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The dividing line

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Reliable savings

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Fifteen cleantech businesses from UK seek their fortunes on trip to the land of opportunity

the environmentalist
environmentalistonline.com
May 2015

Dissecting SOIL

Safeguarding an invaluable natural resource

iema
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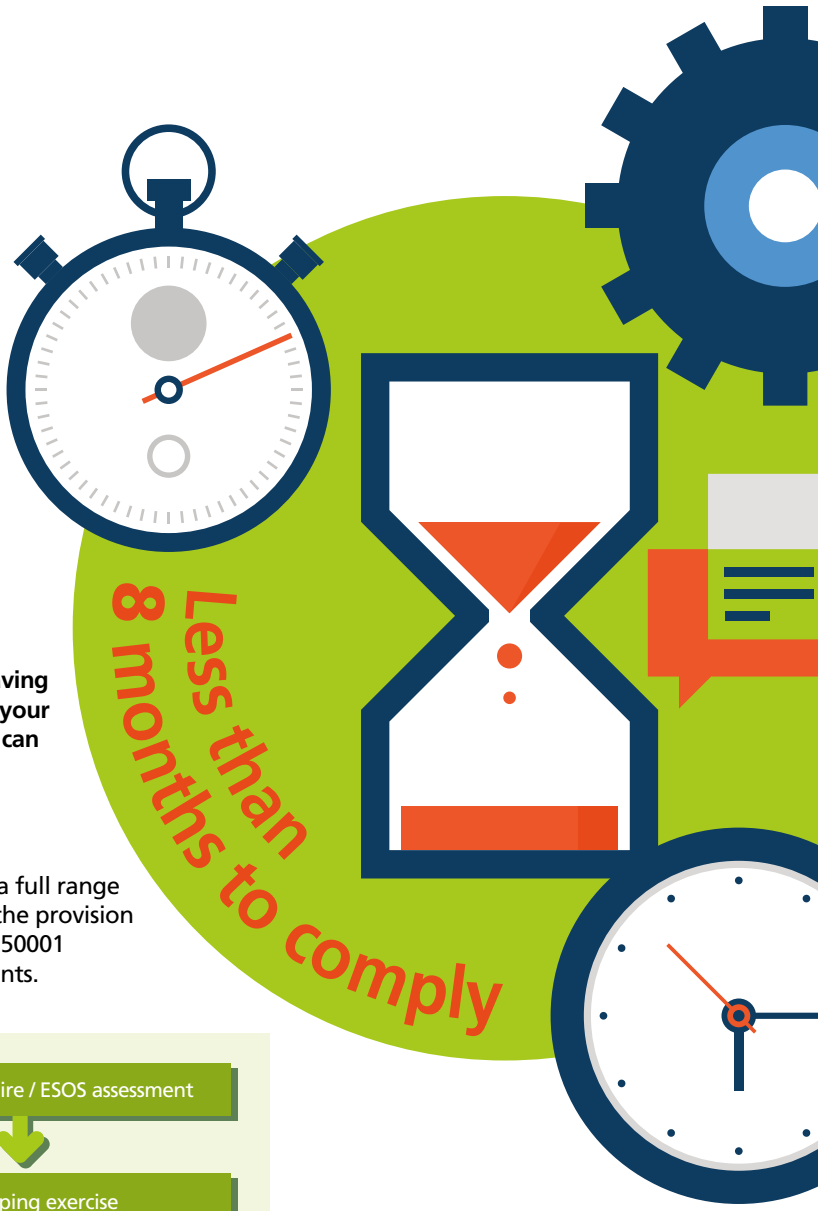
Countdown to ESOS compliance



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May

News

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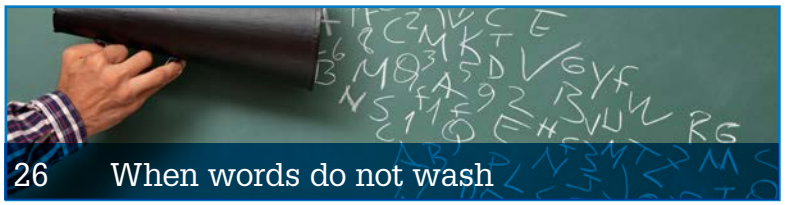
Features

In the year of soil, Andrew Tinsley and Timothy Farewell argue that planners and environmentalists must do more to help safeguard this natural resource

The new version of 14001 is due out in September. Here, Marek Bidwell sets out a process to plot the differences between the 2004 and 2015 editions

Guy's and St Thomas' NHS Foundation Trust is helping to pioneer energy performance contracts in the public sector. Paul Suff reports on its ambitions



In a follow-up to her November article on corporate transparency, Jiggy Lloyd warns public declarations often risk being no more than greenwash

UK cleantech businesses recently travelled to the US to seek backing for their products. Trevor Clawson reports on some of those that made the journey

James Alflatt and Neil Waterson highlight the challenges facing developers in towns and cities, and how EIA experts can help overcome common problems

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Dealing with the deficit

Financial deficits have been at the top of the political agenda since the economic crash, with policymakers across Europe squabbling over how best to deal with the shortfall in public finances. But there is another deficit, particularly acute in the UK, that has attracted less attention, and solving it could also help to reduce the financial debt. The UK has a severe skills shortage, which will hamper future economic growth and the creation of a more sustainable economy.

The engineering and project management consultancy, Atkins, recently predicted that infrastructure projects in the UK could experience higher costs, poor decision-making and late project delivery due to a lack of scientists, engineers and technicians. It found that many of the firms involved in delivering the £460 billion worth of infrastructure projects over the next few years were struggling to recruit staff, while two-thirds expected the shortage to worsen over the next five. The report from Atkins highlighted how a lack of potential recruits with science, technology, engineering and maths (STEM) skills could stifle innovation, which it said is vital in creating solutions to modern infrastructure challenges. In the water sector, for example, it quotes experts who suggest the industry will require a different set of skills if it is to manage demand and develop creative solutions to environmental challenges. The report questioned whether already stretched teams would be allowed the time to develop innovative solutions to realise the government's ambition for a modern, sustainable, resilient and customer-focused water sector. Now, a new report (p.8) commissioned by the Shell Springboard, reveals that a lack of STEM graduates will hamper low-carbon innovation across the economy and warns that the UK may miss out on annual growth worth £6.7 billion by 2023 as a result.

There is a severe skills shortage, which will hamper growth and the creation of a sustainable economy. The government must make dealing with the skills deficit a priority

The Atkins and Shell Springboard reports both indicate that skills shortages are likely to hinder the transition to a more sustainable, resource-efficient, low-carbon economy. IEMA has already highlighted the fact that just 13% of organisations are fully confident they have the skills to successfully compete in a sustainable economy. Its campaign, which has just received backing from its 40th sponsor (p.34), is at the vanguard of raising the importance of bridging the skills gap so UK companies can capitalise on the economic opportunities offered by more sustainable options. The UK construction industry is also trying to tackle the deficiency through a number of initiatives, including its supply chain sustainability school. The new government in Westminster must make tackling the skills deficit a priority.

Paul Suff, editor

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

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Short cuts

Boundaries exceeded

Four of the nine planetary boundaries identified by scientists in 2009 have now been exceeded, according to research published in *Science*. The boundaries consist of: climate change; loss of biodiversity (renamed as biosphere integrity to better reflect the effect humans have on the functioning of ecosystems); ozone depletion; ocean acidification; biogeochemic to reflect flows (the flow of nitrogen and phosphorus); land-system change (deforestation); freshwater use; atmospheric aerosol loading; and chemical pollution. The four that have been crossed are: extinction rate (one of two indicators for biosphere integrity); deforestation; atmospheric carbon dioxide (an indicator for climate change); and the flow of nitrogen and phosphorus. Scientists believe that crossing planetary boundaries increases the risk of the Earth system moving to a much less hospitable state for human civilisation than the current one, which is known as the Holocene epoch.

Call for case studies

Organisers of a major event on natural capital are seeking case studies that demonstrate how considering the natural environment can benefit the bottom line as well as nature. Submissions are being sought from businesses, financial institutions, governments and other organisations that have developed their understanding of natural capital to bring about a strategic change in decision making. Case studies must involve lessons learned that are relevant to a wider audience. The World Forum on Natural Capital will take place in Edinburgh in November. It is organised by the Scottish Wildlife Trust, and brings together the United Nations Environment Programme, World Business Council for Sustainable Development, International Union for Conservation of Nature, and the Natural Capital Coalition. Case studies can be submitted at naturalcapitalforum.com/call-for-case-studies until Friday 29 May.

Water shortages demand action

Global groundwater withdrawals have tripled over the past 50 years, with more than 25% of extractions described as non-sustainable, according to a new report from four global agencies.

Unesco, the World Bank, the Global Environment Facility (GEF) and the International Association of Hydrogeologists claim governance of groundwater resources has for too long been an area of policy neglect and have called for urgent action to manage the increase in depletion and degradation. They set out in the report, *2030 vision and global framework for action*, the principles governments should adopt to better manage groundwater.

The study warns that widespread groundwater pollution is threatening humans and the environment. It says that most urban aquifers are suffering from sanitation issues, while coastal aquifers are exposed to saline water intrusion while industrial pollution, pesticides and fertilisers are seeping into reservoirs.

According to the report, withdrawal intensity is highest in China, India, Pakistan, Bangladesh, Iran, the US, Mexico and Europe. It says this consumption could lead to a loss of freshwater reserves at a time when groundwater storage is critical for sustaining water security and adapting to climate variability.

Lake Isabella near Bakersfield, east of California's central valley is at less than 13% capacity after a two-year drought

Image: Global Warming Images /REX

"We can no longer take this invisible but vital source for granted; urgent action is needed to ensure its long-term availability," said Naoko Ishii, GEF chief executive.

The report was published as the governor of California, Jerry Brown, introduced the first statewide mandatory water reduction measures. The executive order requires cities and towns in California to reduce water use by 25% over the next nine months. The move follows a two-year drought. In 2015, the governor declared a drought state of emergency after the driest year on record.

Supply chain data pressure

More businesses than ever are demanding disclosure of climate change data from companies in their supply chain, according to CDP.

Twelve organisations have joined the NGO's supply chain group this year. They include vehicle manufacturers Toyota and Volkswagen, and breakfast cereal business Kelloggs. The US government's leading procurer of goods and services, the General Services Administration, and US-based trade body the Electronics Industry Citizenship Coalition are among new non-corporate members.

The World Resources Institute has also signed up, having reported voluntarily for the past two years.

There are now 72 members of the supply chain group, with 14 based in the UK, including BAT, Jaguar Land Rover, KPMG, Vodafone and Unilever. Three companies, Italian oil and gas company ENI, Brazilian food processor Marfrig and Canadian paper manufacturer Domtar, did not renew their membership. The combined spend of members has almost doubled from US$1.3 trillion in 2014 to US$2 trillion in 2015.

Members have requested data on greenhouse-gas emissions and other risks from almost 8,000 suppliers, up from 6,500 in 2014, CDP says. Dexter Galvin, head of CDP's supply chain programme, said: "These corporations want to maintain robust supply chains in a climate-changed world. We are seeing that decision making in procurement is changing."

CDP sent out its supply chain questionnaire in April. Last year, it found that members of the group were leaving their suppliers behind. For example, whereas 34% of members had set both absolute and intensity-based emissions reduction targets, just 7% of suppliers had done so. More than one-third of suppliers reported no documented processes for assessing climate risks.

ONS sizes up low-carbon economy for the first time

Environmental products and services contributed £26.3 billion to the UK economy in 2012, equivalent to 1.6% of GDP, according to the Office for National Statistics (ONS).

The body has published a report on the output and employment of the environmental goods and services sector (EGSS) and its contribution to the economy (gross value added or GVA) between 2010 and 2012. It found that the sector had grown by 1.5% since 2010, when it was worth £25.9 billion. However, growth was lower than for the economy as a whole.

More than 357,000 people were employed full-time in the EGSS in 2012, an increase of 5.3% from 2010, ONS found. The wastewater and waste management sector was the biggest employer, with 120,600 workers, representing 33.8% of EGSS jobs. At £9.4 billion, this sector also contributed the largest amount in terms of GVA. Water quality and efficiency employed the second largest number of people (28,800), followed by recycling (25,800), environmental consultancy and engineering services (25,600), and energy saving and sustainable energy systems (23,100).

Image: Cultura/REX

ONS says that the data is experimental, since its methodology is still under development. The report is its first attempt to quantify the size of the sector in line with an internationally agreed definition. EU member states must report on the size of the sector in a standardised way by 2017.

The body hopes to improve the accuracy of the data, in particular on the contributions from water, insulation and education to the EGSS. It launched a survey earlier this year on the low-carbon and renewable energy economy and has also added questions on the green economy to its annual business survey. ONS plans to report the data annually from 2016, and will report separately on EGSS exports.

WEEE mountain growing

Global waste electronic and electrical equipment (WEEE) totalled 41.8 million tonnes in 2014, according to a UN report.

It says the e-waste comprised resources, such as gold, silver and iron, worth $52 billion and contained high volumes of toxic material, including lead glass, mercury and cadmium, as well as 4,400 tonnes of ozone-depleting CFCs.

The UN found that most of the world's e-waste was not collected in 2014 for proper resource recovery or treatment of the toxic elements. It also calculated that less than one-sixth of the waste had been diverted from landfills to recycling and reuse. "Worldwide, e-waste constitutes a valuable 'urban mine', a large potential reservoir of recyclable materials. At the same time, the hazardous content of e-waste constitutes a 'toxic mine' that must be managed with extreme care," commented UN under-secretary-general David Malone.

Large and small kitchen, bathroom and laundry equipment accounted for the majority of discarded electronic and electrical equipment, making up 60% of the stockpile of global e-waste. By contrast, just 7% of the 2014 total consisted of mobile phones, calculators, personal computers, printers, and other small information technology products.

The US, China, Japan, Germany and India produced the most e-waste by volume, while Norway, Switzerland, Iceland, Denmark and UK head the league of countries on per capita basis. In 2014, each citizen in the UK produced 23kg of WEEE, according to the report.

The UN calculates that about 6.5 million tonne or 15.5% of the WEEE generated in 2014 were treated through national take-back programmes.

The UN forecasts that the global volume of e-waste will rise by 21% to 50 million tonnes in 2018.

Short cuts

CEOs back GHG action

A group of 43 chief executives has written an open letter to world leaders pledging their commitment to global efforts to reduce greenhouse-gas emissions. The CEOs represent companies including AkzoNobel, BT Group, Ikea, Philips Lighting, Swiss Re and Veolia. The letter urges world leaders to reach an ambitious deal on the climate and sustainable development goals at UN meetings later this year. It extends an open offer to governments to meet and co-design tangible action and effective targets. The CEOs pledge to act as ambassadors for climate action, focusing on solutions and economic opportunities. They will also actively manage climate risks and incorporate them in decision making, and consider how to strengthen the resilience of their companies and also society. The letter outlines support for measures including carbon pricing; robust monitoring, reporting and verification; and disclosure on financial investments and policies relating to energy.

Drying out denim

Clothing company Levi Strauss has reported that it has saved one billion litres of water since 2011 through its Water<Less process, which reduces by up to 96% the amount used in garment finishing. The figure is included in the firm's new lifecycle assessment (LCA) report, which updates it inaugural LCA study, published in 2007. The company says the latest report analysed the complete product lifecycle, probing deeper into the environmental impacts of cotton in key growing regions, apparel production and distribution in a range of locations, and consumer washing and drying habits in key markets. It found that, on average, a pair of jeans consumes almost 3,800 litres of water throughout their lifetime – more than two-thirds (68%) during the cultivation of the cotton and almost a quarter (23%) after they are purchased by a consumer. The LCA also discovered that the consumer is responsible for the biggest proportion of energy and climate impacts – 37% of the 33.4kg of carbon emitted during the lifecycle of a pair of jeans.

Short cuts

Decarbonising the US

The introduction of new emissions standards will accelerate the shift in the US away from coal-fired power generation. At the same time, the country is on course to install a record level of renewables in 2015. These developments mean electricity-related emissions in the US could fall to their lowest level since 1994, according to Bloomberg New Energy Finance (NEF). It forecasts that the Mercury and Air Toxics Standard, which came into effect on 16 April and followed a period of cheap gas, will retire 23GW of coal-fired generation this year. A further 30GW will be taken offline by 2020. Meanwhile, 18.3GW of renewables capacity will be installed this year as developers rush to take advantage of federal incentives before they end in 2017. Bloomberg NEF says a record level of solar (9.1GW) will be installed in 2015, mostly in California, and the third-highest annual amount of wind (8.9GW) generation will be built. Despite the forecast rise in renewables capacity, Bloomberg NEF predicts that natural gas-fired generators will largely replace coal power plants as falling gas prices encourage investment in more efficient, combined-cycle turbines.

Building resilience

Built environment charity BRE is launching a three-year research programme to improve the resilience of buildings and infrastructure to flooding, wind damage and overheating associated with climate change. It is prioritising these after identifying gaps in knowledge around them. The programme began in April, with five initial projects. The first is developing standards for flood-resilient repairs and technical guidance to help contractors deliver cost-effective measures. Another will provide guidance on overheating in urban homes, while a third is considering how wind loading affects buildings. Two other projects will focus on developing tools for post-disaster reconstruction, and assessing and managing resilience at community level.

Universities flunk targets

The higher education sector is on course to achieve only half its 2020 carbon reduction target, according to an analysis of official data. Universities and colleges have a sector-wide target, set by the Higher Education Funding Council for England (HEFCE), to reduce carbon dioxide emissions by 43% by 2020 against a 2005 baseline. Institutions were allowed to set their own targets based on their ability and capacity to implement reductions. Almost three-quarters (72%) are aiming for emissions reductions of between 31% and 50%.

Sustainability consultancy Brite Green analysed data from HEFCE and the Higher Education Statistics Authority and found that, by 2013, universities and colleges had achieved a reduction of only 8.5%. Based on performance so far, the consultancy predicts that the sector will achieve only 51% of its 2020 target. In its report, Brite Green highlights significant variation in performance between universities. Of the 126 analysed, only 44 are on track to meet or exceed their 2020 reduction targets, while 82 are forecast to miss them.

Darren Chadwick, managing partner at Brite Green, has advised universities to review and update their carbon management plans to get back on track. The consultancy believes that some universities may have overestimated what they could achieve, especially if their targets failed to fully take into account the growth in student numbers. Limited penalties for failure could also have reduced the scope for investment in abatement technologies and programmes, it added.

Lancaster University has cut its carbon emissions by 43%

Image: View Pictures/REX

Lancaster University is ranked as top performer, having reduced its emissions by 43%. It is followed by Harper Adams University College and the University of Reading. All three universities are predicted to exceed their 2020 targets.

Crop-based biofuels capped

Use of crop-based biofuels to help the EU meet its plans to decarbonise transport will be restricted after a deal between the European parliament environment committee and the council.

Under the agreement member states will only be able to count 7% of biofuels from agricultural crops towards the EU target for 10% of transport fuels to come from renewable sources by 2020.

Crop-based biofuels have been blamed for causing food price rises, deforestation and water shortages, while offering limited carbon savings.

For the first time, emissions from indirect land-use change (ILUC) will be recognised. Member states will be required to report on the emissions linked to ILUC when determining the biofuels to include towards national biofuels targets and when identifying the ones that should receive public subsidies. However, there will be no requirement for ILUC emissions to be included in the accounting of biofuels. The measure was backed by the European parliament, but most member states opposed it. This means that biofuels will still be counted towards EU targets and continue to be eligible for subsidies under the renewable energy and fuel quality Directives.

The deal was cautiously welcomed by environmental groups. Pietro Caloprisco, senior policy officer at Transport and Environment, said: "This allows us to start gathering clear data and see if we are really achieving greenhouse-gas reductions." Faustine Defossez, senior policy officer for agriculture and bio-energy at EEB, said: "This is at least a clear signal that land-based biofuels are not good."

Both NGOs are hopeful that crop-based biofuels will eventually be phased out. The commission has said that food-based biofuels will not receive public subsidy after 2020.

Skills shortages risk low-carbon economy

A lack of STEM graduates will hamper low-carbon innovation across the economy, causing the UK to miss out on growth worth £6.7 billion a year, finds a new report.

Engineering growth – enabling world-class entrepreneurship in the low-carbon economy warns that by 2023 there will be a shortfall of 50,000 graduates a year with science, technology, engineering and maths skills.

The report, which was commissioned by Shell Springboard, which funds innovative low-carbon technologies, states: "Having the right skills in the economy will be essential to enabling the UK to maximise the low-carbon opportunity. Given that much of the innovation required by the low-carbon transition is technological in nature, engineering and science skills are essential to a successful low-carbon energy transition."

It also warns that the UK lacks the entrepreneurial culture that is essential to converting technical skills into actionable and proven business opportunities. It says that, although the green energy industry in the UK produced double the number of "spin-outs" from universities as the US between 2000 and 2013 relative to GDP, they raised less than half the equity their American counterparts did.

Image: Cultura/REX

Professor Erkko Autio from Imperial College business school, who led the team that produced the report, said: "This research shows that we not only need new technologies, but also new business models and new entrepreneurial attitudes. A new breed of entrepreneurs will be spearheading such innovation, from university spin-outs to individual entrepreneurs, and we must do everything we can to ensure their scale-up performance is the best it can be."

The report recommends reform of education to improve technical and entrepreneurial skills and greater policy stability to support investment certainty in the low-carbon sector. It also says big businesses need to be encouraged to support viable low-carbon innovation.

The call to expand the number of graduates with STEM skills comes as the IEMA campaign to bridge the sustainability skills gap secured the backing of its 40th sponsor, civil engineering business VolkerWessels (p.34).

From environmentalistonline.com…

EMR cost woe

Food and drink manufacturers in the UK are concerned about the rising cost of energy, with 75% citing it as a factor in decisions to expand their business. The finding is from a survey of 100 food and drink manufacturers by energy company npower. From April, two elements of the electricity market reform (EMR) started to appear on energy bills: contracts for difference (CfD) and the capacity mechanism. These elements will initially add around £0.4/MWh to bills, but this will increase over time to £8–10/MWh by 2020, npower pointed out. Almost two thirds of those surveyed (64%) said they had taken action to improve energy efficiency. More than a quarter (26%) report that they have either planned cuts to their workforce or frozen recruitment to combat rising costs, while 16% have considered moving production offshore. A further 15% said they would pass on the costs of EMR to customers, and 38% complained they needed more notice of the changes.

environmentalistonline.com/EMRcost

Health at risk

An immediate moratorium on hydraulic fracturing, or fracking, should be implemented to allow time for a comprehensive health and environmental impact assessment to be completed, according to Medact, the body for health professionals. It says the precise level of risk to human health cannot be calculated and emphasises that intensive levels of fracking could pose additional risks in the UK because of the proximity of proposed sites to people. Public health issues highlighted in the report include: the potential hazards associated with air and water pollution; the negative impacts related to noise, traffic and damage to the natural environment; and the indirect effects on climate change from additional greenhouse-gas emissions. According to the report, oxides of nitrogen, hydrogen sulphide, formaldehyde, benzene, ethylene and toluene, as well as particulate matter and ground-level ozone are among the more significant airborne health hazards.

environmentalistonline.com/medact

Lobby conflict

Many major multinational companies with strong sustainability policies are also members of trade associations that are lobbying against EU climate policy, according to research from the Policy Studies Institute (PSI). In a report, PSI profiles the responses of business bodies to consultations on European climate change policies, including the emissions trading system (ETS). It found, for example, that the European Chemical Industry Council argued against measures to strengthen the ETS, claiming they would "directly worsen the measures against carbon leakage without any environmental need". Meanwhile, BusinessEurope, which has national business federations such as the CBI in its membership, is reported to have commented that EU climate targets undermine industrial competitiveness. PSI says that lobbyists use various mechanisms to exert influence over policy, including organising dinners between chief executives and EU commissioners.

environmentalistonline.com/lobby

Industrial CCS paramount

Carbon capture and storage is the only technology available to decarbonise heavy industry to the extent needed to meet UK carbon targets, according to a report from the Green Alliance.

It acknowledges ongoing government support to make carbon capture and storage (CCS) viable for power stations, but warns that policymakers must adapt the technology for industry or run the risk that it will not offer a route to decarbonise industry or provide low-carbon power.

The report urges the government to invest in "industrial CCS clusters", estimating these would capture nine times more carbon than through the two power station projects – White Rose in Yorkshire and Peterhead in Scotland – now being supported through the government's CCS demonstration programme.

If the government included the Humber heavy industries in its White Rose CCS demonstration project, for example, it could reduce the project's cost by nearly two-thirds per tonne of CO_2, says the report. This, it claims, would also help to cut the cost of CCS and bring it more into line with solar and offshore wind.

Image: Sipa Press/REX

"CCS is one low-carbon option among many for the power sector. But, to decarbonise industry, CCS is the only choice," said Dustin Benton, head of energy at the Green Alliance. "Creating industrial CCS clusters would cut carbon faster as well as costs. Supporting clusters makes sense, whereas simply compensating energy intensive industries for high carbon prices does not."

BP pledges more transparency

The board of oil and gas company BP has agreed to disclose more information on its greenhouse-gas emissions and the resilience of its assets as the world switches to a low-carbon economy in which tighter restrictions are placed on burning fossil fuels.

Shareholders had demanded more transparency in a special resolution put to the company's annual general meeting. The resolution, "Strategic resilience for 2035 and beyond", directs BP to include in its annual reports from 2016 further information about: the firm's operational emissions management; asset portfolio resilience to the International Energy Agency's climate change scenarios; low-carbon energy research and development, and investment strategies; and public policy positions relating to climate change. It states that the company's annual submissions to the CDP (formerly the Carbon Disclosure Project) as well as the data it already publishes in its sustainability review could provide the basis for the additional information that is required.

BP chair Carl-Henric Svanberg told the meeting that the board supported the resolution. He declared climate change a challenge, but noted that the world had made encouraging headway in disconnecting economic growth from rising energy consumption through efficiency and low-carbon initiatives.

He said an orderly transition to a low-carbon economy required putting a price on carbon, a faster switch from coal to gas, a greater focus on energy efficiency and more support for lower carbon technologies. "We are taking action in all of these areas," said Svanberg.

The resolution was backed by 98% of shareholders that voted.

CDP chair Paul Dickinson described the vote as "a game-changing day". He said: "The way that BP's management and shareholders have come together to pass a resolution of this kind is unprecedented. It represents a major change in attitude in one of the biggest companies on the FTSE 100, with one of the highest carbon footprints."

The list of major international investors backing the resolution included: Aviva Investors; Jupiter Fund Management, Schroders; the Universities Superannuation Scheme; Dutch pension fund manger APG; and French financial companies Amundi and BNP Paribas.

Business plans

Costa has opened an "eco pod" outlet, which it describes as the first "zero energy" coffee shop in the UK. The building, on Wrekin Retail Park in Telford, boasts rainwater capture, solar PV cells, which are embedded in the curved roof, and an insulated façade to retain heat in during the winter and keep the interior cool in summer. The building is positioned to achieve optimum levels of sun and shade. **Whitbread**, which owns Costa, says zero energy is achieved through passive ventilation and innovative construction techniques so that the energy required to heat and cool the building is minimised and any that is required is provided by the solar cells.

Peterborough's **Queensgate shopping centre** has carried out an assessment and improvement scheme to help retailers reduce energy, waste and water. The assessment, through the "growing greener pledge" scheme, involved Queensgate and managing agent JLL working with stores to identify improvements. As a result, energy consumption has declined by 4,253,000 kWh, producing financial savings of £477,000; water consumption by 3,000m³; and carbon emissions by 2,933 tonnes. It has also achieved zero waste to landfill.

Jaguar Land Rover (JLR) has received a Queen's award for reducing the environmental impact of its products and operations. The enterprise in sustainable development accolade recognises JLR's rollout of light-weight aluminium vehicle technology and low-emission engines, as well as reductions in operational energy, waste and water.

Asia Pulp & Paper (APP) has announced that it will install more than 200MW of rooftop solar capacity across eight of its mills in China over the next five years. The move comes after APP piloted solar arrays at several sites, including installing 20MW at a mill in Suzhou.

Energy conservation has earned **Boeing** an Energy Star partner award from the US Environmental Protection Agency. Measures taken by the aircraft manufacturer, which helped to secure the award, include replacing more than 5,100 lighting fixtures with more efficient versions.

In court

Commission launches legal action against the UK

A failure to reduce nitrogen oxide (NOx) emissions from the Aberthaw coal-fired power station in Wales has led the European commission to refer the UK to the European Court of Justice.

Under Directive 2001/80/EC on the limitation of emissions of certain pollutants into the air from large combustion plants, the so-called LCP Directive, member states had until 1 January 2008 to reduce emissions of a number of pollutants from power plants, including NOx. Emissions of NOx from Aberthaw have consistently exceeded permissible levels, says the commission. It points out that the plant near Barry operates under a permit that sets an NOx emission limit of 1200 mg/Nm^3, whereas the LCP Directive sets it at 500 mg/Nm^3.

The operator, RWE npower, says it is committed to reducing emissions from the 1555MW plant and that it continues to invest in measures to upgrade equipment, including replacing boilers.

The commission said it had noted that UK authorities and the operators were working to find a solution and welcomed recent announcements that investments would be made to upgrade the plant. "But at present the plant continues to operate under a permit which allows it to emit high levels of the toxic gas NOx," it stated.

The commission is also referring the UK to the European Court of Justice over its failure to ensure that urban wastewater is adequately treated in a number of areas. It says treatment is inadequate in four regions, while Gibraltar has no treatment plant. In a further 10 areas, wastewater is discharged into sensitive environments, such as freshwaters and estuaries, without meeting the required standards.

Under the urban wastewater treatment Directive (91/271/EEC) member states must ensure effective collection and treatment, as untreated water poses risks to human health, inland waters and the marine environment.

Noise costs waste firm almost £25,000

Waste company Wood Yew Waste has been fined £19,500 for causing noise pollution and for failing to comply with notices to take action to reduce noise generated by its site at Woodbury Salterton in Devon. Exeter magistrates' court also ordered the firm to pay £4,019 costs.

The site has had a permit for wood recycling since 2010, but there has been a number of compliance breaches there over the past few years. In 2013, the Environment Agency served an enforcement notice on the site to reduce noise pollution, mainly from two wood chipping machines, but no improvements were made and a second notice was issued in early 2014.

Although the company, which describes itself as the south-west's largest recycler of waste wood and plasterboard, had agreed to implement measures to cut noise, including installing insulation boarding in a building, these had not been made by the deadline. The magistrates described the firm's inaction as reckless, saying it had been given enough time to comply and had received repeated advice from the agency, which it ignored.

Wood Yew Waste pleaded guilty to three charges under the Environmental Permitting (England and Wales) Regulations 2010: two for breaching its permit in relation to noise pollution and the other for failing to respond to the enforcement notices.

Landfill operator fined £55,000

City Plant has been fined £55,000 and ordered to pay costs of £17,824 by Beverley magistrates' court for failing to comply with enforcement notices issued by the Environment Agency in 2014.

The notices required the company to install a leachate extraction system at its landfill site near Gilberdyke in east Yorkshire to collect methane gas, but the firm failed to meet the deadlines set by the agency. The regulator had required City Plant to install the gas collection system by the end of July and an engineered cap by the end of October.

Nearby residents had complained for several years about the smell and noise from the site, which is near to the M62 and at one stage was more than double its permitted height of 14m.

Case law

CJEU to consider equal treatment of Switzerland

In *Swiss International Airlines v Secretary of state for energy and climate change and Environment Agency* [2015], the airline challenged the validity of UK regulations implementing EU decision 377/2013/EU. This temporarily excludes flights between the European economic area and other countries but not Switzerland from the emissions trading system.

Rather than challenge the EU decision directly, the airline sought a reference to the Court of Justice of the European Union (CJEU) by challenging the validity of the UK regulations. It argued that the decision breached the principle in EU law of equal treatment by treating Switzerland differently from other countries. The company's initial case for judicial review was rejected for two reasons: the principle of equal treatment did not apply to differential treatment by the EU towards third countries; and, even if it did apply, there was no arguable case that it had been breached in this case. The airline appealed and the UK court of appeal considered the "external affairs" exception to the EU principle of equal treatment. The airline argued that the exception must be construed narrowly and precisely. The court noted that the EU landscape had changed in many ways since the CJEU last had a chance to consider the scope of the external relations exception to the principle of equal treatment.

Although the appeal court said it could see great force in the approach adopted by the judge in the earlier hearing, it was not free from doubt. As a result, the court allowed the appeal, granted permission for the airline to apply for judicial review and referred two key questions to the CJEU.

Hayley Tam

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New regulations

In force	Subject	Details
19 Mar 2015	Emissions	The Fluorinated Greenhouse Gases Regulations 2015 replace the 2009 Regulations, and transcribe EU Regulation 517/2014 on fluorinated gas. The new regulation updates enforcement provisions and the list of offences to reflect 517/2014. Enforcement notices may be issued to companies that fail to comply, while gases imported unlawfully may be impounded. Part III of the regulations specifies competency obligations for specified operations involving fluorinated gases. Employers are required to employ suitably qualified employees. Certification bodies are required to provide details of certificates issued on request within 14 days. lexisurl.com/iema778009
24 Mar 2015	Emissions	The Carbon Accounting (2013–2017 budgetary period) Regulations 2015 update the accounting system for carbon against greenhouse-gas emissions reduction obligations under the Climate Change Act 2008. Changes to the accounting methodologies reflect credits and debits to the UK net carbon account as a consequence of the EU emissions trading system and the inclusion of domestic aviation in the scheme. lexisurl.com/iema87628
27 Mar 2015	Planning	The Marine Works (Environmental Impact Assessment) (Amendment) Regulations 2015 amend the 2007 Regulations in relation to the functions delivered by Natural Resources Wales (NRW). The regulations make NRW responsible for assessing the environmental impact of works where it is also responsible for licensing marine works. lexisurl.com/iema87637
1 Apr 2015	Carbon management	The CRC Energy Efficiency Scheme (Allocation of Allowances for Payment) (Amendment) (No. 2) Regulations 2014 set the price of allowances under the CRC scheme at £16.90 from 2016. lexisurl.com/iema61459
1 Apr 2015	Energy	The Energy Efficiency (Private Rented Property) (England and Wales) Regulations 2015 introduce measures to improve the energy efficiency of domestic and non-domestic private rented property. Tenants will be able to request the landlord's consent to energy efficiency improvements. From 1 October 2016, a minimum energy performance certificate band E will apply to these properties. New tenancies may not be granted for underperforming domestic and non-domestic properties from 1 April 2018. Landlords may not continue to let underperforming domestic properties from 1 April 2020 and underperforming non-domestic properties from 1 April 2023. lexisurl.com/iema87601
1 Apr 2015	Energy	The Electricity Supplier Obligations (Amendment & Excluded Electricity) Regulations 2015 revise arrangements for the funding of contracts for difference (CfD). Eligible green imported electricity will become exempt from funding costs and some electricity-intensive industries, including quarrying, chemicals, iron and steel, will get an 85% reduction against CfD costs on electricity supplied to qualifying processes. These regulations also set the CfD operational cost levy between 31 March 2015 and 1 April 2016. The Electricity Market Reform (General) (Amendment) Regulations 2015 permit the CfD Counterparty and Gas and Electricity Markets Authority to make arrangements to deliver fuel measurement, sampling and sustainability assessments to confirm that installations subject to CfDs are meeting sustainability criteria. lexisurl.com/iema87602; lexisurl.com/iema87604
1 Apr 2015	Hazardous substances	The Planning (Hazardous Substances) Regulations (Northern Ireland) 2015 remake the 1993 Regulations. Quantities of hazardous substances requiring planning consent remain unchanged, but consenting provisions are transferred to councils from the Department of the Environment. These regulations do not implement the land-use planning requirements of the Seveso III Directive (2012/18/EU), which will apply across the UK from June 2015. lexisurl.com/iema78015

Latest consultations

22 May 2015
Producer responsibility
Defra is consulting on plans to amend the regulations for producer responsibility for batteries and packaging waste. Producers of batteries and packaging must pay for collecting, treating, recycling and recovering a proportion of their products. The proposed changes aim to reduce the "administrative burden" of meeting these obligations. The plans will affect the Waste Batteries and Accumulators Regulations 2009; Producer Responsibility Obligation (Packaging Waste) Regulations 2007; and Producer Responsibility Obligations (Packaging Waste) Regulations (Northern Ireland) 2007. The environment department is also seeking evidence to help review the business target for recycling waste plastic packaging.
lexisurl.com/iema87657

15 Jun 2015
Smart metering
Decc is consulting on two issues relating to the rollout of smart and advanced meters to the non-domestic sector. It wants opinions on whether to remove the existing policy position, which allows suppliers to use communications services other than those provided by the Data and Communications Company (DCC) for any SMETS2 meters they install at non-domestic premises. Decc is also seeking views on whether to extend beyond April 2016 the date by which non-domestic suppliers must install advanced meters.
lexisurl.com/iema87659

18 Jun 2015
Environmental impact assessment
The Welsh government is proposing to amend the Environmental Impact Assessment Regulations and procedures associated with making local development orders (LDOs). The plans include: raising the EIA screening thresholds for schedule 2 urban development projects and industrial estate projects; measures to respond to recent case law and implement the Geological Storage Directive; amendments to legislation associated with LDOs to allow local planning authorities to make orders for schedule 2 EIA development; and the specific provisions in the EIA Regulations for discontinuance and modification orders. The proposed changes to the screening thresholds are the same as those implemented in England in April 2015.
lexisurl.com/iema87665

18 Jun 2015
Climate change
The European commission is consulting on integrating agriculture, forestry and other land use into the 2030 EU climate and energy policy framework. It is seeking input on evaluation of current policies and the policy options to be assessed after the European council endorsed the climate and energy framework in October 2014. In a parallel consultation, the commission wants stakeholder views on a legal proposal on the effort of member states to reduce greenhouse-gas (GHG) emissions to meet the EU's 2030 GHG reduction commitment. Specifically it wants feedback on continuing the existing decision 406/2009/EC, the "effort sharing" commitments to 2020, until 2030. At the council meeting last October, EU leaders expressed their wish to continue the effort sharing decision approach for 2021-2030, with the aim of reducing emissions by 2030 by 30% compared to 2005 levels within sectors not covered by the emissions trading system. This would be their contribution to achieving by 2030 the overall 40% GHG reduction target.
lexisurl.com/iema87669;
lexisurl.com/iema87671

New guidance

ESOS audits	Decc has published guidance on auditing for the energy savings opportunity scheme (ESOS). *Approaches to ESOS audits* (lexisurl.com/iema87675) is intended to provide "best practice" advice on how to exploit the flexible framework in ESOS to maximise cost saving benefits, says Decc. The guide focuses on how to apply best practice when: developing audit plans – how to determine the scope of your ESOS audits, decide how many and what type of audits to undertake and who are the right people to do them; delivering audits – what the audits should include, how to prepare for them and the available tools; reporting audits – how to plan and structure the report, and what it should contain; and engaging senior management – how to raise awareness of the importance of ESOS and the best way to prepare for senior management sign-off. The guide also contains templates to help plan and deliver audits and manage the required evidence pack.
Fire prevention	Revised advice on fire prevention plans for permitted sites storing combustible waste is available from the Environment Agency (lexisurl.com/iema87678). It sets out the minimum standards that must be included in a site's working plan or management system. If they are not, the Environment Agency may take enforcement action. The guidance applies to all combustible materials, including: paper or cardboard; plastics; rubber (natural or synthetic, including whole tyres, baled tyres, tyre shred, crumb and fibre); wood (including planks, boards, sawdust, shavings, logs, firewood or chips, or wood joined to form crates, pallets, casks or barrels); fragmentiser waste (from processing end-of-life vehicles, plastics and metal wastes from materials recovery facilities); rags and textiles; scrap metals; refuse-derived fuel (RDF) and solid-derived fuel; waste electrical and electronic equipment such as fridges, computers and televisions containing combustible materials such as plastic; compost and plant material; and biomass.

Laying down the law

The powers of environment regulators on the move again

Simon Colvin warns that proposals to tackle illegal waste sites will have implications far beyond the waste sector

There have been a number of examples recently of waste sites being abandoned, leaving thousands of tonnes of discarded material. According to the government, waste crime costs the UK economy about £568 million a year.

In February, Defra and the Welsh government jointly published a consultation and call for evidence on tackling waste crime in England and Wales. The deadline for responses was 6 May 2015.

The issue is of wider importance than just the waste sector since many of the powers proposed in the consultation would be available to the Environment Agency and Natural Resources Wales in the chemicals, manufacturing and food production sectors, among others. So what are some of the more radical proposals being considered?

Impacts on landowners

When waste sites are abandoned, owners are often left to clear up after their tenants in accordance with s59 of the Environmental Protection Act 1990 (EPA). This covers the powers to require the removal of waste that has been unlawfully deposited.

Critics suggest this approach is unfair because owners are made responsible for situations they often have no knowledge or awareness of. In some circumstances, owners have also been prosecuted for "knowingly permitting" the activities of their tenants.

Policymakers want the system to be fairer for landowners to ensure they fully understand the potential implications when entering into agreements with tenants. They also want landowners to be made aware by regulators at the first available opportunity of any non-compliance by tenants. One option being considered is the requirement for consent from a landlord before a tenant can start operating a waste activity.

Alongside this is the need for regulators to notify owners of any non-compliance so they can take action directly to protect their own interests.

Financial provisions

One of the biggest problems when dealing with illegal waste activity is the cost of clearing sites, which can run to several millions of pounds.

The call for evidence issued by Defra and the Welsh government looked at whether bank bonds or insurance could offer potential solutions. The downside with both options is they can be expensive to obtain and could make it difficult for smaller, legitimate operators to enter the market.

Another option is the introduction of a waste superfund. This would operate much like the US superfund established by the Comprehensive Environmental Response, Compensation and Liability Act of 1980 to deal with historic pollution problems at orphaned or abandoned sites. The US fund is supported by the chemicals and petrochemicals sectors.

The intention in England and Wales is that waste operators pay a levy into a central pot to finance the clearance of abandoned waste sites.

The duty of care

A topic not touched in the call for evidence is the use of the waste duty of care, which is covered in s34 of the EPA. It is my belief that the duty of care could help to place more responsibility on waste producers for any of their discarded material found at an abandoned site. When asked about using this route to share responsibility between landowners and producers of waste found at such sites, regulators often shy away from tackling what is a difficult issue. Successfully identifying the origin of an item of waste is often hard.

However, there is clearly a role for proportionate responsibility whereby the waste transfer note system can be used to allocate responsibility to waste producers for material that has entered but not left an illegal or abandoned site.

This is the approach adopted in the US when dealing with historic landfilling operations and would partly reflect the approach under the contaminated land regime in England and Wales.

Forward thinking

It is generally accepted that the Environment Agency and Natural Resources Wales need to be given the powers to properly deal with operators of illegal waste sites. However, there need to be controls established to ensure the proper use of these powers.

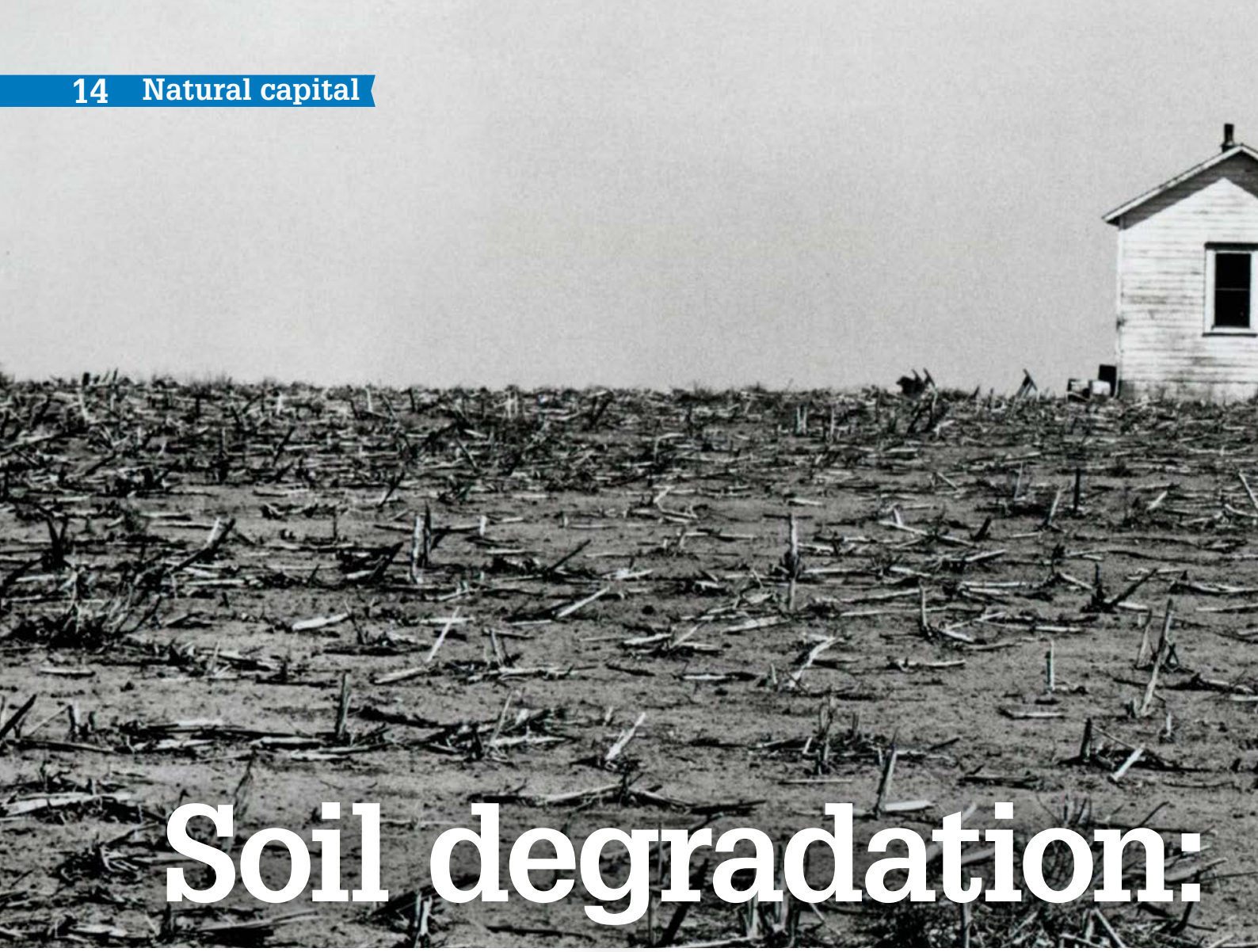
The proposals set out in the consultation issued by Defra and the Welsh government (see below) include some fundamental and radical proposals, which will have impacts beyond the waste sector.

Tackling waste crime

The consultation issued on 26 February by Defra and the Welsh government sought views on further strengthening the regulators' powers in respect of all types of facilities that operate under an environmental permit. The measures proposed included: suspending and revoking permits if certain conditions are not met; issuing notices to prevent breaches worsening; taking physical steps to prevent further breaches – for example, by physically stopping waste coming on to sites; allowing the regulators to remove a risk of serious pollution at a facility, regardless of the circumstances; removing pre-conditions for regulators to bring High Court proceedings; and requiring the removal of waste from land.

The consultation document is available at lexisurl.com/iema89672.

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



Soil degradation:

In the international year of soil, **Andrew Tinsley** and **Timothy Farewell** provide a reminder that we need to do more to safeguard this natural resource

It is easy to see why soil is poorly understood by environmentalists and planners alike. Despite a modest recognition of sustainability issues, this abundant, natural resource is a fragile one that is, in effect, non-renewable, and discussion of it is dominated by some highly technical science and unfamiliar language and classifications.

Soil is a key part of the biosphere but it generates so slowly it can take 500 years to form 1cm of new material. It is estimated that one heaped teaspoon of soil contains as many living organisms as there are people on the planet. The most popular antibiotics, including penicillin, have come from dirt and a recent study of soil biota – all the organisms that spend much of their life in a soil profile – by researchers at Northeastern University and NovoBiotic Pharmaceuticals in the US found new antibiotics could be produced from sample collected in Maine. It could be argued that protecting the life in soil is no less important and valuable as protecting that in areas of rainforest; we just need to adjust our scales of perception.

It is international year of soils. As such, 2015 presents an opportunity to explore why soil, the third environmental arena, with air and water, is rising up the political agenda.

An old problem rediscovered

Soil degradation, which includes erosion, compaction, the loss of organic content and biota, sealing and contamination, is a familiar problem. Each year, 24 billion tonnes of topsoil is lost globally through degradation and erosion, threatening the futures of entire societies. In the UK alone, there is growing evidence that poor management and development practices are major causes of degradation, perhaps costing as much as £1.2 billion a year, according to a 2011 report for Defra.

The most famous example in modern history of soil degradation and failure is the 1930s "dustbowl" in the US and Canada. Land use was changed from natural prairie, where the grass roots hold and reinforce loose textured soils, to intensive, mechanised agriculture with bigger fields, deeper ploughing and more intensive cropping without traditional rotation, field boundaries or fallow periods. As a result, agricultural land and soil rapidly degraded after a long drought. Moisture was lost, the topsoil structure broke down and the wind eroded the soil.

The hardships faced by the people in the areas affected were exacerbated by the economic depression.

a growing issue

Image: Courtesy Everett Collection/REX

The dustbowl years hastened the introduction of the first US soil protection laws with a warning from President Franklin D. Roosevelt that "the nation that destroys its soil destroys itself".

Although the dustbowl was a natural disaster, it was made worse by human mismanagement. There are also examples of industrial disasters that, as well as killing and injuring people, have almost instantly put large areas of soil resources beyond beneficial use. In April 1986, after an explosion and fire, radioactive materials released from the Chernobyl nuclear reactor contaminated 400,000 hectares of agricultural land, which are now lost permanently to production in Belarus, Ukraine and Russia. The disaster even affected a few areas in Cumbria and north Wales where farming was restricted until 2012 because radioactive caesium-137 from the Chernobyl fallout was found in upland soils. If measures were not taken, it was at least in theory possible for the material to enter the UK food chain through grazing animals.

The Seveso disaster near Milan, Italy, in 1976 resulted in contamination of more than 600 hectares of soil after the accidental release of a dioxin – an environmentally persistent and highly toxic chemical – from a factory. About 2,000 people were treated for dioxin poisoning, while hundreds of thousands of tonnes of contaminated topsoil had to be disposed of in specially constructed landfills. This led to the EU creating the Seveso directives, transposed in the UK through the control of major accident hazards or COMAH legislation.

More recently the explosions in March 2011 at the nuclear reactors at Fukishima, Japan, after a tsunami led to the contamination of 3 million hectares of land with long-lived caesium-137.

The slow disaster

These disasters represent rapid, acute changes to soil systems and produce swift political reactions. However, it is slow, chronic changes to systems, which may take years or generations to be noticed, that have become the concern in Europe and globally. One example is the loss of carbon from soil. It has been estimated that 4.4 millions tonnes of carbon were lost each year from soils in England and Wales between 1985 and 2005, equivalent to 42% of the UK reductions in CO_2 under the Kyoto protocol.

Erosion is another issue. Using modelling and field survey data, researchers at Cranfield University reported in 2006 that typical soil erosion rates in England and Wales from wind were up to two tonnes per hectare each year. They also found that up to 10 tonnes were lost due to tillage erosion; as much as five tonnes to co-extraction on root crops and machinery; and up to 15 tonnes from water erosion. The threshold for tolerable rates of soil erosion has been identified at one tonne per hectare a year. Beyond this level, the ability of the soil to function properly and deliver ecosystems goods and services is damaged. It is likely that future extreme weather will increase the rates identified by Cranfield.

Humans now significantly influence many ecosystems on Earth, and more than 85% of the planet's

The 1930s "dustbowl" is a famous example of soil degradation. Land use change and a long drought resulted in the structure of the topsoil breaking down and soil being eroded by wind

Image: Getty

land has been altered as a result. In the UK, this figure is almost 99%. Natural and human-regulated functions are inter-linked over much of the planet's surface as "anthropogenic biomes" or, as research body Resilience Alliance terms them, "socio-ecological systems".

There is growing evidence that the major impacts on soil come from decades of gradual degradation, not singular events. The capacity for soil to deliver key ecosystem services necessary for a sustainable society has suffered through:

- gradual loss of topsoil to erosion;
- permanent sealing of soils beneath new construction;
- compaction through trafficking of heavy machinery at inappropriate times of the year;
- decline of the organic matter content as a result of changing land management practices; and
- the industrialisation of agriculture and an associated loss of biodiversity.

Where soil biodiversity is lost, there is almost inevitably a loss of soil carbon to the atmosphere as CO_2. This exacerbates the problem, as higher temperatures lead to a decline in soil carbon. Climate models suggest the UK climate is changing to one of warmer summers and milder, wetter winters but with an increased likelihood of extreme weather such as heatwaves and intense rainfall. These would put extra strain on soil.

A type of rapid soil erosion in Europe is increasingly recognised as a new phenomenon: not dustbowl but "muddy flooding" as a result of heavy rainfall. Europe is not immune to dustbowl effects, however. One of the more disturbing facts to emerge in recent years is that in several countries, including Bulgaria, Cyprus, Greece, Hungary, Italy, Portugal and Spain, some areas have been affected by desertification, as defined by the UN convention to combat desertification.

Ecosystem services provider

Soil provides a number of vital functions and services. These include:

- "Green" water storage for use by plants and crops.
- Supporting diverse species and rich ecological habitats, including soil organisms.
- Environmental interaction through decomposition and cycling of nutrients.
- Providing a platform for construction and secure foundations, including surface transport infrastructure.
- Protection and storage of buried infrastructure – telecommunications, IT, gas, electricity and water services.
- Carbon cycling, storage and sequestration.
- Filtration of clean water for drinking, locking contaminants into the soil structure.

- Providing a treatment medium for human and industrial organic waste.
- Influencing and potentially moderating the extent and severity of flooding.
- Protecting archaeological and cultural heritage.
- Food, fibre and biomass crop production.

Degraded soils cannot provide the same level of these natural goods and ecosystem services that humans, as "service consumers", take for granted, but which are vital to the sustainability of society. As Elin Enfors at the Stockholm Resilience Centre says: "Maintaining soil health over time, both in terms of its physical, chemical and biological properties, is crucial for the long-term resilience of ecosystem services, including water regulation, in agricultural and other landscapes."

In 2011, the UK government issued the natural environment white paper (NEWP). It builds on the findings of the UK national ecosystems assessment, which recognised the degradation of soils that has occurred as part of wider environmental degradation.

The NEWP created the potential for biodiversity offsetting, a system where developers fund the creation of equal value habitat elsewhere if their project has an adverse impact on an environment. Although this may be politically attractive, critics have questioned the feasibility of recreating ancient soilscapes, which take thousands of years to mature in new areas because the fundamental building blocks and ecosystems of these habitats will be missing.

A UK soil strategy?

The 1972 EU soil charter set aspirational standards for soil protection to be included in member states' national legislation. It was superseded in 2006 by the European soil thematic strategy, while in the same year a draft soils framework directive was proposed. Plans for the directive were withdrawn in 2014 after years of lobbying in the UK by, among others, farmers' union NFU. Critics said the directive would have placed undue financial burden on nations that had many soil types. Its defenders argued that those countries were the ones that had most to lose in terms of uncosted ecosystem services.

Guidance targeting soil degradation has been produced separately by each of the devolved administrations. The strategies show what is possible where there is the political will. Defra's *Safeguarding our soils: a strategy for England*, published in 2009, describes the requirements of the EU soil thematic strategy and sets some key goals for the management of soils in England. It includes the ambitious vision that, by 2030, "all England's soils will be managed sustainably and degradation threats tackled successfully. This will improve the quality of England's soils and safeguard their ability to provide essential services."

In particular, the strategy recognises the decline that has occurred over the past 200 years through intensive agricultural management, development-linked degradation, and contamination from industrial pollution. The report also references a soils toolkit for planners. This has yet to materialise, however.

Due to the timescales of degradation and recovery, and the local "landowner" perspective often taking precedence, region-wide soil degradation is seldom championed as a political issue because legislation is largely targeted at remediation of contaminated soil.

Although there are soil strategies for England, Wales, Scotland and Northern Ireland, legislation focusing on direct protection of soil is almost non-existent in the UK. Indeed, only nine EU countries have specific legislation to protect soils. In the UK, some soil areas are partly protected by incidental inclusion in other legislation and briefing documents, including the Land Compensation Act 1973, Contaminated Land Regulations 2006, Environmental Permitting Regulations 2014, and Sludge (use in Agriculture) Regulations 1989.

Planning for soils

With so little soil-specific legislation, it is perhaps unsurprising that there is limited dialogue between soil scientists and planners. It is particularly frustrating that, although the UK lacks soil protection laws, it has some of the best web-based academic databases in the world available on its soils.

These include the Land Information System, which is maintained by Cranfield University and is an integrated database of soil and climatic data for England and Wales. It provides multi-temporal assessments of topsoil elements to track changing conditions of the soil, as well as a suite of soil maps for specific planning purposes. Some of the maps show how a soil can recover from compaction, the vulnerability of the built environment to soil-related ground movement, contamination from pesticide leaching, and runoff pathways and hydrological flow. Similar information is available for Scotland through the James Hutton Institute's SIFSS – soil information for Scottish soils – database, which contains information on about 600 soils in the country.

Soils develop over thousands of years, but can be irreparably degraded over much shorter timescales. Better communication to planners and environmentalists of the risks and mitigation strategies to minimise human impact on soil is one step that can be made towards securing a more environmentally resilient society for future generations.

As Matt Aitkenhead, of research centre the James Hutton Institute, says: "Soil is the memory of the land. All of the things that have happened to the land over time are recorded, minutely or in broad strokes, within the soil. Soil is natural capital and the damage we are doing to it directly affects the interest we get back on this capital. We keep dipping into soil capital to keep our economies strong. Can Europe afford to build a new Berlin every year on good quality agricultural land? We must ensure that the memory the soil will have of us in 2015 is a good one – future generations will not forgive us if we fail."

Andrew Tinsley, MIEMA, CEnv, is an environment and sustainability consultant working on infrastructure-level and national projects, particularly those affecting the defence and nuclear industries. Dr **Timothy Farewell** is a geospatial soil and environmental scientist at Cranfield University.

Mind the gap

Marek Bidwell outlines a process to plot the differences between the old and new version of the 14001 standard

More than 250,000 organisations worldwide will this year begin the process of transitioning from the 2004 to the 2015 version of ISO 14001. An effective gap analysis can help those organisations to make the necessary changes.

Voting on the final draft (FDIS) of the revised standard for environment management systems (EMS) is expected to take place in July and August, with the new version published in September (p.35). After this, there will be a transition period, and organisations will have up to three years to make the necessary changes. Certification bodies, however, are likely to integrate the first 14001: 2015 audit with an organisation's next planned three-year recertification audit.

A change is to come

Most practitioners will know that the headline changes between the 2004 and 2015 versions of 14001 include: more alignment between an organisation's strategic direction and its environmental policy and objectives; a requirement to address the significant environmental issues associated with the lifecycle of products and services – but not to carry out a full lifecycle assessment; and a requirement to determine and address the risks associated with threats and opportunities.

However, if practitioners are to be properly prepared for the changes, they need to fully understand the precise meaning of the new requirements and compare them with their organisation's current practices. This will identify any gaps, and enable them to develop an action plan to implement any changes. It is best not to tackle this primarily as a compliance exercise. Rather, consider how the new topics could add value to, and increase the resilience of, the organisation's activities, products and services. It advisable to read around topics related to the requirements in 14001: 2015 and research examples of best practice in areas such as employee engagement, ecodesign and "cradle-to-cradle", using this activity as a springboard for innovation in the EMS.

The article in the August 2014 issue of *the environmentalist* discussed a number of the key changes between the existing 14001: 2004 and the then draft of the new standard. All of the issues highlighted were carried forward into the FDIS, although there has been some watering down of the requirements for strategic planning and the quality descriptors for communicated information, as well as changes to the terminology for risks, threats and opportunities.

The following panels list the clauses that contain key changes in the FDIS, pose questions that practitioners can ask to conduct a gap analysis, and give examples of the typical evidence that they might use to demonstrate (and go beyond) compliance. Also included is the example of a small firm that supplies and fits domestic insulation products to illustrate how an organisation might approach some of the new clauses.

Marek Bidwell is director of Bidwell Management Systems and author of *Making the transition to ISO 14001: 2015*.

Context of the organisation

Clause	Gap analysis questions	Examples of typical evidence
Understanding the context of the organisation	Has the organisation identified the external and internal issues that affect its ability to achieve the intended outcomes of its EMS? Has the organisation identified the potential effect that the environment may have on its activities, products and services?	■ Swot/Pestle analysis with an environmental focus (p.19). ■ Strategic business planning. ■ Consider effects of "planetary boundaries"on the organisation. ■ Business continuity management – for example, BS 22301. ■ Climate change adaptation plan.
Understanding the needs and expectations of interested parties	Has the organisation carried out a stakeholder analysis exercise? This can determine the internal and external parties relevant to its EMS, their needs and expectations, and any associated compliance obligations.	■ Stakeholder analysis. ■ AA1000 AES: stakeholder engagement standard.

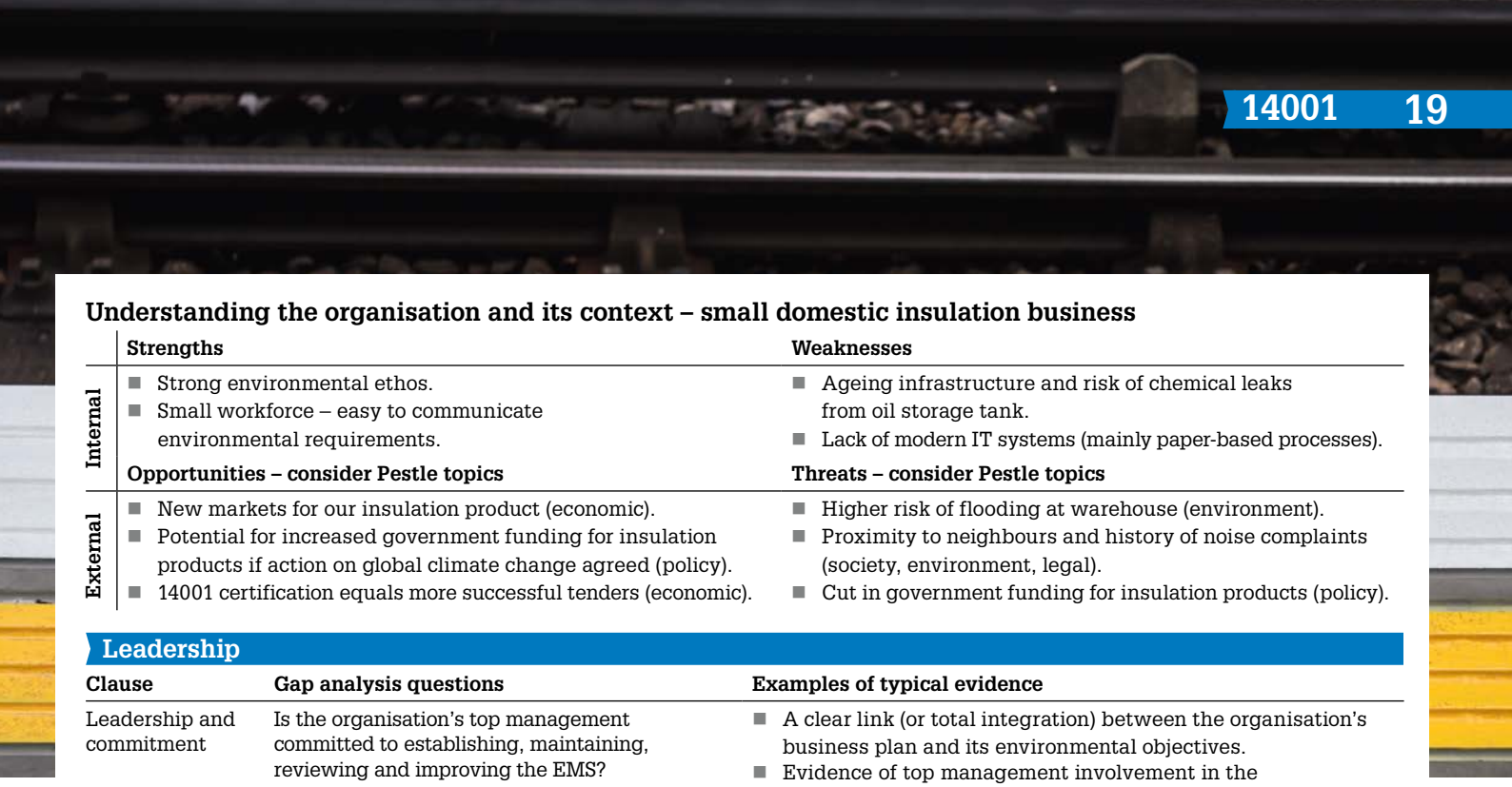


Image: iStock

Understanding the organisation and its context – small domestic insulation business

	Strengths	Weaknesses
Internal	■ Strong environmental ethos. ■ Small workforce – easy to communicate environmental requirements.	■ Ageing infrastructure and risk of chemical leaks from oil storage tank. ■ Lack of modern IT systems (mainly paper-based processes).
	Opportunities – consider Pestle topics	**Threats – consider Pestle topics**
External	■ New markets for our insulation product (economic). ■ Potential for increased government funding for insulation products if action on global climate change agreed (policy). ■ 14001 certification equals more successful tenders (economic).	■ Higher risk of flooding at warehouse (environment). ■ Proximity to neighbours and history of noise complaints (society, environment, legal). ■ Cut in government funding for insulation products (policy).

Leadership

Clause	Gap analysis questions	Examples of typical evidence
Leadership and commitment	Is the organisation's top management committed to establishing, maintaining, reviewing and improving the EMS? This includes, but is not limited to: – ensuring the system is effective; – giving consideration to environmental issues when planning the overall strategy and direction of the organisation; and – integrating the EMS into the organisation's overall business processes.	■ A clear link (or total integration) between the organisation's business plan and its environmental objectives. ■ Evidence of top management involvement in the environmental planning and review processes. ■ Early consideration of environmental issues in the change management process of the organisation – for example, when moving into new markets; developing new products and services; and mergers and acquisitions. ■ Evidence that environmental processes are embedded in the modus operandi of the organisation – for example, environmental criteria are embedded in product design.
Environmental policy	Does policy include commitments to protect the environment most relevant to the organisation?	■ Commitments over and above pollution prevention, such as zero waste to landfill; carbon neutrality; habitat protection.

Planning

Clause	Gap analysis questions	Examples of typical evidence
Significant environmental aspects	Does the organisation take a lifecycle perspective when identifying its environmental aspects?	■ An aspect register that includes upstream aspects (such as the abstraction and transport of raw materials) and downstream aspects (including the delivery, use and ultimate reuse, recycling or disposal of products and services).
Risks associated with threats and opportunities*	Has the organisation evaluated the threats and opportunities identified in the context analysis (above) and taken the appropriate measures to prevent or reduce undesired effects? These include the potential for external environmental conditions to affect the organisation, such as climate change mitigation.	■ Assessment of risk associated with threats and opportunities (below). ■ Strategic business planning. ■ Consider effect of "planetary boundaries" on the organisation. ■ Business continuity management – for example, BS 22301. ■ Climate change adaptation plan – other applicable environmental issues should also be included.
Planning actions to achieve environmental objectives	Does the organisation have a plan to achieve its environmental objectives? Is the plan integrated into the organisation's business processes?	■ Organisational business plan that includes environmental goals. ■ Specific measurable project plans for each objective. ■ Records of progress against each objective. ■ Consider ISO 14031: environmental performance evaluation.

** Terminology in clause 6.1.4 may change from "threats and opportunities" (DIS) to "risks and opportunities" in the final draft international standard.*

Risks associated with threats and opportunities – small domestic insulation business

Issue	Potential adverse effects on EMS and/or organisation	Control measures
Strengths		
■ Strong environment ethos	■ None.	■ Not applicable.
Weaknesses		
■ Ageing infrastructure	■ Increased risk of pollution from oil tank.	■ Install new tank. ■ Procedures for pollution prevention and spill response.
■ Lack of modern IT systems	■ Reduced potential for implementing an IT system that saves paper.	■ Implement paper recycling policy – see environmental objectives.

Opportunities		
■ New markets for insulation products	■ If overseas, there is a risk of not complying with national regulations. ■ Increase in staff travel and product delivery miles.	■ Ensure all environmental regulations are identified and addressed – see procedure for environmental project management. ■ Implement a new route planning system to minimise mileage – see environmental objectives.
Threats		
■ Increased flood risk at warehouse	■ Loss of product, business disruption and increased insurance premiums.	■ Since the floods in 2012, firm has been seeking an alternative location for the warehouse – it is likely a decision will be made in Q2 2015. As an interim measure, a mezzanine floor has been constructed in the warehouse and vulnerable stock is stored at height.
■ Collapse of government funding for insulation	■ This would have a major impact on the volumes of product that can be sold and installed.	■ Continue to monitor the political situation. ■ Support trade association lobby on the issues. ■ Develop products not dependent on government grants – firm launching supply and fit flood defence products from Q2 2015.

Support

Clause	Gap analysis questions	Examples of typical evidence
Competence	Does the organisation evaluate the effectiveness of actions taken to acquire environmental competence (education, training or experience)?	■ Competency tests. ■ Direct assessment and observation. ■ Twice-yearly personal development reviews.
Communication: general	Has the organisation planned and implemented a process for internal and external communication – what, when, with whom and how? How does organisation ensure that its environmental communications (particularly data) are reliable?	■ Stakeholder needs analysis and engagement plan. ■ Staff engagement plan. ■ Internal and external audits of communicated information. ■ Verified external environmental sustainability report. ■ Certification to standards – such as AA1000 AES.

Operation

Clause	Gap analysis questions	Examples of typical evidence
Operational planning and control – procurement	Has the organisation determined the environmental requirements for the procurement of products and services?	■ Environmental/sustainable product specifications written into contracts/ purchase orders – for example, FSC timber, GreenPalm and EU Ecolabel. ■ BS 8903: principles and framework for procuring sustainably. ■ Evaluation of contractor/supplier environmental performance – for example, questionnaires, and audits.
Operational planning and control – design	Has the organisation established controls to ensure environmental requirements are considered in the design process?	■ Integrate into product design environmental criteria – such as carbon and water footprints, durability and "cradle-to-cradle". ■ Compliance with environmental product legislation. ■ Lifecycle assessments of products or services – ISO 14040 series. ■ Use of environmental design indicators, such as BREEAM or CEEQUAL.
Operational planning and control – communication	Has the organisation communicated the relevant environmental requirements associated with external providers, including contractors?	■ Processes for contractor control – for example, contractual requirements, inductions, site inspections and reporting. ■ Extension of the above processes to cover outsourcing.
Operational planning and control – information	Has the organisation provided information about the potential significant environmental impacts of its products?	■ Energy performance criteria and labels. ■ End-of-use information, such as take-back schemes, reuse or recycling. ■ Information to minimise all applicable environmental impacts associated with the product or service, such as correct setup and storage.

Performance evaluation

Clause	Gap analysis questions	Examples of typical evidence
Monitoring, measurement, analysis and evaluation – general	Has the organisation extended environmental monitoring and measuring of significant aspects associated with its lifecycle impacts? Has the organisation documented its methodologies for monitoring, measuring, analysing and evaluating to ensure valid results?	■ Sustainable procurement indicators – for example, "percentage of raw materials purchased from a sustainable source". ■ Sustainable design indicators – for example, "percentage of projects achieving an A-rating for BREEAM". ■ Data process steps for each indicator, detailing: data collection; meter reading; calibration; data storage; conversation; aggregation; and formulae. ■ Use of defined methods for specific data streams – for example, ISO 14064.
Management review	Do the management review outputs have implications for the strategic direction of the organisation?	■ This requirement relates to the new requirements for "strategic direction". ■ Similar evidence as listed in the clause on leadership and commitment (p.19), with the addition of management review minutes relating to business strategy and environmental management.

Healthy savings

Paul Suff on how an NHS trust is pioneering energy performance contracts

Energy performance contracts are often described as too good to be true, but they are a low-risk way of reducing consumption and costs. An EPC is a partnership between a customer and a utility company or equipment supplier to improve the energy efficiency of its buildings and facilities. The energy savings are guaranteed, typically until the project costs have been covered, with the customer accruing the ongoing savings. The Energy Efficiency (Encouragement, Assessment and Information) Regulations 2014 define an EPC as an arrangement under which energy efficiency measures are:

- provided, verified and monitored during the whole term of the contract: and
- paid for by reference to a contractually agreed level of energy efficiency improvement or other agreed criteria such as financial savings.

EPCs are popular in the US public sector. BRE reported in 2013 that the EPC market there had grown from $2.6 billion to $6.2 billion over the previous 10 years. EPCs are less common outside the US. But Alexandra Hammond, associate director for sustainability at Essentia, is hoping that more public sector organisations in the UK will agree EPCs: "The NHS alone has the potential to cut energy costs by up to 20% and reduce its carbon footprint by up to 25%. Savings across the whole NHS of around 14% would total more than £100 million, enough to employ nearly 3,000 nurses. EPCs can blend the 'quick wins' with those that add value but perhaps do not have the necessary defined paybacks, helping public bodies achieve a programme of investment that delivers lasting value."

With energy prices expected to rise over the long-term, Hammond outlines the potential for savings in financial terms. "An organisation spending around £4 million a year on energy can expect the cost to increase to £9.9 million over the next 10 years, and to £15.5 million by 2030," she says.

A framework agreement

Essentia, which is the commercial arm of Guy's and St Thomas' NHS Foundation Trust and provides sustainability services to other public sector organisations, recently signed an EPC with British Gas. It will save the trust at least £1.3 million a year on energy costs and cut annual carbon emissions by 7,500 tonnes. The cost of the energy-saving measures is £10.3 million and is funded entirely by

Recladding the façade of the 148.6m tall tower at Guy's Hospital – the world's tallest hospital building – will help cut annual energy consumption by 18%

Essentia's five-stage EPC model

Understand
- Your buildings' current energy use
- Your organisation's business objectives
- Your energy savings targets

Select
- Potential energy saving measures using a desktop audit

Design
- Define/agree costs and savings
- Design energy saving measures
- Select financial solution

Deliver
- Provide detailed programme
- Ensure business continuity
- Integrate with supply chain

Perform
- Measure and verify energy savings
- Educate and train users
- Consider further improvements

the trust. "The numbers are really compelling. These are guaranteed but, because we are tendering for all the work, I am confident we can generate even higher savings at lower cost," says Hammond, who has spent the past two years developing the trust's EPC framework.

Essentia says this can provide a model for other NHS bodies, local authorities and universities to guide them through the process, speed up the project and save money. It consists of five stages (see above), from understanding an organisation's energy use and its business objectives to measuring and verifying energy savings, and educating and training users. "The framework includes standard terms and conditions and pre-written contracts, saving money on legal fees," says Hammond.

Also included is technical support, independent measurement and verification, assessment of the technical and commercial risks, assistance with financial modelling and legal support.

Essentia has also "pre-procured" eight energy companies, including British Gas, enabling organisations to go straight to a provider without having to engage in the lengthy, official public sector procurement process. Pre-procurement of suppliers by Essentia involves checking their financial viability, insurance arrangements and experience, for example, saving other public sector organisations time.

Hammond says energy firms must also uphold core values of collaboration. She stresses that suppliers' ability to work collaboratively with clients is at the heart of the process: "The framework is not just about getting the paperwork right, dotting the 'i's and crossing the 't's. It places a responsibility on the energy firms to work with their clients to deliver best value and innovative solutions."

British Gas says the key to a successful EPC is to develop close working relationships between the parties. It says an EPC typically has four phases:
- agreement on project criteria and key outputs;
- an investment audit to establish a baseline of energy use and quantify potential savings;
- design and implementation of agreed solutions to deliver the energy and carbon improvements; and
- performance management or the measurement and verification phase.

The eight energy firms involved in the Essentia framework vary in size, but Hammond says all recognise the importance of continually engaging the clients, even the people who are not directly involved in energy matters. "They know when to talk to the medical director or the finance director," she says.

Hammond reports that 12 NHS trusts, including Barts and St George's as well as her own, have gone through the process (see panel, p.24).

Securing savings

Guy's and St Thomas' has a record of investing in technologies and upgrading facilities to reduce energy consumption. The trust installed combined heat and power (CHP) units in 2009 at its two main hospital sites in south London. The 3.2MW units provide around half of the trust's annual electricity requirements, while the waste heat generated is reused for each hospital's heating and hot water supplies. They also cut annual emissions by about 11,300 tonnes and save the trust almost £2 million a year, which is reinvested.

Hammond says there was concern that such initiatives would limit the opportunities to further save energy through the EPC. "We wondered before the British Gas assessment whether the installation of the CHP units in 2009 would mean there wasn't much more we could do to save energy," she recalls. "But it turned out that we had the most compelling payback of any EPC British Gas had ever assessed."

The audit, which took place over six months and involved experts from British Gas and energy services business Breathe Energy, identified 32 technologies to install, including new boilers, automated heating systems and solar panels. "Breathe was responsible for the technical audits and British Gas for how to implement the technologies," says Hammond. "The biggest single saving, more than £1 million, will come from lighting." The trust has been gradually replacing conventional lighting with LEDs for years in 24-hour areas such as corridors, but the detailed lighting design produced by British Gas targets areas such as wards, which are harder to access. "Initially we will be replacing light fittings with LEDs, but the contract also includes designing

Image: Dennis Gilbert

Image: Tom Dymond/REX

Essentia's work at Barts and St George's

Barts Health NHS Trust

Barts Health NHS Trust procured its EPC with Skanska through Essentia's framework. Agreed in January 2014, the EPC aims to reduce annual energy consumption by 21% and carbon emissions by 34% at three of the trust's sites – Newham and Whipps Cross university hospitals, and Mile End hospital.

Under the contract, Skanska guarantees that the energy-saving measures put in place will generate enough savings to pay for the project, lasting 12 years. Skanska says the project will help reduce the hospitals' running costs, and the technologies and initiatives will help to improve the internal and local environments at the sites.

St George's NHS Healthcare Trust

In summer 2014, St George's NHS Healthcare Trust in south London agreed an EPC with British Gas and Breathe Energy. Over the 15-year contract, the Tooting hospital's total annual energy costs should reduce by 25% and more than 6,000 tonnes of carbon emissions will be saved each year. Financial savings to the trust are estimated at more than £1 million a year during the lifetime of the contract, which was delivered through Essentia's EPC procurement framework.

The £12 million cost of the project is being funded by a loan from the London energy efficiency fund. The money will be spent on a range of energy-saving measures, including the installation of combined heat and power boilers, absorption chillers and solar photovoltaics, as well as changes to the steam, and ventilation and air-conditioning systems.

"Working alongside the trust, we have reviewed its estate and put in place a bespoke plan to help dramatically reduce energy costs and carbon emissions," says Mike Chessum, head of energy construction services at British Gas. "These savings are guaranteed by the contract and means the trust can make a positive return on its investment."

systems to light a space more intelligently," Hammond says. "Research suggests that clever use of lighting, particularly systems mimicking daylight, can aid the healing process. If we can use lighting to improve health outcomes and discharge patients earlier that will have huge benefits for our organisation."

Hammond says the rollout of the different technologies under the EPC will link with the £1 billion capital investment being made by the trust over the next five years. "We need the two programmes to work in parallel," she says. "In the past, we have been guilty, like most organisations, of taking a piecemeal approach: projects were done with the best intentions, but would conflict with other priorities and result in systems that did not work well together." To ensure coordination, the capital development team must consider energy management in every project and work across projects to rationalise equipment and make sure the trust estate can adapt to future service needs.

Installing the technologies will take around 20 months, starting with equipment that will soon need replacing. "We have put together a new project register," says Hammond. She is keen to point out that the in-house engineering teams have been involved in the process. "We knew where most of the big opportunities to save energy were. Breathe and British Gas didn't identify many things that we were not already aware of," she says. "The difference with the EPC is that we are guaranteed the savings. If British Gas does not meet the targets, it has to write us a cheque." The other advantage from using an outside supplier is that there is a greater impetus to quickly secure potential savings. "In the past, equipment would be replaced when necessary and only then would we enjoy the savings. It was more of an accidental benefit," she says.

The contract has enough flexibility to allow emerging technologies to be installed. "Innovation is moving apace and if something better comes along it can be installed when equipment needs replacing or as a separate piece of work," says Hammond.

Getting it right

She has several tips for organisations considering an EPC. Communication is crucial, she says, because EPCs are often misunderstood: "The key message is that you do not have to give away your savings. It is important that senior management understands that EPCs are not about the energy supplier taking all the savings. Guy's and St Thomas' will save money on its energy bills – at least 10% a year is promised and it will retain any savings above the guaranteed level."

Communicating the potential benefits across the organisation is also important. "It's important that everyone understands why the EPC has been agreed. At Guy's and St Thomas' I didn't want anyone to be surprised when we presented the plan to the board," says Hammond. Moreover, the message must be relevant to the recipient: "Some parts of our estate are very old and the plant is working hard to maintain the right temperature and sufficient air changes. So when the contract was explained to the chief nurse we focused on how it would improve the environment; how more efficient equipment would make our facilities better places in which to treat patients and for staff to work. Similarly, the medical director is not particularly interested in how the contract will result in less planned preventive maintenance. But if I tell him it is likely to reduce the duration of someone's hospital stay, he gets that."

She advises public sector organisations to investigate EPCs and take advantage of the relatively cheap finance that is available. She lists as potential sources of finance Salix, which since 2004 has funded almost 13,000 projects, the Green Investment Bank, the London energy efficiency fund and similar regional sources. "There are a lot of things public sector organisations could do to save money on their energy bills and plenty of sources of finance. They need to make it a priority," says Hammond.

The balance between new and now ideas

Eco Technology Show focuses on proven best practice and products, says director **Nicola Gunstone**

When the Eco Technology Show opens its doors for the fourth time this June in Brighton, property owners, developers and equipment installers will be able to see and get to grips with the technologies and ideas that can make a real difference to energy usage.

Businesses have become used to the idea of energy auditing, mandatory for larger organisations with the start of the energy savings opportunity scheme or ESOS. Although ESOS will identify where the savings can be made, it does show how. At the same time, the energy saving equipment available is becoming ever more complex.

As Martin Russell-Croucher, director of sustainability and special projects at RICS, has said: "Owners and occupiers will also need to be educated about the operation of their property as the technology becomes more complex."

What really matters to managers is having an action plan that they know will make a real impact, and which they can implement in the face of continued confusion about funding. In all probability, they will have looked at the big ticket Capex ideas by now and have either scheduled them in or accepted that the available budget will not allow them. That is why Eco Technology Show's focus on the practical, affordable ideas that can make a difference right now will make a visit to Brighton this June worthwhile. Our goal as organisers is to encourage energy and facilities managers to embrace innovation in technology and low carbon solutions.

Building on the lessons and successes from previous years, the event aims to combine forward thinking debate with an exhibition of practical ideas and products that are available. Speakers from technology providers and companies, such as Nando's and Thameslink, will share what they have learned about energy auditing and management. The free seminar sessions are all run in an environment designed to encourage lively debate.

The opportunity to join an extended Q&A with the head of the Energy Managers' Association, Lord Rupert Redesdale, will be a major draw again this year and we are delighted that the Liberal Democrat peer has chosen this event as a platform. A few laughs, but with a serious take-home message, are promised by actor Robert Llewellyn, of Red Dwarf and Scrapheap challenge fame, who will be championing the cause of electric vehicles.

The core exhibition zone will be a cornucopia of products available and ready to implement now, whether you are from a business contemplating its first ESOS report, a company faced with rocketing energy bills, a supplier dealing with demands from customers looking for evidence of sustainability credentials, or an individual homeowner.

We are also excited about the Innovation Zone, which is a new feature of the show this year. Here, 20 small businesses from dozens of applicants will showcase their new ideas and products. Each of them will be giving a short presentation outlining their ideas, which range from a robot to install insulation to devices that save water.

In the Communication Hub, visitors will be able to get a quick answer to questions from experts. This area will also host a series of networking sessions over the two days of the show where delegates can meet like-minded individuals.

Across the show, there will also be many practical sessions from established businesses on topics such as rooftop solar, ESOS auditing and electric vehicles. The programme also has ample opportunity to explore game changing thinking on how we should organise our economy for a sustainable future.

Overall there are more than 70 keynote presentations and panel discussions to choose from, while more than 140 exhibitors, from providers of energy management equipment to building and retrofit specialists, will showcase their products and services.

Register today for fast track entry at www.ecotechnologyshow.co.uk.

When words do not wash

In her second article on corporate transparency, **Jiggy Lloyd** looks at the dangers of greenwash

I stated in a viewpoint in the November 2014 issue of *the environmentalist*: "We live in a world in which words are easier to deliver than corresponding actions." It is my belief, and my great concern, that this gap is growing. Too many of the grand policy statements on the environment that organisations issue in an attempt to appear progressive lack one thing: action. The failure to act on declarations means they are simply "greenwash" and it is something that the corporate social responsibility (CSR) and sustainability professions must address.

But it does not end there: there is also a tendency for organisations to reveal a lot about issues that are easy to shed light on, while remaining silent on those that are more tricky, but possibly more important. This can be summed up as "selective" or "skewed" transparency.

Lack of control?

There are two main reasons for the gap between the stated beliefs of organisations and their actions: the first is drawn from my experience, based on many years of scrutinising CSR and sustainability communications; although many organisations say "the right thing", we have made precious little progress towards a more sustainable economy. There are many reasons why the gap might be growing.

First is the expectation that businesses should iterate policies on just about everything. Second, companies are getting larger and the management teams more dispersed. Communications are easier and costs must always be reduced, such that organisations today – at least those in the private sector – operate on a much lighter version of the management hierarchy that was typical even as recently as the 1990s. As a result, it is easier for head office to state that "so-and-so" is what the organisation believes, but harder, unless compensatory measures are put in place, to ensure that this belief is reflected on the ground across multiple sites.

Talk to the chief executive of a large organisation for any length of time and you may hear how they struggle to know what is going on in the organisation they head. This problem is particularly evident in multinationals that have their roots in one continent and culture. It is not uncommon to find that, as you travel further from the cultural heart of the company, policies are less well reflected in organisational behaviour.

Narrowing the gap

This problem prompts the question: what can organisations do to narrow the gap between what they profess and what they practise?

First, it is important to address any lingering belief that such a gap is "acceptable". Yes, there is an argument that aspirational statements are part of a visionary management culture. This is valid up to a point, but no further. Remember that an organisational culture that discounts its own statements has a very corrosive effect on stakeholder relationships.

Policies should not simply emerge from the top of an organisation, to be driven down and out to the periphery. Before the policies are rolled out, it is better that they are subject to internal discussion – along the lines:

- "what is the issue?"
- "what should we aspire to?"
- "what policy will put us on the right road?"

That way they are less likely to end up as corporate wallpaper. But beware so much consultation and consensus that they simply confirm the status quo. Aim for "stretch", but not so much that implementation is near impossible and disillusion sets in.

Of course, corporate culture will affect how much stretch and aspiration are considered appropriate in policy statements. I know of two comparable companies in the fast-moving consumer goods sector that have opposing views on communicating policy in public. One issues grand statements and far-reaching targets on every conceivable topic on the CSR and sustainability agenda; the other adheres to its mantra "we never say anything that we could not possibly live up to".

A third strand of a can-do strategy is to build policy adherence into the management reporting processes. Management reports tend to include a reference to health and safety policy. It is less common to see commentary on the reporting unit's success in adhering to other policies. Letters of assurance – a common feature of relationships between organisations and their external advisers – may be best when, for instance, the reporting unit is large or highly autonomous and has few other opportunities to communicate with the core.

At the other, more human end of the reporting spectrum, dialogue between managers and their direct reports should embrace policy as well as performance issues. It is important to avoid a tick-box mentality, however, in order to adopt appropriate techniques. For instance, "how are you getting on with …[policy issue abc]?" is preferable to "have you complied with…?".

Selective transparency

I am concerned about selectivity in instances when an organisation espouses in its CSR and sustainability communications policies that differ from those expressed in its dialogue with policymakers. As a professional and as an environmentalist, I believe we must acknowledge that this goes on. How else do we explain instances of companies engaging in lobbying against measures that, according to their CSR and sustainability reports, they would be in favour of?

And how else can the stance of some industry groups be less pro-sustainability than the published views of individual members? A recent study from the Policy Studies Institute (p.8) revealed the extent of such behaviour, finding that many major multinational companies with strong sustainability policies are at the same time members of trade associations that are lobbying against EU climate policy.

I am concerned about when an organisation espouses in its communications policies that differ from those expressed in its dialogue with policymakers

It amazes me that organisations let this happen. Clearly, it is bad for stakeholder relationships. But it also represents a huge waste of effort. If CSR and sustainability communications are not used to discuss how proposals for legislation, for example, affect the progress of an organisation, much of the benefit of those communications is lost. It is better to help stakeholders appreciate the dilemmas that organisations face in aligning business survival with sustainability goals than to waste time conveying a rose-tinted view. From the point of view of policymakers, the same argument applies: lobbying positions framed in terms of sustainability will have more traction. Compare "we object to [legislation proposal xyz] because it will have a negative impact on our organisation" with "[legislation proposal xyz] will prevent us being a more sustainable organisation in a more sustainable world because…".

Some good reports on the relationship between CSR and sustainability communications and lobbying have been produced – the Green Alliance briefing, *The private life of public affairs*, is one. They all propose remedies, of which I particularly favour these:

- it should be standard practice for organisations to include in their CSR and sustainability communications a commentary on their lobbying activities and their alignment with the organisation's policies;
- there should be transparency about involvement in trade associations; and
- all lobbying communications –consultation responses and so on – should include a short statement on how the espoused view aligns with the respondent's CSR and sustainability policies.

Following these steps would do much to prevent the skewed nature of many CSR and sustainability communications. Yes, it would make them less comfortable to read, but isn't that a good thing? After all, it is the grit in the oyster that produces the pearl.

Jiggy Lloyd is an independent environmental consultant. She is a former non-executive director at IEMA. For more information go to jiggylloyd.co.uk.

Image: iStock

The young pretenders

Trevor Clawson reports on some of the UK-backed businesses on a mission to help clean up the world

A coach pulls up outside the Intersection for the Arts in San Francisco and a group of UK-based scientists, engineers and entrepreneurs disembark. Over the next few hours these representatives from 15 companies will pitch their technologies to an audience of venture capitalists, strategic investors and potential partners. But this event is more than a routine trawl for funding. All of the companies have been selected through a competitive process to take part in a "Clean and Cool" trade mission organised by the technology development agency Innovate UK and its partner, The Long Run Venture.

There is, perhaps, an element of taking coals to Newcastle. California has assumed a leadership role in terms of US efforts to cut emissions and use natural resources more efficiently. And, with a severe water shortage focusing minds on the issue of climate change, the state and its cities have already imposed an extensive raft of environmental regulations, with more planned. In effect, local legislators have created a market and testbed for "cleantech" businesses, and San Francisco is the epicentre of activity.

A land of opportunity?

So, the UK's cleantech hopefuls were stepping into a land of opportunity, but with a caveat. The San Francisco bay area captured 43% of US investment in clean technologies – some $4.3 billion – in 2012, but potential backers are wary after major losses on solar power in the 2000s. These days, any company hoping to make an impact must demonstrate not only innovative science but also a viable route to market.

And that is undoubtedly a big challenge for start-up businesses. Technologies that look promising in a university or science park laboratory may require millions of pounds to complete the journey to fully engineered solution; even then there is no guarantee of a market. It is a high-risk business and companies often founder in the so-called valley of death that lies between the development, prototype stage and commercialisation.

So what does the road from prototype to market look like? Six companies taking part in Clean and Cool told *the environmentalist* about their technologies, how they were developed and their plans for commercial realisation. Some are offering cutting-edge science that promises to reduce overall carbon levels or to revolutionise agriculture, while others are innovating by cleverly applying existing technologies to a problem. The range of firms involved in the Cool and Clean mission demonstrates that the best solutions do not always consist of cutting-edge technology, but often it is about adapting what already works and aligning it with a business plan that addresses needs.

Images: Flickr/ cleanandcoolmission2012

Demand Logic

Not all cleantech solutions require years of research and development. Existing technologies can often be applied to a specific but pressing problem. In the case of Demand Logic, the problem is the energy wasted each day by large commercial and public buildings. The company's approach has been to collect and analyse information from building management systems (BMS) – boilers, coolers, meters, batteries, lighting, pumps and ventilation units, for example – and identify inefficiencies and waste, allowing building managers to take action.

According to Sonny Massero, who leads on strategy and business development at Demand Logic, the system can deliver significant savings: "We've done a pilot at King's College London where we identified savings of £390,000 a year." The pilot was carried out over three campuses and tracked data from 554 major plant items, including boilers, pumps and air handling units. Overall 100,000 data points were tracked, including individual lighting units. After an analysis, the college identified annual carbon savings of 2,500 tonnes.

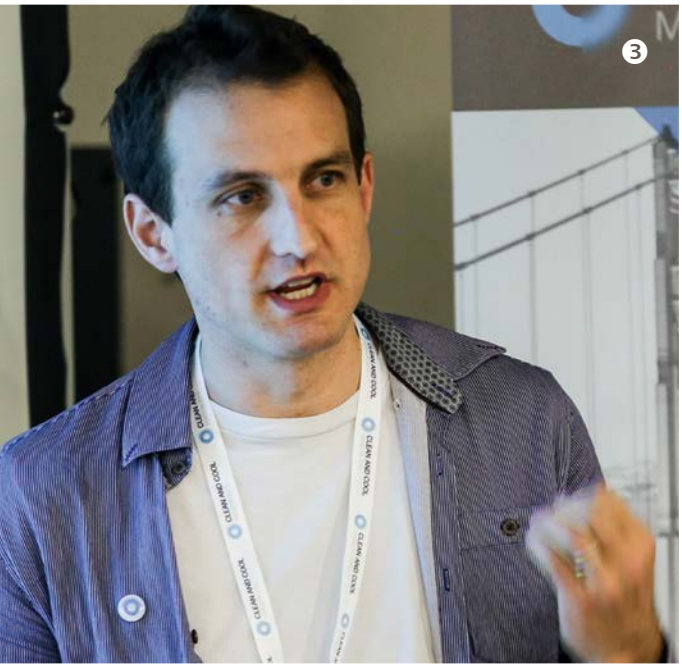
Massero believes the market for Demand Logic is potentially huge. "In the City of London alone we estimate that there is energy waste amounting to £50 million a year," he says.

Having carried out the King's College pilot in 2013, Demand Logic has been quick to come to market and its clients include another university, Goldsmiths, as well as GE Capital Real Estate and Land Securities. The company also secured a customer directly as a result of its participation in the Cool and Clean mission.

The company's ability to roll out a commercial service quickly reflects the relative simplicity of the offering from the customer side. Demand Logic provides hardware to collect data from the BMS, which is relayed to the company's own analytics software. It crunches the numbers from the devices, with excessive demand (and frequency) flagged device by device. Arguably, it is a system that could be replicated by other big data companies, but Massero contends there is nothing else as comprehensive on the market.

Cumulus Energy Storage

Renewable energy remains a key theme in the cleantech sector but the emphasis is shifting from energy generation products to management systems that will allow grid operators to cope with intermittent supply – particularly from wind and solar – and peaks and troughs in demand. Batteries provide a means to store energy generated by intermittent and other sources and release it when



1 **Peter Blezard**, CEO at Azotic Technologies
2 **Andrew Ling**, co-founder of Perpetualv2G
3 **Tim Kruger** from Chess
4 **Aniruddha Sharma**, CEO and co-founder of Carbon Clean Solutions
5 **Nick Kitchin**, founder of Cumulus Energy Storage
6 **Sonny Massero**, strategy and development lead at Demand Logic

required, smoothing out the disparities between supply and consumption. According to Lux Research, the power storage industry will be worth $117 billion worldwide by 2017, so there is a huge amount of battery-related activity. The sticking point is often cost. How do you provide enough storage at a price that is affordable for grid operators? Nick Kitchin and Darron Brackenbury, founders of Cumulus Energy, believe they can resolve this by using copper-zinc batteries, which they say are significantly more cost-effective than other technologies. Reliability is also a plus.

Although based in the UK, Cumulus is carrying out its research and development in Oakland, just over the bay from San Francisco, and is developing units ranging from 1MWh to 100MWh. Once the prototype has been completed, the company plans to start manufacturing, beginning with a 1MWh per month capacity in the UK.

Perpetualv2G

For transport companies, battery technology has the potential to solve one problem in particular: how to economically power in-vehicle refrigeration units or indeed any consuming unit that normally relies on electricity generated by the motor.

Founded in 2012 by Andrew Ling, Perpetualv2G provides a system based on lithium-ion batteries. Power is harvested from vehicle alternators and stored in the batteries, which have a range of outputs. Rather than reinventing battery technology, the key is software that monitors available output from the alternator and allows the storage unit to take capacity without affecting consumption. The system enables, say, a delivery van company to run its refrigeration units when the vehicle engines are turned off, saving up to 40% in fuel costs, according to Perpetualv2G.

"We make it possible for vehicle owners to enable start-stop technology," says Ling. "So they can keep onboard systems running when the engine is switched off." In addition, Perpetualv2G's batteries have inputs to take power from alternative sources, such as solar energy.

Perpetualv2G has installed its system on 100 Sainsbury's "click and collect" delivery vehicles, so they can run cooling systems when parked outside London tube stations for long periods – in a new service customers can order online and pick up their groceries at underground stations. So far, these vehicles have saved 840 tonnes of CO_2 emissions.

Carbon Clean Solutions

Carbon capture is seen as a key tool in cutting emissions, but it has proved difficult to roll out on the scale required at an affordable cost. Enter Carbon Clean Solutions (CCS), a company with its roots in India but with a British base. Contemporary carbon capture solutions have involved high capital spending at the outset followed by the ongoing cost of expensive solvents that degenerate over time, says CCS. Its proprietary CDR Max solvent, however, achieves a 99% carbon capture rate with running costs up to 30% lower than other solvent-based systems, claims the company. It achieves these efficiencies due to the low temperatures required for "dissociation" and a lower rate of solvent degradation, so the material lasts longer. In addition, the solvent is less corrosive, reducing the cost of plant.

The CCS system has already been tested in India at a plant owned by chemical company Solvay and achieved a saving of $23 per tonne of carbon captured when compared with the technology previously used there. CCS claims the system can easily be scaled up by 20 or 30 times to work in larger plants.

Chess

One school of thought is that measures to simply freeze or cut emissions will not be enough to avert a climate change catastrophe. Too much damage has already been done. That is the view of Tim Kruger and his company Chess. His is a vision of "carbon negative power" in which the process of generating electricity removes carbon from the atmosphere.

Working at Oxford University, Kruger has tested a system in which limestone is used as part of a process to capture carbon from natural gas. Rather than limiting how much carbon is released, the limestone absorbs CO_2 from the atmosphere, reducing overall pollution levels. "Thus fossil fuel becomes part of the solution," says Kruger. The technology is at an early stage and, before scaling up, Kruger plans to build a 200kw prototype next year. Acknowledging that this is a long-term project, Kruger nonetheless believes that proving the science at the prototype stage will focus the minds of regulators. "Once you've proved that it is possible to clean it up carbon pollution, you can make companies responsible for doing just that," he says.

Azotic Technologies

Bio-technology company Azotic is focused on reducing nitrogen levels in the environment, and at the same time provide farmers with a more cost-efficient way to ensure a healthy yield. Nitrogen-based fertilisers are essential to maintaining crop yields but, according to the European commission, the pollution damage they cause – including contributions to climate change and biodiversity loss – costs between €50 billion and €280 billion a year in the EU. There are means to mitigate the impact of nitrogen, such as using sensors to detect areas that require fertiliser and then deploying computerised dispensers to apply the quantities needed. The downside is the high cost.

Azotic's solution is to coat seeds with a sugar solution. When the plants grow, they fix nitrogen from the air. "Our trials indicate that by using the solution we can reduce the amount of nitrogen fertiliser required by 50%. That would not only mean less pollution but lower costs for farmers," says Peter Blezard, Azotic's chief executive.

He is aiming for a 2% share of a £110 billion nitrogen fertiliser market and, with trials nearly complete, the technology is close to market launch. "It's the best revolution in agriculture for 100 years," Blezard claims. In many respects, the technology is an advance on techniques already used in legumes farming, but Azotic's formula will work on a much wider range of crops.

Trevor Clawson is a business writer.

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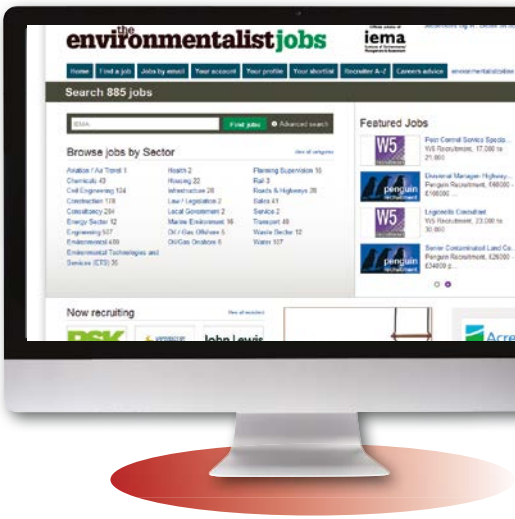

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Assessing the urban environment

Towns and cities pose specific challenges when conducting environmental impact assessments, argue **James Alflatt** and **Neil Waterson**

Environmental impact assessment (EIA) tends to be high on the agenda for many developers, a position secured by the risk of possible delays from legal challenges. In an urban setting, development has potential for significant impacts on people, which bring specific challenges for assessments. As a result, there is often greater public interest in such projects.

The role of a competent EIA expert appointed early in the process can assist in delivering a robust and proportionate approach to EIA, and will save time and money in the longer term. There is huge benefit in having planners as EIA coordinators since they are often central to project coordination, and can add value in identifying political and planning sensitivities. They will also understand the control mechanisms in the planning process to ensure mitigation measures are viable, deliverable and can be sufficiently monitored by planning conditions and legal agreement.

In most cases, urban projects are likely to involve redeveloping previously built-on land. Although they may have less impact on the natural environment, their possible proximity to high numbers of people and other urban uses can have significant impacts.

Important issues

Issues of likely concern include increased traffic and noise as well as poorer air quality. For residential developments, existing residents and service providers are likely to be concerned that more people moving into the area will adversely affect access to doctors, dentists and schools. Heritage issues may also be more common due to a greater number of listed buildings and conservation areas in towns and cities.

Many of these issues will be addressed at least partly at the planning application stage in the case of urban developments. However, the requirement for EIA raises the bar, not only as to the scope and detail required, but the need to deliver what has been assumed in the environmental statement.

Equally, proposals for urban developments will often offer measures that will result in benefits for local people, whether in terms of housing, jobs, or recreational or community facilities. It is important that the EIA considers these benefits and sets these against any adverse impacts. In that way a balanced and informed picture of the effects of the scheme on the community can be provided.

Image: iStock

On a constrained urban development, the ability of developers to mitigate impacts onsite may become increasingly difficult, making it essential to identify acceptable solutions offsite. These may include financial contributions secured from the developer and delivered through the planning process.

Communication is key

A further challenge lies in identifying the impacts against those perceived by the local community. To smooth the process, these can be addressed through public consultation early in the planning process.

The consultation should be seen as an opportunity to help inform the EIA and the evolution of the proposals, so that adverse impacts can be identified and avoided or minimised through design measures. When done effectively, the communication will help to limit the level of rumour and temper the popular perception that the scheme will work to the detriment of the local population and area.

Competent EIA experts will have the knowledge and ability to communicate the beneficial impacts and stress the positives from the scheme, and set these against other planning and political sensitivities.

Increasing requirements

The EIA challenges associated with developments in towns and cities are likely to increase with forthcoming changes to the EIA Directive, which will place more onerous requirements and obligations on developers and planning authorities. It may be some time – but spring 2017 at the latest – before these requirements are transposed into UK regulations, so the changes may not immediately have a direct impact on development projects.

Of more immediate concern will be the changes to EIA screening thresholds, which came into force at the start of April and exempt many smaller sites. Under the changes developers will no longer have to go through the screening process if a site is smaller than five hectares or 150 homes. However, the higher density of residential development in towns and cities will mean that in many cases the 150-dwelling threshold will apply and an EIA be necessary, irrespective of the site area. Demand will therefore continue for competent EIA practitioners with experience of developments in an urban environment.

James Alflatt and **Neil Waterson** are partners at Bidwells, an IEMA EIA Quality Mark accredited company.

New IEMA membership fees from next month

	Price
Affiliate	£117
Associate	£152
Fellow	£175
Full	£160
Graduate (price subject to change in 2015)	£52
Student	£50
Student of IEMA corporate membership university	FREE
GACSO plus IEMA non-professional level – Student, Graduate, Affiliate	£260
GACSO plus IEMA professional level – Associate, Full, Fellow	£295
Full/chartered environmentalist	£311

As previously featured across regular updates to members, renewal rates for 2015/16 will change from the start of next month. Details of the new fee structure for the main membership levels can be found in the table (above).

All members will be notified of their exact fee, including any additional registrations, four weeks in advance of their renewal date. Members whose renewal is due on or shortly after 1 June 2015 will receive full details of their fee for 2015/16 four weeks in advance of the date.

Changes to the membership fees are being applied to support the delivery of services this year and beyond. Members can expect a number of new and improved features, tools and opportunities in the months ahead, which will ensure they get maximum value from their membership.

Members can save £5 on their annual renewal fee by switching to direct debit. Go to iema.net/membership-renewing to find full details of how to arrange your direct payment.

Some frequently asked questions, which explain further the changes to the fees structure, are available at iema.net/fees.

More backing for campaign to boost sustainability skills

IEMA's skills for a sustainable economy campaign continues to gather momentum, with VolkerWessels UK becoming the 40th supporter

Since its launch in October 2014, 38 organisations and two high-profile individuals – former MP Joan Walley and environmentalist Jonathon Porritt – have pledged their support for IEMA's collaborative campaign to bridge the environment and sustainability skills gap. With the addition of VolkerWessels UK, a multi-disciplinary civil engineering and construction group, the list has reached a new milestone. Supporters range from sole trader consultancies to multinational companies, with growth driven largely by IEMA members who either work for or with the organisations backing the campaign.

Adrian Shah-Cundy, head of corporate responsibility at VolkerWessels, said: "We fully endorse IEMA's skills for a sustainable economy campaign as employee and organisational skills, training, knowledge and experience are the very foundation of every good business."

IEMA would like to thank VolkerWessels UK and all our campaign supporters for their backing and ongoing contributions.

If you would like to get involved in the campaign to gain profile and take advantage of a number of upcoming opportunities, visit iema.net/get-involved-0.

Anglo Placing People First
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Energised Environments Earth. Smart. Solutions.
EY Building a better working world
Joan Walley
matt:e Caring about your world
optimus
Royal HaskoningDHV Enhancing Society Together
SKANSKA

Policy update

Bringing the 14001 standard up to date

The working group revising the international standard for environmental management systems, ISO 14001, has finalised the technical requirements of the new version. After a final edit and translation, a ballot of ISO members will be conducted during July and August, with 14001: 2015 set for publication early in September. The International Accreditation Forum has set a three-year transition period for accredited certification.

The revision contains significant additions and enhancements to the 2004 edition, including requirements to: understand the strategic context of the organisation and the needs and expectations of interested parties; integrate environmental management in core business processes; and evaluate risks and opportunities. Significant additional emphasis is given to continual improvement of performance.

Having finalised the content of the new standard, attention is now turning to implementation. The transition to the new standard offers an opportunity to breathe new life into an EMS to ensure maximum value is gained – a focus of the iemaSTS 14001 transition course. Inevitably, the changes will pose questions of interpretation. IEMA will be providing opportunities for members to share their experiences to enhance the consistency of implementation.

The revision will also shine a light on external certification audits – in the way that certification bodies (CBs) assess conformity to the new requirements and ensure assessors have the competence to undertake this role effectively. IEMA has significant concerns about this, as we have heard that some certification bodies claim there are no significant changes in the new standard. Having been involved throughout the process of drafting the revision, I know this is not the case. If your certification body is telling you that nothing much has altered, they are wrong and it is probably time you changed your CB.

Martin Baxter is executive director of policy lead at IEMA; @mabxteriema on Twitter.

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More successful IEMA members

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

Associate

Ruth Abra, VolkerFitzpatrick
Abdullah Al Ghamdi, SAFCO
Sunitan Al-Hafee, Sabtank Jubail
Mishal Saud Al-Harbi, Saudi Kayan Petrochemical
Mohammed Al-Harbi, Sabic Technology Centre
Mohammed Al-Khatert, IBN ZAHR
Bassam Al-Munshi, SHARQI
Ibrahim Al Oqaily, National Industrial Gases Company
Derek Anderson, Proactive Safety Advisory Services
Ken Andrews, Arena Structures
Julian Badger, Victim Support
Lindsay Barnes
Wayne Bates, Jacobs
Victoria Broucke
Stephen Burnett
Gary Clark, Sellafield
Richard Deeney, Environmental Efficiency Consultants
Rosanne Dinsdale, Marine Scotland
Joanna Dodd, One 51 ES Metals (North)
Alexandra Gardner, Vinci
Christopher Gregg, Ecotricity
Kanako Hasegawa, United Nations Development Programme
James Hennessey
Peter Holburt, Sellafield
Martyn James, Yara
David Leatham
Victoria Leigh, Engineering Services Consultancy
Lynsay Lovegrove, DS Smith
Christina Lumsden, Arup
Robert Main, Marine Scotland
Liam McCarthy, Sedalcol UK
Abdullah F Metwalli, IBN RUSHD
Graham Mills, Network Rail
Rachel Navin, Ramboll UK
Joao Queiros, Marine Scotland
David Ratcliffe, Amey
Imogen Rattle, Environment Agency
David Richardson, Royal Bank of Scotland
Alex Roberts, Aster Property
Matt Rooney, PwC
Malcom Rose, Marine Scotland
David Rushton, Afton Chemical
Kevin Sanders, Telent Technology Services
Peter Shephard, Tata Steel Colours
Paul Simmons, Atkins
Ben Stanton, Johnson Matthey
Dan Stewart, Marine Scotland
Ian Sullivan, Hain Daniels Group
Tim Sutton, Oxfam Novib
Craig Taylor, Robert McBride
Derek Thorpe, Environment Agency
Alexandra Warner, Jones Lang LaSalle
Kirsten Velthuis, Schofield Lothian
Peter Whitworth, Ardagh Group
Susan Wilson, Nexen
Sarah Wormald, Food and Environment Research Agency
David Wren, Interserve (Defence)

Full and Chartered environmentalist

Tom Dearing, RPS Group
Tony Grace, University for the Creative Arts
Brendan Kemp, AECOM
Timothy Leinster, Quod Planning Services
Roger Matthews, Natural Resources Wales/ Cyfoeth Naturiol Cymru
Ryngan Pyper, Sandpyper

Chartered environmentalist

David Flood, Brakes Group
Nicholas Pincombe, UE Associates

IEMA events

Date	Region/Time	Topic	
20 May	South West	Social (Exeter)	
20 May	Yorkshire and Humber	Implementing skills in the supply chain	
27 May	Yorkshire and Humber	District heating	
4 Jun	South East	Social (London)	
17 Jun	South West	Social (Exeter)	
1 Jul	Yorkshire and Humber	Social (Leeds)	
2 Jul	South East	Social (London)	
8 Jul	Wales	Full member and CEnv mentor forum; IEMA network meeting and social	
IEMA conference			
14 Jul	London	Delivering sustainability: culture and capability	
Webinars			
27 May	12.30–1.30pm	Economic value of ecosystem services	
External events			
11–12 Jun	Brighton	Eco technology show 2015	ecotechnologyshow.co.uk
6–7 Jul	Cambridge	The EPSRC centre for industrial sustainability annual conference	lexisurl.com/iema87837

EIA update

Council considers festival impacts

Plans to stage the annual T in the Park festival at a new site have still to be agreed after Perth & Kinross council asked the organiser, DC Concerts, for further information on potential environmental impacts. The council has now received an addendum from DC Concerts to the environmental statement, which provides more details on the following issues: traffic and transport; ecology; ornithology; water management and private water supplies; noise; projection description; and site selection.

The festival had been held at Balado airfield since 1997 but it has been forced to move after the Health and Safety Executive last year raised concerns that the site was too close to a pipeline carrying oil to Grangemouth. DC Concerts

Image: Getty

submitted a planning application in January, together with an environmental impact assessment (EIA) and a pre-application consultation report, to stage the festival at Strathallan Castle in July.

Public consultation ended on 24 April and councillors were due to meet to decide whether to grant approval as *the environmentalist* went to press.

EIA practice update with IEMA's Josh Fothergill

Hong Kong study tour

In April, IEMA welcomed a delegation of 13 impact assessment professionals from Hong Kong, including executive committee members of the Institute of EIA (HKIEIA) and four officials from the environmental protection division at the region's government.

The delegation came to the UK for a knowledge exchange study tour with IEMA members and were kindly hosted by Royal Haskoning DHV, Temple Group and the European Bank for Reconstruction and Development. The visit coincided with the 2015 EIA Quality Mark forum, allowing delegates to exchange thoughts and experiences on the challenges and triumphs of working in impact assessment (IA). The second day of the tour also formed the first of IEMA's new IA Network events. The theme was international knowledge exchange on major infrastructure IA, and included examples from the UK and Hong Kong as well as delivering IA in line with practices required by international financial institutions.

Senior IEMA staff also met the HKIEIA members to discuss how to deliver ongoing success through the memorandum of understanding signed by the two organisations in 2014. It was agreed that a joint programme of webinars would form the next step in this very positive relationship.

IAIA 15 – Italy

As IEMA's EIA policy lead, I presented recently at the successful conference of the International Association for Impact Assessment (IAIA) in Florence. It was held between 20–23 April and attended by more than 1,000 delegates. They heard presentations from 600 speakers and were able to exchange knowledge and ideas around the theme of IA in the digital era. IEMA aims to share some of the conference discussion through its IA Network webinar series over the next few months.

Forthcoming events

- **28 May – webinar**: EIA of the expansion of Hong Kong airport.
- **1–2 June – conference**: Strategic environmental assessment (Oxford Brookes University event).
- **25 June – webinar**: Innovation in UK EIA.

EIA research

Assessing SEA alternatives

Research suggests that "alternatives" – different ways of meeting the objectives of policies, plans and programmes – is one of the most poorly completed parts of strategic environmental assessment (SEA) and that the limitations of current practice have resulted in objections and judicial reviews. These limitations include: belated consideration of reasonable options; narrow scope of proposals that often include unrealistic or retrofitted substitutes; limited stakeholder and public involvement in the assessment and selection of alternatives; a lack of systematic approaches to their assessment and comparison; and inadequate reporting of the "storyline" on how they were identified, what the potential impacts are and why the preferred measure was selected. A study in *Environment Impact Assessment Review* provides practical guidance on the identification and development of alternatives, their assessment and comparison, selection of the preferred option, and documentation of the process and the reasons for selection.
lexisurl.com/iema89516

Calculating solar glare

Photovoltaic (PV) systems can generate glare due to optical reflections, so effective assessment of such impacts is crucial to planning PV systems in urban areas and in traffic zones. These assessments must focus on limiting potential reflections to avoid risks to public infrastructure or discomfort for residents. However, it can be difficult to calculate glare in locations ahead of installing the PV panels. In a paper published in *Environment Impact Assessment Review*, researchers at the Frauhofner Institute for Applied Technology in Germany outline a new 3D-simulation methodology that will enable planners to calculate and visualise reflections or glare from PV panels based on the geometry of a system's environment.
lexisurl.com/iema89520

Olivia Preston

Environment risk manager, BBC Workplace

Why did you become an environment/sustainability professional?

I've always been passionate about the natural world, and through my biology degree I learned how ecosystems could easily be thrown out of balance. Working with companies to embed sustainability at the core felt like a powerful way to make a difference.

What was your first environment/sustainability job?

My first proper role was as an environment officer at the Environment Agency, a great practical training ground. As part of a multi-disciplinary team, I developed expertise on various pieces of legislation and different environmental impacts. I had my own set of permitted sites to regulate and audit, and had to respond 24/7 to pollution incidents.

How did you get your first role?

I was lucky enough to be accepted on the training scheme for environment officers. This was a 16-week intensive course of on-the-job and classroom training.

How did you progress your environment/sustainability career?

I decided to step away from being a regulator to work at Bath Spa University, developing its environmental strategy and implementing a new environmental management system as part of the EcoCampus scheme. After the system achieved the highest level, equivalent to 14001, I found myself craving new challenges in a different sector.

What does your current role involve?

It is incredibly varied. I work as part of a large property team managing the BBC's estate of around 150 buildings. As one of two experts, I provide advice across the business on all environmental issues. On the compliance side, I make sure reporting for the carbon commitment reduction scheme, discharge consents, energy savings opportunity scheme, BREEAM and duty of care audits are all in place. I spend a lot of time analysing data and benchmarking building performance to spot opportunities to reduce impacts. This often develops into improvement projects, which I help to scope and manage.

What's the best part of your work?

Developing communications and behaviour change projects, and working out how to build messages to maximise stakeholder engagement using marketing tips from sustainability communication experts.

What's the hardest part of your job?

Explaining the parts of my work that people never see. Recycling is one example – through our supply chain we carry out duty-of-care audits on waste contractors, and those working in the field know there is a huge industry built on recovering valuable recyclable materials. Yet some staff still ask: "How do I know it's really recycled? Are you sure it doesn't just get dumped in landfill?"

What was the last development or training course or event you attended?

The Global Reporting Initiative G4 reporting training programme run by Total Eco Management, which qualifies me as a certified reporting practitioner.

What did you bring back to your job?

A greater understanding of how to use the GRI materiality principles and indicators to define an effective reporting process, and to implement a meaningful sustainability strategy focused on the right areas.

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

Communication and negotiation with different stakeholders using language they respond to is crucial. Not everyone is won over with "hearts and minds", but if you translate opportunities into financial savings, or as a "unique selling point" against competitors, you'll have a better chance of influencing. Effective planning and project management skills are also critical.

Career file

Qualifications:
BSc, MIEMA

Career history:
2011–now Environment risk manager, BBC Workplace
2007–11 Environmental support officer, Bath Spa University
2005–07 Environment officer, Environment Agency
2002–03 Licensing officer, Defra

Where do you see the environment/sustainability profession going?

I see a greater blend of the sustainability, corporate social responsibility and environment management functions, which can sometimes be disconnected, into one professional discipline. The partnership between IEMA and GACSO is a great step forward.

Where would like to be in five years' time?

In a leadership role setting the strategy in an organisation that has yet to realise the benefits of putting sustainable business practices at the heart of its strategy.

What advice would you give to someone entering the profession?

Join a professional body and network as much as you can. An in-house environment role can often feel quite lonely if you are not part of a wider team. Getting involved in industry events opens up a valuable support network.

How do you use IEMA's environmental skills map?

It's a useful framework to see where I need to develop, and it allows me to track my progress.

Shirley Parsons Associates

Sustainability Careers

Due to rapid expansion within the area, Shirley Parsons Associates are currently looking to speak to sustainability and corporate social responsibility candidates of all levels.

If you are looking for your next move or would simply like advice on the type of roles that are available to you then contact our sustainability specialist directly:

Tom Nicholls – 01296 611321
Tom.nicholls@shirleyparsons.com

Get in contact

For more information regarding any of these opportunities or to apply please call 01296 611322 or email response@shirleyparsons.com

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REC Member

SELECTION OF CURRENT OPPORTUNITIES

Sustainability Manager
LONDON £65K TN 7023
A financial services corporation is seeking a sustainability specialist with sector experience to sit within their growing corporate sustainability team. The role would entail implementing strategy development with regards to ESG framework throughout the organisation. You will be working with internal department managers and external clients to deliver sustainable solutions. Candidates must be qualified to a degree level and have management experience.

QHSE Advisor/Manager
ESSEX £42K–£50K LO 7050
A leading waste management company is currently recruiting for an ambitious QHSE manager to manage the performance of QHSE activities and overall company objectives. The successful candidate will be responsible for planning and developing procedures to improve the operating quality and HSE efficiency within the plant. Suitable candidates will have an environmental/ engineering related degree and hold the NEBOSH general certificate.

Environmental Coordinator
LONDON £35K–£45K + CAR LO 7133
Shirley Parsons Associates are currently working with one of the UK's leading multi-disciplinary consultancies who are seeking a Regional Environmental Coordinator. You will be responsible for establishing and managing the regional environmental delivery plan and driving and delivering plans to meet environmental targets. Candidates must hold an IEMA membership and have experience with environmental data sets.

Senior Acoustics Consultant
LONDON £40K TN 7122
We are currently working with a global construction and infrastructure design consultancy who are seeking to appoint a Senior Acoustics Consultant. Supporting the acoustics team, you will mentor a team of junior consultants whilst acting as the key point of contact for clients. The successful candidate will need to have experience of providing advice on high profile large scale infrastructure/construction design projects and be qualified to degree level.

Environmental Advisor
WALES £30K–£35K + CAR LO 7076
A leading civil engineering company are currently recruiting for a high calibre Environmental Advisor for their latest project in South Wales. You will be responsible for assisting with external and internal audits, ensuring legal compliance across the project and acting as CEEQUAL assessor across the project. Candidates must be a member of IEMA and have a relevant environmental degree.

Environmental Advisor
LONDON £26K–£35K + CAR ALLOWANCE LO 6935
A leading infrastructure maintenance company are currently seeking an Environmental Advisor to join its growing and progressive SHE team. Covering up to six sites, you will be responsible for providing environmental advice and guidance to ensure contractual KPIs are met, whilst assisting the quality team in maintaining ISO 14001. Ideal candidates will be a member of IEMA and have a good understanding of environmental law.

Climate and Environment Consultant
CENTRAL SOUTHERN ENGLAND £35K–£40K + CAR LP 7092
An international consultancy is looking for a Climate and Environmental Consultant to join their team. The company works primarily with manufacturing clients, therefore a background in this industry would be ideal. The main responsibilities of the successful candidate would be to ensure clients' sites are energy efficient and comply to ISO 14001 regulations. An expert knowledge of ISO 14001 is essential.

Environmental Advisor
SOUTH EAST c£25K + CAR ALLOWANCE LO 6954
A UK principal contractor is seeking an Environmental Advisor to work on a major utilities project. This role is responsible for ensuring Environmental Compliance, undertaking site audits and inspections and reporting in to the project SHE Manager. A UK driving licence and environmental sector experience is essential.

Sustainability Advisor
LONDON £35K LO 6571
An international contractor is currently recruiting for an experienced Sustainability Advisor. Within this role you will be responsible for ensuring that all environmental objectives relating to regulation, law and contractual commitments are met. You will also implement and manage ISO 14001 as well as managing company environmental requirements. Candidates must be a member of IEMA and have a minimum of 2 years' experience within the construction/infrastructure industry.

EIA Consultant
LONDON £35K TN 7153
Shirley Parsons Associates are currently working with a global property services consultancy in London who are seeking an Environmental Impact Assessment Consultant to join their growing team. The successful candidate will need to have experience undertaking EIA and providing Environmental advice within a consultancy environment.

www.shirleyparsons.com

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MAKING A DIFFERENCE

Time for a new challenge?

EIA

Acoustics

Town Planning

Landscape Design

Architecture

Transport Planning

Building Surveyor

Ecology

Structural Engineering

Hydrology

This is a fantastic time to join RPS. As one of the UK's leading multi-disciplinary Consultancies, we are working on a number of high profile projects and require first class, innovative and motivated staff.

With an enviable client list, and the highest calibre multi-disciplinary back up team, we are able to offer unparalleled opportunities, in a dynamic work place, where achievements are rewarded and progress encouraged.

We are currently looking to recruit staff in the following disciplines:

- EIA
- Acoustics
- Town Planning
- Landscape Design
- Architecture
- Transport Planning
- Building Surveyor
- Ecology
- Structural Engineering
- Hydrology

For more information on any of these roles please visit our recruitment website at www.joinrps.com or contact our Recruitment Manager via e-mail at geoff.thorpe@rpsgroup.com

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