

TRANSFORM

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Economy ●
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FOR ENVIRONMENT AND SUSTAINABILITY PROFESSIONALS

July/August 2019
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ARE YOU AN ECO-WORRIER?

Building resilience
to climate anxiety

PLUS

Good all-rounder Wayne Hubbard
on London's circular economy drive

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IEMA is the professional body for everyone working in environment and sustainability. We provide resources and tools, research and knowledge sharing along with high quality formal training and qualifications to meet the real-world needs of our members. We believe that together we're positively changing attitudes to sustainability as a progressive force for good. Together we're transforming the world to sustainability.

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TIM BALCON, CEO OF IEMA

Framework for the future

We have now reached a point where the truth of climate change is largely accepted. It was great to see World Environment Day's focus on air pollution last month, and we have a great selection of World Environment Day resources available on the IEMA website (bit.ly/2Xma6Rv). As the professional body for sustainability, IEMA fully understands the work being done to tackle climate change, which has been a long time coming. However, the challenge has moved from 'change' to 'radical reform'. We need to rethink what we perceive as sustainable in the world of government policy, business and commerce.

The development of skills and behaviours will become increasingly important. We are always working on our professional standards, which are articulated in IEMA's skills map – they are integral to equipping our members with the tools needed. At IEMA we have seen employers demanding more sustainability training for their employees, which is encouraging. The launch of a new apprenticeship framework in environmental management is also closely aligned with our professional standards, and signals the embedding of the skills, knowledge and behaviours needed for the future. I congratulate all those involved in getting this framework launched.

It is an exciting time to be an environment and sustainability professional, with the scale of change increasing at pace. In addition to giving members the knowledge needed to deliver radical reform, we are also providing them the skills that will allow them to succeed in a rapidly-changing environment.

It is increasingly obvious that the public are becoming more offended when they receive goods in excessive or inappropriate packaging, and in this issue of *Transform* we shine a light on the issue of waste. With more and more nations refusing to accept waste from other countries, the notion of better waste management will need to be designed out from the initial production stage, rather than parachuted in at the end of an item's lifespan. There are great opportunities for IEMA members to make a difference in this area, with an ever-growing amount of knowledge to share and develop as we work together for change.

"The public are becoming more offended when they receive goods in excessive or inappropriate packaging"



ROUNDUP

ENVIRONMENT &
SUSTAINABILITY
NEWS AND VIEWS

SOCIETY

'Eco-anxiety' on the rise as activist groups sound the alarm

More people are concerned about the environment than ever before, with multiple studies suggesting that 'eco-anxiety' is a real phenomenon being felt worldwide.

Described by the American Psychological Association (APA) as a "chronic fear of environmental doom", eco-anxiety is said to conjure up emotions ranging from mild restlessness to shock and fear.

And these feelings are growing in prominence as scientists and activist groups form an alliance in sounding the alarm over the scale of the climate crisis.

YouGov polling has found that a record 27% of UK adults now believe the environment is one of the top three greatest issues facing their country, up from 17% in mid-April.

This surge in environmental concern coincided with April's climate protests by Extinction Rebellion and a rise in media attention surrounding activist Greta Thunberg.

Meanwhile, a survey of 6,500 Australian women earlier this year found that nine in 10 were "extremely concerned" about climate change, with a third aged under 30 saying they were even reconsidering having children because of the crisis.

"We can say that a significant proportion of people are experiencing stress and worry about the potential impacts of climate change, and that the level of worry is almost certainly increasing," said Susan Clayton, professor of psychology and environmental studies at the College of Wooster.

Eco-anxiety has also been coined "climate change distress" and "ecological grief", while the term 'klimatångest', literally meaning 'climate angst', has become well established in the Swedish language.

However, anxiety is thought to be a natural response to the prospect of environmental disaster, and further research has found that around half of Americans are still "hopeful" about tackling climate change.

The APA says individuals should not focus on feelings of helplessness, but instead look to support networks that help boost mental health and resilience to eco-anxiety.

Taking action in the community to actually reduce environmental damage,

such as raising awareness about clean energy, is seen as one of the best solutions to feeling anxious.

"Discussing the co-benefits of clean energy with family and friends spreads the knowledge and facilitates change from the ground up," the APA recommends.

"This proactive approach can help provide those who are concerned about climate change with some level of psychological 'relief' and a sense of accomplishment in helping others and the environment."



BUSINESSWATCH



Leading businesses launch 'plastic credit' system

A 'plastic credit' system has been

launched by a group of leading businesses to support recovery and recycling activities. Nestlé and Veolia are among the founders of the 3R Initiative, which will see companies buy credits to offset plastic packaging that is difficult to eradicate. Rules will be set for the number and value of credits, with the revenue used to help projects in 'plastic leakage hotspots' in Latin America, Africa and south-east Asia.

🔗 bit.ly/2MP5AXH



Kellogg's 'upcycles' waste cereal into beer

Kellogg's has teamed up with Salford

brewery Seven Bro7hers to turn discarded cereal into craft beer. 'Sling It Out Stout' and 'Cast Off Pale Ale' will be made from Coco Pops and Rice Krispies respectively, brewed with overcooked, discoloured or uncoated rice-based flakes. This follows the successful launch of the brewery's Corn Flakes-based 'Throw Away IPA' last year. The beers will be served across Manchester and can also be bought on Seven Bro7hers' website.

🔗 bit.ly/2IFXTxH



Sainsbury's launches reverse vending recycling trial

UK supermarket

chain Sainsbury's has launched a reverse vending recycling trial in its Lincoln superstore, which will allow customers to exchange plastic bottles for 5p coupons. Shoppers could save up to £25 at a time if they deposit the maximum allowance of 500 bottles per customer. The scheme will accept items of up to three litres in volume. "We're delighted to offer a new way to help our customers recycle while saving on their shop" said Sainsbury's brand director Judith Batchelar.

🔗 bit.ly/31z5hUK

CIRCULAR ECONOMY

Majority of customers would pay more for sustainability

A survey of 6,000 consumers across Europe, North America and Asia has found that more than half would pay more for sustainable products designed for reuse and recycling.

Nearly three-quarters said they are buying more eco-friendly products than they were five years ago, with eight in 10 planning to buy more; 83% said it was "important" or "extremely important" for companies to design goods that are meant for reuse and recycling.

"The shift in consumer buying reinforces the need for companies to increase their commitments to responsible business practices," said Jessica Long, managing director at professional services company Accenture, which carried out the survey.

The research also found that plastics are perceived as the most damaging type of packaging on the market, with paper seen as the most environmentally friendly.

However, one in four consumers said the chemicals industry – which plays a key role in driving recycling and reusable technologies and materials – is the sector least concerned about its environmental impact. This is despite a circular economy for plastics and advanced recycling technologies potentially boosting US GDP by billions of dollars and providing 38,600 jobs.



DISCLOSURE

Investors push for more climate transparency

An investor coalition with nearly \$10trn in assets has launched a fresh push to ensure hundreds of companies are transparent about their environmental impact.

The group is targeting 707 firms with \$15.3trn in market capitalisation across 46 countries, demanding they report through the non-profit global environmental disclosure platform CDP.

Exxon Mobil, BP, Chevron, Amazon, Volvo, Alibaba, Qantas Airways and palm oil company Genting Plantations are among the companies under the microscope.

The 88 investors will engage with 546 of the companies on climate change disclosure,

with 166 being targeted for water security transparency, and 115 on deforestation.

"Investors are asking for this information and using it for corporate engagement, selecting stocks and building investment products," CDP global director of investor initiatives, Emily Kreps, said. "The 'vow of silence' from non-disclosing companies cannot go on."

The services industry is the sector being most targeted for climate change disclosures, followed by manufacturing and fossil fuels. Retail, food, beverage and agriculture and manufacturing are the sectors of most interest for deforestation transparency, while water security concerns are most prevalent in manufacturing, retail and fossil fuels.





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STRATEGY

IEMA submits consultation responses under the Resources & Waste Strategy

In the UK we generate around 11.6m tonnes of packaging waste each year. In an attempt to tackle this issue, the government released the Resources & Waste Strategy for England (RWS) in December 2018; it plans to address resource efficiency and the 'market failure' of waste production.

Building on member input collected during a series of April workshops and webinars led by IEMA policy lead Marc Jourdan, IEMA responded in May to an RWS consultation – Reforming the UK Packaging Producer Responsibility System. IEMA confirmed that it is in favour of ambitious targets to tackle packaging waste, but recognises that this will require extensive investment in new infrastructure in order to achieve



enhanced material recovery, which will need to be carefully planned and aligned with private and public-sector investment cycles.

IEMA also co-signed additional letters and consultation responses by the Environmental Policy Forum, a network of UK environmental professional bodies promoting

environmental sustainability and resilience for the public benefit, and the Packaging Value Chain. The responses call on the urgent need for joined-up implementation of extended producer responsibility and 'consistency' across the UK as a priority. The responses can be accessed on the IEMA website under the news section, or by going to bit.ly/2EBMNbS

Further member engagement activity will be scheduled later this year, to inform responses to other RWS consultations on topics such as the EU Circular Economy Package. If you wish to support this engagement, please sign up to the IEMA Circular Economy Network by emailing cenetwork@iema.net

STANDARDS

Advancing sustainable finance

Finance plays a major role in shaping the world we live in. This is a crucial point given that we live in a time of political and regulatory change; threats such as climate change mean we need to futureproof society, the environment and the economy. In answer to this challenge, we can enhance our capacity to manage risk, boost green finance and support innovative business models that will make us more resilient to change.

Building on the *IEMA Guide on Sustainable Finance*, IEMA has been working with members to develop voluntary standards on sustainable

finance. As the formal liaison organisation to the International Organization for Standardization's Technical Committee 322 on sustainable finance, IEMA is now at the centre of discussions on the integration of sustainability considerations and environmental, social and governance practices into institutional investment decision-making and wider finance management.

At the UK level, IEMA chief policy advisor Martin Baxter and several IEMA members are continuing to support the development of BSI's PAS 7340, a framework for embedding the principles

of sustainable finance within financial organisations. If you wish to find out more about IEMA engagement on sustainable finance standards, please register for the webinar session on 24 July at bit.ly/2KZ8iY6

In a related development, the Task Force on Climate-related Financial Disclosures' (TCFD) 2019 Status Report was recently released, confirming that 785 organisations are now supporters of the TCFD Recommendations Report (up from 513 in September 2018).

IEMA has been working with stakeholders and professional bodies to engage with the private sector on strategies to address potential climate-related risks and opportunities, taking into consideration different scenarios. To find out more about IEMA's engagement, please view our recent webinar on this topic, which is available at bit.ly/2WVCCKA



REPORT

Independent Review of the Modern Slavery Act 2015

British nationals made up the highest number of UK slavery cases in 2017, with 5,145 potential victims of trafficking and slavery. In response, the UK government commissioned an independent review of the Modern Slavery Act 2015 (MSA) in August 2018, in order to strengthen and enhance the current legislation as the nature of modern slavery evolves.

IEMA policy lead Marc Jourdan oversaw IEMA's participation in the review by conducting a member-wide survey. IEMA used those results to submit its recommendations to the secretariat of this independent review. The recommendations can be viewed at bit.ly/2Ko3Dzy

The final report of the independent review was laid in Parliament on Wednesday 22 May, and a government response is expected in due course. The document is available at bit.ly/31sBH2D. IEMA led a webinar on the interim review findings in April with the participation of Baroness Young of Hornsey, an official expert advisor for the review. The webinar can be viewed at bit.ly/2WRIynu

IEMA welcomes the findings of this report, which mirror its own recommendations in calling for the independent anti-slavery commissioner to have stronger monitoring powers so that it can hold government agencies to account. The report also echoed IEMA's demands on transparency in supply chains, stressing that legislation should mandate the areas companies are expected to report on, and that section 54 requirements should be extended to the public sector while making necessary reforms to strengthen the government's approach to non-compliance with the MSA. These reforms could include fines and directors' disqualification.

If you wish to participate in further engagement activities around the topic of modern slavery or social sustainability more generally, please contact Marc Jourdan at m.jourdan@iema.net

EVENT REVIEW

Sustainability Leaders Forum: Climate Emergency, Transitions, and the Challenge for our Profession

This IEMA Fellows event saw presentations from a range of speakers. Natalie Bennett, former leader of the Green Party, gave the keynote remarks, considering how public interest and school strikes have been influential in recent political developments and offering a perspective on 'fear narratives' versus more positive transition messaging.

Nick Molho, executive director of Aldersgate Group, extracted recommendations from the Group's latest report to note that it is essential that technologies such as carbon capture and storage, hydrogen and biofuels are trialled at scale. In doing so, he reminded the audience that successful and unsuccessful trials are equally valuable for policymaking.

Jon Foot, head of environment for EDF Energy and Chair of the IEMA Climate Change and Energy Network, provided EDF Energy's perspective on low-carbon generation, including the importance of skills

development to support the transition to a net zero future. Jon noted how the switch to low-carbon electricity is revolutionising the industry, driving innovation out of coal mines and gas fields and towards low-carbon power plants, energy efficiency and smarter use of electricity.

IEMA policy and engagement lead Nick Blyth presented an overview of IEMA's work on climate change and moderated a panel discussion. He also shared some of IEMA's upcoming actions on climate change, including network initiatives, revising its policy statement, international standards developments, and helping transition organisations. Collaborations with other professions are a continuing theme, including an event with the British Psychological Society next month on climate change communications. If you have questions, or wish to contribute insights, please contact Nick at n.blyth@iema.net

EVENT REVIEW

Make it British Live

IEMA was delighted to attend Make It British Live in May – an event showcasing British manufacturers and producers of textiles, clothing and homeware. It was fascinating to learn about the challenges and opportunities faced by the fashion and textiles industry.

Delegates emphasised issues around sustainable sourcing and transparency in the supply chain, but we learned that the majority of environment and sustainability issues in this industry are not dissimilar to other sectors. We're excited to develop our relationship with the fashion and textiles industry, and to share our guidance and expertise with the sector going forward – especially with regard to creating and maintaining a sustainable business.

Are you an IEMA member working in fashion and textiles? We'd love to hear from you – email corporate@iema.net to join the conversation.



NEW REGULATIONS

THE LATEST

■ **LEGISLATION** ■ **GUIDANCE** ■ **CONSULTATION**



1 MAY 2019

Air quality

The Air Quality (Taxis and Private Hire Vehicles Database) (England and Wales) Regulations 2019 place a duty on licensing authorities to provide certain information on licensed taxis and private hire vehicles to a central database.

➤ cedr.ec/63t



25 MAY 2019

Planning

The Town and Country Planning (Permitted Development, Advertisement and Compensation Amendments) (England) Regulations 2019 extend permitted development rights to allow high street conversions to offices and homes.

➤ cedr.ec/63w



31 MAY 2019

Marine licensing

The Marine Licensing (Exempted Activities) (Amendment) Order 2019 introduces three new exemptions from the requirement to hold a marine licence under the Marine and Coastal Access Act 2009.

➤ cedr.ec/63u



18 JUNE 2019

Dangerous substances

The Carriage of Dangerous Goods (Amendment) Regulations (Northern Ireland) 2019 make various amendments to implement the radiological emergency preparedness and response requirements contained in the Basic Safety Standards Directive.

➤ cedr.ec/63x



31 MAY 2019

Air pollution

Guidance has been published to help businesses that use refrigeration or freezer units using hydrofluorocarbons as refrigerants prepare for the upcoming ban on the use of HFCs with a global warming potential greater than 2500, which will come into force on 1 January 2020.

➤ cedr.ec/63o



2 MAY 2019

Emissions trading

The UK, Scottish, and Welsh Governments as well as the Department of Agriculture, Environment and Rural Affairs in Northern Ireland are consulting the public on the proposed approach to UK carbon pricing once UK leaves the European Union.

➤ cedr.ec/63q



9 MAY 2019

Flood management

The Environment Agency is seeking views on the Draft National Flood and Coastal Erosion Risk Management Strategy for England. It sets out proposals to become resilient to flooding and coastal change, including developments for the next 10-30 years, as well the changes needed by 2100.

➤ cedr.ec/63p



3 JUNE 2019

Waste

The Environment Agency is consulting on proposed guidance for appropriate measures for permitted facilities that take healthcare waste, which will replace the technical guidance note EPR 5.07 on clinical waste.

➤ cedr.ec/63y



➤ An airfield in Cambridgeshire became an illegal storage site for more than 5,300 tonnes of mixed waste

INCOURT

WASTE

Illegal waste site leads to prison and £314,000 compensation

The illegal storage of more than 5,300 tonnes of mixed waste at a site in Cambridgeshire has resulted in jail for one man, a suspended prison sentence for another and a company ordered to pay more than £300,000 in compensation.

James Mervyn Williams was sentenced to 12 months in prison for his part in setting up the site, while Christopher Kerr was sentenced to four months in prison, suspended for two years. Biowood Recycling Limited, which organised deliveries of waste to the site, was fined £12,690 and ordered to pay £314,426 compensation to the landowner who paid to clear the waste.

In August 2014, Kerr leased a site on part of an old airfield, telling the landowner it would be used to process timber. The Environment Agency found it was operating illegally; officers found wood stacked four metres high and falling into hedgerows. A fire risk was posed, resulting in an Emergency Fire Plan being drawn up.

Kerr had registered a waste exemption, limiting the amount of waste in any seven-day period to 500 tonnes. However, around 1,000 tonnes were being delivered weekly. He told Agency officers that he was running the site on behalf of Williams, and had no real involvement in it, but it was shown he had set up a business account and £116,638 had been transferred into it by Williams. Kerr pleaded guilty to breaching the Environmental Permit Regulations.

Williams ran a similar site and decided his company would broker all the waste to CGK Recycling – but it did not have enough customers to supply the site, so he used the services of another waste broker, Biowood Recycling Ltd. Williams pleaded guilty to knowingly causing the waste operation without an environmental permit. Williams and Biowood also pleaded guilty to failing to comply with their statutory duty of care under the Environmental Protection Act 1990 to prevent a waste offence.



CASE LAW

Dismissed review against poultry facility appealed

An appeal against a dismissed judicial review of planning permission granted by Shropshire Council for an intensive poultry-rearing facility has been allowed.

The facility was to be constructed on the operator's land, with the manure to be used as fertiliser on the operator's and third-party land. This was confirmed by an environmental impact assessment (EIA), which also considered the impact of odour and dust. The appellant claimed that the manure would cause unacceptable odour and dust.

The Environment Agency advised that the operator would have to put in place a manure management plan, and a permit was issued. Shropshire Council granted planning permission, which the appellant challenged for failure to consider the effects of the development on the environment. The judge at review stage was satisfied that the permit was sufficient to control the management of manure off-site.

On appeal, the judge said it was clear the planning officer had misunderstood the scope of the manure management plan. The EIA had discussed arrangements for the operator's land but not any third party's, and had not specified the third-party land on which the manure was going to be spread. It also had not assessed the effects of odour and dust arising from manure storage and spread. It gave no indication that the Agency had concluded the proposed storage and spreading of manure was not a potential source of pollution. The appeal was allowed.



LEGISLATION

UK commits to zero greenhouse gas emissions by 2050

Prime minister Theresa May has announced that the UK will end its net contribution to climate change by 2050, compared with 1990 levels, making the UK the first G7 country to legislate for net zero carbon emissions. A Statutory Instrument will amend the Climate Change Act 2008 to add the target date.

This announcement follows advice from the government's independent advisory body, the Committee on Climate Change, which has said that to keep our Paris Agreement target of 1.5°C, we must achieve net zero CO₂ contributions from every part of our economy.

The largest contributions to UK greenhouse gas emissions currently come from heating,

transport, electricity production and agriculture. The achievement of net zero targets may rely on the development of carbon capture and storage technology.

The government says it is imperative that other major economies follow suit, and for that reason, the UK will conduct a further assessment within five years of implementing the new legislation to confirm that other countries are taking similarly ambitious action.

Theresa May will meet young science and engineering students to discuss the new target and what must be done to achieve

it, as well as to gain views on the progress of existing climate, waste and biodiversity commitments.

"As the first country to legislate for long-term climate targets, we can be truly proud of our record in tackling climate change," said May. "This country led the world in innovation during the Industrial Revolution, and now we must lead the world to a cleaner, greener form of growth."

"Standing by is not an option. Reaching net zero by 2050 is an ambitious target, but it is crucial that we achieve it to ensure we protect our planet for future generations."



Wayne Hubbard had worked in the waste sector for 16 years when he experienced his eureka moment. It came during a conference in 2012, when he heard about the concept of the circular economy and how it was vital to accommodate the projected two billion consumers, predominantly in China and India, who would soon attain middle class lifestyles and demand the same material goods as people in the West.

"That would be totally unsustainable, and I realised we needed to do something about it," the chief operating officer at the London Waste and Recycling Board (LWARB) says. "Suddenly the circular economy made absolute sense. Up to that point, most people in the sustainable development world tried to work within a contradiction. In order to reduce waste, we had to consume less – but if we consume less, we put economic growth at risk."

It's a tough problem and one Hubbard has grappled with for years. Now he has some answers – and they are desperately needed.

Just 4% of China's urban population was considered middle class in 2000, rising to around 30% last year. McKinsey and Company recently projected that this would be 76% by 2022. Elsewhere, a third of the food produced around the world is thrown away. If food waste were a country, it would be the planet's third largest emitter of greenhouse gases, behind the US and China. Another mind-boggling challenge is that 60% of the world's infrastructure needed by 2050 has not yet been built. "It's a terrifying thought and a fantastic opportunity," says Hubbard.

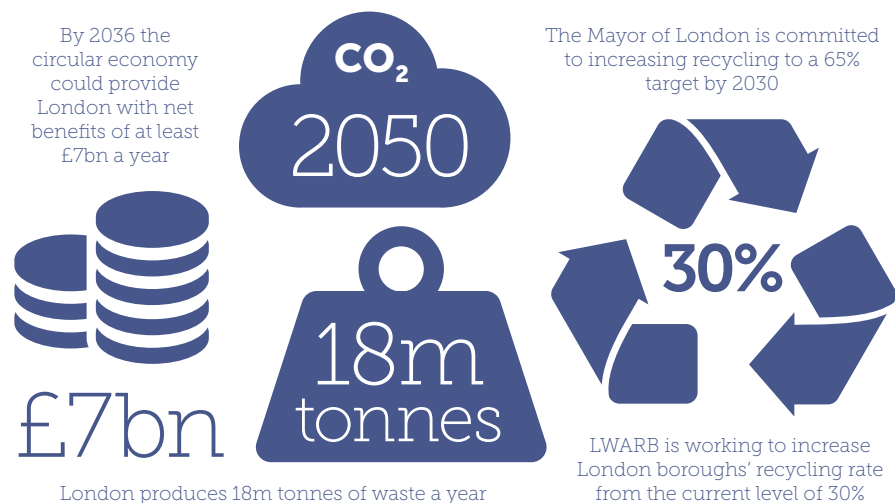
Wayne Hubbard is spearheading London's drive towards a circular economy. He tells **Huw Morris** how the capital can be a standard-bearer in the war against waste



Coming
full
circle

GOALS FOR LONDON

The Mayor of London aims to make London a zero-carbon city by 2050



From the top down

London is grasping this opportunity, hoping to be a standard-bearer in the charge towards a sustainable future. LWARB works with the Mayor of London and the capital's boroughs to improve waste and resource management, and steer the city's transition to the low-carbon circular economy on which its economic and environmental future depends. Its mission is to ensure businesses, boroughs and communities make the "best use of resources and materials".

From the top, Mayor Sadiq Khan has embedded the low-carbon and circular economy in his environment strategy. This influences his powers for economic development, planning, and transport, as well as waste. He is committed to increasing recycling to a 65% target by 2030, as well as to making London a zero-carbon city by 2050. Hubbard sees LWARB's work as accelerating the circular economy "from the inside out".

First, LWARB is working to increase London boroughs' recycling rate from the current level of 30%. A major part of the board's role is "collaboration, communication and demonstration of the circular economy", acting as "a hub, a network of networks" of organisations active in the arena. Its Circular London

"We want to identify opportunities for collaboration across the supply chain and different organisations"

initiative has a broad remit to accelerate the circular economy by working with big corporates, investors, policymakers, business model pilots and small businesses. "We don't want to control them, but we want to identify opportunities for collaboration across the supply chain and different organisations."

LWARB's Advance London programme aims to establish an innovation centre to act as an incubator for start-ups working with big corporates. This is backed by a £14m venture capital fund. Underpinning its work is business support to start-ups and other companies seeking to transition to the circular economy.

"This is harnessing London's thriving start-up and tech community, and investing in businesses whose model is reducing waste but wouldn't necessarily know it," Hubbard says. "It's not like you

have to wear a hair shirt to use Spotify or Apple Music. Those kinds of business models appeal because you are getting a better level of service, but you don't have to buy a material thing."

Widening participation

Hubbard acknowledges that 'circular economy' is a "nebulous term". He prefers to see the concept through the lens of five business models: "Recycling, making stuff that is recyclable, the sharing economy, products and services rather than material goods, and making stuff that lasts longer by designing for durability."

Ask the average person about the circular economy, though, and you are likely to get a blank stare. Hubbard does not see this as an issue: "Some people say there is a problem, but I don't think it matters because nobody identifies as a circular economist. People say they are a passionate recycler or repairer, but they don't say they are a circular economist."

"It doesn't bother me, because these are circular economy disciplines without knowing it. The smartphone enables us to take part in the circular economy by using eBay, Kindle, Spotify or Apple Music. Almost always, recycling is a choice you have to make. You have to ask people to put stuff in a separate bin, whereas listening to Spotify, for example, is easier."

Hubbard describes London as a "dense, complicated city" with multiple housing types, buffeted by massive consumption of material goods and crammed with "people who are less inclined to listen to authoritative voices telling them to recycle". London's population is projected to hit more than 11 million by 2050. This is intensifying pressure for a sustainable approach to housing, office space, products and critical infrastructure.

He depicts a busy population that "moves around the city a lot, is difficult to pin down – so you have to make things very simple". Part of the challenge is the high level of rented properties, occupied by people who recycle less than homeowners.

However, the challenge is bursting with opportunities. LWARB predicts that by 2036, the circular economy could provide the capital with net benefits

Interview

"The smartphone enables us to take part in the circular economy by using eBay, Kindle or Spotify"

of at least £7bn a year across the built environment, food, textiles, electrical and plastics sectors, as well as 12,000 new jobs in re-use, remanufacturing and materials innovation. LWARB's route map, which will be reviewed in the coming months, identifies £2.8bn of those benefits to be delivered in the capital alone, with the remainder coming from the rest of the UK, Europe and the world.

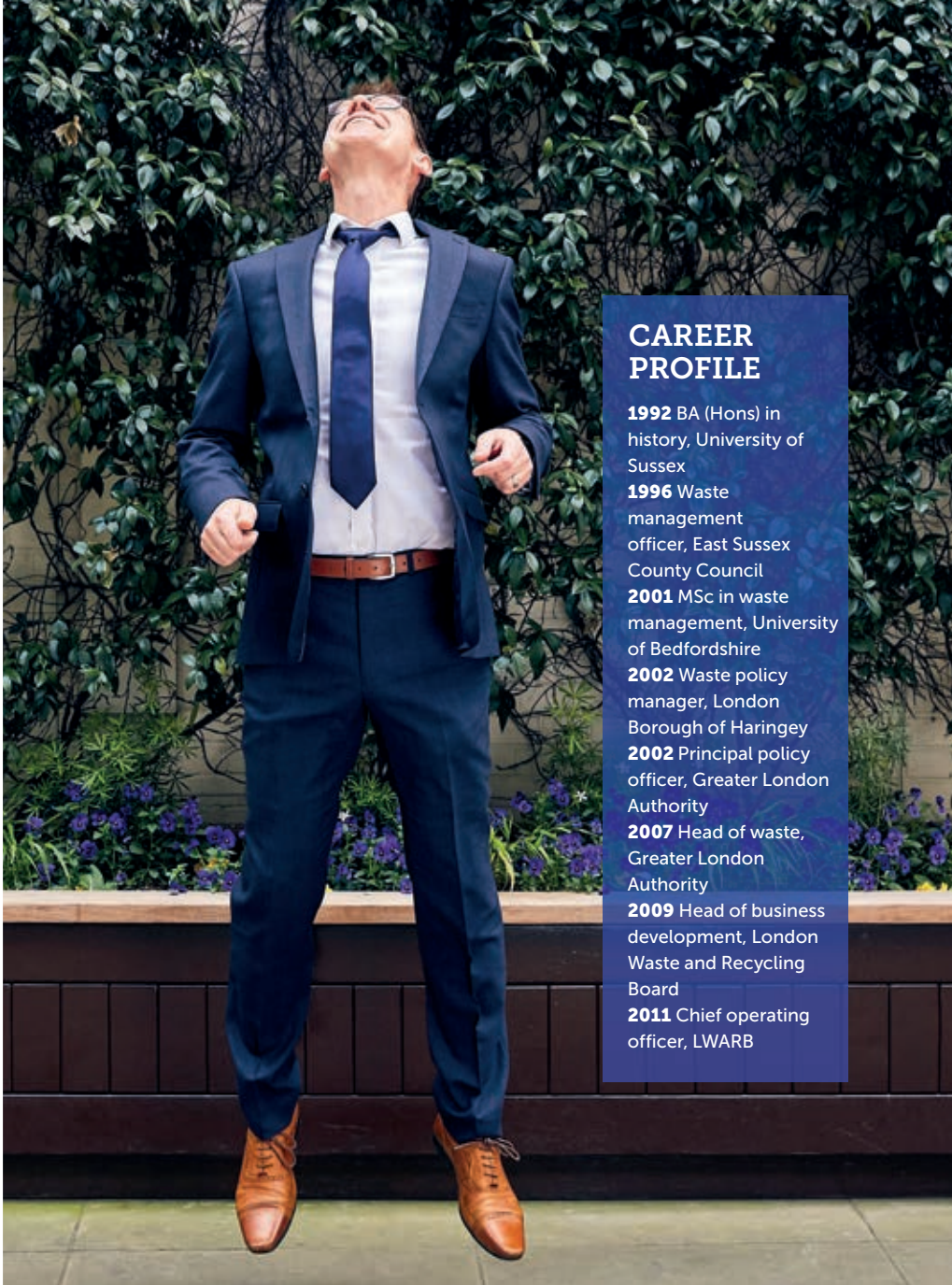
Cross-sector effects

He cites research by Arup showing that the circular economy could reduce the London's waste by 60% by 2030, a prospect he calls "significant". A look at the figures shows the sectors in LWARB's sights.

The capital produces 18m tonnes of waste a year – more than half from construction, with the bulk of the remainder from businesses and households. London creates 20m tonnes of construction material each year, with half going to waste. The construction sector employs almost one in 20 working people in the capital; Hubbard says this "is a real opportunity to create new jobs in areas like re-use, remanufacturing, repair and maintenance".

Elsewhere, London could add £2bn-£4bn to gross domestic product by 2036 if it adopts a circular food economy. Textiles could add more than £1bn, particularly as London is a global leader in this area – from high street brands and retailers to high-end fashion houses. In 2013, its consumer clothing market was ranked third in the world after New York and Tokyo, and by 2030 is forecasted to be the largest, with a predicted value of £29.5bn.

Similarly, circular economy benefits for electrical goods – both consumer and business – suggest up to £900m could be



CAREER PROFILE

1992 BA (Hons) in history, University of Sussex
1996 Waste management officer, East Sussex County Council
2001 MSc in waste management, University of Bedfordshire
2002 Waste policy manager, London Borough of Haringey
2002 Principal policy officer, Greater London Authority
2007 Head of waste, Greater London Authority
2009 Head of business development, London Waste and Recycling Board
2011 Chief operating officer, LWARB

available annually by 2036. This approach could also ensure plastics are used to their greatest potential and value, netting up to £200m a year by that date.

Hubbard argues that London is among global leaders on the circular economy and sits comfortably alongside cities such as Amsterdam, Paris, Helsinki, Copenhagen and Barcelona, which gain more credit for their environmental initiatives. He is very optimistic about the future. This optimism informs how he sees his career before that eureka moment. "I didn't choose a career in waste. Like most people of my era, you happen on to it and then become fascinated and slightly obsessed when

you realise waste is the end-of-pipe for everything we consume. It gives you a view about society and economy that is unique.

"When we start to think about managing this material and how to reduce it, you suddenly realise it is about everything. I fell into it and then became fascinated by how I could help transform a system to produce less waste. That simple thing has massive implications. It's about how we move from an economy that consumes stuff to an economy that uses services. The change from consumption to use is a good proxy of the circular economy." ¹

HUW MORRIS is a freelance journalist.

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The Election Diaries

The European elections have left me wondering whether to laugh or cry. The Brexit Party swept across Britain, all noise and beery bluster. That the party's policies fit neatly onto the back of a fag packet suits its leader Nigel Farage, and seemingly matters little to the 5.2m people (36.1% of the vote) who backed him. "We are now looking towards Westminster," is the warning on the party's website.

On June 1, the Brexit Party – which was only launched in April – was polling at 26%, ahead of Labour (22%), the Conservatives (17%) and the Lib Dems (16%). The party hasn't yet written a manifesto for a general election, but its main protagonists have form when it comes to climate scepticism.

Chief among them is Ann "there is no climate change, hasn't anybody looked out of the window recently?" Widdecombe. Those were her words in 2009 – the year after she was one of only five MPs to vote against the Climate Change Bill as it passed through Parliament, and the year before she hit the *Strictly* dancefloor. In 2014, those famous five got back together for an anniversary. "I am proud to have been one of those five MPs and I wonder how many others would join us if the vote were happening now," she wrote at the time, in a piece for the *Daily Express*.

Five years on, perhaps we should start to wonder – and worry. Widdecombe is back in politics as a Brexit Party MEP. At the time of writing, the Electoral Calculus website puts the Brexit Party on course to win 249 seats, with Labour on 216 and the Conservatives just 54. Libs Dems would grab 51 and the SNP 56.

The Green Party would muster just one, despite polling as high as 11% in some surveys (the perils of first past the post). Still, it's a "really high number of people, one in 10 saying they will vote Green for Westminster", suggested the party's co-leader Siân Berry. "This success has been a long time coming."

This is a moot point. Farage has depicted himself as the fox shouting his way into the Westminster hen house and the 'riches' that supposedly await us at the end of the Brexit tunnel. "This place I am hoping to get to is so marvellous that if I described it to you now you would go crazy with excitement," as the other 'Fantastic Mr Fox' said.

The Greens, meanwhile, are the ones with the cunning plan – one that has already seen their popularity jump from 3% to 11%, despite no-one knowing who the leader is. Berry co-leads the party with Jonathan Bartley; they stood on a joint platform



"THE BREXIT PARTY'S MAIN PROTAGONISTS HAVE FORM WHEN IT COMES TO CLIMATE SCEPTICISM"



to "become England and Wales's third party". Britons love a plucky underdog, but perhaps the party's European election results will cause Berry and Bartley to adjust this target?

According to Press Association figures, the Greens won 12.1% of the vote in Great Britain in May's European elections, ahead of the Conservatives (9.1%). Their success wasn't just confined to these shores, though: Greens won 70 seats in the 751-seat European assembly, and in Germany their vote doubled to almost 20%, which could reportedly see the German Greens' co-leader Robert Habeck on the path to the chancellor.

Could Berry or Bartley make it into number 11? Stranger things have happened. So far there has been no flirting with Labour or the Lib Dems. It would be up to others to pursue the Greens in any progressive alliance – and they won't be easily wooed.

Buoyed by the 'Greta effect', the Greens are enjoying their power as potential kingmakers. Voters sent a signal that they want the environment at the heart of politics, according to Yannick Jadot, an MEP for the Europe Écologie-Les Verts party (which surprised many in France by coming third). "The environment cannot just be a promise you make before elections," he told *The Guardian*.

It's a message that politicians should heed. Theresa May had a tepid attitude towards global warming before Michael Gove – expertly judging the shift in public opinion – convinced her to make a splash with the 25-year environment plan. The environment secretary has re-energised Defra, but so far there is little primary legislation to show for his efforts. And now his eyes are set on a much bigger prize: the leadership. Should he win, Gove will find it hard to row back on the eco-brand he has created for himself. If he tries, the Greens will be waiting. 🌿

DAVID BURROWS is a freelance journalist.



Our recent industry roundtable brought together leading experts from fields spanning energy, transport, sustainability, academia, manufacturing and technology to discuss the future of flight.

Chris Seekings reports

Wings *of* change

Aviation in a low-carbon world

A

viation has radically transformed travel during the past century, bringing people closer together and redefining the way we do business, take holidays, deliver medical aid and transport goods. The industry also accounts for an estimated 2% of global greenhouse gas emissions and 12% of transport-related CO₂, with its contribution to

climate change rising fast.

However, amid growing public awareness of the state of the environment, plans are under way to overhaul the way the whole sector operates, from boosting energy efficiency to redesigning the means of long distance travel altogether. Here, a group of 23 leading experts from fields spanning energy, manufacturing, technology, academia, sustainability and transportation work through the many challenges facing aviation as it looks to thrive in a low-carbon world.

Electrical evolution

James Cameron, a member of Heathrow 2.0's advisory group and chair of the roundtable discussion, gets the ball rolling by asking about the latest technological innovations.

"We have been looking at the two key limitations of composite materials used in aircraft: a lack of motility and relatively low toughness," says Paul Robinson, head of the department of aeronautics at Imperial College London. "We have built on our understanding of current materials and are looking to improve them, with a focus on controlled stiffness and shape measuring, and most recently looked at applying these to a morphing wing."

One of the most exciting developments around new materials concerns their ability to actually store power once in flight. "We have also been looking at materials that not only perform structurally, but also can store electrical energy, which is particularly relevant to the electrification of aircraft currently under way," Robinson explains.

The UK government has just closed a consultation into the future of aviation, and envisages that hybrid or all-electric aircraft will be in service by 2050. This follows the successful short-distance flight of the E-Fan all-electric aircraft across the English Channel in 2015, while Airbus and Rolls Royce's E-Fan X demonstrator is in the developmental stage. It is hoped that this will help establish certification requirements and pave the way for electric air travel across Europe.

"The pressure is on to move as rapidly as we can towards reduced or even zero-emission aviation, and there are now full development programmes moving forward hybrid and all-electric solutions," says John Turton, aerospace committee member at the Institution of Mechanical Engineers. "The 2050 timeframe certainly seems feasible to me, but it's a process of taking one step at a time and we are only at the start of this process. It would seem that a long-haul electrical hybrid is still a long way off, though."

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Andrew Macmillan
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Mark Westwood
Chief technology officer, Transport Systems Catapult



Richard Templer
Director of innovation, Grantham Institute, Imperial College London



John Turton
Aerospace committee lead, Institute of Mechanical Engineers

Breaking down barriers

There is agreement that the electrification of long-haul aircraft will be a hard nut to crack. A report from consultancy firm Roland Berger highlights that there are 169 projects for small electric aircraft under way. Two-to-four-seat electric planes that can travel 50 miles are already possible, while 400-mile flights with 10 seats should be available within the next decade.

"My problem is that anything under 50 seats in the current air transport system contributes just 1% of fuel burn; everything over that contributes 99%, so the challenge is how we scale these technologies," says Ron van Manen, programme manager at the EU's Clean Sky 2 partnership. "If we can get that technology up to 50 or 100 seats and up to 600 miles or 1,000 miles, it gets interesting. But if the needle sticks at no more than, say, 10 or 20 passengers and a few hundred nautical miles, it's not going to have any impact."

It is put to the panel that a new type of fuel may be necessary, with the energy used for long-haul flights likely to remain based on combustion and gas turbines in the short term. "New energy storage technologies offer an alternative to fossil fuel sources in favourable circumstances," explains Anthony Powell, research division lead at the University of Reading. "However, the implications for materials resources should not be underestimated. For example, reserves of the key components of lithium-ion batteries, while sufficient to meet growth in electrification of vehicles, may be insufficient to address increased demand from other sectors."

Among the largest challenges are the weight of aircraft and the height at which they travel – both have a high impact on fuel burn. The panel also posits price as a barrier. It is not currently possible to fit existing aircraft with electric motors – electrification requires a complete design change. "The elephant in the room here is life-cycles," van Manen says. "Each fleet replacement cycle is a \$5trn investment and takes around two decades, and what is being delivered now by manufacturers will still be in service in 2035. Conversely, in order to have a fleet in 2050 that is genuinely 'low-carbon', that generation

"The elephant in the room here is life-cycles. Each fleet replacement cycle is a \$5trn investment and takes around two decades"

Ron van Manen, Clean Sky 2 programme manager

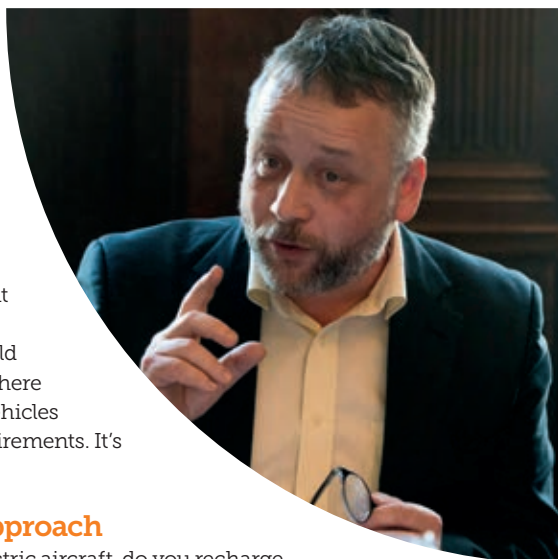
of aircraft would need to become available in the 2030s. We need to work on that technology in the next five to 10 years, or it won't be on time. We can't go to airlines and say 'you have to make another \$5trn investment, straight after the last'."

This leads to a discussion around design change and what this will mean in practice – not just for aircraft, but also for airports and surrounding infrastructure. "It is about connections in the physical space," Cameron says. "Electric flights might need a 45° launch, while hydrogen-based craft could need huge wing spans – there are all different kinds of vehicles with different spatial requirements. It's challenging."

A whole-system approach

If there is a big shift to electric aircraft, do you recharge the planes on arrival or replace their batteries to achieve acceptable turnaround times? What are the safety implications of holding vast amounts of battery storage at the airport? Batteries will increase landing weight, possibly leading to increased landing speeds. What will that mean for runways and air traffic control? "You have all these implications of electrification that you have to consider," says Ken Hart, aerospace engineering lecturer at the University of Hertfordshire. "The airport infrastructure is all connected to the aircraft associated with it."

There is also the question of actually getting passengers to the aircraft. Road traffic causes more CO₂ emissions than aviation, so perhaps this whole process needs to be redesigned. "You could start sending people in pods directly to the aircraft, which would allow you to move the airstrip miles from the terminal and reconfigure how the airport interacts with the plane," muses Geoff Rodgers, vice provost at Brunel University London.



"If you look at emissions, it is a huge challenge for aviation. I think that if Greta Thunberg was here she would be pushing that urgency"

Nick Blyth, IEMA policy and engagement lead

The panel also discusses how different goods will be transported around airports in the future. It is suggested that dirigibles fitted with GPS tracking, rather than planes, could be responsible for freight and transport of heavy goods, for example. These could be passed to smaller vehicles for delivery, creating a different picture of movement in and out of airports.

Either way, it is agreed that electrification and potential redesigns are going to require multi-skilled delivery teams. "We will need to think about the planes, how they sit on runways, and secondary and tertiary support," says Ian Smyth, director at UK Power Networks Services, who estimates that electrifying all long-haul aircraft in the UK will require around 5% of the country's total electricity consumption. "This will need a whole-system approach, bringing together aeronautical and electrical engineers, along with environmental groups."

Lessons to be learnt

When it comes to planning new infrastructure projects, Smyth explains that there are lessons to be learnt from the electricity





"I think every time you fly, you should actively be reducing the net amount of CO₂ in the atmosphere – that would be a transformative message"

Richard Templer, Grantham Institute director of innovation

Anticipating future trends and their impact on infrastructure is critical for airports. Heathrow's chief strategy officer, Andrew Macmillan, was enthusiastic about emerging possibilities.

"We can start to see how radical decarbonisation of flying could happen, but the challenge then shifts to making it real. Take electrification – as we are able to forecast the timing of take-up more accurately, we can start to plan long-term infrastructure. We must ensure we can meet future demand, but also ensure we have a reliable energy source." Being able to map out the pace and implications of change is the central challenge.

Many smaller businesses already have grand designs for the future of aviation infrastructure. The convergence of renewable

energy, storage, digital demand, electric vehicles and sign management is under way and could soon produce inexpensive and abundant power. "I think when we are making an investment case for electrification at an airport, we need to learn lessons from other projects like High Speed 2," Smyth says. "What are the triple bottom line benefits? It has to be cheaper, better for customers and better for the environment."

No time to waste

All this talk of timeframes, price, technology and infrastructure design raises concerns that the aviation industry's current efforts are incompatible with the urgency of the climate crisis. A report from the Intergovernmental Panel on Climate Change (IPCC) published last year warned that the world only has until 2030 to avoid uncontrollable global warming.

"As a sector, planned frameworks like the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) do

"Will long-haul, wide-bodied aircraft still be flying in a net-zero world? The longevity of the industry is still something we are trying to understand"

Rachel Everard, Rolls Royce head of sustainability



system. "We work to the "four Ds": democratise, digitise, decarbonise and decentralise," he says. "It is a moral obligation to allow people use of electricity as they see fit – we must move away from restriction of choice through limiting carbon and allowing consumers choices which are sustainable."

He highlights how previous infrastructure projects have been let down by a failure to include energy professionals in the early planning stages. "You have the bulldozers come in, then the civil engineers, the mechanical engineers, the structural engineers, and then electrical engineers. We need electrical infrastructure in the early stages because the low-carbon technologies are proven and ready to be applied to new projects."

However, there is some scepticism among the panel members about the feasibility of new projects. "There is no infrastructure whatsoever to produce the electric charging needed for aviation," van Manen says. "When you consider the challenge of electrifying around one billion cars on the road, aviation can probably learn some lessons in terms of thinking a little bit too optimistically."

not go far enough," says IEMA policy and engagement lead Nick Blyth. "You have got a voluntary scheme starting in 2021, and a mandatory one beginning in 2027, but then we have the IPCC saying we only have 11 years to bend the curve on emissions. Policy has to do more to support innovation and be more biting."

This discussion takes place after weeks of protests from Extinction Rebellion, with the activist group said to be planning action at Heathrow Airport. Meanwhile, the climate strike movement has seen more than 1.5 million young people protest against government inaction on climate change – a sentiment that is likely to be shared by a group of Imperial College London aeronautics students observing this discussion.

"Extinction Rebellion has brought emotional language to the debate on climate change," says Richard Templar, director of innovation at Imperial College London's Grantham Institute. "This is fantastic but tends to demonise activities such as flight. We need to take air transport emissions to zero while enabling the societal, economic and political benefits that it has created."

However, a UN report released in 2016 revealed that, by 2050, the aviation sector could be consuming a quarter of the world's carbon budget if it does not meet its emission targets. The industry is aiming to cap its emissions at 2020 levels, but air travel is expected to increase by around 5% per year up to 2034, and there were more than four billion passengers in 2017 alone.

"You are up against it if you look at historic emissions and recent ones, it is a huge challenge for aviation against that backdrop," says Blyth. "I think that if someone like Greta Thunberg was here, she would be pushing that urgency."

Changing the language

Emissions offsetting comes in for criticism, with some members of the panel raising concerns about the use of language. "When you look at offsetting and hear that you can offset a flight's emissions for €80 or €1, it's hard sometimes to imagine how that actually works," says Blyth. "Things have improved with better standards, but I think there is still some greenwash under way."

He also argues that the concept of carbon neutrality can be improved on. "There is too much focus on offsetting, but the neutrality picture also needs to be geared towards innovation and transition," Blyth says. "The issues of avoidance and efficiency are underplayed, so I think we need to evolve this concept of becoming carbon neutral and apply it in a different way."

Cameron agrees, saying that 'offsetting' can be a misleading term that distracts from businesses' other obligations. However, he highlights the fact that good ideas have come about when carbon is a value by governments or private contracts, and argues that there should be a deeper discussion around how resources derived from offsetting are deployed. "We need to start thinking harder about where to channel the revenue streams effectively from offsetting or carbon prices," he says. "At least CORSIA gives us something to work with, and we might be able to accelerate progress through the International Air Transport Association."

There are also concerns around how the issue of emissions is framed. Templar says that more emphasis needs to be placed on

emissions as a pollutant, and that airlines should present themselves as part of the clean-up operation.

"If you describe carbon as a pollutant, then the cost of emissions is the cost of cleaning it up, so it becomes a financial transaction," he says. "You can't just ignore your emissions, and what do you do when you pollute? You should clean up and let your customers know you want change – this is a rallying cry."

Thinking big

When it comes to solutions, there is agreement that the industry will need to think beyond current proposals. Templar suggests that aviation team up with other hard-to-decarbonise sectors, pooling resources to develop the technologies of the future. "I think every time you fly, you should actively be reducing the net amount of CO₂ in the atmosphere," he says. "Airlines and airports should ally with the cement and steel industries to create technologies that remove carbon, so customers know that every time they fly they are helping the environment. That would be a transformative message."

Tapping into customers' perceptions of aviation is something that comes up again and again. "Start investing in these carbon removal technologies and businesses so that customers see you as part of the solution," Templar adds.

Moving back to the topic of long-haul flights, there are some who question whether these will even exist in the same way in decades to come. It is suggested that a higher number of short distance flights may be the way forward. "Will long-haul, wide-bodied aircraft still be flying in a net-zero world? Personally, I don't know, but the potential for innovation, particularly in short-haul flights, is still something we are exploring, for example through concepts such as our eVTOL," says Rachael Everard, head of sustainability at Rolls-Royce.

The panel discusses how travelling shorter distances more often could transform the industry. "In a previous organisation we did research into capital utilisation, and thought about how aircraft might not be owned by airlines ➤



Andrew Chen
Head of
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Heathrow



Ron van Manen
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Gary Cutts
Future Flight challenge
director, Innovate UK



Tom Budd
Lecturer in air planning
and management,
Cranfield University



James Rose
Head of engineering,
Heathrow

Roundtable

in future, but just travel from east to west in hops, with passengers opting in for certain flights," says Gary Cutts, director at Innovate UK's Future Flight challenge. "The whole business model may change, driven by consumer's demand for low-carbon travel."

Some are unsure whether customers would be willing to be more eco-friendly if it meant big changes to their journeys. "Accepting a 20-minute longer trip across the North Atlantic could lead to a 20% to 30% carbon saving, and airlines will generally tell you that their customers won't accept that," van Manen says. "But I think passengers choose on the basis of maintaining their gold card, the quality of the seat, the reliability of the airline, the lounge they like, the airport they like – consumer preference is not necessarily the same as the perception of many airlines."

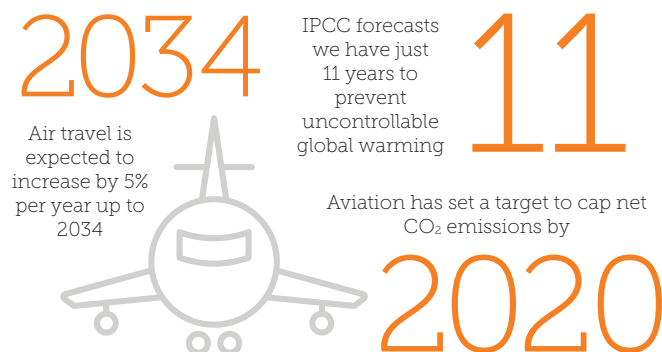
It is also suggested that different technologies may need to be matched to different flights. "It's a fascinating challenge, and there could be a great variety of services offered," says Cameron. "There will be issues around pricing those services, but the market is rewarding innovation right now. It might not even be delivered by a recognised name in the aviation industry, but by a specialist in digital systems."

Reasons for optimism

This discussion has highlighted various challenges and opportunities facing aviation's path to carbon neutrality, and will be used to frame how Heathrow's Centre of Excellence for Sustainability designs new projects, to begin later this year.

INDUSTRY JET LAG

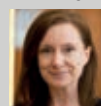
The aviation sector must act now to reduce its emissions



Rachael Everard
Head of sustainability,
Rolls Royce



Anthony Powell
Research division
lead, University of
Reading



Sarah Werts
Business relationship
manager, University of
Reading



Paul Robinson
Head of aeronautics,
Imperial College
London



Geoff Rodgers
Vice provost –
research, Brunel
University London



Neil Harris
Professor of
atmospheric
informatics, Cranfield
University

The industry is buoyed by increasingly efficient and affordable green technology, and few expect airline traffic flows and business models to be the same in 2050 as they are today. The prospect of customer engagement excites the panel. "It may be that the industry doesn't understand the appetite for these changes among the public," Cameron says. "There may be something alluring about that change, and many may have had some consciousness-raising by Thunberg and her company."

But who should drive these changes? Templar argues that airlines and airports must show leadership. "Because airlines have direct contact with customers, they have both the opportunity and responsibility to enter into a purposeful dialogue about how to decarbonise flight," he explains. "Leadership in such dialogue means that the questions that are solicited are pertinent, based in potential solutions and are never neutral about the climate change impact of flying as it currently operates. You have to be saying 'we know what we have to do, and this is what we want to do.'" This carrot-rather-than-stick approach is something that is welcomed strongly by some on the panel.

From a broader perspective, it is agreed that strong collaboration will be key to rethinking how and where we fly, the speed, height and distance of travel, and how this is matched with various different technologies. This is something Rolls-Royce is already doing by teaming up with smaller companies. Everard says: "The opportunity and challenge for larger firms is how to harness the energy and culture of a smaller company or start up, and working out how we can scale up and develop these

technologies, including potentially bringing them in-house."

Cutts highlights that there is an appetite for collaboration among stakeholders. "We know that aviation is quite compartmentalised, but the people we have talked to have shown a great desire to work with new entrants and find solutions together."

Collaboration and systemic thinking will be critical as aviation comes under increasing public and regulatory pressure, but the industry has had to face numerous other existential challenges in the past. "Ask a good engineer, or even a good artist, and they will tell you that creativity and constraint go together," Cameron says. "All creativity emerges within the construct of a constraint, but when you see an electric aircraft move, for example, it changes your consciousness, and I do see huge optimism."



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Plastic pollution

Your book is called *Plastic Soup: An Atlas of Ocean Pollution*. What exactly is 'plastic soup'?

'Soup' refers to the phenomenon in which plastics fragmentise into ever smaller pieces, which can never be cleaned up. Most people think plastic pollution is far away, in the middle of the ocean. The book illustrates not only that 'plastic soup' is a global problem – you will find it in even the most remote places on earth – but also that it manifests itself in different ways.

How much has worldwide production of plastic increased during the past 40 years?

A study by Roland Geyer, Jenna R Jambeck and Kara Lavender Law that appeared almost two years ago (bit.ly/ScienceAdvancesFatePlastics) estimates that global production of plastic resins and fibres increased from 2m tonnes per year in 1950 to 380m tonnes per year in 2015, representing an annual growth rate of 8%.

Is there any evidence to suggest some plastic use might be more environmentally-friendly than natural products in the whole lifecycle sense?

Not that I know of. It depends on the definition of 'lifecycle' you use. Paper packaging is heavier than plastic packaging and costs more energy to transport – but if you include the end-of-life phase in your analysis, plastic is much worse for the environment than paper because it lasts forever.

Are we recycling correctly? Or are we making mistakes putting plastic back into the environment?

Recycling can be much improved if we return plastic through deposit systems and recycle the same type of plastic each time, instead of making new products from all different types of waste plastic. Products made of recycled plastic, such as toys, contain a relatively high toxic content because chemicals such as additives and flame retardants cannot be removed during the recycling process.

Do we need better labelling, for items with microplastics for example?

We certainly need better labelling. It would, for instance, be helpful, if synthetic clothing was labelled to inform the buyer that they are polluting the environment with plastic microfibres every time they machine wash or dry the garment. The government should make labelling mandatory until better solutions are introduced.

Do you think the the microbead ban in the UK is working – does the legislation have teeth?

The UK ban is only banning plastic scrub particles in personal care products. Many other microplastics are still allowed. The plastic pollution going down your drain has not been ended. The ban is also confusing. Why is glitter in scrubs covered by the legislation, when glitter in make-up or shampoo isn't? The UK government should support the recent proposal by the European Chemical Agency to ban

Michiel Roscam Abbing talks to Kathryn Manning about how plastic waste is affecting ecosystems, and how we can create positive change through laws and recycling

Soup of the Day



all intentionally added microplastics – not only in cosmetics, but also in detergents, paints, agricultural and industrial products.

What are 'nanoplastics' and how are they harmful to organisms?

Nanoplastics are very small pieces of plastic, smaller than 0.0001 mm, that are hardly visible even when using the most sophisticated microscopes. Plastic in the environment fragmentises into ever smaller pieces. The consequence is that the amount of nanoplastics exponentially increases. These nanoplastics can spread through the bodies of animals and humans with as yet unknown consequences. Nobody knows whether these particles could cause chronic inflammation in the body and trigger a series of disorders, including cancer and Alzheimer's.

In what way is plastic in the ocean changing marine ecosystems?

We do not know exactly, because marine ecosystems are very complex, with all kinds of interactions. But there are many red flags. For instance, recent research found that mussels are losing their grip because of microplastics, putting mussel beds in danger. Another study found that the chemical substances that attach to plastic in seawater, or that leach out of it, impair the defence mechanism of the common periwinkle. Swedish researchers found nanoplastics are causing behavioural abnormalities in fish, making them easy prey, which impacts the ecosystem's current balance. It's a disturbing insight that plastic makes coral reefs sick. We also know that pathogenic bacteria travel large distances on floating microplastics.

What evidence is there that plastic in our environment and seafood is damaging our own health?

At the moment there is no clear evidence that it is impacting our health, unless you live in an environment that is heavily polluted with plastic and where plastics are being burned in the open air. Millions of people are living in such circumstances. Microplastics and nanoplastics in seafood are considered a potential future food safety issue. Two phenomena are evident:

the concentration of microplastics in the environment (and the air) will only increase in the years to come. We also know that microplastics, especially nanoplastics, can penetrate deep into human bodies (they can enter organs, brains and the placenta). The dilemma is that by the time we can prove their harm to human health, it will probably be too late to take measures.

Are there some polluting factors that you think the general public is only vaguely aware of and should be publicised more?

Yes, indeed. I'm thinking about the impact of microplastics in soil and its long-term effects on terrestrial ecosystems. Another is that we breathe microplastics continuously without knowing the consequences. Babies crawl on synthetic carpets and breathe household dust that contains microplastics.

"Campaigns focus on the behavioural change of people while allowing for the continuing production of plastic"

What do you think could be the quick wins or low-hanging fruit for reducing our plastic use and waste?

By far the most important quick win would be a complete ban on single-use packaging. Some countries, such as India, are seriously considering this. Another is to phase out all plastics that cannot easily be recycled. Also to make sure that deposit schemes are put in place to guarantee that used plastic is handed in again. And introduce a packaging or plastic tax to make the use of (primary) plastic more expensive.

Which campaigns have been successful in reducing plastic waste?

So far, there have been no successful campaigns. The problem is that campaigns

focus on the behavioural change of people while allowing for the continuing production of plastic. It is an illusion that this can solve the problem. Even if a tiny percentage of the everyday abundance of plastic leaks into the environment, it would still represent a huge amount. And plastic in the environment never degrades in a natural way.

Do you think a global joint effort on ocean pollution targeting the world's most polluting coastal communities would help?

Governments should attack plastic pollution at its source. A new global convention should be drafted to prevent both growth in plastics pollution and harm to human health, at all phases of the production cycle. In fact, a new global convention is the only way to deal with plastic soup. Big oil is now investing in new plastic production facilities, based on the availability of cheap shale gas. Governments still tend to defend industry interests instead of fighting the negative consequences of climate change and plastic soup. Targeting the coastal communities doesn't help if the world is not able to turn off the plastic tap at the same time.

Your book is dedicated to 'children everywhere'. How can we help the next generation counter the huge environmental issues they will face?

Plastic soup is not the only environmental problem the next generation will have to deal with. The human species must learn not to consume at the expense of the environment. The best thing we can do for future generations is learn and act on that. 🌱

MICHIEL ROSCAM ABBING is a political scientist and author of *Plastic Soup: An Atlas of Ocean Pollution*, published by Island Press. For details, go to: www.plasticsoupfoundation.org/en



A LIGHT IN THE DARKNESS

We all feel anxiety – we have evolved to feel it in response to dangerous situations, as it helps guide us to

safety. However, anxiety becomes serious when it overwhelms us, leading to distress, anxiety disorders or depression.

As sustainability professionals, we are aware of the implications of climate change. Not only do we have to deal with our own psychological responses, we may also have to deal with resistance at work to what we are trying to achieve. The American Psychological Association's 2017 report on the impact of climate change on mental health describes eco-anxiety as "a chronic fear of environmental doom". This can express itself in feelings of grief, loss, rage, despair, guilt or shame.

Climate change is a pernicious problem due to its unique character and interconnection with other issues, and this affects our psychological response to it. For some, the issue remains an abstract threat – which means people think it is more likely to affect other people, in other places, in the distant future.

Many cognitive biases make climate change seem less important – including:

- Discounting future risks and rewards
- Optimism bias about our ability to mitigate potential harm
- Justifying the status quo
- Affective forecasting errors that lead us to assume the future will generally resemble the present.

The 'blamelessness of unintentional action' means that, in the absence of a clear villain, there is no one to blame but ourselves. This can trigger a range of defensive reactions. Social media is increasing judgement for actions such as eating meat, flying or failing to recycle. Increased awareness of what we should be doing, thinking that this is having little or no impact, and concern about the future

Dr Jan Maskell considers eco-anxiety within the sustainability profession, and how we can build up our resilience to feelings of environmental doom

can lead us to feel frustrated.

Part of our role as professionals is to continue to be constructive – and to encourage others to do so. The impacts on our mental health of trying to remain positive can be far reaching in terms of stress, anxiety and depression.

The Health and Safety Executive defines stress as 'the adverse reaction people have to excessive pressures or other types of demand placed on them', and has outlined six main areas



that can lead to work-related stress if they are not managed properly:

- Inability to cope with the demands of your job
- Inability to control the way you do your work
- Not getting enough information or support
- Having trouble with relationships at work
- Lack of clarity regarding role and responsibilities
- Not being fully engaged with workplace change.

All of these apply as much to sustainability professionals as they do to any other role. However, the potential for anxiety about climate change is a stress multiplier for those working in our sector. Issues around support, relationships, control and change implementation can be key factors. Are we supported by stakeholders in our organisations? Do we have good work relationships? How much can we control in our roles? How able are we to implement effective, long-lasting change? If we experience the extremes of inability to function – not being able to eat, sleep or work – then we should seek professional help.

What can we do?

Many organisations are implementing mental health plans and employee assistance programmes to ensure workers thrive. Employers should assess risks to employees' health; for those whose work involves tackling climate change, this includes consideration of the six HSE factors previously noted. The HSE's Management Standards may also help to identify and address health risks. Individual action plans can be developed for employees who are suffering from stress. The earlier a problem is tackled, the less impact it will ultimately have.

There are many things we can do to boost our resilience. The work of Fred Luthans considers the role of positive psychological capital, focusing on hope, resilience and optimism. How do we remain hopeful, resilient and optimistic in the face of climate chaos?

"Part of our role is to continue to be constructive – and to encourage others to do so"

Hope is defined by Luthans as "a positive motivational state" that is based on goals – directing our energy towards achieving those goals. Practical approaches for developing hope include setting 'stretch' goals. What meaningful and stretching goals do you have at work? You may have organisational goals, but do you set yourself goals in your personal life?

Resilience – the capacity to rebound or bounce back from adversity, conflict and failure, or even positive events, progress, and increased responsibility – can also be developed. When experiencing difficulty, people turn to those they are close to for emotional support. Consider your social networks – who is there to support you? More importantly, how can you cultivate and maintain strong social connections? Connectedness to others is a psychological need and a foundation for wellbeing and protection against eco-anxiety.

Individual mental health is better where there is strong social cohesion. Within organisations, sustainability professionals can encourage this by bringing people together to discuss and agree actions. Talking therapies are beneficial for finding solutions to personal problems, so enabling conversations and discussing the co-benefits of pro-environmental behaviour helps to spread knowledge, facilitate change and bring about social cohesion.

Barbara Fredrickson proposes that experiencing a large number and variety of positive emotions makes us more capable of 'broadening and building' ourselves into more optimistic and resilient individuals. We can become more aware of what makes us feel good by focusing on appreciation of what we have, what we do well and what makes us proud. Appreciation of others and showing genuine gratitude also helps us to develop these aspects.

We can also promote a more optimistic approach by differentiating between things we have control over and things we do not. Why try to change something that is beyond your ability, when there are things you can do? People have claimed that joining a group, such as a zero waste group, has made a positive difference to their wellbeing through the sense of belonging and achievement it offers. Examples of sharing through car clubs, lift shares or 'maker spaces' also offer social benefits, as well as economic and environmental ones.

Setting a responsible example

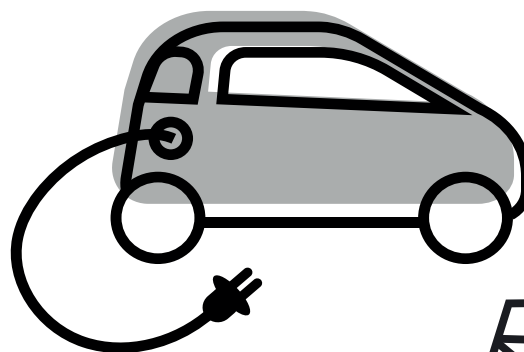
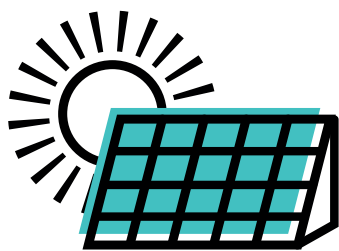
As sustainability professionals, we should be responsible examples for others, signalling the desirability of sustainable norms, communicating to others the value of pro-environmental behaviours and highlighting situations where people are acting sustainably.

Frame solutions in terms of what can be gained. People prefer winning to losing, so options should be presented in terms of benefits. This includes more than physical health and economic growth, ideally emphasising the interpersonal and social benefits of climate action. ①

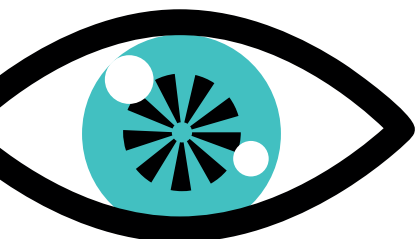
DR JAN MASKELL, PIEMA CPsychol is an occupational psychologist

Strategies for tackling eco-anxiety

- Set yourself challenging goals – personal and professional – to increase your hopefulness, engagement and achievement
- Develop social networks as support and enable conversations about climate change to develop social cohesion
- Appreciation of what you have, and of others, increases positive emotions
- Focus on what you can do and what you can influence, rather than what you can't do
- Join (or start) a group of like-minded people
- Share more.



Assurances for an ambitious Environment Act



Chris Seekings examines the Broadway Initiative's recommendations for creating an Environment Act that is fit for purpose

that all environmental law is based on these principles. All policy development should take account of the principles, too.

4) A unified spatial framework for environment, social and economy

This should include a single 'map' that shows the opportunities for improving the environment and operates on different scales, establishing a single integrated framework to inform local decision-making and planning.

5) Include clear and stable responsibilities for specified activities

This must include a requirement for new developments to incorporate environmental net gain, and also include 'extended producer responsibility' to encourage upstream responsibility for the environmental cost of products.

6) Provide independent oversight of government processes and act

The act should provide provision for advice, scrutiny of targets and for receiving complaints. It must also include provision for enforcing non-compliance robustly, and establish an independent and equipped body or bodies that are accountable to parliament.

7) Support a coherent approach at UK level

Westminster government must work with devolved administrations to ensure co-operation in developing policies with cross-border implications, and in setting the UK's position on relevant international agreements. It should also provide independent oversight for UK-level commitments.

More detail on the assurances can be found at bit.ly/2MERKHc

The UK government's draft Environment Bill risks "severely" downgrading environmental protections after Brexit, scrutiny by MPs has concluded.

In response, a group of environment, business and professional bodies, known as the Broadway Initiative, has published demands it believes must be at the heart of the Environment Act. These organisations have been working on recommendations for post-Brexit environmental law for nearly two years, and hope their assurances will establish a new constitution for the environment.

Martin Baxter, IEMA's chief policy advisor, explains: "The assurances set out the key elements needed for a coherent Environment Act that gives society predictability on the long-term pathway for the environment, providing the basis for private and public sector investment in environmental improvement.

"The key is to get past the pattern of short-term policymaking, where policies are introduced late in the day, once problems have become entrenched.

That approach means that society and the government pick up the bill, and businesses face high short-term adjustment costs.

"The Environment Act is the opportunity to set a clear pathway as soon as possible, that enables all sectors to plan, invest and collaborate towards a sustainable future and healthy environment. While the need for the Environment Act was triggered by the UK's decision to leave the EU, these shortcomings need resolution irrespective of Brexit."

Assurances:

1) Define shared objectives for the environment

This must include long-term targets to maintain and restore the environment, a 'non-regression' requirement on existing laws, and a participatory process with business and civil society.

2) Establish predictable processes for government

This should include a duty on the Secretary of State for the Environment to develop a mechanism to set standards and ensure measures for achieving targets are in place. It should also require the government to develop an Environment Improvement Plan every five years, and a set of indicators for targets to be reported on.

3) Clear principles for incorporating the environment in policy development

The act must at least include the principles set out in the Withdrawal Act, and ensure





HARRY GREENFIELD

Senior land use advisor, The Country Land and Business Association (CLA)

The CLA represents around 30,000 farmers and landowners across England and Wales. Environmental issues often focus on urban or industrial issues, but for CLA members it is rural land management that holds the key to leaving the environment in a better state for the next generation.

Land management has a huge impact on the natural world, and the CLA sees proactive land management as an opportunity to make major improvements to our natural environment. Amid unpredictability for farming and the rural economy post-Brexit, farmers' role in restoring the environment could give some certainty.

This is why it is important to CLA members that the Environment Bill contains long-term objectives, to guarantee a focus on actions that conserve the environment. Michael Gove has set out a direction that will see a more environmental focus within agricultural policy, with farmers paid to provide benefits such as clean water and thriving wildlife. Targets will show where land managers can best focus their efforts and give them the certainty to integrate environmental management into their business planning.

Given the size and scope of the Bill, there is still much detail to work out. The CLA is working with others through the Broadway Initiative to ensure the government develops policies that work for rural businesses.



STUART COLVILLE

Director of strategy, Water UK

Water supplies depend on the long-term health of water bodies, so we have a profound interest in their future protection against overuse and pollution.

The government has recognised some of the features that protection will require: a scrutinising body, transparency of aims and progress, and enforcement. To date, though, Environment Bill proposals have not gone far enough, with some areas – such as enforcement – being weaker or more complicated than the status quo. That is why we support Broadway's assurances, which identify the features to get right.

Many of those assurances set this test for legislation: what is the degree to which we expect the Office for Environmental Protection to maintain the ability to uphold the rules? If that test is failed, we risk 'in-flight' changes to complex, multi-year plans, which could increase cost and make it harder to deliver improvements.

The assurances also bring opportunities to enhance the framework, rather than replicate what we have. An embrace of 'extended producer responsibility' could be transformational: many sources of environmental harm are still seen as too complicated to tackle, or are cleaned up via costs imposed on customers.

Challenging producers to prevent pollution will almost always be cheaper and better than subsequently cleaning contamination.



MATTHEW FARROW

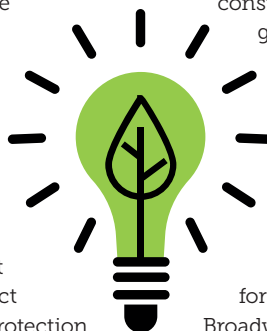
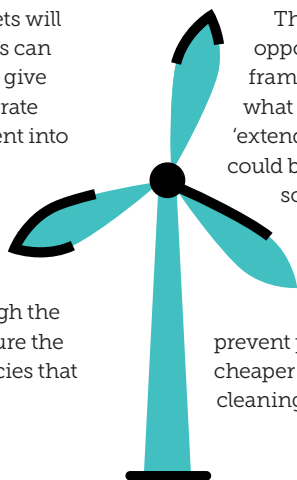
Executive director, Environmental Industries Commission (EIC)

The UK's environmental technology and services sector is strong, outperforming the economy as a whole and with higher than average productivity levels. We have expertise in traditional fields such as landfill engineering, and cutting edge ones like sustainable city data modelling.

EIC members are the firms that make up this sector, from multinational consultancies to family-owned green engineering firms. The markets that these firms operate in are largely defined by environmental policies and regulations. To be able to raise investment, these businesses need to be confident that policy is not going to be switched back and forth as ministers come and go.

Broadway Initiative's Assurance 2 ('Establish predictable processes for government to ensure appropriate policies are in place') is crucial. The assurance makes clear that this must lead to more than just setting targets many years hence. It refers to setting milestones – otherwise there is a tendency for governments to delay environmental action, which makes it impossible for sustainable structured environmental markets to evolve. Without those markets, investors will put their money elsewhere.

Assurance 5 is also important, calling on the act to require 'environmental net gain' from new development and 'extended producer responsibility'. This could spur business to prevent environmental damage occurring, rather than cleaning up after it has happened.



Personal development

IT'S A FANTASTIC SKILL TO HAVE

As we move towards a world that focuses on storytelling through social media and events, the written word is becoming less of a focal point for current topics. It's the place for deeper thought and longer pieces – but short, sharp talks, videos and podcasts are the order of the day, so speaking is a powerful tool

IT WILL BUILD YOUR CONFIDENCE

I always say: if something scares you, challenge yourself to do it. Start small and gradually build to larger audiences or more challenging situations. Your confidence will grow as you tackle your fear head-on, but it's also a chance to get more involved in a wider range of topics

YOU NEVER KNOW WHO YOU'LL BE SPEAKING WITH!

I have maintained contact with most of my co-speakers and often gone on to work with them in some way, whether that involves writing, supporting their sustainability work, coaching, mentoring or developing their business. In some cases, I have worked alongside eminent professionals at the top of their field and been in awe of them! I learn something every time I speak

IT WILL HELP YOU SHAPE YOUR THINKING

I know that sounds counterintuitive – you expect the person on the stage to be a thought leader. At the same time, though, they are listening and engaging with their fellow speakers and with the audience, because they want to test their ideas, learn from others and build on what they know

Sandra Norval describes how public speaking can make a difference in the fight against climate crisis and wildlife loss

Recently we've seen a huge increase in the attention paid to climate change and biodiversity loss, with the actions of Extinction Rebellion demanding attention – but the most compelling stories have come from the two opposite ends of the age spectrum.

Storytelling has been fundamental to this increased focus, through repeated and succinct oration from Greta Thunberg, just stepping into the limelight, and David Attenborough, the master with decades of experience under his belt. The aspect that connects them is their passion for making a difference. Their love for our planet shines through in what they say, and we cannot help but respond, react and rethink.

However, their voices alone are not enough. Within each and every one of us is a voice waiting to be heard – if we find our own way to unleash it. For some it will simply be speaking out at work, challenging things that need to change, but for others it's an opportunity to spread their ideas, gain support and drive momentum.

I have been chair of IEMA Sussex and Surrey Region for a couple of years now, and as an IEMA Fellow have been a speaker at all sorts of events, from small intimate groups to larger stages. From these platforms I have challenged audiences to think differently, and feedback has always helped me to build what I can do.

In recent months I've noticed that, when arranging events, it's often a struggle to get speakers – for all sorts of reasons. Dates and locations are always a challenge, of course, but it surprises me when people tell me they haven't ever considered speaking about their subject. I understand that it can be daunting, and I've seen many articles and videos about tackling those fears, but I thought it would be interesting to share my take on what speaking does for you, the speaker. It might surprise some readers to know that it really isn't about boosting your ego.

TIME

TO



Personal development

YOU ARE SHOWING WHAT YOU ARE CAPABLE OF

While you are up there speaking, you are demonstrating more than just your speaking skills. You're showing what you know and how you communicate your message. Your passion for your subject will shine through the nerves. And anyone in the audience will recognise that you know how to handle the pressure of putting your ideas out there; that is critical in the sustainability profession

YOUR PROFILE WILL GROW

Building your professional standing means growing your profile. It's not an ego thing – it's part of increasing your reach to do more. *Key Person of Influence* by Daniel Priestley talks about doing this by writing articles and speaking. IEMA is always looking for contributions to papers, event speakers, and articles for *Transform*

YOU WILL INSPIRE OTHERS

Whether through your subject or simply by being up on stage talking about it, you will inspire someone. They might not tell you until a long time afterwards, but I guarantee that it is happening!

YOU ARE SHOWING OTHERS WHAT IS POSSIBLE

Think back to times when you have been inspired by someone you could relate to – someone who represented you. Maybe you watched a woman introduce a difficult concept on stage, or a black TV presenter inspired you, or you saw someone with prosthetic limbs speak about climate change. We talk about diversity and inclusion, but need the exemplars to take the stage. Even now I am sometimes the only woman on a panel; we need our pool of professional speakers to grow so we can see and hear you

YOU WILL LEARN

By speaking you will learn how to speak well, engage different audiences and manage the room on panels and in Q&A sessions. You will learn about new topics from co-speakers, and even find out where your knowledge gaps are

YOU MIGHT JUST CHANGE THE WORLD!

After all, that is the intention of our work, and getting your ideas out there will definitely make a difference

SPEAK

UP!

The biggest gain for me has been getting the message across to the audiences I speak to, whether on stage, on camera or simply in meetings. The good news is that the more you find your voice, the more your confidence grows – and you develop your ideas, too. Not so long ago I was painfully shy, would never have dared to challenge someone senior and often told myself that I knew nothing. Things changed when I finally found my voice.

Gaining confidence

A decade later, I have full confidence in my speaking ability. I gradually found my techniques for all sorts of scenarios, but it all came with practice. In the early days I was literally standing on stage with my knees knocking, nerves keeping the volume out of my voice and my face glowing red. The more I went out there and did it, the more I learnt to use that nervous energy. Above all, I drew energy from the conversations that followed, discussing my topic and building confidence along the way.

Speaking up has, without a doubt, opened doors for me. I have used the experience in my skills evidence for my qualifications, gained CPD from the events I have participated in, honed my ideas for the work that I do and built a network of incredibly inspiring people, many of whom I have shared the stage with.

Please, don't just take my word for it. Start by getting involved with your local region, tell them what you'd like to talk about and help to plan an event to make it happen.

We need to scale up change. We must also change ourselves, and this is just one way that all IEMA members could make a difference. I hope to share a stage with you some day! 🗣️

SANDRA NORVAL, FIEMA is director of Bluedotaug and IEMA Sussex and Surrey Region chair. Find out about her speaking experience at www.sandranorval.co.uk

Zoning out

The lack of consistency between different clean air zones is creating confusion. **Dr Sarah Wixey** believes a more coordinated approach is needed

In 2015, the government launched its plan to improve air quality in 61 English cities, starting with the introduction of five clean air zones (CAZs) by 2020. Scotland, Wales and Northern Ireland have their own plans, including the Scottish government's pledge to introduce low emission zones (LEZs) into its four biggest cities by 2020, and other air quality management areas by 2023. A couple of English cities have gone one step further, with Oxford even planning a zero emission zone (ZEZ). London launched the UK's first charging ultra-low emission zone (ULEZ), and Hackney Council has ultra-low emission streets, which differ from the ULEZ.

The absolute importance of air quality and the sheer number of cities tasked with reducing pollution prompted the Joint Air Quality Unit in 2017 to produce the Clean Air Zone Framework: Principles for setting

up Clean Air Zones in England. It would be natural to assume cities have used this framework to design a consistent approach to their zones and adopt a standard set of clear rules for all vehicle users to follow. Unfortunately, this is not the case. The fact that we have so many different CAZ variations and each is categorised differently creates confusion.

A lack of coherence

Instead of a single, coherent and coordinated approach to a national problem, we now have a patchwork of individual initiatives across the UK. Anyone trying to operate a business, or simply travel from city to city, needs to research in advance what restrictions are in place, when they apply, any exemptions, whether the city operates a charging CAZ, how much it costs to use a non-compliant vehicle, and the process of paying the fine.

The introduction of ULEZ and plans for CAZs in other cities have forced fleet managers to ensure they have the right vehicles operating in the right place at the right time.

Lack of consistency means localised plans are frequently put in place. Businesses need to take into consideration whether older vehicles will need to be replaced or moved to areas where restrictions are more lenient (not recommended, as this simply moves pollution to other areas), and whether adopting new working practices could reduce fleet size.

Recycling firm First Mile used to deliver its waste recycling bags to businesses across Central London in a van; it now uses a cargo bike. The company has also significantly invested in its fleet to ensure the heavy goods vehicles it uses for collections are the greenest they can possibly be. CEO Bruce Bratley has admitted that it cost his business £3m to make sure it was ULEZ-ready.

The time has come for the various devolved governments and city authorities to come together and develop a single, consistent, easily understandable regulation to take forward. As it currently stands, the decentralisation of CAZs is somewhat ineffective and potentially detrimental to the improvement of air quality. Any plans should be developed with trade associations that represent the businesses most likely to be affected by any changes. Once identified and agreed, the implementation timescales need to be fixed to allow vehicle owners and businesses to plan their future.

Knowing the fixed implementation timescales will not only help vehicle owners and businesses, but will also provide the motor industry with the certainty it needs to ramp up production of ultra-low and zero-emission vehicles. 🌱

DR SARAH WIXEY is associate director at WYG.

"Instead of a single approach to a national problem, we have a patchwork of initiatives across the UK"



Visit www.iema-transform.net
for more member profiles

Connect

Why did you become an environment/sustainability professional?

I have always considered working with businesses to be the most effective way to tackle some of the world's most pressing challenges. They have the potential to make a substantial positive impact on society and the environment if we can guide their innovation and their resources.

What was your first job in this field?

My first job after I graduated with my masters degree was with SLR Consulting. I was lucky enough to work alongside truly inspirational people. I was given the opportunity to grow professionally and as a person. I felt invested in, and I will always appreciate that.

How did you get your first role?

I sent out more than a thousand speculative letters and CVs to environmental consultancies and got one reply. Luckily, I got the job!

What does your current role involve?

I founded Simply Sustainable in 2010. We are an award-winning corporate responsibility and sustainability consultancy, and I have the pleasure of leading an extraordinary, talented team. What each client requires from us can vary depending on a variety of factors, the most prevalent being the point at which the business is on its sustainability path. This may mean we need to provide thought leadership on the use of artificial intelligence, or perhaps provide a tailored CSR benchmark for a company still early on its journey.

How has your role progressed over the past few years?

We are constantly listening to our customers, identifying the challenges they face and asking ourselves how we can improve our services to tackle these. For example, we developed a tool in partnership with an econometrics company to calculate sustainability's return on investment. Proving the financial value of long-term environmental investments



CAREER PROFILE

Nicola Stopps

FIEMA

CEO of Simply Sustainable

can be very elusive, and I believe that this tool is something every sustainability leader needs to have in their arsenal.

What's the best part of your work?

I'm a people person, with a thirst for knowledge. There is nothing better than collaborating with my team to help provide useful and future-facing solutions for our diverse clients.

What's the hardest part of your job?

Slowing down enough to appreciate what has been achieved.

What was the last development event you attended?

I have been honoured to have been chosen to attend the four-month Goldman Sachs 10,000 Small Businesses programme. Working with my cohort to scale some of our biggest business hurdles has been a real opportunity for me, and I've enjoyed working with people in so many different industries.

What did you bring back to your job?

The programme has reinforced an empathic approach – the need to appreciate the professional and personal challenges of our clients.

What are the most important skill(s) for

your job? Active listening, positivity, and being practical.

Where do you see the profession going?

As individuals, we need to arm ourselves with a wide variety of general business skills as well as specialist sustainability skills. We also need to scale up and speed up if we are going to tackle the global challenges we face.

Where would you like to be in five years' time?

In five years, I'd love to still be an active and valued client partner while enjoying fun family time.

What advice would you give to someone entering the profession?

Educate yourself on sustainability, but also immerse yourself in business drivers, challenges and priorities. Most of this work involves integrating environmental goals while expanding broader business objectives. The most successful sustainability strategists understand that they cannot achieve any impact goals if they cannot also achieve the bottom line.

How do you use the IEMA Skills Map?

We use it to support the development of our teams.

If you had to describe yourself in three words, what would they be?

Joyful, positive and resilient.

What motivates you? The people around me, my wonderful family and the beautiful world we live in.

What would be your personal motto?

Always make time to look at the view.

Greatest risk you have ever taken?

Bridge jumping and swimming in glacial lakes.

If you could go back in history, who would you like to meet? **Nelson Mandela** – for resilience and commitment to non-violence. 🌱



CONNECT

SOCIAL AND COMMUNITY NEWS FROM IEMA

INTERNATIONAL

IEMA New Zealand going from strength to strength

During the past couple of years, New Zealand has seen a step-change in ambition around a range of sustainability issues. On the climate front, we have seen the introduction of the Zero Carbon Bill (bit.ly/2JjIyp9), providing a framework for New Zealand's contribution to the Paris Agreement's aim of limiting global average temperature increases to the 1.5°C target above pre-industrial levels.

The country has established the Climate Leaders Coalition (bit.ly/2D90uyt), committing over 80 organisations, representing more than half of the country's gross emissions and 25% of private sector GDP, to climate action. The government has also launched its first 'wellbeing budget', focused on intergenerational outcomes, sustainability, inclusivity and productivity.

This is a positive reflection on the sustainability professionals who have worked hard to raise the profile of

these issues in New Zealand. It has also led to an increase in demand for individuals with the broad sustainability skillsets required to deliver change. In 2017, a formal IEMA regional group was established to support the growing network of IEMA-accredited professionals working in New Zealand. Since then, the group has organised a number of networking events, and seen increased interest in the work of IEMA more broadly.

As the group builds its profile, we would welcome contact from IEMA members based locally and beyond who are willing to help broaden our impact. We are currently looking at options to bring IEMA-accredited skills training to the local market while also continuing with a programme of localised networking and knowledge sharing.

➤ **For further information, contact newzealand@iema.net and/or follow the group's activities on twitter @IEMA_NZ.**

AWARD

Environmental Professional of the Year

The Society for the Environment is pleased to announce that Jerome Baddley FIEMA is its Environmental Professional of the Year. Baddley is a Chartered Environmentalist and head of unit at the National Sustainable Development Unit for the NHS, Public Health and Social Care at the NHS and Public Health England.

Baddley has worked in the environmental sector for 20 years. He chairs the National Working Group for Low Carbon Inhalers, and co-chairs the National Task Group on low-carbon anaesthetics.

"I have been blessed to work with amazing teams, supportive management and great leadership," he commented. "Really, this is an award for them."



QUOTE UNQUOTE

Perfect timing to receive the latest @IEMA_Transform magazine as I'm currently transitioning to an environmentally friendly diet #meatfree #ClimateBreakdown #toptips @IMOGENCLAREC



This looks like a great issue - and what we can learn from global conversations/wisdom - #foodsystems #agriculture @IEMA_Transform @PARSONSJJOANIE



Strewth.....going to have our work cut out - almost 200 entries to @iemagnet Sustainability Impact Awards! Can't wait to get stuck into the judging #inspiring @MBAXTERIEMA

Replying to @mbaxteriema @IEMA_Transform Congratulations - what a great response in the inaugural year! A fabulous initiative. @KEYOSTAS

Proud to be featured in this month's @IEMA_Transform magazine! My article examines how industrialised agriculture is affecting both the planet and our own food security @CHARTERSLEWIS



Excited to announce that FIEMA member @jeromebaddley won the @SocEnv_HQ Environmental Professional of the Year award last night for his work in sustainability. Many congratulations Jerome! @IEMANET



Eid ul Fitr is likely to coincide with #WorldEnvironmentDay. The Bahu Trust has produced a short resource for our community on what can be done on #EidulFitr to contribute to safer, cleaner & healthier air for us all to breathe @BAHUTRUSTUK



WHAT'S ON THIS MONTH

iema.net/events

GESA MEETING

Financing green, sustainable or circular economic transition – does ESIA help?

► 9 July 2019

The concept of transitioning to a new economic model is not new, but this session aims to 'follow the money'. It will look at how donors and international finance institutions put their weight behind these concepts, and what the role of environment and sustainability practitioners is in supporting that. This event will give the perspective of practitioners who are working with donors and lenders, and introduce some of the tools and frameworks that those institutions are using to steer investment towards a more sustainable future.

► To book, go to bit.ly/GESAFinGreen

MASTERCLASS

Environmental impact assessment for infrastructure projects

► 16 July 2019

This focused one-day masterclass will provide in-depth practical guidance on how to develop an EIA for your project. Hear the latest insight on recent regulation changes and learn how to overcome the common challenges and issues you will encounter in the process. This interactive event will bring together environmental experts to share first-hand knowledge, innovative ideas and to address the biggest challenges you will face throughout the process.

► To book, go to bit.ly/EIAMaster

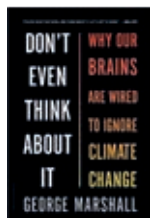
BOOK CLUB WEBINAR

Don't Even Think About It: Why Our Brains Are Wired to Ignore Climate Change

► 18 July 2019

Most of us recognise that climate change is real, and yet we do nothing to stop it. What is this psychological mechanism that allows us to know something is true but act as if it is not? George Marshall's search for the answers brings him face to face with Nobel Prize-winning psychologists, the world's leading climate scientists and the people who denounce them, liberal environmentalists and conservative evangelicals. Join us on this webinar, in which we'll be discussing key concepts of the book with our host, Marek Bidwell.

► To book, go to bit.ly/IEMABookclub



NORTH WEST

Fighting air pollution on a local level

More than 30 members attended a thought-provoking evening event in Manchester on 4 June, hosted by IEMA's North West Steering Group.

Sanja Potgieter-Vermaak, senior lecturer at Manchester Metropolitan University (MMU), opened the debate with an overview of MMU's research into air pollution and an insight into some of the issues that are yet to become mainstream. Her talk covered projects on environmental forensics, aerotoxicity, airport-related investigations, air pollution monitoring and assessment, and health. The latter projects included studies of inhalable urban road dust on Oxford Road in Manchester, which revealed surprising results. The take-home message was that the fate of environmental particles is complex, and the general assumption that assessments can be based on total (bulk) concentrations needs to be reconsidered.

Amy Stidworthy, principal consultant at Cambridge Environmental Research Consultants (CERC), introduced air quality forecasting for Manchester



using CERC's ADMS-Urban software, which is integrated into the new Clean Air Greater Manchester website and produces three-day air quality forecast maps. While residents can sign up for air quality alerts via SMS text, email or recorded message, it was stressed that air quality forecasts will not solve the city's air quality problems. They can, however, mitigate short-term health effects by helping people who are vulnerable to poor air quality to prepare.

Megan Black, head of logistics and environment at Transport for Greater Manchester, outlined Greater Manchester's proposed Clean Air Plan, which aims to address illegal levels of NO₂ in the shortest possible time. The main proposal is to target vehicles with older diesel engines with a clean air zone, rather than a congestion charge that targets all vehicles. Attendees were encouraged to visit cleanairgm.com to comment on the proposals. The Clean Air Plan proposals will then be developed in more detail, informed by responses.

EAST OF ENGLAND

Boosting mental health and resilience among sustainability professionals

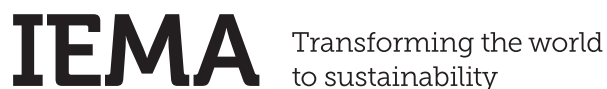
By Mike Thakoordin

On 23 May, IEMA's East of England Regional Committee held a 'social and workshop' event on the theme of mental health and resilience for sustainability professionals. Myself as speaker and four other IEMA colleagues enjoyed working through the interactive materials as we dealt with what is a fairly deep subject, happily sharing our different experiences.

This is a subject that can affect many environmental and sustainability professionals, if only because so many of us work alone and are dependent on key individuals within our organisations for assistance. Everybody felt that, through the event, they had gained an understanding about what help is available to individuals. There was also a recommendation that the regions should look at putting on similar events, and that there should also be a national lead on this issue from IEMA.

Mike Thakoordin is a trainer and consultant specialising in mental health in the workplace. For more information, contact mikethakoordin@yahoo.co.uk

If undelivered please return to:
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