understanding of climate change This leads the conversation to focus on the langauage that surrounds climate change. **Blyth** asks whether messages should instead accentuate some of the opportunities that do exist for positive action.

"It's worth noting that climate change brings with it business opportunities," says **Sara Fry**, senior environment, health and safety manager at engineering company Edwards. "My firm makes a range of abatement products that are in demand from several industries, such as manufacturers of semi-conductors."

Nonetheless, there is concern that these positive messages around climate change are failing to reach their audiences. **Mather** outlines two approaches to

communication: "persuasion" and "seduction". He explains that although communication designed to persuade tends to be based on evidence and logic, messages of seduction appeal to people's emotions. "Too often the climate change message has focused on the scientific evidence and it hasn't worked. Now there are 20 reports, but people believe less than they did when there were 10," he says.

Jamal Gore, co-founder of carbon management company Carbon Clear and managing director at Confluence Sustainability, argues that organisations tend to be more "logical" than individuals. He says this is important when framing communications. "I think organisations can be persuaded on climate change, particularly if the action to address it makes financial sense." He concedes, however, that if sustainability measures make financial sense they tend to be labelled "sensible business", leaving sustainability practitioners responsible for the less attractive measures. "The challenge for environment professionals is to ensure initiatives that save money, such as installing energy efficiency lighting, are also acclaimed as helping to address climate change," says **Gore**.

"Organisations can be logical," says **Cumming**, "but they are also made up of people." Even in those companies that have bought into the need to address climate change at the chief executive level, he believes that engagement tends to diminish at the next level of management. **Foot** agrees that climate action can flounder due to inertia in parts of a business. He believes that organisations wanting to improve engagement on sustainability issues need to provide the right incentives to enable all people to understand the need for change and to engage with the new culture.

Cumming too recommends introducing incentives to improve awareness of sustainability issues. "You can do as much engagement as you like, but initiatives are likely to fail if managers are not offered incentives to act," he says. **Cumming** advises firms to include tackling climate change in managers' targets.

Warris has noticed a change in the language around climate change. "The messages are increasingly about energy and energy efficiency," she says. "It is a language that businesses understand." **Fry** agrees, commenting that framing action on climate change around energy efficiency is a more positive message.

Several participants are concerned that action by leading businesses appears to be failing to filter its way through the supply chain. **Vivian**, for example, has found that many suppliers do not know what their main customers are doing on climate change. He reports that the board members of a company working with a number of well-known high street retailers were unable to name one sustainability initiative adopted by their customers. "The message is not reaching the bottom of the supply chain," says **Vivian**. "If that failure is partly down to the language then, as environment practitioners, that is our problem. We need to be clearer about the outcome."

Mills also believes that the language used by environmentalists must be clear. "We need to talk about the risk of overshooting the 2°C threshold that scientists believe is the limit to avoid dangerous climate change."

Some panellists believe that companies might be more inclined to address their climate change impacts if the language shifts away from adaptation to resilience. "It's a more business-friendly word," concedes **Johnstone** at the Environment Agency. But although she believes that is important to use business-friendly language to raise awareness, **Johnstone** points out that an approach that is based only on building resilience could miss some significant risks or opportunities for cost-effective adaptation.

Taking responsibility

Blyth is keen to seek the opinions of the panel on the issue of carbon embodied in products imported into the UK and the possibility of carbon leakage, as firms consider moving energy-intensive production processes to countries with weaker environmental regulation. He asks whether the Institute should encourage all companies to adopt a lifecycle approach that factors in consumption-based emissions.

Fry believes firms' attempts to calculate the embodied carbon in products are stymied by the lack of available data. "I find it extremely frustrating that embodied carbon is one of the areas where the necessary information is not in the public domain," she says. **Fry** acknowledges that Defra publishes some very good information on GHG emission factors and that the ICE database at the University of Bath also provides freely available information. However, she argues that there remains insufficient data to allow companies to properly measure the embodied carbon in products made in China and Russia, for example. "It would be good if those were factors available," she says. **Mather** argues: "I should be able to compare a sustainably

TALKING POINTS

sourced piece of wood from Kingfisher with a piece from an Indonesian rainforest."

This leads to a conversation on how best to generate a database containing the necessary information. **Mather** points out that the EU attempted to develop such a tool nearly 18 years ago. "The plan was to cost out the environmental impact of every major product in carbon terms, but that plan was vetoed," he says.

Mather still believes that trading blocs like the EU are best placed to establish the standard methodology for capturing such information. **Fry**, meanwhile, would like to see the GHG protocol lead on developing a database, but is wary of some of the information on carbon that it supplies. "Some of it is very out of date," she says.

Gore notes that major corporations are driving the collection of supply chain data via the internal databases of the carbon in products. "Walmart, for example, is asking its suppliers questions about the carbon content of their products. This is the kind of information that all companies need." He also draws attention to the UK's introduction of mandatory GHG reporting for quoted companies and the specifications of the scope 3 guidance accompanying the GHG protocol, both of which may help improve existing datasets.

Guaranteeing the reliability of data is a concern among some panel members. "We need to be confident that the data is reliable," says **Foot**.

A hierarchy of sorts

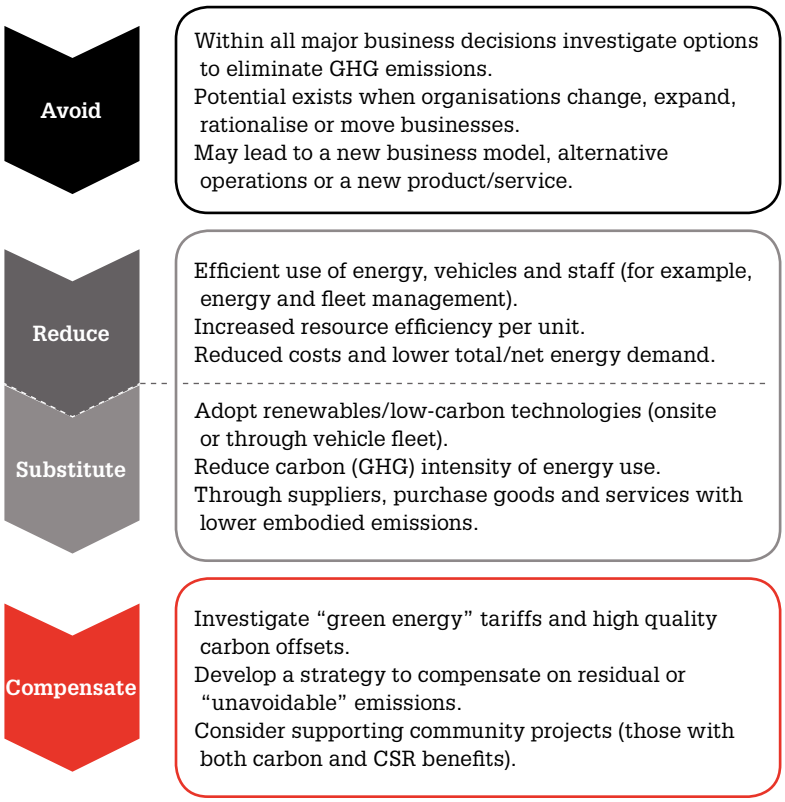
The existing IEMA CCPS contains a GHG management hierarchy (see p.18). Avoiding emissions is at the top of the hierarchy followed by reduction measures and then substitution approaches, with compensation at the bottom. **Blyth** reports that members participating in the workshops generally still value the hierarchy, though some have questioned whether the "compensate" section should still be accompanied by the red warning, arguing that purchasing carbon offsets is increasingly considered legitimate. "In some cases, offsets help to set an internal price for carbon that can incentivise avoidance and reduction measures," he says. **Blyth** wants to hear what the panellists think of the hierarchy and how IEMA can help drive activity at the top.

Vivian warns IEMA to be careful about raising expectations that practitioners can deliver the high-end measures in the "avoid" section now. "We can't. We have to accept that it is going to take time for many businesses to make decisions that eliminate GHG emissions," he argues. "We should be saying 'avoid' measures are the ideal, which companies should strive for, but also support them practically in how they can evolve to scale those heights."

One way to do that, explains **Foot** at EDF Energy, is to break down the hierarchy into what can be achieved now and what is feasible later. "As a business, we have set short- [2016/17], medium- [mid 2020s] and long-term [2030] targets. The long-term ones are about avoiding emissions altogether," he reports. "I think you need to present businesses with a model that can be broken down in this way. It makes complex issues simpler and manageable, provides challenge, and improves transparency in terms of aspiration and performance reporting."

Cumming reports that Kingfisher has a plan that includes an aspiration to net positive in key areas, including energy, by 2050. He explains that these moves are being driven by resilience and security of supply, which are major areas for Kingfisher.

The GHG management hierarchy



Gore highlights one area of concern with the existing GHG hierarchy: the structure implies a chronological sequence, suggesting that companies must complete the "compensation" section before moving on to "substitution" and beyond. "The 'avoid' actions listed in the hierarchy often have a greater impact, even if they are harder to do. There's an argument that if they are strategically important companies should do them first," he says. **Gore** believes the hierarchy should be restructured so businesses are encouraged to address all of the aspects simultaneously.

Cumming, meanwhile, cautions against moving the purchase of green tariffs from the bottom of the hierarchy, even though a recent consultation from Defra suggests it is a "reduction" measure. "I disagree with that view. Green tariffs are definitely a compensation action, not a legitimate reduction strategy."

Blyth asks whether carbon offsetting should be viewed in a similar light.

Several participants argue that there are plenty of actions companies can take now to reduce emissions and that offsetting should be used only when it is too expensive or impossible to deliver further carbon reductions. **Vivian**, however, believes that if companies engage in measures at the bottom of the hierarchy, such as offsetting and green tariffs, this can help to build support for further action to tackle emissions. "It can raise the level of understanding. Even if it is not the 'correct' approach, it can encourage firms to do more."

Mills at the Marishal Thompson Group defends the use of carbon offsetting. She explains that an insurance company she works with has a robust GHG emissions calculation and reduction plan in place, but uses offsets only for emissions it cannot realistically eliminate.

Several panellists would like to see IEMA do more to encourage firms to ensure that the offsetting credits they purchase have the biggest impact. "The most cost-effective carbon abatement measure is the $25 concrete stoves for people in sub-Saharan Africa, which reduce fuel consumption by 80%, but they don't qualify as UN-certified emission reduction projects," reports **Mather**.

Taking the lead

Vision 2020, which was developed by IEMA in 2013 to guide its activities over the next few years, requires the Institute to be more vocal on a range of issues, including climate change. How IEMA and it members provide leadership on climate change was the final topic of conversation among the panel.

Warris says practitioners should provide leadership now and not wait for international climate negotiations to reach a consensus on the way forward or for national governments to develop strategies to tackle GHG emissions effectively: "We need to step away from the assumption that there will be a politically led solution. That's not going to happen unless we take action first."

In **Mather**'s opinion, IEMA would be better placed to provide leadership if it ensures environment practitioners are knowledgeable about climate change. "They need to know the basics, what the global macro trends are, what is being done, and so on," **Mather** advises. Several panellists believe IEMA should urgently address this, citing evidence that many in the profession do not possess sufficient knowledge. One, for example, describes a "painful" recent recruitment process for junior environment positions at his firm. "The vast majority of applicants simply did not have the skills set to deal effectively with climate change issues," he says. "IEMA needs to be a trusted voice on climate change," says **Mills**, but she too has concerns about the lack of subject knowledge among some members.

Mather suggests that IEMA develops materials for practitioners that contain core information on climate change. He also advises that the Institute runs courses for senior people in businesses to raise awareness. "Most executives are 25-year-plus veterans who did not have to know about climate change to get to their positions, so they don't believe it's important." **Cumming** agrees that IEMA should target key influencers in organisations. "There are a lot of people in key positions who, quite frankly, do not have the skills or expertise to deal with environment issues," he says. "That is becoming more apparent as everyone tries to get on the sustainability bandwagon."

Meanwhile, **Gore** suggests that IEMA concentrates its efforts on developing a cohort of practitioners and senior business people to help spread the climate change message. **Vivian** advises that IEMA establishes an annual barometer to monitor progress on a range of environment issues. "The Institute could use the findings each year to start, and then develop, a conversation."

Both **Fry** and **Mills** want IEMA to develop a clear message on climate change and its impact. "What we need are good examples that practitioners can use in their professional life to really make a difference in their organisations," says **Warris**.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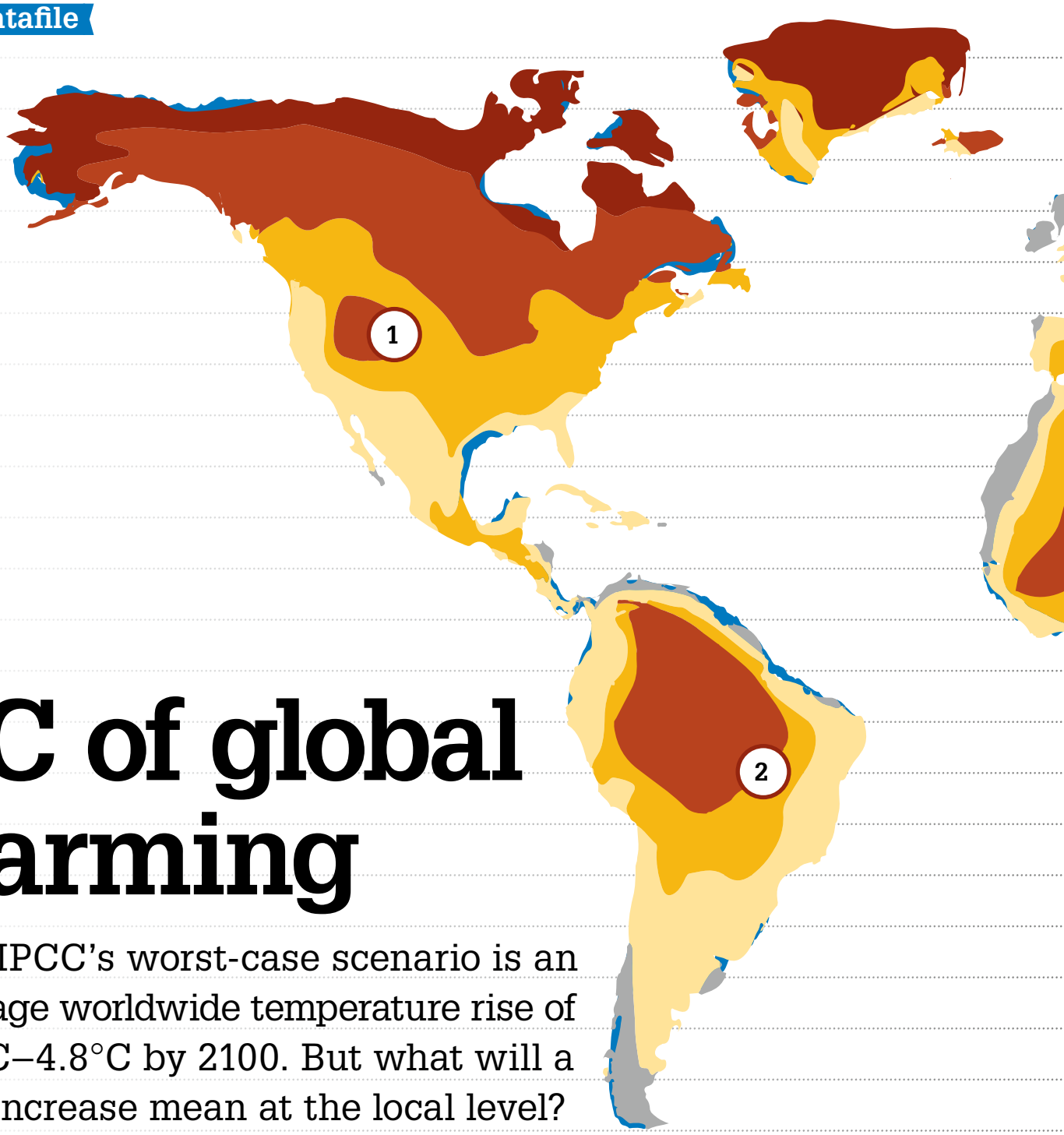


4°C of global warming

The IPCC's worst-case scenario is an average worldwide temperature rise of 2.6°C–4.8°C by 2100. But what will a 4°C increase mean at the local level?

1

The hottest days of the year in parts of North America could be up to 12°C higher with an average 4°C rise in global temperature. This would affect major cities, including Chicago, New York, Ottawa, Toronto and Washington DC.

2

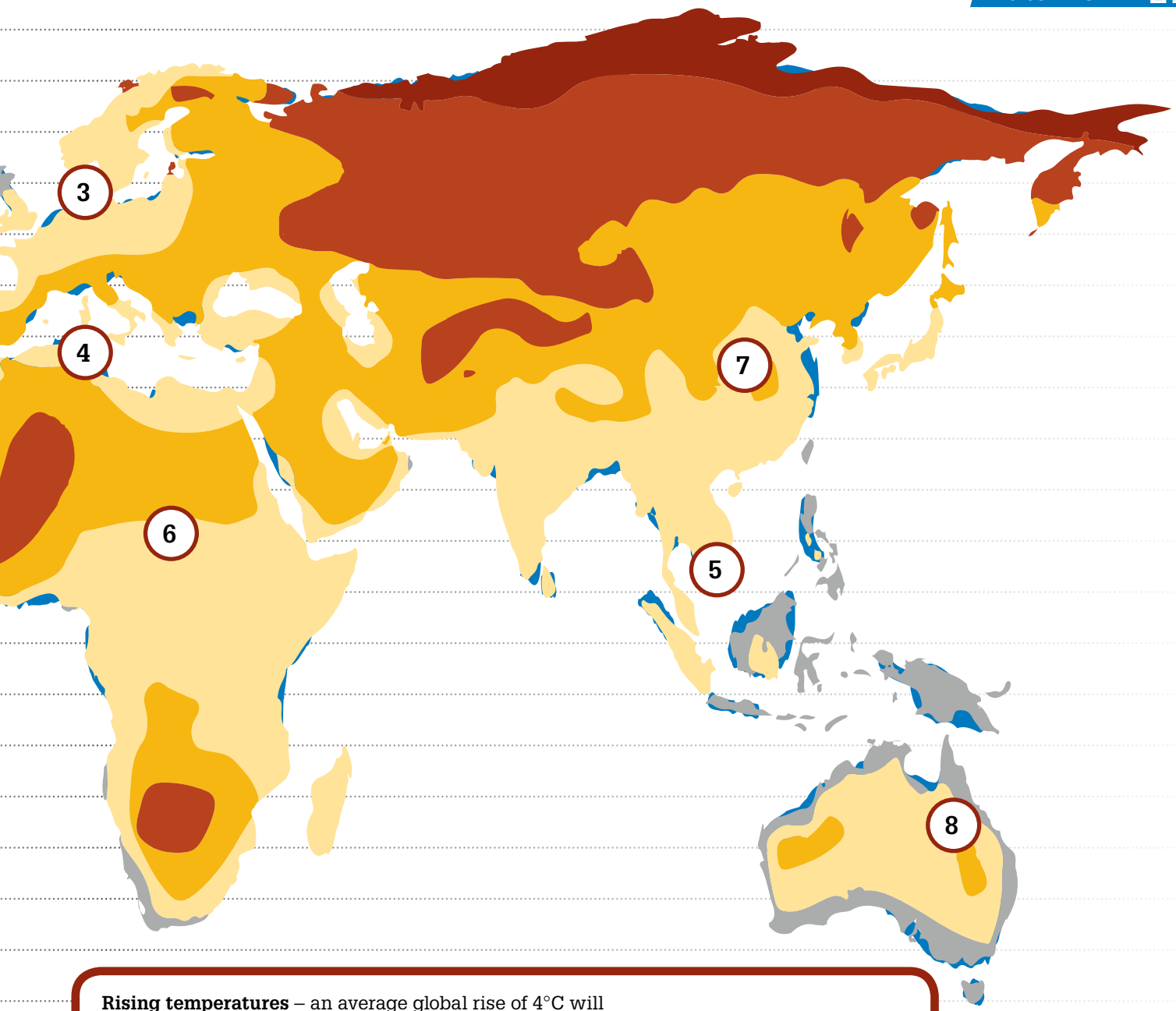
The Amazon rainforest will be at risk from drought and the outbreak of uncontrolled fires. Heightened forest-fire risk will also affect large areas of the US, southern Europe, southern and east Africa, and southern and eastern Australia.

3

Sea-level rise combined with storm surges put people and assets in the UK and the Netherlands at risk. The hottest days in some European regions – particularly those hit hardest by the 2003 heatwave, such as France – could be 8°C higher.

4

Water stress will increase in the coastal areas of the Mediterranean, where average river runoff will decrease by up to 70%. In some parts of the world – areas at high latitudes and in the wet tropics – runoff is likely to rise, increasing flooding risk.



Rising temperatures – an average global rise of 4°C will mean that some areas experience much larger increases

9°C+ 7–8°C 6°C 4–5°C 3°C

Rising sea-levels – many heavily populated regions will be at risk

5

Coastal areas of south-east Asia will be at risk from rising sea levels, which are projected to be 10–15% higher in 2100 than in 1985–2005. Sea levels around Manila, Jakarta, Ho Chi Minh City and Bangkok are set to rise by 1 metre by 2090.

6

Annual precipitation will decrease by up to 30% in parts of Africa. Drought coupled with heat will lead to significant changes in vegetative cover, putting species at risk of extinction and resulting in a severe loss of farming livestock.

7

Rice yields are expected to decline by up to 30% in China, as well as Bangladesh, India and Indonesia. Maize and wheat yields will fall by 40% at low altitudes, while soybean yields will decline across the world, including in the US.

8

Substantial loss of coral reefs is expected at just 1.5°C–2°C of global warming as a result of the impacts of the heat and ocean acidification. Scientists have predicted that most coral reefs are unlikely to survive a 4°C rise in temperature.

Information sources: IPCC 2013 (lexisurl.com/iema22915); The Met Office – interactive map, December 2013 (lexisurl.com/iema22913); The World Bank 2013 (lexisurl.com/iema22914)

Are you

Suzanne Kearney takes a look at the limitations of insurance policies in covering pollution incidents

Environmental pollution insurance policies are no longer a prerequisite only for oil companies and radioactive waste operators. Dry cleaners, paint manufacturers, prisons, schools and universities are just some of the organisations that should be taking a look at their standard public liability policies and considering whether the pollution cover is sufficient.

Specialist environment insurance policies started to appear in the UK from the 1970s. They were initially intended to protect against losses arising from accidental pollution. Although the market was slower to mature in the UK than the US, where environmental legislation has been much more draconian and led to the development of additional insurance policies, several turning points have resulted in the growth of similar policies in this country.

These decisive moments include the Association of British Insurers' introduction, in 1991, of a standard exclusion for pollution liabilities in public liability policies and, in 2000, the launch of the contaminated land regime, under the Environmental Protection Act 1990. There has also been growing pressure on companies to report their environmental impacts and the implementation of the EU Environmental Liability Directive (see box right). The Directive introduced the "polluter pays" principle to remedy environmental damage and established new liability for operators of commercial and industrial activities to prevent and rectify harm to protected species and natural habitats.

With standard public liability policies offering only limited cover, businesses need to weigh up the impact of a pollution incident as well as the often costly cleanup, and consider the implications of their standard policy not providing adequate cover.

What's covered?

Cover for environmental and pollution incidents under public and products liability insurance is limited and insufficient for most businesses. For instance, pollution coverage is almost always limited to third-party claims resulting from "a sudden identifiable unintended and unexpected incident".

If you do not have a specific pollution and contamination cleanup extension you are unlikely to be covered for the cost of any remediation undertaken by the Environment Agency, for example, and, even if you do have one, the amount payable will be limited. The extension is also likely to exclude other important losses such as cleanup of the organisation's own property – even where such remediation is required by a regulatory authority – and restoration of flora and fauna. In addition, pollution cover under policies protecting property or material damage/business interruption is certain to be restricted to loss caused by pollution associated with a defined peril, such as flood or fire.

For many pollution incidents there is potential that the existing policies will not provide adequate cover and put a business at risk of having to fund the cleanup and the restoration of habitat.

Most standard insurance policies are also unlikely to provide any cover for liabilities resulting from gradually occurring pollution or for cleanup of land or water at a company's sites. Nor will they provide any cover for environmental damage liabilities. Furthermore, where any form of pollution cover is provided under any standard policies, it is likely to be in the form of a "complete exclusion". This means that all pollution costs will be excluded from cover, unless one of a series of policy-defined exceptions applies. This is likely to place responsibility for proving that all the conditions for cover have been met on the policyholder and not the insurer. There is also the potential for grey areas to emerge, which render a business unable to prove that all the stated policy conditions required for cover have been met. To put it bluntly, an organisation is likely to have significant potential for uninsured losses if any of its activities release pollution.

What can be done?

In the past 10 years or so, new environmental insurance policies have been developed to meet the demands of modern businesses and the regulatory framework. They fall into the following categories:

- **Environmental impairment liability** (or pollution legal liability insurance) – has options to cover loss from historical contamination, loss from contamination caused by ongoing operations or a combination of the two.
- **Remediation cost cap/stop loss** – covers loss arising from cost overruns during remediation.

covered?

- **Contractors' pollution liability** – covers loss arising from contractors operating on third-party sites.
- **Business-based liability** – covers pollution and environmental liabilities arising from the activities of the organisation.

The main option is specialist pollution liability insurance to cover business sites and activities. Such policies provide cover on a single site, multi-site or portfolio basis. Cover can include, for instance, onsite and offsite statutory cleanup costs, natural resource/biodiversity damage, third-party claims for injury and property damage, as well as investigation and legal defence costs. Coverage can be provided for both new and historic pollution conditions, depending on the options available. Policies can also potentially be extended to cover business interruption resulting directly from pollution.

If an organisation needs further protection, environmental damage insurance will cover pollution liabilities resulting from a business activity on its own or leased property, as well as on third-party premises and during the transport of goods. The policy can also be extended to cover the increased cost of working – similar to business interruption – and can also cover any lender with an interest or security in the business.

As in standard pollution liability policies, the wording in environmental damage insurance policies makes no distinction between pollution conditions resulting from sudden and accidental incidents and those that gradually occur, so typically cover both. However, gradual pollution incidents can potentially sit alongside an existing public liability or products policy on a "difference-in-conditions" or "difference-in-limits" basis.

Getting covered

Once risk managers and finance directors have tested the efficacy of their current pollution insurance programmes, it may be time to look at additional cover. The cost of purchasing extra cover has fallen in recent years, particularly where the operational risks are relatively straightforward.

Although it's very unlikely that insurance is available for ongoing known pollution liabilities, it may be possible to insure known pollution or contamination risks that could result in future liabilities, and it will certainly be possible to insure unknown pollution risks with the right insurer. The principal benefit of buying specific pollution liability insurance is that it can fill in most of the potentially significant gaps in cover under standard public liability policies. It may be prudent to focus on the key risks, such as:

- liabilities resulting from gradually occurring pollution, especially historical pollution;
- cleanup of pollution of land or water at your sites;
- environmental damage liabilities under the Environmental Liability Directive; and
- business interruption loss resulting from pollution.

Knowing what is at stake is the first priority. Environmental liabilities are here to stay. For a small investment, a suitable extension may be purchased, which will allow a business to continue to trade through any major pollution incident and minimise its bottom-line costs.

Suzanne Kearney is head of liability and specialty services at Davies Garwyn. davies-group.com

The impact of the ELD

In a recent update, Lloyd's, the specialist insurance market, warned about the increasing focus by regulators on ensuring polluters pay for any environmental damage. Although it acknowledges that the implementation of the Environmental Liability Directive (ELD) is still in its infancy and its impacts are, to an extent, untested, Lloyd's points out that the ELD puts the onus on companies to return the environment to its original state. It says a company can now expect to pay between 10 and 40 times more for remediation under the ELD than it would have done before the Directive came in. With environmental damage no longer limited to pollution, this has also increased companies' exposure, says Lloyd's.

Insurance premiums

"Organisations that suffer a major loss as a result of an environmental incident are likely to face increases in their insurance premiums. However, the issues surrounding this area of insurance remain nebulous as the market continues to develop. Clearly there are certain types of business that are more likely to face environmental exposures and risks. Some companies will have a heightened exposure as a result of their emissions to air or waste management activities, while others are more likely to face oil and chemical spills or the discharge of contaminated water from cleaning or cooling operations. Those businesses with no operational processes, particularly landowners and property management companies, must also be aware of the environmental liabilities they could assume from the activities of their tenants and neighbours, as well as from any industrial processes that took place at the site in the past."

Simon Taylor is executive director at Clear Insurance Management

Bright young things

the environmentalist learns about the innovative features installed at the new head office of the NUS

Sustainability is a key word at the National Union of Students (NUS) and the organisation has helped to embed a number of innovative initiatives in the higher education (HE) sector. One of its most successful is "green impact", an environmental accreditation and awards scheme, bringing together HE staff and students with their wider communities to showcase positive changes in environmental practice.

Given the NUS's strong record on sustainability, it is no surprise that its new head office in London is an ecobuilding. The environmental elements that are incorporated in the retrofit of Macadam House near King's Cross range from the mainstream, such as a remote-access building management system (BMS), to a unique "native" green wall to encourage local biodiversity and an ivy habitat wall to help reduce air pollution. In addition, a pioneering LED lighting rental agreement with Philips includes a financial incentive for the Dutch company to help the NUS save energy.

Leading by example

Macadam House, which has been awarded a BREEAM "excellent" rating, is an illustration of the high priority that the NUS affords sustainability. As James Agombar, ethical and environment manager, says: "It would have been hypocritical of us not to develop a building with the highest-possible environmental credentials. We set out to make our new HQ a demonstrator of what an eco-office should look like, and plan to make it an education piece on sustainability for our staff, students, volunteers and visitors."

Although the building is a tangible testament to the NUS's commitment to minimising its carbon footprint, Agombar says that its design deliberately set out to incorporate the many sustainability features in a way that does not necessarily stand out as something special. "The aim was for Macadam House to feel like a modern building rather than an 'eco' one because we wanted everyone to think that its environmental features should be the norm," he says. "Students are the future leaders of society and it is an opportunity for them to gain an understanding of what buildings of today and the future should look like."

Some of the building's groundbreaking environment features, therefore, are not as visible as they could be. The green walls, for example, are sited at the back of the building rather than in a place that would have greater visual impact. However, the current position is more suitable for the plants, which are striking when in full bloom – and so this was the decisive factor in determining where the green walls were situated.

The 15-year "pay-per-lux" rental agreement means that Philips is responsible for the lighting and the NUS pays a quarterly fee based on the amount of energy it consumes.

In every office space there are "carbon culture engagement screens" linked to the building management system, which display up-to-date energy consumption across Macadam House.

Seeing the light

Under its agreement with Philips, the NUS rents state-of-the-art LED lighting from the supplier rather than buys the fittings. The "pay-per-lux" procurement deal gives Philips responsibility for the lighting over 15 years, while the NUS pays a quarterly fee based on how much energy it uses.

"The pilot we have developed with Philips includes a financial incentive for the company to help us save energy as part of the rental agreement; if we use more energy than the threshold we have agreed, Philips reimburses some of the rental," says Agombar. "So Philips had an incentive to put in the most efficient and best designed lighting, and has an ongoing incentive to help us monitor and manage it."

Agombar estimates that it would have cost the NUS about £120,000 to procure the lighting system – too high a price for a registered charity. There is LED lighting throughout the building, with combined daylight and motion sensors and a central management system to change sensor and dimming settings. In the 1,200m^2 of office space, only 7.7kW of lighting is used for the 784 light points, achieving significant energy and carbon savings compared with traditional office lighting installations.

The NUS and Philips spent a year developing the "pay-per-lux" deal. Agombar says it is "all credit to Philips" and the company's forward-thinking approach that procurer and supplier could broker such a progressive arrangement. "It's a win-win situation because Philips benefits from guaranteed income for 15 years, while we benefit from the most energy-efficient LED lighting on the market, as well as the ongoing expertise of Philips," says Agombar.

Because the deal includes service and warranty obligations, Philips engineers are available to help run the system. The supplier monitors the lighting online and reports back regularly to the NUS. Philips also advises on any new technologies that could deliver enhanced energy savings for the union.

Cradle-to-cradle carpet

Another pioneering feature of the new building is the carpeting. The carpet tiles are made and fitted by Desso, and are certified "cradle-to-cradle" products, which Agombar describes as "the next level in recycling". It means that no harmful materials go into the flooring's manufacture and every component in the carpets can be broken back down into its parts and reused in the manufacturing process.

In an agreement that mirrors the "pay-per-lux" deal with Philips, the NUS rents the carpet tiles for Macadam House from Desso. Agombar explains that fitting tiles rather than a whole carpet is more efficient and sustainable because they can be replaced individually if damaged. The rental aspect of the procurement model also inspires the manufacturer to produce hard-wearing flooring that will last, although the cradle-to-cradle nature of the design ensures the product's enduring sustainability.

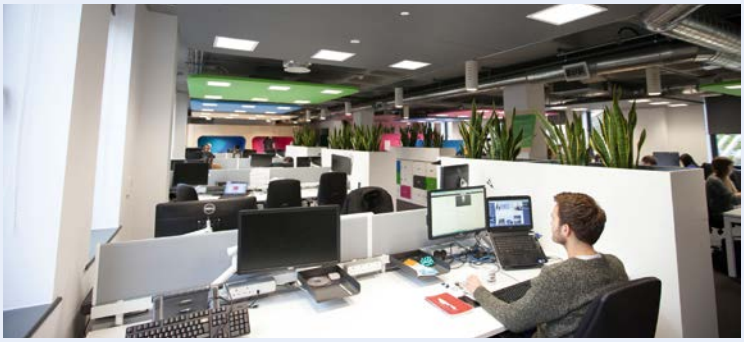
Constructive engagement

The NUS follows a philosophy of what it calls "constructive engagement" to encourage its stakeholders, including staff and volunteer students, to behave in a sustainable manner. The new building is viewed as an opportunity to further this agenda and the NUS is working with students from Westminster Kingsway College to engage staff and visitors. For example, in every office space there are "carbon culture engagement screens" that are linked to the BMS and display up-to-date energy usage throughout the building. There is healthy competition between the two floors of office space to achieve the lowest carbon footprint.

In terms of waste, there is only one waste bin to a floor and recycling points are available throughout the building, to encourage behaviour change. Recycling services also include food waste.

Macadam House has 27.6m² of "green walls" – one dedicated to native species and another to biodiversity. The building also boasts a 74.3m² ivy habitat wall, which is designed to help reduce local air pollution.

Key sustainability features of Macadam House



Renewables
- A solar photovoltaic system with a capacity of 6kW.
- A solar thermal system which provides hot water.

Biodiversity
- Green roofs on the building's bike shed and on a slab by its lightwell.
- Bird and bat boxes have been installed, as well as measures to support insects, including clay and reeds for nesting, a butterfly and insect hibernation box and an underground bumblebee box.

Energy efficiency
- Heating and cooling is via an efficient variable refrigerant flow (VRF) heat pump system, which provides four units of energy for every one used. The VRF is able to provide heating and cooling simultaneously by moving excess heat from one area to another requiring heat. The VRF's fan speed can be adjusted and thermal zones configured to allow for flexibility of the office space in future.
- The ventilation system has CO_2 detection, which ensures ventilation matches occupancy levels.
- The building generates no nitrogen oxide emissions because no gas is consumed on the premises.
- The retrofit included installating high-efficiency double-glazing and insulation measuring 150–300mm.
- The NUS has embraced server virtualisation by reducing how much computer equipment must be kept cool.
- Print Manager Plus software has been installed to set printing targets and reduce paper and energy use.
- Instant hot water machines have been fitted on hard-wired timers, so there are no kettles in the building. Also, only AAA*-rated fridges and ambient-air hand driers have been installed.
- The lift uses variable speed drives and efficient controllers.

Water efficiency
- 3,000 litres of rainwater is harvested to flush toilets.
- All sanitaryware has flow restrictors and thermostatic mixing.
- Sub-metering for cold water has been installed on each floor and is linked to the building management system (BMS).
- The BMS can detect water leaks by comparing the out-of-hours and office hours consumption rates, as well as historic data.
- Water shut-off valves on each floor are linked to the BMS.

Recycling
- 90% of the construction waste during the refit was recycled.
- Each floor has multiple recycling points and only one waste bin.
- Recycling services are provided by Paper Round and include food waste collection.

After feedback from staff and students, the NUS has worked closely with IEMA to refine its "green impact" training workshop and resources, and it is now an IEMA-approved training provider for the Institute's course, "Introduction to auditing and evaluating environmental behaviour change".

The NUS has so far trained 1,300 auditors to support its teams in embedding "green impact" into their universities and colleges. The union also wanted to ensure that its student volunteers leave the training course with something to add to their CV, and with the knowledge and skills to lead a more sustainable future, personally and professionally. "Our ongoing relationship with IEMA will help us to build stronger links with the professional body and its members, which, in turn will positively influence our work with staff and students across all our initiatives and communities in the HE sector," says Agombar.

Moving in…

NUS staff have been working in their retrofitted head office for just six months, so it is early days to assess the building's environmental performance compared with the previous headquarters. "We really need at least a year's full data to make a meaningful comparison but the initial signs indicate a much-reduced carbon footprint," says Agombar.

He is particularly pleased with the progress of the pay-per-lux arrangement with Philips and says that a collaborative partnership has emerged.

When asked whether there were any aspirational environmental features that had to be ruled out from the refurbishment, Agombar names just two: the NUS investigated the possibility of installing a lift that generated electricity but, with only a few floors to travel, it would have taken at least 60 years to gain any payback on the investment. "We also asked, belatedly, for staff key cards that would turn off electricity as do hotel room cards, but it was too late in the project to incorporate such a system," says Agombar.

Because it is so early in the life of the new office, the sustainability features are still being tweaked to optimise their performance. For example, the sedum planted on one of the green walls did not flourish in the wet winter so the contractor, Scotscape, is considering an alternative planting scheme.

…and moving on

Bearing in mind the extensive raft of sustainability features included in the retrofit of Macadam House, the financial outlay was surprisingly low, with a total investment of about £200,000.

Agombar's advice to other organisations considering a similar refurbishment is to pay attention to every detail of sustainable design and think beyond the parameters of an accreditation scheme. "There is always room to innovate, such as with our agreement with Philips," he says.

"If a charity on a small budget like the NUS can achieve such a sustainable building, so can any organisation," argues Agombar.

the environmentalist

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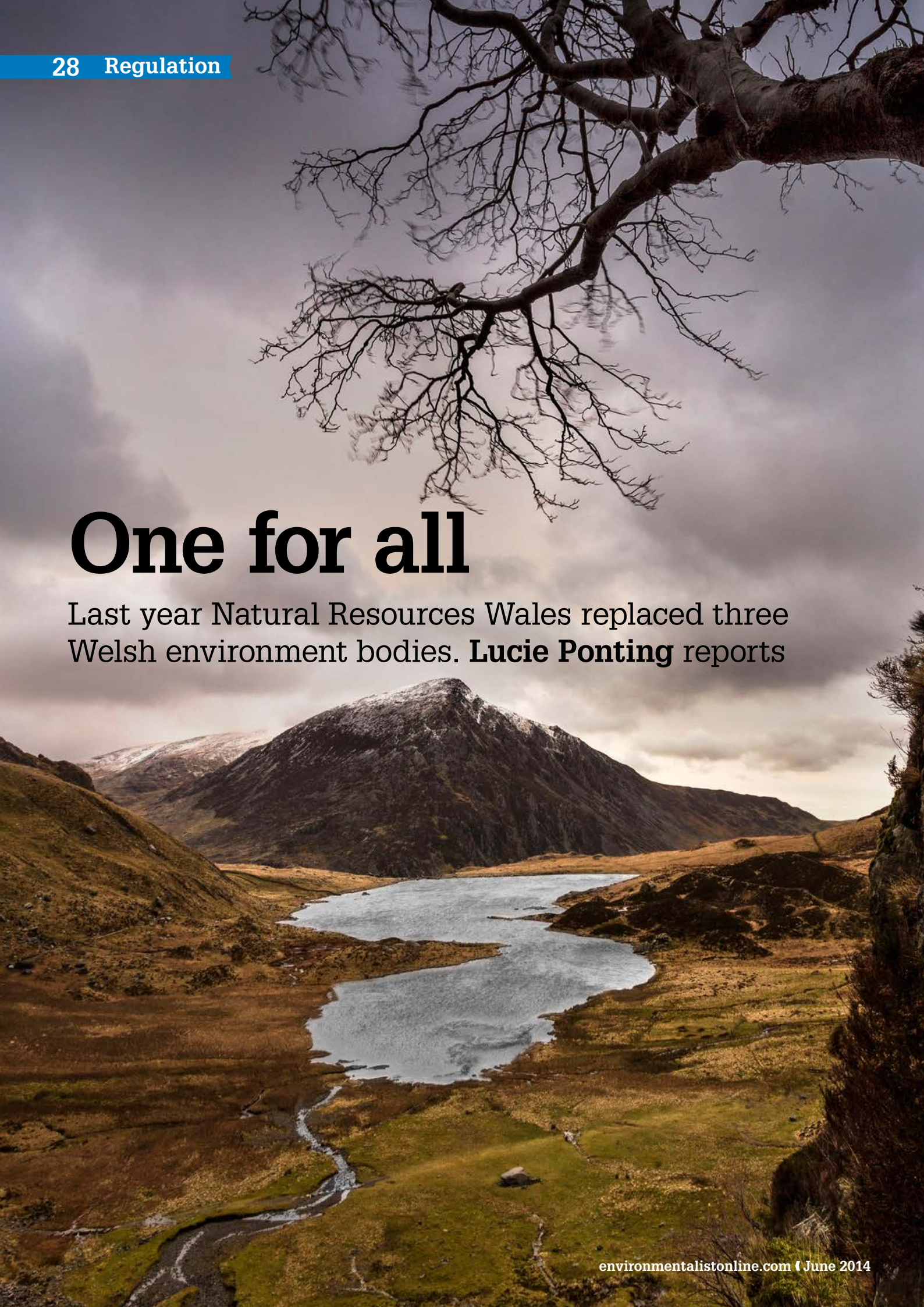


One for all

Last year Natural Resources Wales replaced three Welsh environment bodies. **Lucie Ponting** reports

Launching Natural Resources Wales (NRW) a year ago, its chief executive, Emyr Roberts, promised a "fresh approach and new direction". The body, which brought together the Countryside Council for Wales (CCW) and the Welsh arms of the Environment Agency and the Forestry Commission, pledged to manage the country's natural resources more sustainably and, through greater efficiency, generate benefits worth £158 million in its first 10 years.

Perhaps inevitably, NRW has spent much of its inaugural 12 months focusing on delivering the core business and regulatory activities of its legacy bodies and melding these to create a functional single entity. At the same time, it has been developing some innovative projects that exemplify an ecosystems approach to environment management.

First year priorities

"One of our priorities – because the organisation was formed pretty quickly – was to ensure we continued to deliver," explains Ceri Davies, NRW's executive director for knowledge, strategy and planning. "People depend on us for things like flood defences and permitting, so it was key that we didn't just stop and reflect. But we're also ambitious and we recognise a unique opportunity to look at new ways of working."

NRW employs about 1,900 people and, with an operating budget of £177 million, is the largest body sponsored by the Welsh government. In its first year of operation, NRW committed to:

- protect people and homes from flooding, pollution and other environmental incidents;
- maintain and improve the quality of the environment, including the promotion of nature conservation, access and recreation;
- provide opportunities for people to learn about, use and benefit from Wales's natural resources;
- support the Welsh economy by using natural resources to support jobs and enterprise;
- help businesses understand and work on their environmental, social and economic impacts when bringing forward proposals; and
- help to make the environment and natural resources more resilient to climate change and other pressures.

What no one could factor in to the early plans, however, was the effect of last winter's storms. "Flood defence maintenance is a key role for us," says Davies. "We obviously didn't have the same issues in terms of scale and impact as England, but we did experience significant flooding and dealt with it effectively."

During the storms in January 2014 alone, staff issued more than 100 flood warnings to at least 28,000 properties. And despite the persistent threat, flood defences kept an estimated 74,000 homes safe.

Throughout the period, NRW operated much the same response systems as its legacy organisations. "In the first year, you'd anticipate that," says Davies. But she adds that, because "the people on the duty roster operating those systems are now drawn from all the bodies, that gives us more resilience in terms of numbers we can call on and the new ideas they bring". The unified body is also still working closely with the Environment Agency in England. "Clearly, people live in the areas on the boundary and the environment doesn't respect boundaries," adds Davies. Rainfall on the Welsh mountains also has a knock-on effect in English counties.

"We're maintaining the service but we're also using the expertise in the organisation to broaden our contacts," she explains. The former CCW's strong links with the agricultural community were particularly useful in keeping open the lines of communication during the flooding. And, since then, NRW has asked farming unions to keep informing it about areas of concern or where they think dredging is required.

"The dredging question isn't as simple as it sounds," says Davies. "It can be a very damaging activity, so we have to make good, informed decisions." NRW is also liaising with local authorities, which manage the smaller streams and other watercourses, to find solutions that consider the "whole environment".

Ecosystem confusion

Outside of delivering the core business, much of the work NRW was involved in during its first 12 months centred on developing its ecosystems approach. Described by the 1992 UN Convention on Biological Diversity as "a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way", the approach takes biodiversity action beyond a single species or habitat and recognises humans as an integral part of the system. The NRW says this way of dealing with biological diversity involves considering and regulating the environment in Wales as a whole, rather than dealing with individual aspects; it will help weigh up and set priorities for the competing demands on natural resources.

Davies explains that the need to develop an ecosystems approach was one reason for bringing together the three organisations under the NRW banner. "And we're now working with the Welsh government, environmental organisations and businesses to define what it looks like in reality."

Discussions about flooding have helped this process. "Rather than looking just at defences at the river bank or coast, we've moved on to asking how we use the environment upstream to hold water back," says Davies. NRW has 7% of the land of Wales directly under its management as forestry, so it has been looking at what it can do to contain the water in the upland areas. "It's obviously not the answer to all flooding," explains Davies, "but perhaps it could level out some of the peaks."

More broadly, public feedback suggests the ecosystems approach confuses many people. "Because of the terminology, people sometimes think it is only about the environment," says Davies, "but it's about the environment, economy and society, and all of those choices being made together." The easiest way to address the confusion, she suggests, is to provide practical examples, so NRW has set up three trials

around the Dyfi, Rhondda and Tawe rivers to develop the tools required. These trials link land and sea to examine issues from a "whole catchment" perspective, rather than looking separately at flooding risk, agricultural needs and water quality.

Another example of the approach in action is the way in which NRW dealt with a potential permitting issue in south-west Wales. A dairy and creamery, First Milk, wanted to expand but there were doubts about the ability of the catchment to absorb more discharge from the effluent system. "Working with the company, we involved the farmers who supply the milk," Davies says. The farmers were persuaded to alter their agricultural practices so they presented less of a burden on the catchment, allowing the creamery to take in more raw materials from the farmers and produce more products, which added value to the economy.

In the round

The extraordinary storms during the 2013–14 winter were not the only first-year challenge for the new body; NRW also had to deal with the effect of *Phytophthora ramorum* infection in larch trees in the forests it manages for the Welsh government. So far, two million infected trees have been felled.

In keeping with NRW's holistic ecosystems approach, the felling has been carefully managed. Davies says that NRW looked at the process "in the round", considering associated environmental problems – such as water run-off and silt contaminating streams – as well as social and economic impacts. Trees that are felled are replaced with new species to make future woodlands more diverse and resilient.

"We needed to ensure NRW didn't flood the market with larch and artificially depress prices, so we tried to manage work in a sustainable way and agree long-term contracts so businesses could gear up for the amount of timber processed," says Davies.

Five 'good' work programmes

The 2014–17 corporate plan from Natural Resources Wales outlines the following five work programmes:

Good knowledge – gaining wisdom and understanding of natural resources in Wales and how we affect them; using evidence and applying learning from experience so that we make good decisions.

Good environment – ecosystems are resilient and secured for the future, wildlife and landscapes are enhanced, and the use of Welsh natural resources is carefully managed.

Good for people – ensure people are safe and enjoy and benefit from Wales's natural resources and understand their relevance in their day to day lives.

Good for business – a "location of choice" for business and enterprise, and a place where best practice environment management is adopted and encouraged.

Good organisation – well led and well managed, with suitably skilled and experienced staff and effective underpinning systems and processes; transparency in its decision making and continuously improving its service to customers and partners, benchmarking itself against the best.

NRW is one of the biggest providers of outdoor recreation in Wales, with 550km of mountain bike trails and 450km of walking trails, for example, so it also had to take into account how recreational facilities would be affected by the tree felling. A pioneering treatment to inject a herbicide to stop sporulation has proved helpful in slowing the spread of larch disease and allowing NRW to plan felling and minimise its impact.

The first 12 months also saw the introduction of a new approach to hydropower developments, a controversial policy area for the former Welsh arm of the Environment Agency. "We decided to look at what the environment can deal with, and direct developers to areas where they would have least impact, rather than waiting for applications to come in and then getting into difficulties over sensitive locations," explains Davies.

Most recently, NRW has reviewed its internal salmon stocking policies. "Our hatcheries are the result of past activities," says Davies. Historically, these were set up to replace the loss of a piece of habitat for fish migration. But evidence is growing that hatchery reared young salmon have a much lower survival rate than young wild fish and that introducing them into rivers can harm wild populations. The review brought together former Environment Agency staff who were responsible for the salmon stocking and ex-CCW people who are experts on the Habitats Directive and the impacts of hatchery reared salmon on wild populations. "We looked at our operations and questioned them from the ecosystems perspective," Davies says. NRW is now consulting on plans to stop rearing salmon and instead shift resources into improving rivers that can sustain fish and are fit for the future.

Moving together

Beyond NRW's practical "hands-on" work, one of its main first-year objectives was to develop a corporate plan. In developing this, NRW stood usual practice on its head. "Instead of writing a draft and then consulting on it, we started with a blank sheet of paper and organised stakeholder events all over Wales," says Davies. "We explained our role and responsibilities – the things we have to do – but then asked 'what do you think we should be doing as an organisation?'"

Davies admits she was slightly nervous this might produce a long list of demands. But her fears were not realised. "What came out of the discussions was that people were more interested in the way we work, and how we work with the organisations we regulate or work with collaboratively," she says. "It was much more about how they wanted to work more closely with us and how we, as an organisation, needed to be less precious about providing everything ourselves." Reflecting the feedback, the new plan, launched in April this year, focuses on the delivery of five "good" programmes (see panel, left) covering the pillars of sustainability.

An obvious challenge in bringing together three long-established organisations lay in confronting their entrenched views and traditional methods, while maintaining their expertise across many policy areas. When NRW was first mooted, there were also concerns that the interests of one or more of the legacy organisations might be sidelined or subsumed.

Davies says, however: "Even though a lot of our people are experts in their field and have been employed in certain roles for a long time, what we've found is that just bringing them together has led them to think about their own work in a different way and ask how they can help move things forward."

Many of the first year's achievements, she believes, have stemmed from teams drawn from all parts of the legacy bodies. "Dealing with the larch felling would have been an out-and-out Forestry Commission activity previously," she says. "But we pulled together people with knowledge of the environment and the local economy, as well as people from the old agency with incident management experience." She hopes the corporate plan, which focuses on one organisation with a single voice, will help to cement the new culture.

Future plans

Looking ahead, further development of the ecosystems approach will remain a priority for NRW. "We'll continue to focus on understanding the natural resources we have in Wales and the pressures on these, as well as the opportunities and potential benefits of managing them well," says Davies. "We'll also be looking at all our business practices to ensure that NRW is regulating and advising in the simplest streamlined way; that we're being clear and that we're working collaboratively."

Another challenge the organisation may face is criticism that it is too close to the Welsh government. But NRW chief executive Emyr Roberts recently told BBC Wales that although NRW is the principal adviser to the government on the environment and works closely with it on some things, on others it is independent. In particular, he highlighted NRW's advice on planning and its permitting work – it issues more than 10,000 environmental permits a year.

Although the sheer extent of NRW's remit could limit its ability to operate successfully across all areas, there is little doubt that the organisation is breaking new ground. As scientists, policymakers and the general public change the way they view the environment, other regions and countries may soon be looking to the Welsh model for new ideas.

"We believe we're unique in terms of our breadth and mix of responsibilities," says Davies. "Legislation in the past has served us well in terms of specific concerns, such as air or water quality, but the issues we're facing now, in dealing with things like climate change, are much more complex and integrated. You can't just fix it by looking at it from a single perspective; you can only do it by saying 'how do we look at the whole system to enable us to become more resilient?'"

Lucie Ponting is a journalist specialising in health, safety and environment management.

How we do things around here

Penny Walker examines some of the different ways to think about the culture of your organisation

Organisational culture is an invisible force that can blow you off course or put the wind in your sails. It is there – whether you can see it or not – and if you're not succeeding with your sustainability efforts, perhaps it is the organisational culture that is the problem.

Understanding organisational culture

In his book *Organisational culture and leadership*, Edgar Schein defines organisational culture as the "pattern of shared basic assumptions". He says that these influence how people in an organisation behave and how they make sense of the world. That is why organisational culture is often described as: "the way we do things around here".

Initially, the basic assumptions of the founder and the early leaders of an organisation set its culture. The choices they make early on underpin and colour everything that comes after – at least, they do if those choices lead to the organisation's success and survival. For example, do they work silently in an office with the door shut, or does "work" take place in noisy debate? If there is a choice between opportunities that make the most money and others that are interesting, pioneering or socially valuable, which path does the organisation follow? What is considered long term – a week, a month, one year or 10 years?

Organisational culture – that is, assumptions about what the world is like, what the organisation is like and how the two interact – is also created and revealed at moments of crisis. If income drops, do people get laid off or reduce their hours of work? Is communication with the outside world open or defensive? Is the unexpected greeted by research with customers, stakeholders and benchmarking, or is the response to look to internal experts, first principles and core ethics?

The specifics of an organisation's culture will also be influenced by the wider national culture and by the sector it operates in – engineering, law, campaigning, regulation or retail, for example.

As the organisation grows and new people come in, they either adopt the culture and thrive or stay uncomfortably and then leave.

As long as the organisation continues to function well enough internally and succeeds sufficiently to survive, the original culture will persist. As the organisation changes from a start-up to an established institution, the culture may shift further. Subcultures may arise related to people's places in the hierarchy or their basic job – customer- or user-facing, design or management, for example.

If organisational culture, including subcultures, is a pattern of shared basic assumptions, what is the nature of these assumptions? According to Schein, the basic underlying assumptions will be about:

- **The nature of time** – what constitutes long term and short term? Is time linear or cyclical? Can time be "used" or "wasted"? How controllable is time?
- **The nature of space** – what does it mean to "have" space? How much is enough? How is it allocated?
- **The nature of reality and truth** – how do we know something is real or true? Is it through argument, evidence, gut feeling or by listening to an expert?
- **Human nature** – what is good or bad? Can people change? Should we motivate or control? Can someone's essence be seen in what they achieve or who they are?
- **Human relationships** – are we basically cooperative or competitive? Do we value respect or intimacy? Are we concerned primarily about the group or the individual?

William Bridges, in his book *The character of organisations*, applies the same underlying theory as the famous Myers-Briggs personality type indicator to describe what these shared assumptions might consist of. They include:

- **extraversion or introversion** – primarily oriented towards markets, competitors, regulators and stakeholders; or primarily oriented towards its own vision, competences and culture;
- **sensing or intuition** – in this context sensing means gathering information about details and the "here and now"; intuition focuses on the future, the big picture and the possibilities;
- **thinking or feeling** – decisions are made based on consistency, efficiency and in an impersonal way; or based on individuality, creativity and the common good; and
- **judging or perceiving** – judging organisations reach clear, firm decisions with definitions and closure; perceiving ones keep their options open.

An organisation's culture need not be at the extreme of any of these pairs. What you look for is the broad preference. Bridges' approach provides 16 categories that an organisation might fall into, while Schein's is more open-ended. The latter deliberately resists creating a list of "types" of organisational culture.

What difference does culture make?

Whether you call them basic assumptions or character, the things that make up organisational culture can be profoundly influential on what is done and how.

For example, a judging organisation would rather tie down the budget for a small onsite renewable energy project it can deliver on its own, than leave it open while it waits for the results of discussions with other nearby organisations – even if this means missing out on the chance to achieve much better overall results.

In an organisational culture that assumes that you discover the truth through debate, the sustainability strategy will be developed through workshops and various committees until it is signed off at the top. If the culture assumes the truth is "out there" waiting to be discovered, the strategy will be based on benchmarking and an analysis of external drivers, written by a small group of experts and supported by referenced evidence.

What's the culture of my organisation?

The problem is that underlying culture is so embedded, and feels so non-negotiable to the people who share it, that it can be difficult to perceive clearly.

You can turn understanding organisational culture into your life's work. Tempting as that may sound, there are some short cuts. Bridges' book contains a questionnaire, while Schein's includes a design for a one-day workshop. Either can be a great place to look for a method of diagnosing the current culture.

Meanwhile, there are some places where organisational culture reveals itself. If someone is new to the organisation, they will not yet have learned the culture. Perhaps they will stick out a bit – saying things that do not fit or doing their job exactly as suggested by the company guidance, rather than in the spirit of the culture. By noticing these mismatches, you will get some clues about your organisation's culture.

Other places to look are the discrepancies between what people say the organisation does (its stated priorities or values) and what it ends up doing in practice (because the unspoken underlying assumptions are so strong). For example, a retailer might promote equality and diversity in its workforce, but market its science kits at "boys" and its cookery kits at "girls". Exploring this discrepancy might uncover a basic underlying assumption about intrinsic differences between genders. But do not take this for granted: the assumption may be something quite different – for example, that you have to sell what you think the market will buy rather than shift the market.

Interpreting the "artefacts" of culture – observable actions and physical objects – is not straightforward, and Schein recommends a workshop carries out the analysis rather than leave it to one person, however expert.

Culture and sustainability

Organisational culture can be a tailwind or it can push you on to the rocks. If your organisation's environmental performance is already as good as you want it to be, you may not need to study its culture in any great detail. But if your well-crafted sustainability plans seem to be adrift or in choppy waters, it is worth understanding your organisation's culture better so that you can harness it.

Penny Walker is an independent sustainability consultant. Read her blogs at penny-walker.co.uk/blog.
In a forthcoming article she will focus on how you can harness your organisation's culture to drive change and ask whether you should ever try to change a company's culture.

Clarity is key, says IEMA CEO

In his latest blog, IEMA's chief executive Tim Balcon has announced a forthcoming review of the Institute's membership levels. Balcon discusses the need for businesses worldwide to be able to recognise, understand and engage with what the IEMA membership ladder represents. He explains that the language currently used by IEMA to name and describe each membership level does not fully resonate with global organisations. Balcon reveals that IEMA will launch a member and employer consultation later in 2014 to develop an improved membership structure, which provides greater clarity and a better understood lexicon. The full blog is:

"The business world is now looking at our profession differently. At the same time our profession is changing; IEMA's recent acquisition of the Global Association of Corporate Sustainability Officers (GACSO) is evidence of how the environment is absolutely not a one-dimensional profession.

With their eyes on matters of ethical supply chains, human rights and conservation issues, GACSO members and others joining us are bringing new conversations to the IEMA table.

Of course the core elements of our day-to-day work – implementing environment management systems, compliance issues, maximising efficiencies – are all still invaluable to modern business, yet our profession is clearly expanding to become something much more holistic. While the world around us is waking up to the existing and emerging challenges, what we must do is be more open about our profession.

Being open doesn't just mean demonstrating what someone in an environment or sustainability role does all day, or even what they achieve. It also means ensuring businesses and employers can understand, engage and be enthused about our unique profession. Using unnecessary jargon or exclusive terminology won't do us any favours in the long term. Being more transparent about what we mean, what we do and what we call ourselves will, however, pay huge dividends.

With that concept in mind, IEMA is reviewing the professional structures it – as your professional body – has in place to ensure they remain fit for purpose. In 2014 and beyond, what does "Associate" or "Full" member really mean to employers? Anything? Everything? We just don't know, and I think it's time to take a step back and assess whether the membership ladder that was established when IEMA was formed in 1999 is still valuable.

To be on the front foot on this we are starting to review our membership structure, mapping it against a changing economy, shifting policies and the skills our members have. Doing this ensures that our professional hierarchy is something that businesses worldwide can identify with. Personally I feel our membership structure – at least the names our membership levels have – needs to be simpler and more engaging. You may think differently, so this is an issue on which I need member-input. By the end of 2014 we will have met, surveyed and consulted with members across the globe to try to achieve some consensus on how our membership can be redefined to give you the recognition and profile you deserve, while offering something that is meaningful, useful, understandable and attractive to employers.

Perception is reality so let's work together to ensure that the business community better understands our profession. Getting the words right seems like a good place to start."

The blog is available online at iema.net/news. The consultation on IEMA's membership will start in the autumn and all members will be invited to participate in the weeks ahead.

New course focuses on changes to 14001

With almost two-thirds of members telling IEMA that environment management systems (EMS) are a part of their role, the Institute has worked to ensure that everyone have access to the right consultations, updates and training on the revisions to ISO 14001.

The updated 14001, the world's leading EMS standard, is due to be implemented in 2015 after a thorough consultation and review, to which many IEMA members made significant contributions. To support those with EMS responsibilities through the implementation next year, IEMA will launch a tailored training course later in 2014. "Making the transition to ISO 14001:2015" has been designed to give learners an understanding of the revised standard, enabling them to evaluate and implement changes with the aim of improving their organisation's EMS and environmental performance.

Learners will also benefit from being issued with a "gap analysis" tool to assist in the planning, management and transition to 14001:2015.

Full details of the course, including learning outcomes, providers and costs, will be made available over the next few months, both online at iema.net/training and in future issues of *the environmentalist*. IEMA executive director Martin Baxter, a member of the working group responsible for updating 14001, is due to outline the main changes at the EMS forum on 26 November.

Professional development sessions at Energy Expo

IEMA members have the opportunity to get a one-to-one professional development session at a leading industry event taking place in London this month.

The Institute is a key partner in delivering the Energy & Environment Expo at the ExCel on 17–19 June. Throughout this free event, IEMA will be holding professional development surgery sessions where members can discuss their training, learning and development options with the Institute's professional development adviser, Dipvandana Mehta.

So, if you need advice on getting the right training or upgrading your membership, be sure to visit IEMA's stand – number O1750 – at the ExCel, during the three-day event.

As well as the opportunity to receive advice, Expo delegates will have the chance to hear from several IEMA representatives on key environmental skills and policy. These sessions are:

- A keynote by chief executive Tim Balcon at 10.30am in the Energy & Environment Theatre on 17 June. He will address the issue of "skills for a sustainable economy".
- At 2.25pm on 17 June, IEMA executive director Martin Baxter will present details of the revised ISO 14001 standard in a session entitled "Environment and sustainability leading the way".
- On day two, Nick Blyth, IEMA practice and policy lead, will speak at 11.55am about member views on climate change and energy policy. He will also unveil IEMA's new climate change position statement (see pp.14–18).
- At 11.10am on 19 June, Josh Fothergill will present a session entitled "From waste to resources" in which he will introduce IEMA's special report on resource management.

Registration for the event is free at energy-enviro-expo.com/IEMA. To secure your surgery session, email technical@iema.net.

Expo highlights

Energy & Environment Expo 2014 offers attendees access to a whole range of solutions and businesses – all of which relate to building management and efficiency. As well as an exhibitor zone showcasing solutions and technologies to maximise energy efficiency, reduce costs, ensure compliance and develop effective sustainability programmes, delegates can also hear from experts in the feature and seminar theatres. In addition to sessions by the IEMA team, attendees can hear from experts on a range of topics, including: behavourial change for energy usage; making energy a business issue; contract evaluation; and preparing specifications for suppliers. Decc's "roadshow" on the renewable heat incentive scheme will also be there.

Policy update

Using GHG data with confidence

Defra and the World Resources Institute (WRI) have both been consulting on new guidance on how to account for scope 2 greenhouse gas (GHG) emissions from grid-distributed electricity. IEMA and its members have contributed to the debates.

The WRI has outlined how "dual reporting" might work under its GHG protocol. It proposes that organisations account for two values: one on a "location" basis, using average emission factors for the local grid; and the second on a "contractual" basis, which reflects the attributes of the electricity generation – this will amount to zero emissions in some cases where electricity is from a renewable source. The guidance recognises the different approaches taken by countries and could improve transparency. However, IEMA expressed concerns about the emphasis placed on contractual values, and suggested that organisations adopt a cautious approach when using it in target setting and external communications.

Defra, meanwhile, has looked at how dual reporting could work if applied to its updated GHG reporting guidance and the use of "gross" and "net" accounting lines. Defra's consultation was held after feedback from companies interested in greater promotion of renewable energy. IEMA favours the "net gross" option of the two presented by Defra. The Institute also criticised the decision not to include the existing approach, which is widely used in the UK, as an option in future.

Final guidance is awaited, but it looks like there will be significant differences between the Defra and the WRI approach. In both processes, IEMA pushed for developments that will lead to credible GHG accounting systems that organisations can be confident in using. IEMA believes that in many regions the default position – grid-average based accounting – will continue to be applied, as it is often regarded as the fairest and most balanced method in accounting for scope 2 emissions from electricity.

Nick Blyth is policy and practice lead on climate change at IEMA.

More successful IEMA members

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

Associate

Laurence Adams, DePuy International
David Adams-Hall, CEVA Logistics
Vugar Alakbarov, BP Exploration (Caspian Sea)
Marina Arabidze, BP Exploration (Caspian Sea)
Habiba Bagirova, BP Exploration (Caspian Sea)
Edward Baker
Simon Barker, Ministry of Defence
Gary Bennett, Ministry of Defence
Mark Benson, National Grid
Carl Bowler, Tulip
Amy Brown, West Dunbartonshire Council
Stephen Browning, Ministry of Defence
Gareth Butler, Aspire Defence Services
Cem Cakiroglu, BP Exploration (Caspian Sea)
Ahmet Celik, BP Exploration (Caspian Sea)
Graham Chadwick, Bentley Motors
Benoit Charriere, London Fire Brigade
Alexander Chikhani, Ministry of Defence
Touhid Chowdhury Mohammed
Ketevan Chubabria, BP Exploration (Caspian Sea)
Duncan Cook, OHES Environmental Services
Alex Cooke, GroundSure
Barry Costello, Ministry of Defence
Julie Croft, Mars Petcare UK
Simon Davy, Ministry of Defence
Stefan Dimitrov, EnQuest
Brian Donnelly
David Dransfield, Howarth Metals
Jamila El Mir, Arup
Gary Ellis, Laing O'Rourke
Bobby Fisher, GroundSure
Graham Fry, Colas Rail Training Centre
Nargiz Garajayeva, BP Exploration (Caspian Sea)
Nancy Holman, Affinity Water
Chris Hoskins, Yamazaki Mazak UK
Michael Houston, HHSE LTS
Ian Hutchinson, Speedy Hire
Anar Ibrahimov, BP Exploration (Caspian Sea)
Zakiya Imamova, BP Exploration (Caspian Sea)
Ismayil Jabiyev, BP Exploration (Caspian Sea)
Peter Johnson, AB Agri
Nino Kharabadze, BP Exploration (Caspian Sea)
Danielle Lake, Elexon
John Latham, Saga Group
Yelena Lisanova, BP Exploration (Caspian Sea)
Fuad Mammadli, BP Exploration (Caspian Sea)
Connor McGimpsey, Mabbett and Associates
Haruna Moda Mus, Manchester Metropolitan University
Jemma Moore, Heineken UK
Thomas Norton, Environment Agency
Keith Ogden, Jaguar Land Rover
Lewis Palin, Sodexo
Thomas Paterson, 4Rail Services
Liz Penfold, Walkers Snack Foods
Dinara Ramazanova, BP Exploration (Caspian Sea)
Louise Richardson, Ash Design and Assessment
Debbie Roberts, Qioptic
Timothy Rose, Rockwell Collins (UK)
Martin Scott, Kilnbridge Construction
Eldar Shukurov, BP Exploration (Caspian Sea)
Oliver Smallman, Carbon Credentials Energy Services
Daniel Smith, Ministry of Defence
Azeez Soaga, Thames Water
Matthew Storey, Skanska UK
Ipek Tasgin, BP Exploration (Caspian Sea)
John Thompson, AB Agri
Laura Tyler, Sellafield
Ahmat Ugan, BP Exploration (Caspian Sea)
Alan Ward
Louise Wilson, Coca-Cola Enterprises
Stuart Wiltshire, Department for Work and Pensions
Zoe Wu, Flexcrete Technologies

Full and CEnv

Nigel Barton, Lake Macquarie City Council
Paul Condy, EnviroCentre
Iain Johnson, RSK Group
Chris Rush, Banks Group

Fellow

John Skinner, URS Infrastructure & Environment UK

Upgrading your IEMA membership is key to you gaining the professional recognition you deserve. It can help you secure the job you want and may even help you achieve a higher salary. Learn more at iema.net/membership-upgrade or call +44 (0)1522 540069.

IEMA events

Date	Region/Time	Topic
18 Jun	South West	Social (Exeter)
19 Jun	South East	Creating healthy buildings
3 Jul	South East	Social (London)
10 Jul	South East	Social (Southampton)
16 Jul	South West	Social (Exeter)
7 Aug	South East	Social (London)
14 Aug	South East	Social (Southampton)
20 Aug	South West	Social (Exeter)
Webinars		
26 Jun	12:30–1:30pm	Exploring the links between EIA and strategic environmental assessment

GACSO opens up to IEMA members

After the successful acquisition by IEMA of the Global Association of Corporate Sustainability Officers (GACSO), the Institute is now working to expand this leading-edge network.

GACSO members are generally in roles coordinating, directing and leading on corporate sustainability for organisations around the world. GACSO provides new opportunities for IEMA members, and Affiliate, Associate, Full or Fellow members with corporate sustainability responsibilities are invited to join its network (subject to eligibility). This will help IEMA build and professionalise the GACSO community, making it in becoming even more recognisable and influential.

As well as the services available to IEMA Affiliate and professional members, those who take out additional GACSO membership will gain access to:

- a network of senior corporate sustainability professionals;
- a "safe environment" for joint learning and development on corporate sustainability;
- specific events and online sessions developed by, and for, corporate sustainability professionals;
- special member-only free offers from GACSO-represented organisations, such as Ricoh and KPMG; and
- opportunities to receive mentoring from leading sustainability professionals.

Members will also get the opportunity to make their own contribution via mentoring or sharing experiences.

To join this exciting network and begin benefiting from the learning and networking opportunities, as well as events that GACSO membership provides, is a relatively simple process. Members must be able to demonstrate that they meet the eligibility criteria. A contribution towards administrating GACSO status – not exceeding £40 – during this first, and developmental, year applies.

To find out more about GACSO membership and to register your interest in joining, visit iema.net/membership-gacso or call +44 (0)1522 540 069.

Markus Herz

Group environment manager, Allianz

Career file

Qualifications:
AIEMA, BSc in environmental management

Career history:
2013 to now Group environment manager, Allianz
2008–2012 UK environment manager, KPMG
2006–2008 Regional manager, Envirowise
2004–2006 Green procurement manager, London Remade
1986–2003 Chef in restaurants in Germany, Bahamas and London

Why did you become an environment professional?
I became interested in environmental issues at an early age, and I've always had a particular passion for waste and materials reuse. My first job as a chef strengthened my conviction that there was much to be done to reduce the environmental impact of business and that I want to dedicate myself to this.

What was your first environment job? I was employed by London Remade, a "green" not-for-profit, as a broker for the Mayor of London's green procurement code. The programme aimed to develop the market for products made from recycled materials.

How did you get the role?
In 1994, London prepared for the bid to host the 2012 Olympic Games. The commitment to be a "green games" was already in place and London Remade was commissioned to investigate how a closed-loop recycling system could be operated during the games. Materials from catering were expected to form a significant portion of the waste, which made my academic focus on waste and my background as a chef a good fit. Also during my studies I completed a placement with a small consultancy called Wastebusters. This gave me practical experience and started off my professional network in the environment sector which proved very important.

How have you progressed your career? Through a combination of continually developing my skills, having a real drive to advance my career and being lucky enough to be in the right place at the right time. While working at London Remade, I secured the contract to deliver the Envirowise programme as the regional manager for London. This allowed me to further build up my professional network and live the mantra of "resource efficiency = business sense". It was at that time I joined IEMA. I secured my first corporate role as UK environment manager at KPMG two years later. In 2013, after five years in that role – during which I took on responsibility for Europe, Middle East, South Asia and Africa – I had the opportunity to progress my career and return, after 20 years, to my native Germany by joining Allianz.

What does your current role involve? My role is based in the Allianz4Good department and my responsibilities involve delivering the elements of our climate change strategy that deal with minimising environmental impacts. I am responsible for the strategic development of the environment management system, coordinating activities relevant to our environmental performance and leading a network of local environment officers across more than 50 Allianz entities worldwide. Another core part of my role is the undertaking of an annual assessment of Allianz's global environmental footprint, which is reported externally.

What's the best part of your work?
Being able to contribute to how a large company addresses climate change is a real privilege. While much of my work is numbers-based, I really enjoy working with the people behind the numbers and seeing ideas lead to action that translates into environmental improvements.

What was the last event you attended? I regularly attend online training sessions, peer exchanges and conferences. In April, I went to a symposium discussing the impacts of climate change on Germany.

What are the most important skills for your job? Sound technical knowledge and skills on greenhouse-gas management and reporting are important, as is an appreciation that understanding the business is crucial in identifying improvement opportunities. Another important skill is the desire to work with and inspire a wide range of people to achieve a common ambition.

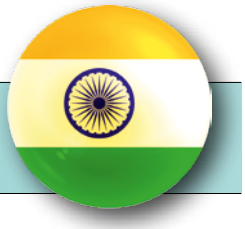
Where do you see the profession going? I think the profession will continue to diversify and provide more opportunities for sustainability professionals. However, particularly within an environment management context, there will continue to be a need for environmental knowledge and a good understanding of the core business.

Where would you like to be in five years' time? In my current role, but engaging with an increasingly diverse set of stakeholders to inspire the significant changes required to meet the challenge of global climate change.

What advice would you give someone entering the profession?
Acquire solid technical skills in your particular area of interest, take advantage of networking and work-experience opportunities and don't restrict yourself geographically too early in your career – experience abroad will bring many advantages.

How do you use IEMA's environmental skills map? I use it as a very helpful point of reference in my personal development and as part of building skills within our global EMS.

India



Lakshminarayanan Ramakrishnan describes the challenges of growth and corruption in protecting India's environment

India is booming. In the past 10 years its population has grown by 22% and its GDP by 135%. This growth is exerting a lot of pressure on the natural environment and the government has been struggling to balance the positives of growth with its harmful impacts.

Many laws have been enacted to help meet India's constitutional commitment to "protect and improve the environment". Despite an annual budget of £250 million and a legal framework in place, the ministry of environment and forests has not been able to provide the majority of India's citizens with clean air, safe drinking water or a place to dispose of waste. This is due to a combination of the politics of development, deep-rooted corruption and poor implementation of environmental policies. Environmental clearances for new projects, for example, have simply become money spinners for some decision makers.

NGOs have played a key role in bringing environmental issues to the courts; they lobby the government and industry to take responsibility for improving the environment. Meanwhile, industry associations, such as the Confederation of Indian Industry, have also been engaging their members towards better environmental performance (see greenco.in). In some areas where natural resources are plenty, such as Chhattisgarh, business interests can destroy the livelihood of locals, and this has contributed in the emergence of militant groups.

The judicial system appears to be the saviour of India's environment. From the early 1990s, the Supreme Court has been the only pillar of the Indian democracy that has stood by nature consistently and recently it intervened to halt illegal mining activities in Goa. Meanwhile, the National Green Tribunal (greentribunal.gov.in) which was formed in October 2010, has been playing a key role in expediting resolution of contentious environmental cases.

The recent general election campaign (April–May 2014) shows that environmental issues are not the priority for the politicians. As development takes centre stage in political debates, environment practitioners wonder whether the new government will be interested in sustainable development. Meanwhile, the common man is more worried about jobs, livelihood and his next meal. He believes that someone else will take care of the environment.

Dr Lakshminarayanan Ramakrishnan, FIEMA CEnv, is professor of sustainability management at IndSearch

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Workshop	Location	Date
14001	Manchester	18th June
	London	23rd June
9001	Aberdeen	24th June
14001	Aberdeen	25th June
9001	Newcastle	26th June
14001	Newcastle	27th June
9001	Cardiff	7th July
14001	Cardiff	8th July
9001	London	9th July
14001	London	10th July
9001	Birmingham	14th July
14001	Dunblane	30th July
9001	London	4th August
	Manchester	11th August
	Birmingham	18th August

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- EMS Auditing for QMS Auditors
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- ISO 50001 Essentials for the Energy Team
- ISO 50001 Appreciation and Interpretation
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