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May 2017



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Power to the profession

Last month, UK prime minister Theresa May called a snap (some may say shock) general election, with a startling seven-week run-up. This is a chance not just to elect leadership, but also an opportunity for practitioners to take the temperature of how you think the current parliament has performed in terms of environment and sustainability.

What do you expect to see from the next government? We want to know your views. We'll be sending you a short poll giving you the chance to air your thoughts. Last year we had almost 4,000 responses from a similar series of pre-EU referendum polls, and it's time to ask you again what you feel should be the sustainability priorities for whoever is in power from 9 June. So, when you receive your e-mail with links to take part, just click and let us know the strength of your feelings. We'll take the results to the media within 48 hours, so you'll see your views making headlines very quickly. Let's make our voices heard in this tumultuous time. Your opinions do more than shape who you are, they also shape how the profession thinks, interacts and intersects on key issues.

Later this year, you'll have another chance to shape consensus and affect government policy. We'll be publishing a report on the 'golden age of infrastructure', exploring, examining and explaining to stakeholders how sustainability skills are key to developing and delivering major transport and utility projects. Each of these projects – whether individually or collectively – can boost productivity and jobs, but they can also have immense environmental impacts if our profession does not have the right input. We'll tell you more about it in the months ahead, but first we need your views to help to shape what the report says and how we say it. We're about to invite you to take part in a survey on sustainability skills in infrastructure developments, so please spare 15 minutes to add your views before the poll closes later this month. The bigger the response rate, the more robust the report will be when we take it to the government, the media and other professions later this year.

Your time is valuable, I know that – but so is the direction the country takes to ensuring environment and sustainability is infused into infrastructure for a thriving post-Brexit landscape. I'm asking you to ensure our profession is seen and heard on crucial issues. We cannot miss these opportunities to influence and inform, and we do that best collectively. Our voice is more resonant when we call together. Get involved, and let's bring power to the profession.

We'll be publishing a report that will explain to stakeholders how sustainability skills are key to developing major infrastructure projects that do not have major environmental impacts



Tim Balcon,
CEO of IEMA

IEMA is the worldwide alliance of environment and sustainability professionals, working to make our businesses and organisations future-proof. Belonging gives us the knowledge, connections and authority to lead collective change, with IEMA's global sustainability standards as our benchmark. By mobilising our expertise we will continue to challenge norms, drive new kinds of enterprise and make measurable progress towards our bold vision: transforming the world to sustainability.

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Judge rejects clean air purdah plea

The High Court has ordered the government to publish its plans to curb air pollution after the local elections and not wait until the end of June.

Defra officials had attempted to delay publication, claiming that meeting the court's original 24 April deadline, which had been issued in November 2016, would breach the purdah rules ahead of the general election on 8 June. These constrain the government from publishing policy documents ahead of elections.

Environment secretary Andrea Leadsom had told MPs that officials in the Cabinet Office had advised her that publication would breach those rules and that the draft would not be published until 30 June, with the full policy released on 15 September.

Her department applied to the courts to allow it to breach the deadline. The judge refused the application and did not grant permission for an appeal. The government was considering its position as *the environmentalist* went to press.

Meanwhile, Theresa May's decision to call a snap general election has halted publication of other plans crucial to



Cyclists protest against air pollution in London

safeguarding the UK environment, including how it will meet future carbon reduction targets. Climate change minister Nick Hurd told MPs on the parliamentary Business, Energy and Industrial Strategy Committee that the Clean Growth Plan was in a 'holding pattern', along with other policies. The document was originally due to be published in December. But the government pushed this back, first to February 2017 and then to the first quarter of the year.

Another election casualty is the 25-year nature plan. It was expected last summer but its release has been delayed several times.

GIB sold to Australian bank

The government has confirmed the sale of the Green Investment Bank to Macquarie. The Australian financial services business, which paid £2.3bn (£1.7bn to buy the bank, with a further £600m to fund existing projects), promised to invest at least £3bn in the green economy over the next three years.

The bank has invested £3.4bn since it was established in 2012 to fund green infrastructure projects.

'This deal gives us the best of both worlds,' said climate change minister Nick Hurd. 'We have secured fair value for the UK taxpayer. GIB has a well-funded new owner that is committed to the bank's green mission, with a track record of success in green investment and an ambition to grow the business.'

Macquarie pledged to maintain the bank's green purpose and objectives. Under the deal, the organisation's aims will be safeguarded by five independent trustees who will hold special shares. They include James Curran, former chief executive at the Scottish Environment Protection Agency, Peter Young,

environmentalist and former chair of the Aldersgate Group and Trevor Hutchings, director of advocacy at WWF.

A spokesperson for the trustee group, known as the Green Purposes Company, said it looked forward to working constructively with Macquarie to ensure that the bank continues to play a leading role in supporting green investment. 'We expect GIB to continue to act both in compliance with, and in the spirit of, its green objectives,' he said.

Lord Smith of Kelvin, independent chair of the bank, said: 'GIB in private ownership can, and should, continue to play an important leadership role in supporting the global low-carbon transition and the UK government's ambitious plans for a strengthened industrial strategy and emissions reduction.'

Macquarie, which claims to be the world's largest infrastructure investor, said the GIB's Edinburgh office would be home to a new revenue-generating project delivery business. It will provide services to the green energy portfolios of the GIB and the company in the UK.

Short cuts

Going coal-free

National Grid has confirmed that 21 April was the first coal-free day in Great Britain since 1882, when the world's first coal-fired power station opened in London. The energy network operator said that after the West Burton one power station was taken offline on 20 April, electricity generation over the next 24 hours did not include coal as part of the energy mix. A spokesperson said the achievement set down a marker, with coal-free days becoming increasingly common as the fuel is phased out. Recent data from the Department for Business, Energy & Industrial Strategy revealed that between 1990 and 2015 coal use in generation declined by 63%. Provisional figures for 2016 show that coal's share of generation decreased from 22.3% to 9.1%, reaching a record low of 30.7 TWh (down 59% on 75.6 TWh in 2015). The department said this was due to a reduction in coal capacity, the closure of coal sites and the conversion of a unit at the Drax power station from coal to biomass.

Open software

Transparency is among the top reasons why firms are purchasing commercial software to track environment, health and safety and sustainability (EHS&S) performance, according to the 2017 buyers' guide from US body, the National Association for Environmental Management (NAEM). Its survey of 172 in-house EHS&S practitioners revealed that one-third (33%) of those looking for a new system were doing so to be more open. The top two purchase drivers were related directly to technology challenges: outdated software (46%) and poor integration with other IT systems (40%). NAEM executive director Carol Singer Neuvelt said the results highlighted the importance of software tools to EHS&S management as the scope and visibility of the profession grew: 'From the integration of EHS&S metrics into product development to the emergence of supply chain reporting, to meeting stakeholders demand for transparency, the function today is a source of value creation across a business.'

Businessplans

Paint and coatings business

AzkoNobel has announced that it is aiming to use 100% renewable energy and become carbon-neutral by 2050. It said 40% of its current energy needs come from renewable sources. The new mid-century targets also include using only renewable materials in its own operations. 'This is about successfully using sustainability as a driver for innovation, new technologies, new partnerships and new service models,' said corporate director of sustainability André Veneman.

Anheuser-Busch InBev has said that all its purchased electricity will be from renewable sources by 2025 – about 6 TWh of electricity each year. The beer producer said switching to renewables would reduce its operational carbon footprint by 30%. Its first renewable power purchase agreement is with Iberdrola in Mexico.

Soft drinks manufacturer **Britvic** has reported that a new high-speed bottling line, part of a £25m investment at its Leeds plant, has reduced water use by 22% and energy consumption relative to production volumes by 45%. Overall, the amount of water Britvic used relative to production at its European sites declined 1.5% in 2016. The firm said it had achieved a recycling rate of 84% and that its operations in Britain and Ireland had achieved zero waste to landfill. Britvic also announced that it is working with government agency Innovate UK and paper and paperboard producer Natural Resources (2000) on developing packaging from sustainably sourced, renewable wood fibre materials that are fully recyclable.

Kingspan has announced that it exceeded its 2016 target of generating at least half its aggregate energy use from renewable resources. The insulation and building solutions business said last year's figure was 57%, demonstrating that it was on track to hit its goal, set in 2011, of operating at net zero energy by 2020. Kingspan said energy efficiency measures had reduced overall lighting and heat costs by more than 30%, while onsite renewable energy generation had increased from 6.6 GWh in 2012 to 32.2 GWh. In 2016, the group used 164.2 GWh of renewable electricity, an almost a six-fold increase from 2011.

No domestic focus on SDGs

MPs on a parliamentary committee have criticised the government for failing to plan for how to implement the sustainable development goals (SDGs) in the UK.

The UN goals were agreed in September 2015. They follow on from the Millennium Development Goals, but a key difference is that they cover all countries, not just those in the developing world.

The cross-party Environmental Audit Committee (EAC) accused the government of having done little to promote the goals domestically. 'While the government is making big claims about what it can do to implement the goals on the international stage, our inquiry has revealed that it is doing very little at home,' the report states. Cabinet-level ministers were not willing to give evidence to the committee, it noted.

The government should set out how it intends to take a cross-departmental approach to implementing the goals domestically. The government has said



that it will incorporate work on the SDGs into individual departmental plans, but the committee said it was 'deeply sceptical and concerned' about this plan.

An independent advisory body, similar to the Committee on Climate Change, should be established to provide evidence-based advice to a cabinet-level minister and the prime minister, and audit the government's performance against the goals, the MPs suggested.

Committee chair Mary Creagh urged politicians of all parties to show their commitment to ending poverty, violence and hunger in the UK during the general election campaign.

CO₂ accounting can mislead

Organisations and the government need to consider how to make measurements of carbon emissions from buildings more dynamic to factor in when electricity is used, according to consultants.

WSP|Parsons Brinckerhoff analysed the system used in UK building regulations and the Greenhouse Gas (GHG) Protocol to calculate carbon dioxide emissions from the energy consumed. These use an 'emissions factor', a single number, representing the average carbon of a country's grid. The consultancy compared this with the carbon emissions for every half-hourly period over the same year to demonstrate differences in intensity levels. It found that the amount of carbon emitted can differ widely depending on the time of day, season and year.

This has increasingly become an issue with more renewable energy feeding the grid causing greater fluctuate than in the past, according to Barny Evans, sustainability and energy expert at WSP|Parsons Brinckerhoff.

Companies trying to reduce carbon emissions by using energy storage would pay more in climate change levy and report higher emissions than those that

are not under the current accounting methodology, he said. Current accounting methods could also lead to bad decisions, such as prioritising solar energy over energy-efficient lighting, even though solar produces most electricity in the middle of the day in summer, when energy demand is lowest. It also disincentivises energy storage, he said.

Evans suggested that organisations and the government trial reporting their carbon emissions taking into account time of use. 'We need to move to an agreed methodology that would reflect reality better,' he said.

Cynthia Cummis, director of private sector climate mitigation work at the World Resources Institute, which developed the GHG Protocol, said the study provided a good area for further research. 'The more accurate emissions factors are, the more useful they are for decision-making purposes,' she said.

Bastian Buck, standards director at the Global Reporting Initiative, said more energy-intensive industries would have greater awareness of the fluctuations in emissions than those based in offices, because they tend to manage their energy more actively.

BEIS mulls EU ETS options

The government is weighing up options for the EU emissions trading system if the UK leaves the scheme after Brexit.

Giving evidence to the parliamentary Business, Energy and Industrial Strategy Committee on how leaving the EU could affect energy and global warming policy, climate change minister Nick Hurd (pictured) said the UK remained 'very active' in negotiating reform of phase four of the the ETS, and that EU partners were still seeking its input.

If the UK remained part of the system, it would have to accept the jurisdiction of the European Court of Justice (ECJ), however, which handles disputes arising under the scheme. But prime minister Theresa May has vowed that the UK will leave the remit of the ECJ after Brexit.

Hurd told the committee: 'We would need to continue to support decarbonisation. Is the ETS the best way of doing this? There's a strong argument that it is, but there may be other options for us to look at. We're analysing alternatives.'



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Asked about other EU energy policies, Hurd described European product standards as 'really important'. 'They are arguably an understated policy tool in what they have achieved in energy-efficiency improvement, carbon reduction and also other financial benefits to our constituents,' he said. 'Therefore, what we are definitely not going to enter into is a world without standards or, I hope, without ambition on the standards.'

However, he again stressed that leaving the EU would give the UK more scope to introduce different solutions.

UK decouples GDP and GHGs

The UK has been more successful than other high-income nations in decoupling reducing greenhouse gas emissions from economic growth, according to think tank the Energy & Climate Intelligence Unit.

It found that in 2014 – the most recent year for which comprehensive figures are available across the G7 – UK per capita GHG emissions had declined 33% since 1992, while per capita GDP had increased by more than 130%. By contrast, in Japan, the worst-performing G7 country, both per capita GDP and GHG emissions increased, by 83% and 10.5% respectively.

ECIU director Richard Black said the findings demolished the argument that action to curb climate change ruined economies. 'It's really time to slay once and for all the old canard that cutting carbon emissions means economic harm,' he said. 'It's perfectly possible to get richer and cleaner at the same time. Britain isn't the only country that's done it – it's true for most of the G7 – but we've clearly been the best of the bunch.'

However, much of the UK's success had been down to the country 'exporting' emissions, with a greater proportion

produced from goods and services consumed in the UK incurred abroad. However, this trend appears to have stopped since the financial crash in 2008.

The ECIU said the proportion of emissions associated with UK consumption that had been 'outsourced' had not grown since 2010, with Britain's per capita 'imported' emissions now at almost the same level as in the mid-1990s, despite per capita GDP having more than doubled since.

The UK's switch to gas-fired electricity generation from coal in the 1990s, better control of methane emissions from landfill, and the introduction of energy-efficiency schemes such as CERT had also helped decouple emissions and growth, said the ECIU. Other reasons highlighted by the report were the shift towards a more service-based economy and, more recently, an increase in renewable energy.

Black also said there were signs that the rest of the world was catching up with the UK: 'Globally, emissions have been flat for three years while world GDP has grown by 8%.' He warned that the scale of reductions would not be enough to prevent dangerous climate change, however.

Short cuts

Renewable exports

UK-based firms are exporting renewable energy technologies to 43 countries, a study by trade body RenewableUK revealed. In 2016, a sample of 36 firms signed more than 500 contracts to work on renewable energy projects on six continents. The contracts ranged in value from £50,000 to £30m. Wave and tidal testing centres off Cornwall and Orkney are highlighted in the report as the destinations of choice for global companies testing devices in real sea conditions. Knowledge is also being exported, with consultancies winning contracts to plan and oversee the development of wind farms and other renewable energy projects in dozens of countries, including the US, China, India, Chile, Japan and Indonesia. This is the first time the sector has assessed the extent of Britain's global reach in these technologies, and the range of products and services sold overseas. The number of companies exporting and the number of contracts signed are underestimates because the sample represents less than 10% of RenewableUK's membership, the body noted. UK-based wind, wave and tidal energy companies are well placed to benefit from the \$290bn global market for renewable energy, trading with countries inside and outside the EU, the organisation said. RenewableUK's executive director, Emma Pinchbeck, said: 'Britain must secure its position as a leading exporter in tomorrow's global energy market.'

Women rise at SocEnv

More than half (58%) of registrants to the Society for the Environment (SocEnv) in the first quarter of 2017 were female, the first time such a gender split has occurred. SocEnv said that there had been a consistent increase in the percentage of new Chartered environmentalist being female and it expected the trend to continue. The average age of new registrants had fallen year on year. The number of Chartered environmentalist reached 9,000 at the beginning of April.

Renewables reach record global capacity

A record level of renewable energy capacity was installed globally last year, even though investment in clean energy was 23% lower than in 2015.

Research commissioned by the UN found that new investment in renewables, excluding large hydro, totalled \$241.6bn, the lowest since 2013.

However, falling costs resulted in a record 138.5 gigawatts of wind, solar and other renewables being added, 8% more than in 2015. The additional capacity figure was equivalent to 55% of all the generating capacity added globally in 2016 and the highest proportion in one year. Investment in new renewables' capacity was also roughly double that in fossil fuel generation, said the report, *Global Trends in Renewable Energy Investment 2017*.

Overall, the proportion of global electricity coming from new renewable sources increased from 10.3% in 2015 to 11.3% in 2016, preventing an estimated 1.7 gigatonnes of carbon emissions.

The study comes after research by the World Energy Council revealed that energy leaders believe that the world is on an irrevocable path towards decarbonisation, one that is no longer entirely dependent on a global climate agreement. 'Advances in electric storage and renewable energy are key areas that have the potential to dictate the pace and the scale of the energy transition,' the council said in its report, *World Energy Issues Monitor 2017*.

The council said the worldwide implementation of renewable energy capacity had demonstrated a degree of certainty about the future role of these sources in the energy mix.

Meanwhile, renewables reduced Europe's carbon emissions by 10% in 2015, more than the annual GHG emissions of Italy, the European Environment Agency has reported.

It estimated that renewable energy accounted for more than three-quarters



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(77%) of new electricity-generating capacity installed in Europe in 2015. The agency also said that, in both 2014 and 2015, Germany, Italy and the UK generated the largest reductions in fossil fuel use and carbon emissions due to the uptake of renewable energy.

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Waste planning

The planning system needs greater flexibility if the waste industry is to introduce circular economy business models, the Environmental Services Association (ESA) said. In a report, the trade body said the waste industry increasingly resembled the logistics sector, with materials moved according to markets. However, many local authorities still practised the strict culture of control that existed when most waste was sent to landfill. The ESA said this was constraining the capacity for waste companies to create a network of facilities that allow the movement of materials to areas where they can be used cost-effectively in manufacturing processes. Some planning authorities had imposed mileage limits on the haulage of materials to and from waste and recycling facilities either within local plan policies or through planning conditions on consented development, the ESA reported.

bit.ly/2pIPOXR

Tech trials fund

Projects trialling new technology to ease traffic congestion, improve air quality and boost energy storage have been granted £18m by government agency Innovate UK. Each of the 12 projects selected aims to tackle problems related to urban environments. Drastic changes in urban infrastructure and design will be required to support a high quality of life for the more than 70% of the population expected to live in towns and cities by 2040, the agency said. Projects include a 12-month trial to store peak electricity from UK homes in used Nissan electric vehicle batteries and a scheme to convert electricity into hydrogen to create affordable, green energy for the transport sector. The funding from Innovate UK comes after the Business, Energy & Industrial Strategy and Transport departments announced that £109.7m would be spent on developing driverless and low-carbon vehicles.

bit.ly/2op9LYN

New ISO 20400

The final version of a standard to help organisations to integrate sustainability into their procurement processes has been published by British standards body BSI. ISO 20400 defines the principles of sustainable procurement, such as accountability, transparency, respect for human rights and ethical behaviour. It will complement ISO 26000, the international guidance on social responsibility, published in 2010. Jacques Schramm, chair of ISO/PC 277, the project committee that developed 20400, said businesses could no longer rely on suppliers to provide them with what they want without asking questions. Organisations benefit greatly from getting to know their suppliers to ensure that they have ethical practices, he said. Businesses that do not manage practices throughout their supply chain risk, at best, poor quality products or, at worst, disasters such as the collapse of the Rana Plaza factory in Bangladesh in 2013, he added.

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Bodies come together to produce guide on impact assessment for cultural heritage

IEMA, the Chartered Institute for Archaeologists (CifA) and the Institute of Historic Building Conservation (IHBC) are teaming up to produce guidance on impact assessment for cultural heritage.

Guidelines on the topic are currently missing from the heritage profession's library of resources. 'Practice in cultural heritage impact assessment is of variable quality, reflecting the absence of widely adopted guidelines,' said Josh Fothergill, policy lead at IEMA and a member of the project panel that is developing the guidance. 'The collaboration between IEMA, CifA and IHBC seeks to address the problem by uniting practitioners from across the impact assessment, conservation and heritage professions and ensure they have free digital access to this much-needed guidance.'

The main purpose of the guidelines, which will be published next year, is to demonstrate how the broad principles of impact assessment apply to, and can support, cultural heritage projects.

The project panel has set a series of objectives for the development and eventual deployment of the guidance. These are to significantly enhance assessment and achieve new good practice, including:



IEMA Transforming the world to sustainability

IHBC
INSTITUTE OF HISTORIC
BUILDING · CONSERVATION

CifA Chartered
Institute for
Archaeologists

- all developments must be assessed by a suitably qualified heritage professional or team of professionals;
- there must be an appropriate level of engagement in all stages of the planning and design process;
- assessments must be proportionate to the nature of the proposed development and the heritage resource affected; and
- findings will always be presented using clear, well-defined terminology.

The three bodies believe the guidance will be used by heritage professionals undertaking assessments; practitioners responsible for commissioning assessments; and anyone working in a related discipline who needs to

understand the context and nature of cultural heritage assessment in the UK.

Rob Sutton, project panel member and head of heritage consultancy at Cotswold Archaeology, said the success of the guidelines would depend on effective consultation across the sector: 'We need to build support for this to ensure the best possible outcome for everyone. We'll be working with practitioners and stakeholders across the spectrum and I encourage IEMA, CifA and IHBC members to get involved as soon as our consultation begins.'

In the months ahead, the project team will aim to secure sponsors, scope the consultation, update professionals on engagement and provide progress updates.

Abolishing the unethical: IEMA supports new charter on modern slavery

IEMA has joined a coalition of leading construction sector institutions and associations, with the shared objective of raising awareness to eradicate modern slavery in construction supply chains.

The Modern Slavery Charter supports the principle that slavery, in all its forms, has no place in commerce. Signatories commit to seek opportunities to uphold, preserve and promote the right of freedom in the UK construction industry and will:

- act in accordance with laws and regulations;
- develop tools, materials and training that support the development of best practice approaches to the issue of business and human rights;

- support best practice through partnerships and research; and
- use their influence, working with relevant authorities, to support the abolition of illegal and unethical practices whenever they are found.

The Modern Slavery Act 2015 helped to bring the issue of slavery and human trafficking to the attention of UK businesses and civil society. Section 54, Transparency in Supply Chains (TISC), highlights the risk to business of finding examples in global supply chains. Many IEMA members active in construction, sustainable procurement and supply chains are supporting organisations to understand and resolve these challenges. High-profile court cases have also highlighted the illegal practices taking place across Britain.

The coalition's supporters also include BRE, BSI, Supply Chain Services and

Solutions, the Chartered Institute of Building, Build UK, Royal Institution of Chartered Surveyors, Chartered Institute of Procurement & Supply, and the Supply Chain Sustainability School. The Ethical Trading Initiative, BHRRC, IHRB and Stronger Together are among the supporters from civil society.

The growing body of support demonstrates a real intent to raise awareness through professional members, with the charter providing an industry focal point to collaborate on business human rights issues.

Nick Blyth, policy lead at IEMA; @nblythiema



Sustainability and skills critical to success of UK's industrial strategy, says IEMA

Investment in sustainability skills and lifelong-learning for the UK's workforce will prove crucial to the success of the UK's industrial strategy, according to IEMA.

In its response to the government's green paper consultation, IEMA said the introduction of an industrial strategy had the potential to focus the economy on sustainable, long-term success. It would also act as a platform for creating and supporting the businesses, jobs and the workforce of the future.



However, IEMA warned that there was a major gap in current proposals, believing the strategy should focus more on enhancing UK productivity through material and resource efficiency, resource resilience and the circular economy.

Martin Baxter, IEMA's chief policy advisor, said skills would be critical to achieving the vision set out in the green paper: 'This is an opportunity to align learning, skills and the demands of the economy, and we urge the government to embed this in the UK's industrial future.'

IEMA Futures

Communication in an age of 'fake news'



As fake news appears to continue to shape our lives in 2017, a report by MPs on the House of Commons' Science and Technology Committee, published in February, looked at the way science was being communicated to the public. The findings revealed that the 'Boaty McBoatface' media furore over naming a new polar vessel (pictured) had increased people's engagement in science. However, the MPs said scientists needed to be more strategic in developing relationships with media and should engage more with the public. Against the backdrop of a climate-change sceptic US president and the sparse coverage on the environment in the government's Brexit documents, do environmental professionals also need to be more strategic in how they approach the media?

A recent Chatham House report into using wood biomass for heat and power concluded that biomass subsidies be revised. The findings were swiftly rebuked by the International Energy Agency. It claimed the study did not present an objective overview on the state of scientific understanding on the climate impacts of bioenergy. The report still received widespread coverage on both the BBC and in *New Scientist*. With all parties respected communicators, who are politicians or the public to believe?

Without being drawn into this specific discussion, as professionals we must ensure that we are impartial, objective and diligent in all communications and in all the work we do. It is now more important than ever to ensure that the information sources we use are sound and objective and, to the best of our knowledge, contain no conflicts of interest.

Sophie Parsons; @IEMA Futures

Get ahead of the game

It is a good time to be looking for a new position; the market is full of environmental job opportunities. However, it can sometimes be tough to secure the role you want. In a highly competitive sector with companies being demanding in what they are looking for, it is imperative you do what you can to get ahead of the game. Here is a reminder of what you can do to help you stand out:

- First impressions count – they set a precedent. Make those first few seconds count. Stand up to meet people, shake hands firmly and be confident when communicating. Always accept a glass of water; it gives you a couple of minutes to get yourself set up in the room where the interview is taking place.
- Prepare, or prepare to fail – employers expect you to know about their business, what they do, their values and vision. Research the organisation, its locations, turnover and members of the interview panel. You can never know enough.
- Build credibility – we can all answer questions, but the key to a strong performance at interview is to

build credibility. When answering questions, it is important to use examples and demonstrations of previous work. This gives the interview panel tangible evidence that you will be capable in the role.

- Take notes – make sure you write down everything the interview panel says. You can use these notes to help to answer questions or to prompt your own. They can also act as a reminder about previous professional experiences.
- Ask questions – it is not all about the interview panel seeking to understand you. Arrive armed with your own questions about the organisation. Seeking to understand more about the business shows a want and a willingness to learn and become a part of it.

Hopefully the above will help you on your way to securing your next employment opportunity.

Contact Environment Works for assistance on interviewing and job opportunities – call 0845 241 3042 or email enquiries@environmentworks.co.uk.



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Will Parsons
Content director
edie

Content

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David Griffiths
Business development
director, edie

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Hannah Styles
Brand marketer
edie

Networking

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www.edie.events/iema

Statements fall as applications rise

English local authorities received fewer environmental statements in 2016 despite the number of major planning applications increasing.

Data from the Department for Communities and Local Government (DCLG) revealed that 397 statements were received by councils and national park authorities in the 12 months to the end of December 2016, compared with 463 in 2015. Last year, planning applications totalled 483,045, compared with 475,632 in 2015, up more than 1.5%.

Shire districts received almost half (46%) the number of statements submitted in 2016, with East Devon (11), Canterbury (nine) and North Devon (nine) given the most. There were 51 (13%) statements submitted to the 32 London boroughs plus the City of London, ten of which were received by Tower Hamlets. Across the 35 metropolitan districts, 47 (12%) were submitted. Of these, Manchester received the largest number (18). Unitary authorities were handed 92 (23%), with Cornwall Council receiving ten.

Meanwhile, 23 (6%) statements were submitted to national parks authorities, with the Peak District receiving 83% of these (19). One statement was submitted

to the London Legacy Development Corporation, the planning authority for the Queen Elizabeth Olympic Park and surrounding area.

More than half (55%) of the 341 planning authorities in England listed by the DCLG received no environmental statements in the year to the end of 2016.

The number of planning applications has been rising over the past five years, and in 2016 the figure was almost 5% higher than in 2012, when 461,300 were submitted. Since 2012, the largest number of environmental statements in a single year was in 2014, when 841 were received.

EIA for marine energy project

Natural Resources Wales has given consent to the Holyhead Deep marine energy project west of Anglesey.

Tidal energy developer Minesto, a spin-off from Swedish aerospace manufacturer Saab, has received consent for a 0.5 MW 'deep green' device, to demonstrate and

prove the technology ahead of plans for installing a 10 MW array at the site. It would be the first low-velocity tidal energy project in the world.

Ylva Sörqvist Hultgren, site development manager at Minesto, said: 'This first step of implementing our unique technology in commercial scale is obviously an important one, and it is therefore satisfying to have reached this milestone.'

The environmental impact assessment (EIA) for the project was carried out by consultancy Xodus. The EIA considered the potential impacts on fisheries, marine mammals, sea birds, marine archaeology and cultural heritage as well as shipping and navigation. It concluded that these were 'not significant'.



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Update on transposing the EIA Directive with IEMA's Josh Fothergill

New regulations

The deadline for transposing the 2014 amendment to the EIA Directive into UK law arrives on 16 May.

The general election on 8 June may delay the launch of some of the new or revised regulations across the UK's 22 EIA regimes. However, the main town and country planning regimes in England and Scotland will be in place as these were laid in mid-April and late March respectively:

- **England** – Town and Country Planning (EIA) Regulations 2017 (bit.ly/2plq7Xf).
- **Scotland** – The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (bit.ly/2pKNV6B).

Common sense prevails

IEMA is pleased that the Department for Communities and Local

Government (Dclg) has responded positively to our call – alongside RTPi, CIWEM and a range of leading EIA Quality Mark registrants – to revert to the EIA Directive wording on competent experts. The Dclg's consultation draft had put the onus on local planning authorities to confirm that a developer's consultants had enough expertise, and do this after an environmental statement was completed.

This has now changed and aligns with the directive and the approach being adopted in Scotland, with responsibility placed on the developer to employ competent experts and justify this in documents alongside the environmental statement.

Conferences on the new regime

IEMA is running two free full-day conferences to celebrate the introduction of the new EIA

regulations. On 16 May, IEMA will be in London, at an event hosted by CBRE. On 24 May, IEMA will be in Edinburgh running a joint event with the Scottish government, which is being sponsored by consultancies AECOM, ERM, LUC and WSP|Parsons Brinkerhoff.

Webinar

If you cannot attend either conference, IEMA is running a webinar to discuss the regulations on 17 May between 12.30pm and 1.30pm (BST). It will also feature speakers talking about IEMA's new EIA advisory documents on health and greenhouse-gas emissions.

To book any of these events go to iema.net/events. To access IEMA's EIA transposition hub visit iema.net/policy/ia/eia-transposition.





In court

Water company fined for two pollution offences in Devon

South West Water has been ordered to pay more than £150,000 after two separate prosecutions for polluting a stream and a beach in Devon.

The first case, in September 2014, involved a combined sewer overflow (CSO) discharging effluent into a stream at Woodbury, near Exeter. The pollution killed more than 150 fish, including minnows, stone loach, bullhead and eels.

CSOs are designed to prevent internal flooding of properties during storms, and are not permitted to operate in dry conditions. But the sewer had become blocked by unflushable material, including disposable wipes, which resulted in effluent discharging into the stream.

The water company did not report the incident to the Environment Agency, which was eventually alerted to the incident by a member of the public.

The agency's Pete Ball said: 'It is important water companies regularly inspect and maintain their structures and assets such as CSOs to ensure they are operating in accordance with their permit and do not cause pollution.'

'While South West Water responded quickly to this incident, it failed to report the extent of the environmental impact of this spill, especially the fish deaths.'

The judge at Exeter Crown Court ordered the company to pay £70,000 in fines and £19,023 costs.

The second case involved sewage leaking into a stream running through the centre of Dawlish, south of Exeter, in August 2015. A brick had blocked the sewer, causing it to overflow. South West Water did not send an emergency team until three hours after the alarm was sounded. The team initially went to the wrong part of the town and reported that nothing was wrong.

Levels of E.coli bacteria in the stream increased from 990 per 100 ml upstream of the sewer to 4,800,000/ml at the point of discharge and the agency was forced to close Dawlish beach for more than 24 hours.

The company was fined £80,000 and ordered to pay costs of £6,202.

South West Water admitted guilt in both cases, but said its environmental performance had improved since the incidents. The firm said it was spending more than £460m on improving the sewerage network between 2015 and 2020, nearly 20% more than it spent in the previous five-years.

Of the pollution at Woodbury, the company said in a statement: 'We accept that fish died as a result of the discharge and that this was not immediately reported to the agency on the Saturday, as it should have been, and for this we apologise. We responded promptly and an operator was already en route when the EA reported the incident to us. The blockage was cleared within an hour with further cleansing work carried out to prevent a recurrence.'

South West Water invested £142,000 to upgrade the sewerage network in Woodbury in 2015 and a further £495,000 is now being invested, it said. A monitor has been installed at the site to reduce the risk of a similar incident in future.

The incident at Dawlish had a 'minor, localised' impact on water quality in the stream, but did not affect bathing water quality, the company said.

It is running education campaigns to make the public aware of what should not be disposed of down the toilet.

The prosecutions are the company's third and fourth this year. In January, it company was ordered to pay £54,000 for allowing untreated sewage to escape from a pumping station in Cornwall. The following month, it was ordered to pay £205,000 after more than 700,000 litres of sewage polluted an internationally important shellfishery in Cornwall.

According to the agency's last annual assessment, published in July 2016, the performance of South West Water had deteriorated from a 'below average' in 2014 to 'poor' in 2015. It was the only water company to have its performance classed as 'significantly below target'. The firm has also missed pollution targets set by Ofwat.

Case law

County council fails to give reasons for green belt plan

In *R (on the application of Tate) v Northumberland County Council*, the High Court quashed planning permission for a dwelling to be built on green belt land. It said the council had failed to give reasons for concluding that the development amounted to limited infill in a village so that it was not necessary for there to be very special circumstances before permission is granted.

The council granted outline planning permission in 2016 for a two-storey dwelling at Tranwell Woods, near Morpeth. The building was in the green belt. The National Planning Policy Framework (NPPF) contains policies relating to the protection of green belt land, including local authorities to regard the construction of new buildings as inappropriate except in very special circumstances. However, a list of exceptions (para 89) includes limited infilling in villages.

In this case, planning permission was granted because the proposed development was deemed to amount to limited infilling. The decision was challenged on the basis that Tranwell Woods is not a village. The court acknowledged that the terms 'village' and 'limited infill' were not defined in the NPPF. Although it found no irrationality in the council's conclusion that Tranwell Woods constituted a village, the court said it had not explained why the development amounted to limited infilling. The court applied the decision in *South Bucks District Council v Porter*, which made clear that reasons for important aspects of a planning decision should be given. In the Northumberland County Council case, the planning committee had failed to do so.

Sarah Bischoff

Lexis®PSL

New regulations




In force	Subject	Details
23 Feb 2017 	Environment protection	The High-Speed Rail (London- West Midlands) Act 2017 grants deemed planning permission for the development of phase one of High Speed 2 (HS2) between London Euston and the West Midlands. The legislation specifies the restrictions and the rights of use over the land acquired for this development. It also provides rights to compulsorily acquire land and associated access rights for the project. bit.ly/2ojpJob
24 Feb 2017 	Noise	The Noise from Audible Intruder Alarms (Wales) (Revocation) and Control of Noise (Codes of Practice for Construction and Open Sites) (Wales) Order 2017 approves two parts of the BSI code of practice relating to noise and vibration control on construction and open sites. bit.ly/2pwmYAU
1 Apr 2017 	Marine	The Marine Licensing (Fees) (Wales) Regulations 2017 set out fees for applications, variations and transfer of licences, and monitoring. No new duties have been created under these regulations. bit.ly/2oHpQL2
6 Apr 2017 	Energy	The Energy Performance of Buildings (England and Wales) (Amendment) Regulations 2017 amend the 2012 regulations, which required parties preparing EPCs, DECAs and ACIRs to enter data on a public register. The 2017 regulations reduce the fees payable to £1.82 for dwellings and £10.12 for other buildings. They also add to the list of data items associated with EPDs and DECAs that may be published on a website. bit.ly/2pu5IEpk
6 Apr 2017 	Pollution	The Pollution Prevention and Control (Fees) (Miscellaneous Amendments) Regulations 2017 amend various pieces of legislation to enable fees to be charged by the Offshore Petroleum Regulator for Environment and Decommissioning Unit (OPRED) for activities relating to the environmental management of the offshore oil and gas industry. bit.ly/2pcxLmL
6 Apr 2017 	Finance	The Oil and Gas Authority (Fees and Petroleum Licensing) (Amendment) Regulations 2017 amend 2016 regulations by increasing fees payable to the Oil and Gas Authority (OGA) – such as for applications for licences to drill for and get petroleum. New activities have also been prescribed for which the OGA can charge a fee, such as for the appointment of well or installation operators. The Petroleum Licensing Model Clauses have also been amended to reflect the increase in fees set by the regulations. bit.ly/2oHsZw0
7 Apr 2017 	Environment protection	The Smoke Control Areas (Authorised Fuels) (Wales) Regulations 2017 revise the list of authorised fuels permitted for use under Pt 3 of the Clean Air Act 1993. They revoke the 2016 regulations. The Smoke Control Areas (Exempted Classes of Fireplace) (Wales) Order 2017 revises the list of exempted fireplaces authorised for use in smoke control areas under s 20 of the Clean Air Act 1993. The amendment revoke the 2016 order. bit.ly/2nYahBF ; bit.ly/2oHsm5W
10 Apr 2017 	Water	The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 consolidate, revoke and replace the 2003 regulations. They set out the provisions of the directive in more detail rather than cross-referencing extensively to the WFD. bit.ly/2oHjATJ
15 Apr 2017 	Planning	The Town and Country Planning (Permission in Principle) Order 2017 grants covers applications for residential development of land allocated within a brownfield land register prepared by a local planning authority. Non-housing development may also be authorised under the brownfield land register. The register must include the information specified in Sch 2 of the Town and Country Planning (Brownfield Land Register) Regulations 2017 (see below). An authority can set a date when the permission in principle will come into force and must keep a register of any granted. bit.ly/2nuXDsb
16 Apr 2017 	Planning	The Town and Country Planning (Brownfield Land Register) Regulations 2017 require local planning authorities to keep, maintain and publish a public register of brownfield land suitable for residential development and if it qualifies for permission in principle. Brownfield land must meet particular requirements under the regulations for inclusion in the register. bit.ly/2mXXSJv
4 May 2017 	Environment protection	The Protection of Seals (Designation of Haul-Out Sites) (Scotland) Amendment Order 2017 amends the 2014 order to designate the Ythan Estuary as a seal haul-out site. bit.ly/2pwsd3B

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

Latest consultations

31 May 2017

Fracking

 In January 2015, the Scottish government placed a moratorium on unconventional oil and gas development in Scotland, preventing hydraulic fracturing, or fracking, for shale oil and gas, and coal bed methane extraction taking place while it examined potential impacts. It is now consulting on the future of fracking after studies revealed that Scotland's geology, particularly a stretch of land in the central belt known as the Midland Valley, contains significant quantities of shale gas and oil, and coal bed methane. bit.ly/2kmDZ0o


31 May 2017

Cambridge, Milton Keynes and Oxford corridor

 The Infrastructure Commission has published a discussion document on strategic planning in the Cambridge, Milton Keynes and Oxford corridor. It says the planning process should be supported and shaped by an integrated cost-benefit analysis, which may be backed up by economic analyses, strategic environmental assessments, sustainability appraisals and health impact assessments. bit.ly/2mrGmgx

6 Jun 2017

Chemicals inventory

 The European Commission is consulting on the European Customs Inventory of Chemical Substances (ECICS) as part of its assessment of the tool that enables users to: identify chemicals; classify them in the combined nomenclature; and name them in all EU languages. The evaluation aims to test the effectiveness, efficiency, coherence, sustainability and relevance of ECICS. bit.ly/2mZD9bd

18 June 2017

Litter

 Proposals to increase on-the-spot fines for littering, graffiti and fly-posting as well as introduce new penalties for the owners of vehicles from which litter has been thrown have been set out by Defra. The plans would raise the levels for s 88 fixed penalties for littering and other environmental offences; change the provision for how councils can use the income from fixed penalties for environmental offences; and remove the requirement for parish council enforcement officers to attend a specified training course. bit.ly/2nY0N4J


16 June 2017

Land guidance

 Draft guidance to encourage land owners and managers to develop working relationships with local communities has been published for consultation by the Scottish government. Its aim is to support good working practices that can lead to mutually beneficial solutions to land-related problems and better local outcomes for economic, environmental, social or cultural issues. bit.ly/2pB4Dmk

30 June 2017

Energy efficiency

 The Scottish government is consulting on proposals to improve the energy efficiency and condition standards in privately rented housing in Scotland. The Holyrood government has designated energy efficiency as a national infrastructure priority, the cornerstone of which will be Scotland's Energy Efficiency Programme (SEEP). It said imposing minimum energy efficiency standards for housing is key to achieving its ambitions, including reducing climate change emissions and tackling fuel poverty. bit.ly/2nKK8Bc

New guidance

Ethical procurement

The NHS sustainable development unit has updated its guidance for health organisations on ethical procurement (bit.ly/2oHO7IW). The latest version of the *Ethical Procurement for Health Workbook* provides guidance for organisations to embed labour standards considerations into procurement and supplier management activities. The authors said the publication reinforces the importance of ethical procurement for the health sector and can help organisations to address supply chain due diligence, which is expected by the Modern Slavery Act. The updates incorporate recent legislative changes as well as case studies and examples of best practice.

Opra

The Environment Agency has updated its guidance on operational risk appraisal (Opra), its approach to assessing risk for activities defined in the Environmental Permitting (England and Wales) Regulations 2016. The series, titled Opra for EPR, includes: *Environmental Permitting Regulations Operator Risk Appraisal* (bit.ly/2pNGA2y); *Annex A – Opra Scheme for Installations* (bit.ly/2pcSfvy); *Annex B – Opra Scheme for Waste Facilities* (bit.ly/2puW8Mj); *Annex C – Opra Scheme for Mining Waste Operations* (bit.ly/2pNC0Bt); *Annex D – Opra Scheme for Permits with Fixed Charges* (bit.ly/2nYIMYH); *How to Complete an Installations Spreadsheet* (bit.ly/2px2vMe); and *How to Complete a Waste Facilities Spreadsheet* (bit.ly/2ojAuqC).

Contracts for Difference

The Department for Business, Energy & Industrial Strategy has published new guidance on estimating electricity supplied to energy intensive industries that will be eligible for the exemption from the indirect costs of the Contracts for Difference (CFD) scheme (bit.ly/2pNGgRA). Last year, the government consulted on exempting EIs from the impacts of the CFD, which aims to encourage low-carbon electricity generation.

Intensive farming

New guidance for holders of intensive farming environmental permits has been published by the Environment Agency (bit.ly/2oHWVGM). The documents cover compliance with permits and IPPC noise management at extensive livestock installations, and include example application forms under the Environmental Permitting Regulations. The documents were last updated in 2010.



Laying down the law

Dealing with some knotty problems

Simon Colvin looks at two important recent court decisions. One involves Japanese knotweed and Network Rail; the other focuses on dual regulation and enforcement



Knotweed was introduced into the UK from Japan in 1825 as an ornamental plant. Since then it has gone on to spread aggressively and is now recognised as the most invasive plant in the country.

The Wildlife and Countryside Act 1981 classes it as an invasive non-native species. It is an offence under the act to plant or to cause knotweed to grow in the wild. New controls on invasive non-native species were introduced by the Infrastructure Act 2015, including species control agreements and orders. These have yet to start to bite because the supporting code of practice has yet to be finalised.

Meanwhile, a recent court case involving Network Rail has highlighted the civil – as opposed to the regulatory – risks associated with knotweed.

No longer good neighbours

The unreported case at Cardiff County Court involved Network Rail and two people – Mr Waistell and Mr Williams – whose properties backed on to land owned by the railway infrastructure company. It is believed to be the first such case to have been considered by courts in the UK.

It is understood that, historically, Network Rail had sought to settle cases outside court but, because of the scale of the problem across the UK on its land holdings, it decided to contest this one to determine how the courts would assess the issue.

Liable for damages

The case has confirmed that a landowner whose land is invaded by knotweed can be liable for damages that relate to the decrease in the value

of a neighbouring property as well as the cost of treating the plant. Waistell and Williams were awarded £4,320 each to treat the knotweed on their own land. They also received £10,000 each for the decrease in the value of their properties. Although the actual fall in the value of the houses was larger, the judge said the claimants could return to court to recover the additional amounts if Network Rail did not successfully treat the knotweed on its land.

Network Rail has not yet confirmed whether it will appeal against the decision of the court.

A case in point

The case is a very significant for landowners such as Network Rail because it confirms the long-held view that the spread of knotweed should be considered a legal ‘nuisance’ and that those affected should be able to claim damages.

Historically, knotweed was used as an earth stabiliser for railway embankments. Passengers looking out of a train window during the summer will see dense stands of knotweed lining railway embankments. Households adjoining those railway lines will now be considering their options in relation to the treatment of knotweed and whether to post a claim for the impact of its presence on the value of their homes.

Landowners must consider the risks associated with stands of knotweed on their land and whether they should try to eradicate them before they face any claims. Owners of adjoining sites should now consider whether they ought to engage with the landowners on whose sites knotweed can be found and request action to remove the plant. They may also consider seeking damages for any resulting decrease in the value of their own land.

Duplication of regulation

The case of *R v Recycled Material Supplies Ltd* concerned the duplication

of regulation by a local authority the London Borough of Newham and the Environment Agency.

Recycled Material Supplies operated a site in east London under two environmental permits: one for mobile plant, granted by the council, and the other for the operation of site, which was granted by the agency.

A condition of the local authority permit included a requirement that vehicles moving materials be ‘enclosed’. However, council officers observed vehicles that were not enclosed and took enforcement action against the company. RMS was convicted. It appealed against the judgment on several grounds, including that it was inappropriate for the council to regulate it and that the agency should be the sole regulator.

The Court of Appeal accepted this argument. It said the activities regulated by the permits were not separate and distinct; there was a blurring of the lines. The so-called mobile plant regulated by the local authority permit was in fact mostly stationary. Also, it was used as part of the process regulated by the agency permit. It concluded that the council should not have issued a separate permit and the conviction was overturned.

Mixed message

The message from the case that regulators must take care when issuing permits for sites that are already permitted. Does the activity need a new permit? Is it already covered by the existing one, or is it best dealt with by way of a variation?

The whole purpose of the regime under the Environmental Permitting Regulations 2007 (now 2010 (as amended)) was to have a single regime to regulate activities that posed a risk to the environment. What we have seen in recent years is the steady creep back towards the application of multiple regimes and multiple regulators. Defra had planned a wholesale review of the environmental permitting regime before last year’s referendum. No doubt that is now some way off.

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



Shopping for sustainability

CSRHUB – rating companies

CSRHUB uses 525 CSR/ESG data sources to rate and rank more than 17,000 companies in 133 countries. Sources include: AccountAbility, CDP, CorporateRegister.com, Dow Jones Sustainability indices, Forest Stewardship Council, FTSE4Good, GRI, Newsweek Top 50 Green companies, Thomson ASSET4 ESG, MSCI ESG and Trucost.

CSRHUB rates firms by dividing corporate social responsibility performance into four main categories (community, employees, environment and governance) and 12 sub-categories – from human rights and supply chain to transparency and reporting.

The environment category covers environmental policy and reporting, waste and resource management, energy use, and climate change policies and performance.

Subcategories are: energy and climate change, which measures the effectiveness of actions; policy and reporting, including reporting performance, adherence to standards such as GRI, and compliance with investor, regulatory and stakeholders' requests for transparency; and resource management, including how well resources are used in manufacturing and delivering products and services. There is also an open-ended number of special issue topics covering CSR issues that do not fit into any of the sub-categories.

Each element of data from a source is mapped into one or more subcategory and/or one or more special issue, and converted into a rating on a 0 to 100 scale (100 = positive rating). Scores for the same company are compared from different data sources and examined and adjusted to remove bias and create a more consistent rating. Sources are weighted based on CSRHUB's estimate of credibility and value. All data on a company is then combined to generate base ratings at the subcategory level, which are aggregated further to the category level to arrive at an overall score.

Visit csrhub.com to find out more. *the environmentalist* would like to thank CSRHUB, especially chief operating officer Cynthia Figge, for supplying scores for this article.

the environmentalist discovers what some of the biggest brands on the high street are doing to address their impacts

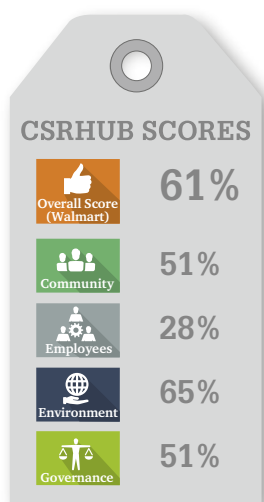
Walk down any UK high street or through a shopping centre and you will find the same retailers and brands, from Asda to Zara. These household names are big businesses with large property footprints and extensive global supply chains. M&S has 914 UK stores, while Tesco has more than 3,500 and J Sainsbury operates about 1,200 food outlets and 850 Argos shops. Inditex, the Spanish company whose brands include women's clothing chain Zara, has more than 1,700 suppliers across 11 countries, including Bangladesh, Cambodia and Turkey, and almost 2,000 factories worldwide supplied Next with products in 2015.

The scale of many retailers' operations gives rise to plenty of environmental and social challenges, including pressure from consumers to tackle waste and climate change, and address poor conditions in supply chains. So how are they faring? We looked at progress against firms' sustainability targets and commitments. *the environmentalist* has also teamed with CSRHUB (see panel, left), the US-based firm of analysts that rates more than 17,000 firms worldwide on their environment, social and corporate governance (ESG) performance to provide scores for each company, highlighting strengths and weaknesses.

Asda

Asda is owned by US retailer Walmart. It announced three key goals in 2005: to create zero waste, run on 100% renewable energy, and sell products that sustain people and the environment. These continue to apply and it is also now focused on ten priorities including: promoting growth of suppliers, local manufacturing and small businesses, especially women; reducing energy intensity and emissions in its operations and the supply chain; helping to preserve natural resources, especially forests, water and land; and supporting the safety and dignity of workers.

Walmart's 2016 global responsibility report, which covers the period between 1 February 2015 and 31 January 2016, reveals that 75% of the company's global waste had been diverted from landfill. Asda alone diverted 98.9%, with 91% reused or recycled (including anaerobic digestion), and had kept its food throwaway rate at less than 1% over the previous five years.



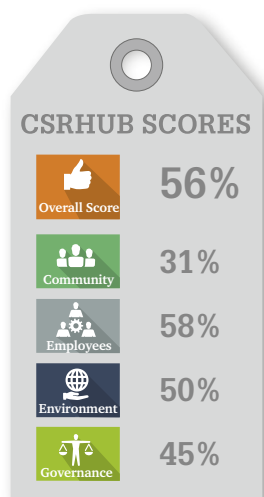
Walmart was the largest onsite renewable energy user in the US in 2015, with more than 340 solar installations throughout the country. Meanwhile, Asda has installed 3.8 MW of solar PV across its estate and, since 2010, reduced its energy reduction intensity by 19%. The UK operation has set a target to use 30% renewable energy by 2020. Overall, Walmart eliminated 35.6 million tonnes of greenhouse-gas emissions from its supply chain. In the UK, Asda operates Sustain & Save Exchange, an online tool that contains information and ideas for suppliers, enabling them to share best practice and identify opportunities to increase resource efficiency. Asda says the 1,250 suppliers registered have tracked savings worth £11m and carbon reductions of 35,000 tonnes since 2013.

Asda sponsors Stronger Together, a multi-stakeholder initiative to reduce the risk of human trafficking, forced labour and other hidden third-party exploitation of workers in the UK.

Boots

Pharmacy and beauty retailer Boots is owned by a US company, Walgreens Boots Alliance, which has set objectives connected to its business activities to help to meet the UN sustainable development goals (SDGs). The 12 areas targeted are: (community) health and wellbeing; young people; cancer programmes; (environment) energy; waste; deforestation; (marketplace) transparency; ethical sourcing; external stakeholders; (workplace) employee wellbeing; equal opportunities; and health and safety.

The three environment goals are: to reduce energy consumption and scope 1 and scope 2 emissions on a comparable basis (including acquisitions and disposals) as defined by the Greenhouse Gas Protocol; to reduce the waste we create, on a comparable basis, and to contribute to the drive for increasingly circular economies through increased reuse and recycling; to develop plans to help achieve zero net deforestation by 2020, collaborating



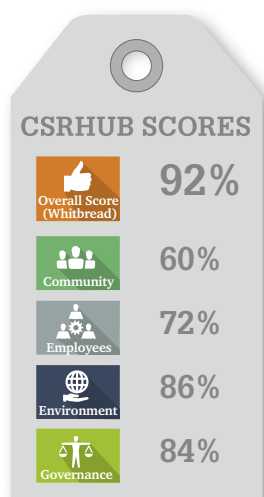
with other organisations in a global initiative. In the UK, Boots is aiming to reduce emissions by 30% by 2020 compared with 2005. The CSR report from Walgreens Boots Alliance, published in February and covering the fiscal year to 31 August 2016, says the UK retailer was on track to reach this target at stores that were open in 2005. LED lighting replacements in Boots stores in the UK over the reporting period accounted for a reduction in energy consumption of 7.9 million kWh. Overall, Walgreens Boots Alliance businesses generated almost 17,000 mWh of electricity through solar panels during fiscal 2016.

The firm says it took various measures in 2016 to mitigate any risk of exploitation in its operations and to meet the requirements of the UK Modern Slavery Act 2015 and the California Transparency in Supply Chains Act of 2010. These included a global ethical trading standards policy that sets out the company's opposition to forced or bonded labour, slavery, human trafficking or labour practices that involve harsh or inhumane treatment.

Costa

Whitbread owns Premier Inn and restaurant brands, Beefeater, Brewers Fayre and Table Table as well as coffee business Costa. Its corporate responsibility programme, Good Together, is described as fundamental to the way the business is run. The group has set targets for 2020, including reducing carbon by 15% and water consumption by 20% against 2014-15 levels, and increasing the direct operations recycling rate to 80%. It has also targeted 100% accredited supply for products for its critical-sourced commodities by 2020. The purpose is to ensure people in the supply chain are treated fairly, their human rights are upheld, the products do not have a negative environmental impact on the planet, and animal welfare is protected.

Whitbread's 2015-16 corporate responsibility report reveals a 12.3% and 6% improvement in carbon and water efficiency respectively across the group. Last year, the coffee business opened its first 'Eco-Pod' in Telford. It is described as the only 'zero energy' coffee shop



building in the UK, incorporating an environmentally friendly building design and innovative energy-saving technology, including solar panels on the roof. Meanwhile, its new roastery in Basildon, Essex, which opened in March and is Europe's largest, is rated BREEAM Outstanding. It boasts a roof-mounted 249kw solar PV system and a rainwater harvesting system. It will operate on a zero waste-to-landfill basis.

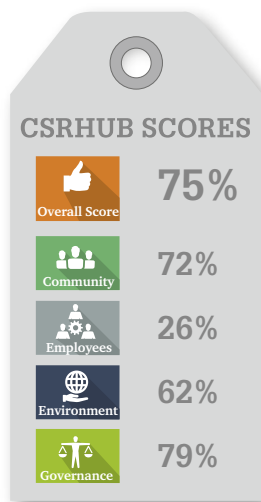
In 2015-16, 76% of waste from Costa stores in the UK was diverted from landfill, with 60% recycled. In February, Costa launched a nationwide cup recycling scheme. It will be available in more than 2,000 stores and guarantees the recycling of any paper takeaway cup, including those from competitors. Costa claimed the scheme was the first of its kind among coffee shop retailers.

All the coffee beans used by Costa come from farms certified by the Rainforest Alliance, which supports farmers and farm workers and aims to protect the planet.

Debenhams

Department store business Debenhams operates more than 240 outlets, including franchises, in 27 countries. Its environmental responsibilities focus on carbon, energy and waste. The company says it aims to reduce impacts through improved awareness, efficiency and sustainable investment. It sources products from 900 suppliers and says ethical sourcing underpins everything it does as a responsible retailer.

Debenhams has set a group-wide 10% carbon reduction target for 2020 against 2007-08 levels. The latest data shows that the firm's overall carbon footprint increased by 7% between 2015 and 2016, from 190,930 to 204,136 tonnes CO₂e. Debenhams says the increase is mainly due to widening the inventory boundary to include scope 3 emissions from water supply and treatment in Hong Kong and Bangladesh, UK rail and plastic material in UK



carrier bags. If the new sources are discounted, scope 3 emissions declined by 8% compared with 2015, mainly because of a reduction in business travel. Scope 1 and 2 emissions declined by 12% between 2015 and 2016.

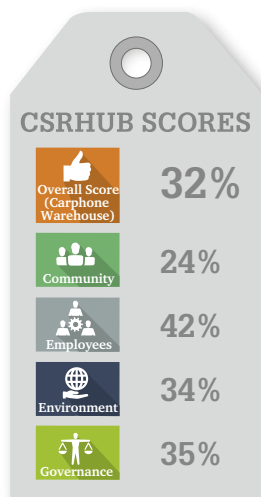
Around £4m was invested in 2016 installing LED lighting in 50 stores. Some 96% of store waste was diverted from landfill last year, up 2% on 2015. It is aiming for zero waste to landfill.

The company's supplier code of conduct, which is incorporated into conditions of trading, requires factories to pay 'fair' wages, treat staff with dignity and provide safe working conditions and not discriminate or exploit. Debenhams says it supported the introduction of the Modern Slavery Act. It is a signatory to the Accord on Fire and Building Safety in Bangladesh, an independent agreement between brands and trade unions that was established after the Rana Plaza building collapse in 2013.

Dixons Carphone

Electrical goods retailer Dixons (Currys and PC World) and mobile phone business Carphone Warehouse merged in 2014. The combined Dixons Carphone says it is committed to building a sustainable, responsible and ethical business, adding that sustainable business practices make sound business sense. Its CSR principles cover people, 'connected communities', environment and supply chain. In terms of environmental sustainability, the company says it is working towards best practice sustainability with minimal waste and optimal efficiency.

Its annual report and accounts for 2015-16 reveal that £1.3m was invested in energy efficiency, with LED lighting installed at 19 stores as well as at the retail support centre in Acton, west London, and one of two buildings at the Newark distribution centre in Nottinghamshire. Solar was installed on roofs at large retail outlets in Coventry and Southampton.



According to the firm, each year these and other efficiency measures would save about 4,300 mWh of energy and reduce carbon emissions by more than 2,200 tonnes. Overall, the company emitted 132,945 tonnes of CO₂e in 2015-16, 12% less than in 2014-15. Its carbon intensity (tonnes of CO₂e per 1,000 sq ft of floor area) was 6.36 in 2015-16. This worked out at 5.76 (5.73 in 2014-15) for the Dixons side of the business and 13.75 (17.41) for Carphone Warehouse.

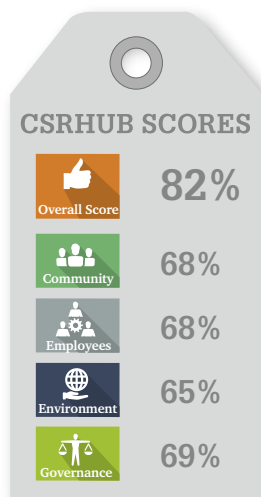
In 2015-16, 75% of material generated by Dixon Carphone stores went to recycling schemes and not to landfill.

Although many of the electrical products sold by Dixons Carphone are sourced from major international brands, which have their own strong ethical and environmental policies in place, the company operates its own. This is based on the Social Accountability 8000 and the FTSE4Good criteria and takes account of the Modern Slavery Act.

Gap

The US retailer has more than 110 stores in the UK. In 2014, the firm began an assessment, with third-party experts to identify and evaluate environmental, social, governance, economic and other issues. It identified 15 sustainability-related factors that guide the company's strategy. These are grouped into three categories: governance and operating context; human rights and social impact; and resource use, scarcity and impacts. The last category consists of water and energy and climate stewardship, management of chemicals and toxics, waste and end-of-life, and materials sourcing.

By the end of 2020, it is aiming to reduce greenhouse gas (GHG) emissions by 50% from its owned and operated facilities globally compared with 2015. The target was set in January 2016 after what Gap describes as the urgent reality of climate change forced it to rethink its approach and strive toward more aggressive, science-based goals. Others include: 80% waste diversion from landfill across



US-owned and operated facilities by the end of 2020 (just 29% was diverted in 2014); phasing out the use of hazardous chemicals in products by 2020; partnering with fabric mills to fight pollution and conserve water; and providing access to clean water for 17,000 people in India through its Women + Water programme.

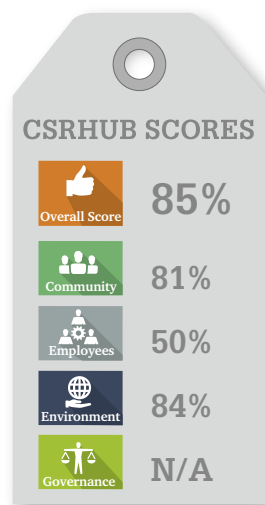
The company's most recent sustainability report, *Our Futures Are Woven Together*, contains only emissions reduction data for the US. It shows that, in 2014, GHG emissions (scope 1 and 2) from its US-owned and operated facilities were 33% lower than in 2008. It also reports that LED lighting was installed in more than 30% of its US stores and all its UK outlets.

In 2016, Gap joined the Better Cotton Initiative (BCI) to partner on sustainable cotton farming initiatives worldwide. The firm wants all branded apparel from 'strategic suppliers' (84% of sourcing expenditure in 2015) to achieve a sustainability rating of green or yellow by 2020.

H&M

Swedish company Hennes & Mauritz has several clothing retail brands, including H&M and Cos. A key feature of its sustainability strategy is to become '100% circular and renewable'. This requires the business to rethink how products are designed and made – including use of water, chemical and energy – the materials that are used and how customers use and dispose of them. Identifying ways to significantly reduce climate impact is also necessary.

The firm says that, wherever possible, it is adopting a science-based approach to define its targets and actions. Circularity targets include use of 100% recycled or other sustainably sourced materials by 2030 and to use cotton from sustainable sources only by 2020. Its overarching aim is to become 'climate positive' throughout its value chain by 2040; reduce electricity use in stores by 25% by 2030; and have a climate-neutral supply chain (first and second tier) by 2030, with two milestones:



20% of factories to be enrolled in an energy efficiency programme by 2018 and all by 2025; and a 30% reduction in greenhouse gases per product by 2025 compared with a 2017 baseline.

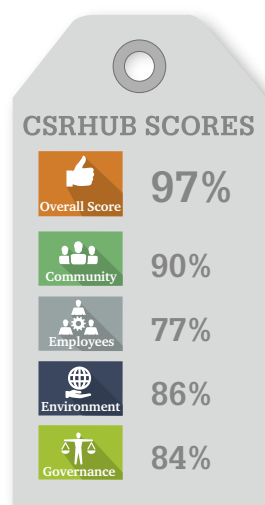
The H&M sustainability report shows that 26% of total materials in 2016 were from sustainable sources (up from 20% in 2015), as was 43% of the cotton used (34% in 2015). Carbon emissions per million Swedish krona sales turnover were 47% lower in 2016 than the previous year. The firm wants all energy used in its own operations to come from renewable sources. In 2016, 96% of electricity was from renewable sources, compared with 78% in 2015.

H&M's ambition to 'continually identify, address and remediate human rights impacts in its value chain' was addressed in 2016 through several initiatives, including: training on modern slavery and forced labour; conducting a gap analysis of modern slavery to identify areas for improvement; and updating risk assessment for new and existing materials to further integrate a human rights perspective.

M&S

Plan A is the retailer's sustainability strategy and is focused on protecting the planet by sourcing responsibly, reducing waste and helping communities. Launched in 2007, M&S says Plan A was a move away from corporate social responsibility 'towards a more holistic approach that addresses all the sustainability issues affecting our business and supply chains'.

The plan was updated in 2010 and, in 2014, M&S revamped it again, setting new, revised and existing commitments for 2020. In 2011, the company said it had achieved 95 of the 180 Plan A commitments set in 2007 and 2010. Highlights from the most recent progress report, published in June 2016, include: four consecutive years of zero net carbon emissions from M&S operations; all operational waste from stores, warehouses and offices recycled; and 73% of products have at least one Plan A environmental or social quality (64% in 2015). Overall, 57 Plan A 2020



commitments had been achieved and five had not. A further 40 were on time and one – customer clothes recycling – was running late.

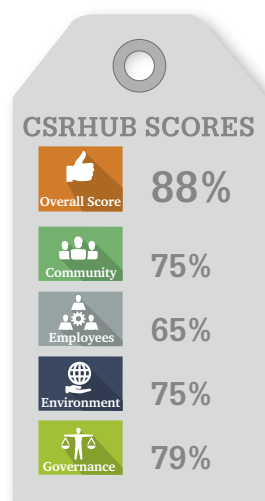
In terms of carbon, M&S believes it is the only major retailer with carbon-neutral global operations. Its total gross emissions (CO₂ equivalent) in 2015-16 were 566,000 tonnes, down 4% a year earlier and 23% lower than the Plan A baseline of 2006-07. The firm says its continuing carbon neutrality has been due to a combination of reductions, procuring renewable energy, and by purchasing and retiring high-quality carbon offsets. All waste from its UK and Ireland operations in 2015-16 was recycled and, since 2008-09, the amount of waste from stores, warehouses and offices has fallen by 31%.

M&S updated its global sourcing principles last year to incorporate the requirements of the Modern Slavery Act. These cover human rights and labour standards, working conditions and working hours and wages.

Next

Next has 540 outlets in the UK and Ireland plus more than 190 stores or franchise operations across 35 other countries as well as a manufacturing plant in Sri Lanka. Its approach to corporate responsibility involves 'acting in an ethical manner, developing positive relationships with suppliers, taking care of employees and being responsible for its environmental impacts'.

The company's environmental priorities are: to improve energy efficiency and work to reduce energy use in its buildings; to minimise waste produced and increase the quantity recycled; and to increase the efficiency of its in-house delivery fleet. In 2015, its global direct carbon footprint was 191,127 tonnes of CO₂e, 3% lower than in 2014 despite total floor space rising 2%.



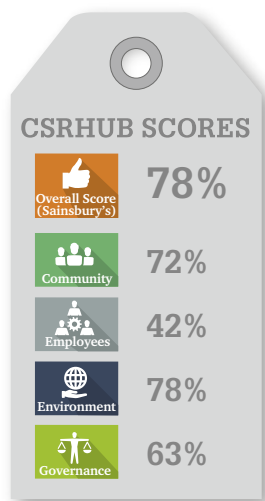
Electricity consumption, meanwhile, was stable, although the firm reported that it had exceeded its target to reduce consumption by achieving an overall reduction of 36% since 2007. Over the 2007-15 period, the carbon footprint of the business fell by 33%. Some 91% of waste created in stores, warehouses, distribution centres and offices was diverted from landfill, slightly below the 95% target. New targets for 2020 include reducing electricity consumption through a 10% reduction in kg CO₂e per sq m.

Next has set standards for suppliers, which include no child or forced labour, freedom of association, healthy and safe working condition and fair wages and benefits. In 2015, auditors assessed 88% of factories manufacturing for Next, with 92% ranked 'acceptable'.

Sainsbury's/Argos

20X20 is the name of the sustainability plan Sainsbury's adopted in 2011. It included 20 commitments to achieve by 2020, including five on the environment. The company revised the plan in December 2015 to focus on the most material issues, particularly food waste. The target to reduce absolute operational carbon emissions by 30% compared with 2005 was retained.

The 2016 annual report shows absolute emissions at the end of the 2015-16 financial year were 3.4% lower than in 2005-06 and that the firm was targeting a 10% reduction in 2016-17. The business also published an emissions intensity measure, calculated using sales area (000 sq ft). Using this, emissions in 2015-16 fell by 4.7% and have decreased by almost 37% since 2005-06. *the environmentalist* has reported (January 2015, pp24-26) on some of the projects to reduce energy consumption and emissions. These include switching to natural refrigeration (at 40%, refrigeration consumes the largest proportion of the annual energy



used across Sainsbury's operations), and installing ground source heat pumps and solar arrays.

The firm says resource efficiency, water stewardship and waste are global issues that it is addressing through an updated commitment to sustainable sourcing. Meanwhile, its code of conduct for ethical trade covers the employment practices expected from its suppliers, both in the UK and abroad.

J Sainsbury completed its acquisition of Home Retail Group (Argos and Habitat (HRG)) in September 2016. Its approach to corporate social responsibility had focused on 12 areas, including operational carbon, waste, products and raw materials, and suppliers. It was targeting a 40% reduction in its carbon footprint by 2020 compared with 2006. It reported in 2016 a 34% reduction in its footprint relative to space and a 29% absolute reduction between 2006 and 2015.

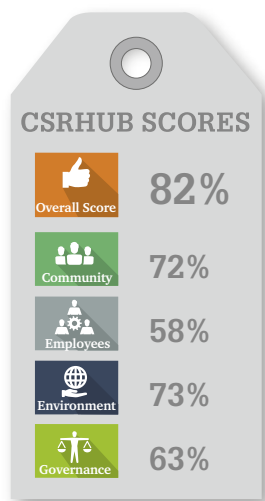
Over the same period, absolute carbon emissions from the operation's commercial fleet declined by 26%. It also reported that 94% of operational waste was recycled in 2015.

Starbucks

US-owned coffee chain Starbucks has more than 25,700 outlets worldwide, with almost 900 company-operated and licensed stores in the UK.

In 2008, amid the global financial crisis, the Seattle-based firm announced it would, by 2015, improve ethical sourcing in coffee throughout its supply chain and decrease the environmental footprint of its store operations. Its 2015 global responsibility report reveals a mixed picture. Some 99% of coffee was sourced from ethical sources audited by, for example, C.A.F.E and Fairtrade – slightly shy of its 100% goal (up from 77% in 2008); purchased enough renewable electricity to power all company-owned stores in the US and Canada (up from 59.3% in 2014); energy use was 4.3% lower than 2008 against a 25% target; and water consumption declined 26.5% between 2008 and 2015, surpassing the 25% anticipated.

In October 2016, the firm announced it had secured renewable energy contracts to more than



550 company-owned outlets in the UK, France, Switzerland and the Netherlands. Stores in Austria have since been added to those covered by such agreements, so the power that lights, heats, cools and runs equipment in the stores is matched against these contracts. The firm says more than 90% of the waste generated at store level, excluding paper cups, is diverted from landfill. It is trialling a new approach to separate paper cups from the rest of its waste, so they can be properly recycled.

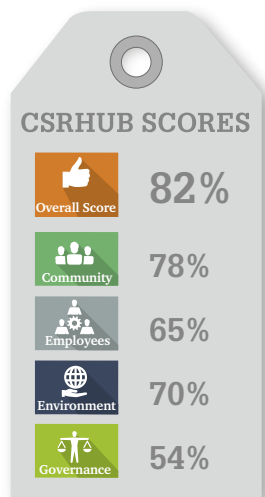
LEED, the US rating system that evaluates a building's environmental performance and encourages sustainable design, is being extended by Starbucks to other countries. The firm reports that each new store in Europe is designed, constructed and operated to LEED standards, while energy audits are carried out in existing, non-LEED certified stores.

Starbucks is a member of BICEP, a coalition of US businesses committed to working with policymakers to introduce 'meaningful' energy and climate legislation.

Tesco

Tesco is the UK's largest retailer and has stores across Europe and Asia. In December 2015, Tesco joined the UN Global Compact, an initiative that encourages businesses worldwide to adopt sustainable and socially responsible policies. Its corporate responsibility commitments include tackling food waste in its operations, reducing carbon emissions and raising human rights and labour standards.

Tesco has targets to halve carbon emissions per square foot of its stores and distribution centres (DCs) and cut by 25% CO₂ emissions per case of goods delivered by 2020 – against 2008 and 2012 levels respectively. Its latest update, published in November 2016, reveals that in 2015-16 it had achieved a 39.5% reduction in emissions from its stores and DCs compared with 2008 and a 17.4% reduction in



distribution emissions compared with 2012. Year-on-year absolute emissions declined 3.1%. Tesco also reported that its largest grocery category suppliers were on track to exceed a 30% cut in their emissions by 2020.

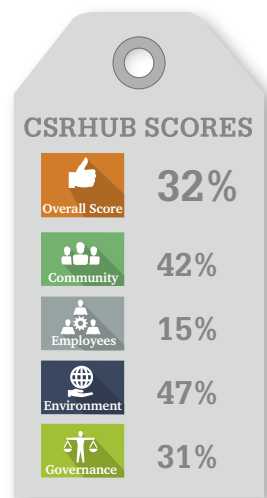
Chief executive David Lewis is chair of Champions 12.3 – an international coalition of businesses committed to reaching the UN sustainable development goal 12.3 of halving global food waste by 2030. Tesco has pledged that, by the end of this year, no food safe for human consumption will go to waste from its UK stores. It operates a scheme that enables staff to alert charities about what surplus food is available to pick up.

Last year, Tesco introduced a new approach to assessing human rights risks and driving improvement. It is focused on where risk in the supply chain is greatest and is based on key factors, such as country risk, type of work and the supplier's capability to manage the issues.

Uniqlo

The Fast Retailing Group, the Japanese apparel business, operates the Uniqlo brand. It has 837 stores in Japan and more than 950 elsewhere, including ten in the UK, mainly in London, where its first international outlet opened. It is set to unveil a fresh sustainability strategy and targets this year but its current priorities are clustered under four headings: production, environment, people and community.

Its approach to the environment is on using best practice, tools, industry collaboration, and consumer engagement to minimise its footprint. Material issues are chemicals, environmental management system, GHG emissions and climate change, and water use. The company is targeting a 10% reduction in CO₂ per unit of floor space in its stores in Japan by 2020



and is committed to eliminating hazardous chemicals from its production processes by January 2020.

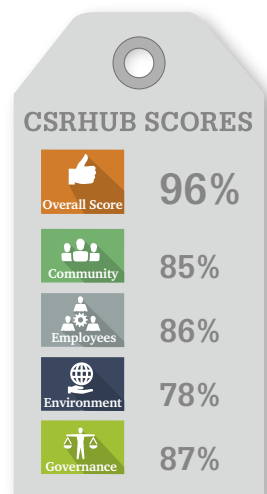
The company is using the Higg Index, the apparel and footwear industry self-assessment standard for environmental and social sustainability throughout the supply chain, to measure the performance of suppliers and set goals for environmental reductions. 'After understanding that our biggest environmental impact is with our suppliers, we are now looking to baseline and set targets for our strategic fabric suppliers,' says Yukihiro Nitta, senior vice-president and sustainability director.

Its 2016 sustainability report was published in February. It shows that scope 1 and 2 GHG emissions in 2015-16 from its Japanese operations totalled almost 138,000 tonnes CO₂e.

WH Smith

News and stationery business WH Smith has more than 600 high street stores and operates more than 750 units in airports, railway stations, motorway service areas, hospitals and workplaces. Its targets for 2020 include: to reduce CO₂e emissions from stores and distribution centres by 40% per square foot (from 2007 baseline); to reduce CO₂e emissions from transport by 20% per pallet (from 2007 baseline); to send less than 5% of waste to landfill; to make 95% of own-brand stationery from certified or recycled timber sources; and to continue to work with the Woodland Trust to plant more than 250,000 trees in UK woodlands between 2010 and 2020.

The company's latest corporate responsibility report shows it is making progress in each area. Its GHG emissions in the year to 31 August 2016 totalled 35,276 tonnes CO₂e (scopes 1, 2 and 3



(employee business travel)), down from 40,126 in 2014-15. Carbon intensity (per 1,000 sq ft) was 8.03 in 2015-16 compared with 9.16 in 2014-15.

Overall, the firm said it had achieved a 49% reduction in CO₂e emissions per sq ft from stores since 2007. Investment in LED lighting across most of its stores, distribution centres and in back of house, such as stockrooms and offices, had delivered significant savings – group energy consumption (kWh per sq ft) fell from 21.1 in 2011-12 to 17.55 in 2015-16.

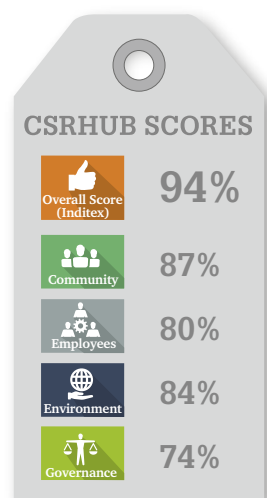
Transport emissions (CO₂e emissions per pallet) have declined by more than 25% since 2007. In 2015-16, 11% of waste was sent to landfill, while 284,000 trees were planted and 85% of own-brand stationery was from certified sources.

WH Smith says it is committed to maintaining good labour standards across its supply chains. By 2020, it wants 90% of supplier ethical trade improvement plans completed on time. It had achieved 81% in 2015-16.

Zara

Spanish company Inditex operates more than 7,000 stores worldwide. Its main brand is Zara and it has 68 UK outlets. The company says sustainability forms the basis of all its decisions and is ever-present in all its processes. Its overall philosophy is called *Right to Wear*, with its social and environmental commitments tagged Social to Wear and Green to Wear. The latter is focused on three major strategic initiatives – water management, energy and greenhouse gas emissions, and biodiversity protection.

As a signatory to the Joint Roadmap to Zero Discharge of Hazardous Chemicals initiative, Inditex is working to achieve zero discharge of undesired chemical substances by 2020 and is committed to sustainable water management across each of the six areas covered by the CEO Water Mandate: direct operations; supply chain and watershed management; collective action; public policy; community engagement; and transparency. Its energy strategy is centred on reducing the energy intensity of its own operations by 15% and reducing the use of energy in



stores by 10% – both by 2020 against 2012 levels and measured against each garment placed on the market.

The biodiversity strategy aims to conserve and develop diversity of species in the communities in which Inditex has a direct presence as well as those connected to its supply chain.

Sustainability performance data for 2015 was included in the company's latest accounts. They show that the consumption of electricity per garment released on the market in Inditex logistics centres, own factories and head offices declined by 4% compared with 2014. Its scope 1 and 2 emissions based on CO₂e g per garment were 548.38 in 2015 compared with 674.72 in 2014 and 706.70 in 2011. The firm says more than 85% of its waste was managed in a way that did not harm the environment in 2015.

The Inditex supply chain consists of 1,725 suppliers and 6,298 factories across more than 50 countries, with 60% of production in Spain. The firm's code of conduct for manufacturers and suppliers set out standards of mandatory compliance in issues of labour rights, health and safety of products, and environmental factors.

In for the long haul

Aviation has long been climate change's bogeyman. Does a new agreement show the industry is now tackling its impacts? **Alex Marshall** reports

If the economics of sustainable jet fuel suggest an industry without a future, the optimism displayed by Maarten van Dijk may seem foolhardy – or perhaps audacious, depending on your viewpoint. But the chief executive of biofuels provider SkyNRG dismisses short-term pessimism and points to a tenfold rise in demand in 2015-16 for its products, which are sourced from manufacturers and made from waste cooking oil and non-food crops.

Despite this apparent boom, the pessimists will remind van Dijk that last year his firm provided only 'a few thousand tonnes' of biofuels to Los Angeles, Oslo and Stockholm airports – enough for about 150 long-haul flights. Moreover, a report by the University of Utrecht published in February estimated that biofuels will cost on average €762/t more than conventional jet fuel between 2020 and 2030.

That is equivalent to €242/t of CO₂ saved, far above the prevailing EU carbon price of around €5/t. If industry subsidies are not forthcoming, only 13,000 tonnes will be used in European flights in 2030, the report says – just 0.02% of all fuel.

Industry of the future?

Van Dijk swats aside that assessment: 'We know this is a long-term industry, but we are moving to a bio-based economy and there is a greater realisation that what's important is how you use those resources. Many people are now seeing aviation as the key area because there are no other ways for it to lower its emissions.'

He points to a programme with Dutch airline KLM that allows corporations and government ministries to buy biofuel to add to an airport's general fuel supply rather than use it for specific flights. Last year it had 12 clients, a statistic that van Dijk confidently believes is an indicator of future growth.

At the same time the aviation industry appears finally to be waking up to the impact of climate change, an epiphany that reinforces van Dijk's optimism. The sector has long avoided climate action, even being excluded from the Paris agreement as well as the UK's policies despite producing 2% of global emissions. The independent Committee on Climate Change says aviation emissions will be responsible for the UK exceeding its carbon budgets until 2050 unless biofuels are used and growth capped.

However, last October, the International Civil Aviation Organization (ICAO), the UN body that governs the industry,

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agreed a plan to tackle the sector's emissions. From 2020, airlines will counter any growth in emissions by buying carbon offsets, a step towards a longer-term aim to halve emissions by 2050 compared with 2005.

The agreement was the result of four years' work, which started after the EU tried to place all flights to and from airports in the bloc under its emissions trading system (EU ETS). The ICAO agreement was hailed as 'historic' when signed and it does appear to be having an impact already.

In February, Heathrow published a sustainability strategy called Heathrow 2.0. It includes an 'aspiration' to offset all emissions from its planned third runway, including those during its construction. Heathrow would achieve this largely using the ICAO agreement – other measures include offering the best landing slots to the most fuel-efficient planes.

Van Dijk does not expect the agreement to have a direct impact on his firm. 'People will buy cheaper offsets rather than our fuel because the price gap is too high,' he says. But even for him, the agreement has already had benefits: 'A week after it was signed, I got a phone call from Turkish Airlines. They didn't buy anything, but they'd never called before.'

Taking off

Whether the ICAO accord does mark a new era for the aviation industry depends on to whom you talk.

NGOs are cautious. 'It's likely to be a measure that ends up so weak that it would be better if the EU acted alone and put aviation fully under the EU ETS,' says Andrew Murphy, aviation manager at Transport & Environment. Industry feels differently.

'This is the best way we'll get to see the aviation industry tackling carbon,' says Andy Jefferson, programme director

at Sustainable Aviation, whose members include all parts of the UK industry, from airports to plane manufacturers. 'The challenge is whether it is robust enough. Is it setting itself strong enough targets quickly enough? I imagine NGOs would say no, but aviation is global and you need a way to get everyone involved.'

The idea behind the ICAO agreement, the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), is to deal with the emissions that cannot be tackled by other means.

Engineering advances in new aircraft are expected to reduce aviation's emissions 40% by 2050, according to Sustainable Aviation. Operational improvements, such as changing flight paths and reducing taxiing times, should account for a further 10%. Biofuels could deliver a further 24% saving. However, even if all that is achieved, industry emissions would still rise. Under CORSIA, airlines will buy offsets to deal with any such increase.

However, the scheme contains several concessions that could undermine its effectiveness. The initial plan was for it to be mandatory from 2021, but opposition from low-income countries delayed that requirement until 2027. Only 66 countries have so far agreed to take part in the voluntary phase. That includes all EU member states, the US and China, but not Brazil, India or Russia. There is no penalty if a country withdraws. From 2027, the smallest countries – typically small island states and any country with a small amount of international air traffic (proposed at less than 0.5% of global traffic) – would remain exempt.

Another weakness is that airlines will not have to purchase offsets based on their actual emissions until 2030. At first, the requirement will be based on the 'average emissions growth rate of the entire sector'.

In February, the International Council on Clean Transportation produced a blunt report on the likely success of CORSIA, and concluded that its loopholes, if exploited, would limit offset to only 73% of expected emissions growth to 2035. The agreement's aim 'is not expected to be met, regardless of low-carbon fuel use or operational and design improvements', it stated.

CORSIA is also unlikely to push any airlines to increase their investment in energy efficiency measures. Buying offsets would cost firms only 0.4% of fuel prices in 2025, rising to 1.1% in 2030. Fuel price variability already offers a bigger driver. There is also concern over the type of offsetting the agreement will cover. The ICAO has started discussing the rules, but Murphy says some airlines and countries are pushing for the broadest range of offsets to be included such as controversial forestry schemes. Transport ministries are leading the negotiations and are trying to avoid adding costs to airlines. 'They see their role as to encourage more flights, and that argument always seems to win out – and that's global, not just in the UK with Heathrow,' Murphy says. 'The climate ministries just hold up their hands [in disbelief].'

The EU appears to have recognised the limits of the agreement, announcing that it plans to continue to include under the ETS flights that take off and land within Europe.

Surmountable problems

Industry seems to think these problems will soon be overcome. 'CORSIA is definitely a step forward,' says Matt Gorman, Heathrow's director of sustainability. 'But it's like any UN process involving more than 190 member states; it's a first phase that will need to be continually improved.'

Sustainable Aviation is open about that need for improvement. 'The biggest challenge the sector faces is that it has talked about a long-term aim of halving emissions by 2050,' says Jefferson. 'CORSIA is only talking about stopping emissions growth, so there needs to be a conversation about how to achieve that.'

The group is lobbying on that point and is trying to ensure the rules underpinning the first stage are strong. 'It would be a shame if the scheme doesn't promote opportunities to reduce aviation's emissions directly using things like sustainable fuels,' Jefferson says. 'But if it costs only \$20 to buy a forestry offset and \$200 for a fuel project, that could be a deal breaker. So how can we have a scheme that does the more expensive stuff? We are having those discussions and I'm hopeful [something will be agreed].'

There are two types of aviation projects that the UN has already approved to generate carbon offsets: installing electric power systems in aircraft to avoid using fuel while taxiing; and installing solar panels at airports to power at-gate operations and run air-conditioning. But there is no guarantee airlines will buy such credits. Heathrow's sustainability strategy outlines a different approach. It wants CORSIA to promote ecosystem restoration, and plans to pilot a project to restore British peatlands. Gorman says such schemes could be cost-effective, but exact costs need to be calculated before airlines can be encouraged to purchase any offsets generated.

New fuels needed

Regardless of the offsetting, a long-term change in aviation's emissions will occur only if planes are moved away from burning fossil fuels. Airplane manufacturer Airbus is working on electric and hybrid propulsion systems, but says electric flight represents 'one of the

biggest industrial challenges of our time'. In March, the US start-up Wright Electric said it would launch short-haul electric flights in a decade, but admitted they would only be possible if battery technologies continued to advance at their current rate. It has yet to design a plane.

This is why SkyNRG and their sector contemporaries are still attracting significant interest despite the current poor economics. Some airlines are even working on their own biofuel projects. This includes British Airways who, in January 2016, scrapped plans to build a waste-to-fuel plant in east London. That project's failure was blamed on the falling oil price and a project partner filing for bankruptcy. But BA is in talks with other companies on a similar idea, according to Jefferson.

The UK government is also taking small steps to increase demand for sustainable jet fuels. The Department for Transport will soon open to aviation its Renewable Transport Fuels Obligation, which was intended initially to promote road biofuels. That could provide a small cash boost to projects.

The Netherlands has already done this. The EU will also allow aviation biofuels to contribute towards its 2030 renewables targets. However, such measures will not close the current cost gap.

Van Dijk says nobody will order airlines to use a rising percentage of biofuel: 'I don't see that happening. Nobody dares upset the aviation industry by imposing extra costs.' The more likely way forward is for a country to part-fund a plant to manufacture aviation biofuels, he says. 'I can see a member state developing a policy supported by the EU that would work a bit like a wind power subsidy: "Here's \$1bn. Who can give us the most fuel for that?" The member state would have to guarantee the fuel would be used,' he adds.

The University of Utrecht report raises another option. The cost of sustainable fuels is a modest, between €900,000 to €4.1m on a per passenger basis. A feed-in tariff to cover costs that way could work, it believes. However, it is hard to see any country promoting such a measure at a time of austerity.

Going it alone

Perhaps an airport could go it alone, as has happened in the case of SkyNRG's projects with Oslo, Stockholm and Los Angeles recouping the costs in landing and other fees. However, this might not work in all cases. Heathrow's new strategy, for example, will ensure sustainable aviation fuels are considered in all relevant infrastructure projects, but the airport operator does not own the refuelling infrastructure at the airport so says it cannot force biofuel use.

It seems that companies like van Dijk's will have to be patient to see whether the aviation industry truly wants to transform itself and deal with its climate impacts by adopting new fuels, or whether it wants to simply rely on others by buying offsets instead. Many will expect airlines to take the second option, but van Dijk at least believes airlines will take the first. 'We are just getting started,' he says.

Alex Marshall is an environment writer.

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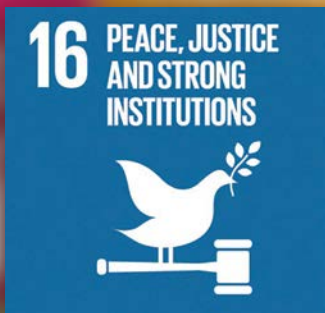
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Peace, justice, partnerships and corporate strategy

The final part of Penny Walker's series on the UN SDGs looks at action on building a peaceful, just society



Peace, justice and strong institutions

Around \$1.26trn is lost in low-income countries to corruption, bribery, theft and tax evasion, according to the UN. This money could be used for the common good: public infrastructure, environmental protection, healthcare and education. Where there is war and conflict, children miss school, disease is rife, and infrastructure and the environment suffer. Where laws are not enforced, unethical players have an advantage.

Targets under UN Sustainable Development Goal 16 include reducing violence and ending abuse, trafficking, violence and torture of children. It also calls for the rule of law to be observed and equal access to justice, as well as measures to tackle money laundering, arms trafficking and organised crime. The incidence of corruption and bribery needs to fall. Effective, transparent, accountable institutions ensure participatory and representative decision-making and require support. SDG 16 also covers legal identities and birth registration.

Human rights

In March, the results of the first pilot Corporate Human Rights Benchmark (CHRB) revealed that most of the 98 companies analysed had far to go, with just three falling into the top band: mining companies BHP Billiton and Rio Tinto, and high-street retailer M&S.

The CHRB was developed with support from a coalition, including financial services firms Aviva Investors and APG Asset Management, and NGOs with expertise in responsible investment and human rights. Because it is an open-source methodology, any company can self-assess to see where it sits in relation to others.

Conflict minerals

In areas dogged by high levels of violence and insecurity, social and economic development is held back and the

environment suffers. The search for precious metals and diamonds is one activity that can be exploited by criminals, fuelling conflict and destabilising communities. Swiss-based refiner Valcambi is committed to sourcing gold only from sources that respect human rights and do not contribute to conflict. Nicoletta Ferro, of Valcambi's corporate affairs team, says: 'Our updated procedures systematise the whole due diligence process, introducing a new set of tools for carrying out a thorough risk assessment, mitigation and remediation.'

Valcambi involved experts in artisanal small-scale mining and responsible sourcing, and an independent academic to help it refresh its systems. 'We have now reached the stage where we are testing feasibility in the field and seeking feedback from key stakeholders: suppliers, clients, UN agencies and NGOs,' says Ferro.

As well as ensuring that its own supply chains are conflict-free, Valcambi hopes its approach will empower artisanal small-scale miners, helping them to access markets and be recognised as a sector. This should strengthen their communities, making them less vulnerable to exploitation by violent criminals.

Companies with links to the gold supply chain can refer to a handbook developed by sustainable mining consultancy Estelle Levin and the Global Initiative Against Transnational Organised Crime as part of the Gold and Illicit Financial Flows (GIFF) Project. Follow the Money helps companies to research financial flows linked to artisanal and small-scale gold mining so they can spot and eradicate money-laundering, smuggling, tax evasion and corruption. 'Every actor has a role to play,' says Levin, who is the GIFF project director. This includes traders and financiers as well as refiners and jewellers. She is passionate about the need to share information to accelerate progress: 'Donors and companies need to invest in knowledge management and communications, so the

impact of public funds is maximised and they give life to the knowledge that comes out of projects.'

When buying gold and jewellery, customers can look for the Fairmined certification and for companies certified by the Responsible Jewellery Council.

Taxation

It is not enough to obey the letter of the law in paying taxes. Some multinational companies have been criticised for complex legal arrangements that aim to lower tax bills, a strategy that is seen as unfair by many people. Power company SSE has taken its tax policies to the next level with the award of the Fair Tax Mark. Director of sustainability Rachel McEwen says the company changed little of what it was doing, but under the terms of the accreditation, it must now disclose a lot more information and publish a standalone, accessible tax report. 'It has led to deep thinking about the role of a big corporation

in society, our rights and responsibilities, our social contract,' she says. 'We benefit from public spending on roads, health and education, so we should pay our fair taxes. It's part of the deal. The Fair Tax Mark sends a powerful message to our customers and our employees about what we stand for.'

Further information

Corporate Human Rights Benchmark – bit.ly/2mjnz
Global Initiative Against Transnational Organised Crime and Follow the Money guide bit.ly/2nvScFO
Responsible Jewellery Council – bit.ly/1Bi4bKN
FairMined – bit.ly/2n3IVJW
Transparency International Business Integrity Toolkit – bit.ly/2o1Jp2A
Fair Tax Mark – bit.ly/2osOCBz

17 PARTNERSHIPS FOR THE GOALS



Partnerships for the goals

As a whole, the sustainable development goals provide a powerful, credible mandate for various organisations and institutions to work towards the same objectives. The challenges are huge. The changes they imply will not be easy. Individual excellence is not enough: change will need to be at the level of the whole system. So it is sensible to work together on the goals.

Targets for goal 17 include direct financing of development through aid and investment; co-operation on sharing knowledge, technology and science; and promoting rules-based multilateral trade. There are targets related to policy and institutional coherence in public bodies and governments, and to credible statistical monitoring and transparency about progress.

Like goal 16, the 17th is both enabling and an end in itself. Cat Tully, of the not-for-profit School of International Futures, says: 'Effective, inclusive and accountable institutions and working in partnership are the keys to unlocking the transformative power of the SDGs. The real question is how we create a common view of the future, harnessing everyone's enthusiasm and energy.'

Genuine transformation, Tully argues, relies on a conversation between governments, citizens and businesses. Corporations increasingly see the need to be part of those multi-stakeholder conversations.

Protein challenge

One multi-stakeholder collaboration, catalysed and convened by sustainability consultancy Forum for the Future, is the Protein Challenge 2040. Waitrose, The Hershey Company and Quorn are among the businesses working together on the question 'how can we feed nine billion people with enough protein in a way that is affordable, healthy and good for the environment?'

What makes this collaboration special is its focus on system-level change and innovation. The organisations involved are not content with the easy and incremental.

They want win-win solutions and have identified innovation for immediate action and longer-term scoping.

Landscape level partnership

A different approach to system change is happening at the landscape level. Examples include the catchment-based approach to improving water quality (see *the environmentalist*, July 2016, pp 22–24) and the KELOLA Sendang landscape partnership in South Sumatra.

With partners including the Zoological Society of London, the Department for International Development and Dutch development NGO SNV, KELOLA Sendang works with oil palm and rubber smallholders to achieve ecological and social benefits across the whole landscape. The anticipated environmental benefits include a reduction in carbon emissions from forest fires and less peatland destruction, and preservation of crucial habitat corridors for the Sumatran tiger.

Seth Shames, director of policy and markets at US-based land use consultancy EcoAgriculture Partners, says a landscape level approach is important. Single-objective strategies that are pursued to solve global challenges such as biodiversity loss, poverty and food insecurity are highly connected, he explains, and solutions aimed at growing

Further information

Protein Challenge 2040 – bit.ly/2osS6nI
Landscapes for People, Food and Nature – bit.ly/2osVnU0
UN Global Compact – bit.ly/1Ks4ZkY
World Business Council for Sustainable Development – bit.ly/1kDJC4m
UK Stakeholders for Sustainable Development – bit.ly/2n3G6sh
Working Collaboratively: a practical guide to achieving more is available at bit.ly/2nO8L1F

more food or conserving more habitat can alleviate one problem but exacerbate another.

His organisation helps to run the Landscapes for People, Food and Nature Initiative, a global partnership of conservation, agriculture and development organisations that use whole-landscape approaches in which both the producer and the communities benefit. Current projects include working in partnership with the international development organisation Solidaridad in northern coastal Honduras, where palm oil is the main crop. Producers in sugar and cocoa supply chains are involved in the

project but so are community, public sector and NGO stakeholders, ensuring a holistic approach.

What makes a great partnership?

Joint working can be disappointing if clear, shared goals and skilful convening are lacking. Potential collaborators need to listen to each other's assumptions about how they expect to work together, as well as what they want to achieve. This approach, and other useful frameworks and tips, are explored in my book *Working Collaboratively: a practical guide to achieving more*.



Strategic responses

Different businesses are taking different approaches when responding to the UN SDGs. Acciona, the Spanish renewables and infrastructure company, is using them to focus its corporate volunteering, while Cemex, BT and Samsung are highlighting links to specific goals in their sustainability reporting. GRI, the Global Reporting Initiative, has mapped the SDGs against its reporting frameworks. Meanwhile, Novozymes is using them as part of filtering and prioritising in its innovation pipeline. The biotechnology firm has gone further, linking the bonus scheme for its executive leadership team to annual operational targets, derived in part from the goals.

Many organisations are using the SDGs to augment their materiality analysis. Global consultancy firm PwC has developed a sophisticated tool to assist clients to take their first steps in engaging with the goals. Louise Scott, who helped to develop the Navigator tool, says: 'Our detailed country-by-country research has helped companies to spot things they didn't realise were important, and catalysed conversations, grounded in geography, about where they can have the most impact.'

Make some noise

Businesses have a powerful voice and can choose whether to support or undermine robust government action in favour of sustainable development. This is particularly important for policy coherence, which is targeted in goal 17. BT is part of the We Mean Business coalition, which involves companies working to accelerate the transition to a low-carbon economy. More than 120 members have signed a commitment to responsible corporate engagement on climate change, promising to audit their activity, ensuring consistency and disclosing their positions, actions and outcomes.

Expert after expert told me that companies need to look hardest at where they may be undermining the SDGs, albeit inadvertently. 'It's not just about opportunities, it's also about responsible conduct and impact,' says Ruth Mhlanga, Oxfam's private sector policy adviser. 'Don't undermine one goal while tackling another. Sustainability leaders will include those who support government efforts to govern for the common good and are willing to stand up to peers who undermine those collective efforts.'

Collaborate to shift the system

Picking off the goals and targets that seem easiest could be a flawed strategy if the actions involve trading off progress on one front with undermining it on another. In its research into the interconnections between the SDGs, the International Institute for Applied Systems Analysis (IIASA) highlights an area ripe with what it calls 'wicked trade-offs': environmental protection versus reducing food prices. The IIASA found that the most effective action would be to reduce the proportion of meat in diets.

Mhlanga also advocates collaborative, system-level action. 'Where companies, governments and civil society work together, making issues like suppliers paying a living wage precompetitive, no single company is disadvantaged by competitors undercutting.'

The Business and Sustainable Development Commission's *Better Business, Better World* report is clear on the need for system-level change: 'Business as usual will not achieve this market transformation. Nor will disruptive innovation by a few sustainable pioneers be enough to drive the shift: the whole sector has to move.' Stephanie Draper, at sustainability NGO Forum for the Future, says: 'Successfully delivering the SDGs requires a really strong systems approach. That means joining up with others' efforts to achieve individual goals; looking at the inter-relationships between all the goals; and delivering the them in a way that models the characteristics we need for a sustainable society.'

Which brings us back to goals 16 and 17, with their call for inclusion, participation and collaboration. 'If you want to go quickly, go alone. If you want to go far, go together.' We need to go far and quickly. So we'd better figure out how we're going to do both.

Penny Walker is an independent sustainability consultant. Penny-walker.co.uk; [@penny_walker_sd](https://twitter.com/penny_walker_sd)

Further information

Global Reporting Initiative – bit.ly/1aVFfc3
PwC's Navigator tool – pwc.to/2nSa8Oz
Responsible Corporate Engagement in Climate Policy – bit.ly/2nOiG7A
Business and Sustainable Development Commission – bit.ly/2oPWrx9

Waste not, want not



In an extract from his new guide, energy and resource expert **Niall Enright** explains why efficiency efforts can sometimes flounder

There are some compelling reasons to implement energy and resource efficiency programmes. For most organisations, there is significant value to be unlocked. This value is often expressed in financial terms, but can also be described in terms of competitive advantage, a continuing licence to operate, enhanced brand value, or a greater ability to deliver service to stakeholders.

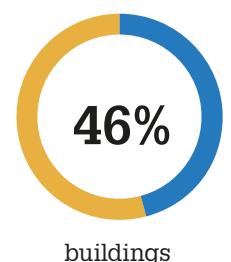
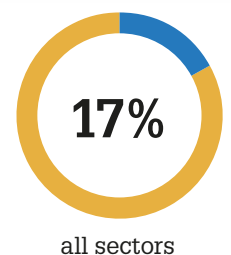
Resource inefficiency also represents a major threat to our survival. Society's demand for improvement is bringing about rapid change, which we can either shape actively or observe passively. To be a winner we need to engage with this change and use it to competitive advantage. Finally, there is a moral imperative to be efficient. Organisations are not islands; they have obligations to many stakeholders, not just in the present but also in the future. Day by day it seems that more organisations are appreciating these facts and responding vigorously to the risks and opportunities of energy and resource efficiency. If one were to examine what many of the world's largest corporations are saying, one would be forgiven for thinking that the problem is solved.

The reality

Unfortunately, this is not the case. Despite self-congratulatory case studies to the contrary, the reality is that energy and resource efficiency efforts are proving difficult to sustain in organisations. Many efforts remain superficial while what some organisations publish is downright misleading. The landscape is littered with disappointments, premature declarations of victory and outright failures.

In my professional experience, less than one-third of programmes achieve their objectives, and a much smaller proportion approach their true potential for improvement. There are many reasons for this. Resource efficiency is complex. It requires many parts of the organisation to be engaged for protracted periods. Sometimes it needs third parties to act in concert with us. It seems never-ending: no sooner has some improvement been made but there is a demand for more – whether to satisfy regulators, stakeholders or just to remain competitive.

Many people who start an energy and resource efficiency programme believe that this is primarily a



Potential
energy
savings

technological challenge. After all, we are constantly reminded that the solution to carbon emissions is better kit – whether that be solar panels or more efficient boilers or electric vehicles.

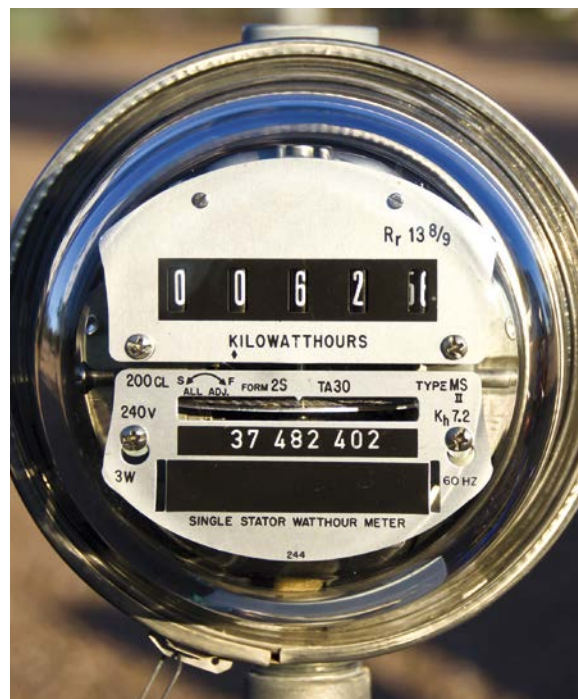
It does not take long, however, for it to dawn on those tasked with delivering results that the main obstacles are not technological but organisational. It is this failure to perceive of energy and resource efficiency as a change management process that often results in the disappointing outcomes.

The economics

The most visible evidence of barriers to energy efficiency is the difference between the observed and potential efficiency. If this difference is small, one could argue that there are few barriers to realising the potential whereas, if this difference is large, one could conclude that the obstacles are considerable.

From an economics perspective, all decisions are rational. Studies suggest the potential for energy efficiency savings ranges from 17% across all sectors to 46% in buildings. If true, efficiency measures should attract large numbers of investors seeking good returns. The fact that we don't see this needs an explanation.

Orthodox economists looking from the 'top down' argue that, since the markets for energy-using technologies are broadly efficient, the only possible reason that these opportunities are overlooked is that they do not, as claimed in the studies, offer a net positive return on investment. They argue that, far from there being barriers specific to resource efficiency, the failure of adoption is due to the more general case that the costs of efficiency are understated and so the investment is, in truth, unattractive. These 'hidden and



missing' costs could account for the apparent lack of investment, and a perception of greater risk explains the higher hurdle rates that efficiency investments are required to achieve.

From the 'bottom-up' perspective of people like myself, who regularly encounter highly attractive opportunities within organisations, this explanation is flawed. We see lots of 'no and low-cost' savings – called 'no regrets' savings since they don't take any investment away from other options. According to the orthodox economists, this category of savings should no longer exist – they cost nothing and take no money away from other investments, and so should have been implemented in full.

The truth

So who is right? As in all debates, there is some truth in both arguments. Common errors in the bottom-up aggregation of opportunities include an underestimation of installed cost and the failure to take account of the interaction of the savings – a 20% saving on top of a 20% adds up to 36% savings, not 40%. On the other hand, the assumption that decisions are entirely rational and there are no barriers specific to resource efficiency defies much research evidence and the personal observations of many efficiency practitioners like myself.

There are genuine challenges associated with persuading organisations to invest time and money in efficiency. Denying that these exist means denying the potential, and this could rob us of the opportunity to deliver what is almost certainly the cheapest and most rapid method of addressing climate change.

Niall Enright is director of the consultancy SustainSuccess and has more than 25 years' experience running energy and resource efficiency programmes for large organisations.

A guide to the manual

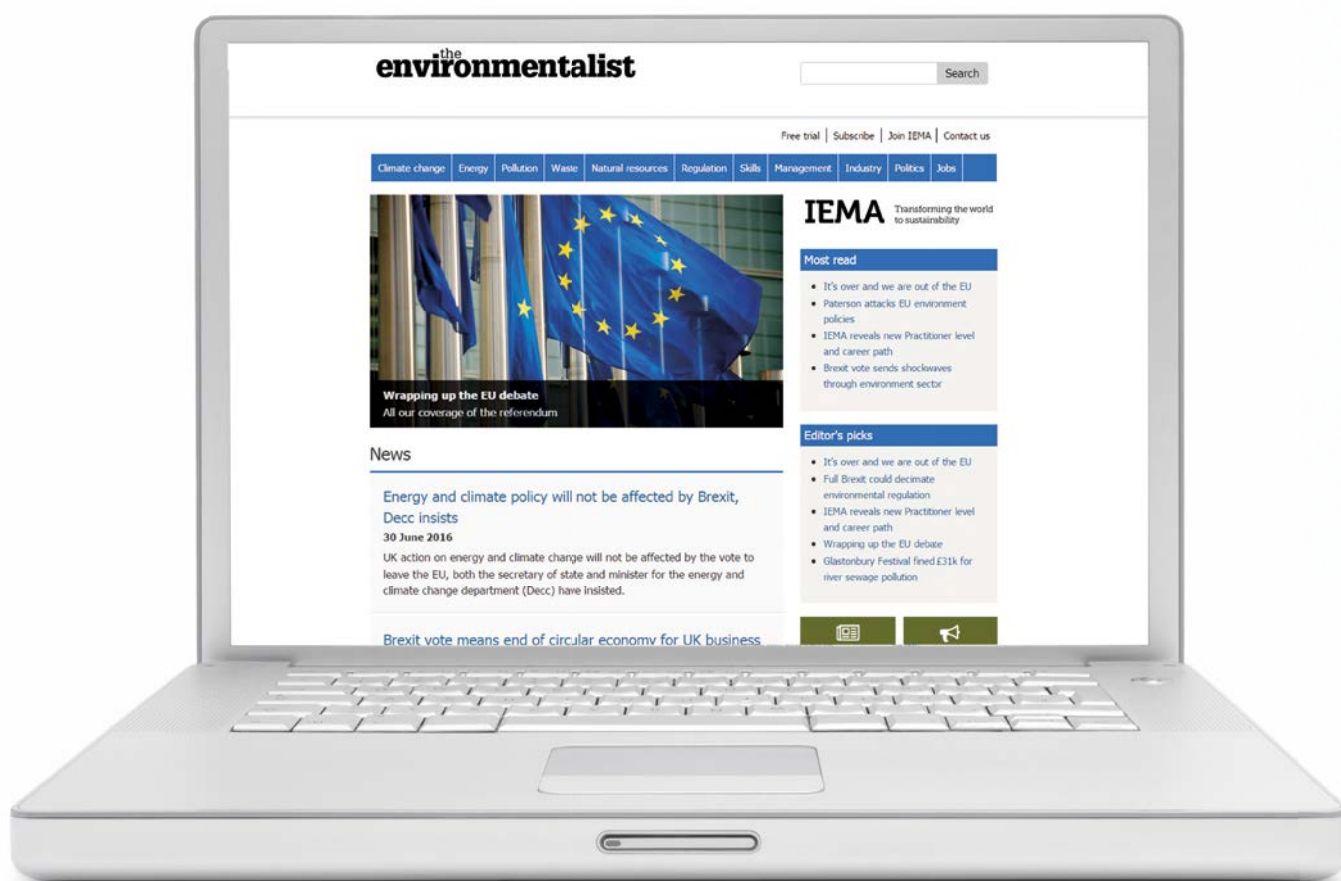


Energy and Resource Efficiency Without the Tears will be published in June. Written by Niall Enright, energy and resource efficiency consultant and occasional contributor to *the environmentalist*, the 840-page, two-volume manual is described as the complete guide to adding value and sustaining change in an organisation.

The book is complemented by an extensive set of companion resources that will help practitioners to drive improvements in their organisation (bit.ly/2nwxshg). These files include: more than 50 spreadsheets to accompany the data analysis and financial analysis; a lighting hours tool to create daily, weekly or monthly lighting demand profiles; MACCBuilderPro, to draw marginal abatement charts (previously sold for £85); a non-commercial license for an M&T tool, MATOD; business case models; full documentation of a certified ISO 50001 system; and a complete software specification that can form the basis for the selection and procurement of a resource efficiency tool.

A free pdf version of the book is available at sustainsuccess.co.uk/iwik, with access to the companion resource files (zip file) for a single user costing £29.99. The manual is also available in paperback and hardbound at £59.99 and £79.99 respectively. Buyers of the print edition receive free access to the companion files.

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Declaring your data

Gordon Miller provides an update on environmental product declarations in the construction industry

Verified environmental product declarations (EPD) in the construction sector have increased substantially in the past year and growth is expected to continue.

According to consultancy Construction LCA, more EN 15804-compliant EPDs were published in the ten months between March 2016 and January 2017 than published in the two years between March 2014 and March 2016. And, by the start of 2017 more than 3,500 EPD verified to 15804 for construction products had been published. The global reach is expanding too. Construction product EPD programmes in Poland, Italy and Slovenia have published their first 15804 declarations, while EPD Ireland has launched. There are now around 20 EPD programmes globally that publish verified 15804 declarations. IBU, based in Germany, has published half of all EPD, demonstrating the increasing maturity of EPD in the country and across mainland Europe.

Greater understanding

In the UK, BRE, the research establishment for the built environment, has developed a comprehensive EPD programme aligned with the European standard 15804: 2012 +A1: 2013 for construction products. BRE also operates an EPD membership programme that includes a range of organisations including Crown Paints, Sika, Forterra, Saint Gobain, Rockpanel and Synthos. Crown Paints has several product EPDs. Forterra



has an EPD for its Thermalite Autoclaved Aerated Concrete Block. Sika holds five EPD including for its Sika-Trocac S, a homogeneous, multi-layer, synthetic roof waterproofing sheet.

'The recent exponential increase in third-party verified EPD can be attributed to a maturing of understanding by product manufacturers of the benefits of not only measuring their lifecycle assessment data for their own use but also of the value in declaring it. EPD give specifiers, contractors and clients more confidence when specifying and procuring products,' says Dr Shamir Ghumra, director, centre for sustainable products, BRE. 'This is especially significant because the data presented in construction product EPD can be combined in 3D CAD/BIM software tools like IES-VE to quantify the environmental impact of building materials for whole building analysis. The results then generated by IMPACT compliant tools, such as IES-VE, Bionova and eTool, can be used in whole building assessment schemes, like BREEAM.'

As sustainability certifications increasingly become a cost of business rather than an add on, assessment credits gain ever greater currency. The dialogue is one among several EPD salient narratives – including systems and products level EPD, BIM integration, the rising health and wellbeing agenda (see *the environmentalist*, April, pp30–31). These will be debated at the second annual EPD event on 28 June 2017 in London (see panel, p34).

Independent backing

Mark Allen, technical director at Saint-Gobain in the UK and Ireland, explains why the French multinational producer of building materials produces uses EPDs. 'A primary factor is so we can achieve transparency in the market against competitors' products,' he says. 'It's also with a view to educating clients around the importance of verified EPDs versus self-declared information.'

The benefit of independently verified EPD, as Allen notes, is they provide a level playing field to measure environmental impacts, for example on embodied carbon. But he warns that this should not be the only considerations and there are other environmental factors that need to be considered: 'There are many categories in an EPD. Embodied carbon calculations are one facet of environmental products. To be truly sustainable we need to understand that sustainability is multi-faceted and that designing for just embodied carbon could lead to poor quality design solutions.' One example is designing buildings with small windows to achieve operational energy efficiency under Part L and s6 of the regulations. However, this could reduce light quantity and quality into the building. In turn, this could increase seasonal affective disorders, and sick building syndrome problems like depression, low mood, poor sleep patterns, stress and so on – it can also reduce people's productivity and concentration.

Allen says Saint-Gobain applies BS EN 15978 standard for calculating the environmental performance of a building. 'It is essential we also understand the other facets of sustainability, like durability, maintenance, life expectancy of buildings and their components and the economics associated with these issues,' he says. 'For instance, a composite grate cover may have lower

embodied energy than a cast iron solution, but if the solution must be replaced twice as much and cannot be deconstructed for reuse or recycling in the future then all we do is stock pile the problem of carbon, moving it from now to future generations.

'In our opinion, we need to move towards building level assessments to stop "greenwashing" and to ensure clients obtain value for money. If a client was aware they had to replace a component twice as much as necessary, I am sure they would choose items which last.'

Different drivers

Of course, real estate developers whose business model is non-operational at asset level – build and sell – do not have the same motivations to invest in capex with a clear eye on long-term issues such as durability and being maintenance free. This underlines that different drivers motivate distinct market sectors, and that EPD integration into whole building assessment schemes, such as BREEAM, is vital to normalise it as an expectation level of construction rather than a nice to have.

EPD are also used to assess product performance improvement – what Allen calls eco-innovation. 'By using an existing EPD we can look at changes to the product to meet market needs, while understanding the ramifications of this requirement. This could result in us deciding not to undertake the change because of possible detrimental impact – one that could have a worse effect than leaving the solution as originally designed,' he says.

'This can be seen on a spider diagram with the 11 or 13 categories of an EPD. You then model the solution in software. What you may find is once change is made at a component level there could be unexpected impacts. If, for example, this caused higher water consumption in the process, this would not be acceptable to us.'

BRE LINA tool

The British Woodworking Federation (BWF) exhibited the world's first lifecycle assessment (LCA) calculated using the new BRE LINA tool at Ecobuild in March. LINA's functionality enables LCA results to be produced for BWF's members' products, which can be uploaded onto the BRE Hub so that a third-party verified BRE Global Environmental Product Declaration (EPD) can be produced.

The LCA results can support the updated version of ISO 14001: 2015 in relation to the clause on lifecycle perspective on the revised international standard for environmental management systems, and can potentially feed into BIM (building information modelling). Two timber windows made by BWF member companies – the Stormsure Timber Casement by JELD-WEN and the Conservation Casement by Mumford and Wood – have become the first products to receive LINA assessments.

'LINA is proving to be a powerful calculator and enables us at the BWF to build on the early work of Wood for Good and the Wood Window Alliance to produce bespoke LCA for our members' products,' says BWF chief executive Iain McIlwee. 'The simple approach and science behind the tool unravels many of the complexity excuses made by competing materials about why embodied carbon cannot be taken into consideration. It revolutionises the way EPDs can be produced and takes us one step closer to these declarations hitting the mainstream.'

Looking to the long term, health and wellbeing are two impact areas in which EPDs can play a significant role to understand and improve products' environmental performance and enhance people's lives. Indeed, HPDs (health product declarations) are beginning to gain traction to complement EPDs and other third-party verification, such as for indoor air quality.

Saint-Gobain operates a programme called Multi-Comfort (the firm's first Multi-Comfort home in France is pictured on p32). It aims to minimise the environmental footprint of a building, focusing on comfort and wellbeing, including thermal and acoustic comfort, indoor air quality, visual comfort and safety. 'We use EPDs as part of the programme,' says Allen. 'The reason for this is simple: firstly, as the LCA includes all the constituent parts of a product, as part of the eco-innovation process we can start to see where we can potentially remove compounds to

improve products and ensure we achieve our multi-comfort criteria. Second, we know the designed energy assessment for multi-comfort (those looking at boiler and internal energy usage) is very close to the actual performance of the building. Therefore, we can be confident adding embodied energy to the building usage will provide a close to reality output – rather than some of the games played with current building regulation compliance tools.'

Competitive advantage

Driving better sustainable societal outcomes and delivering competitive advantage is critical to Saint-Gobain's business vision. EPD supports its position by enabling the company to measure the impact of its products and systems, and make that information public. 'Given we spend up to 90% of our time indoors we need to ensure all avenues help improve the productivity of society to meet the new challenges of tomorrow,' says Allen. 'For example, we could improve productivity making us a more prosperous as a nation. A true sustainable material is one that contributes to sustainability of towns and cities and enables a truly global sustainable framework to exist.'

Gordon Miller is co-founder and chief operating officer of communications business Sustain Worldwide and a trained BREEAM assessor.

EPD 2017

Dr Shamir Ghumra, Mark Allen, Iain McIlwee are among the speakers at the forthcoming EPD construction products event on 28 June 2017. It takes place at the Saint-Gobain Multi-Comfort visitor centre, 95 Great Portland St, London W1W 7NY. For further information and to register go to bit.ly/2oWuXtv.

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Alex Martin

Senior regulatory consultant, Edif ERA

Why did you become an environment professional? I grew up with environmental issues making the news in ways they hadn't before, such as the hole in the ozone layer, deforestation in the Amazon and climate change. Being able to play even a small part in the management of such issues struck me as exciting and worthwhile. I also felt entering the profession would offer a potentially diverse career with opportunities to think as well as do.

What was your first environment job? A placement at E.ON UK. This involved assisting with data collection, analysis and writing for the sustainability report. I also participated in internal audits and responded to requests for information from investors and other stakeholders.

How did you get your first role? I was keen to do an industrial year placement as part of my degree; I thought it would provide excellent experience in readiness for entering the job market. I applied for various placements, which in the case of E.ON UK involved giving a presentation at interview.

How did you progress your career? By moving between organisations and taking different roles – all the while working on product policy and compliance. This has been the common thread for me since graduating and joining Sony where I first came to learn about RoHS and REACH, materials testing and managing product compliance in complex supply chains. I continue to deal with these, but also worked in areas such as ecodesign and energy labelling, and timber regulation and FSC certification as well doing factory audits in Europe, India and China.

What does your current role involve? Winning and delivering projects that relate to what I consult on: technical and environmental regulation affecting electrical and electronic equipment. This includes projects for businesses as well as trade associations, the UK government and the European Commission. My Edif ERA colleagues and I also offer training, run an

annual regulatory conference, and provide commentary through trade publications.

How has your role changed over the past few years? I've only been in the job a couple of years, but the concepts of responsible sourcing and supply chain transparency have certainly further emerged in this time.

What's the best part of your work? Collaboration. This might entail sharing ideas with my colleagues on work proposals or how best to progress projects. Fostering working relationships outside the business can also be rewarding, particularly if they create partnerships or consortia that go on to win projects.

What's the hardest part of your job? Keeping an even workload. You can move between famine and feast on occasion, but throughout it is important to remain engaged and enthusiastic.

What was the last development event you attended? It was Edif ERA's annual conference on regulatory matters, titled Electrical and Electronic Equipment and the Environment.

What did you bring back to your job? Understanding of how various topics – from substance restrictions to ecodesign and the circular economy – are developing and the compliance challenges facing practitioners. A highlight was hearing from a representative of the European Chemicals Agency on the revision of its substances in articles guidance.

What is/are the most important skill(s) for your role? Communication skills are a must; these are especially important for discerning what clients are looking for. Research skills are important too, as is the ability to synthesise technical information and relate it to a client's focus. Getting to a bottom line on something for an industrial client is typically what they want you to deliver, which may well mean understanding not only regulation but their products and business models.



Career file

Qualifications:

BSc (Hons), EngD, PCQI, MIEMA, CEnv

Career history:

2015 to date senior regulatory consultant, Edif ERA

2014 project support, Eastar Pharma

2011 to 2014 product standards manager, Gardman

2008 to 2011 technical officer, AMDEA

2003 to 2008 research engineer, Sony Computer Entertainment

2001 to 2002 industrial year placement, E.ON UK

Where do you see the profession going? I feel it's going to develop more specialisms. There's a sense of that already in the UK, with the establishment of GACSO and ICRS as professional institutes. Some of this development will, I feel, be driven by technological change. Take the internet of things and its potential for more data capture, something that could lead to many more environmental and sustainability assessments being performed across various applications.

Where would you like to be in five years' time? Various possibilities interest me, including continuing in consultancy, and working for another trade association.

What advice would you give to someone entering the profession?

Try to establish what really interests you and the work environment(s) you're best suited to. Don't be afraid to make mistakes or ask for advice. And take advantage of any training opportunities.

How do you use IEMA's skills map?

I drew on it before proceeding to a full membership and I now refer to it for CPD.

Latest member upgrades

We would like to congratulate the following members on recently upgrading their membership.

Associate (AIEMA)

Alexander Alderslade, A Grade Training Services
Simon Arscott, British Airways Interiors Engineering
Tracey Barry, Dwr Cymru Welsh Water
Hannah Bell, Magnox
James Black
Malcolm Brown, Harbour Board
Nigel Buckland, British Airways Interiors Engineering
Klare Chamberlain, CalMac Ferries
Hamish Du Pon, Forsyths
Peter Geary, Canary Wharf Contractors
Stephen Gill, H & S Aviation
Andrew Helm, Stockton-on-Tees Borough Council
Carlene Henderson
Barnaby Hudson, Wolf Minerals
Sandra Humphreys, Bifold Fluidpower
Gennara Iaconianni, Imerys Minerals
David Jordan, University of Stirling
Jennifer King, Starc
Alexia Laird, Canary Wharf Contractors
Paul Lowe, Brush Electrical Machines
Mark Mitchell, Progress Rail Services UK
Alun Morris, British Airways Interiors Engineering
Eamon Mulhall, EPAM

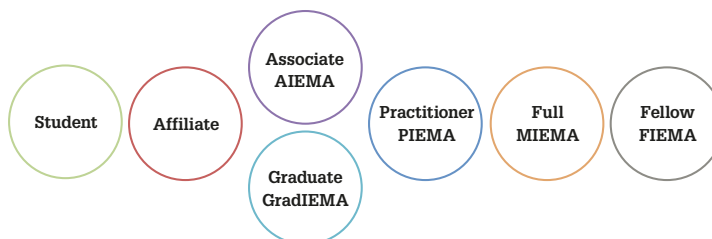
Gary O'Gara, Veolia Environmental Services
Anita Phillips, Historic Royal Palaces
Ceri Powell, British Airways Interiors Engineering
Pat Rafferty, HF Group
Gareth Ranson, British Airways Interiors Engineering
Siobhan Roach, British Airways Interiors Engineering
Francis Robson, Toyota Motor Manufacturing UK
Stuart Ross, Natural Resources Wales
Ian Sherlock, 2 Sisters Food
Joe Somerville, RSK Group
Katy Stark, Environment Agency
Claire Tait, Kier Construction
Gemma Thomas, British Airways Interiors Engineering
Gordon Thompson, Godiva
Rachel Weyman

Practitioner (PIEMA)

Oliver Beech, Skanska UK
Julian Burrell, London Borough of Richmond Upon Thames

Full with Chartered (MIEMA CEnv)

Peter Abbott, BAE Systems
Tom Anderson, Atomic Weapons Establishment
Jonathan Bailes
Andy Bailey, Environment Agency
Duncan Bell, Leicester City Council
Polly Bentham, RSK Environment
Caroline Birkett, Atkins
Emma Bonser, AECOM



Catharine Born, CH2M Hill
Charlotte Brightwell, AECOM
Hannah Clarke, Wolf Minerals
Alexandra Clement-Jones, Arup
Helen Denham, Sir Robert McAlpine
Helen Niamh Drury
Emmanuel Deschamps, Network Rail
Anna Dodd, Leicester City Council
Jamie D'Souza, Sellafield
Georgia Elliott-Smith, Mace Group
Donald Espeute, London Underground
John Fanning, MoD (Navy)
Dorothee Fitzsimmons, Devon County Council
Emily Haddock, Tarmac
Christopher Hall, Envee
Anna Elizabeth Hatley, AECOM
Nicholas Hilton, LUC
Kate Goldthorpe, Sellafield
Julia Goodfellow-Smith, Quest For Future Solutions
Alexandra Greenwood, AECOM
Stephane Gueritte, RPS
Sarah Jones, Siemens
Steve Judd, TfL
Damien Keneghan, CH2M
Katherine Lee, Environment Agency
Phillip Martin, Arup
Philip Morris, North Wales Police

Andrea Mills, Willmott Dixon
Catherine Oates, TfL
Katie Randall-Stratton, CH2M Hill
Thomas Ridgley, RBS Mentor
Sally Rotherham, RSK Environment
Gary Rogerson, Skanska UK
Victoria Rose, Oxford University Press
Alexander Scorey, Tidal Lagoon Power
Angela Sims, Sellafield
Caroline Salthouse, Sefton Council
Emanuele Stella, WSP|Parsons Brinckerhoff
Kirsty Strannigan, Babcock Marine
Jonathan Sykes, BAE Systems Maritime Services
Elizabeth Thomas, Tidal Lagoon Power
Stephen Thomas, Solutia UK
Kathryn Thorp, AECOM
Derek Thorpe, Environment Agency
Emma Wagstaff, Environment Agency
Suzanne Webster, Crossrail
Linda White, Scottish Power Generation Holdings
Catherine Williams, BSI
James Woodfield, Sellafield
Susan Zappala, Natural England

Fellow (FIEMA)

David Symons, WSP|Parsons Brinckerhoff

IEMA events

Date	Region	Topic
9 May	London	The UK's golden age of infrastructure – enabled by environment and sustainability?
10 May	London	From waste to resources: supporting a circular economy with Muntions AD plant
10 May	London	Launch of BS ISO 20400: 2017

New opportunities available to join us in...

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