



VV



TRANSFORM

FOR ENVIRONMENT AND SUSTAINABILITY PROFESSIONALS

Environment
Economy
Society

Feb/Mar 2021

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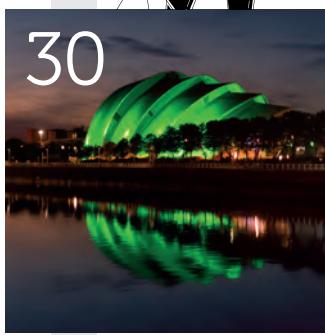
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SARAH MUKHERJEE, CEO, IEMA

A new year and renewed vision

Welcome to the first edition of *Transform* for 2021. I hope it finds you well, and that you managed to find some joy in the festive break, however you spent it.

I don't think that any of us, in our wildest dreams, could have predicted the year we have just had. Offices abandoned, commercial districts around the world emptied, the warp and weft of business life – stopping for a latte on the way to a meeting, heading for the gym or a yoga class on the way home, a much-needed drink with friends – ripped apart.

In many places, the vaccine rollout has begun in earnest. My parents-in-law have had both jabs and are beginning to feel more relaxed about a trip to the shops or a short walk outside. The fact we have several vaccines either available or in the final stages of development shows what remarkable progress can be made when the best minds in the world concentrate on a single, world-threatening problem. There are obvious parallels in the increasingly urgent need to decarbonise the economy. However, many business leaders point out confidence in government regulations, designed to support net-zero, has evaporated as these regulations often change when there is a change in government. On p20, Andrew Jordan and Brendan Moore argue that climate policy needs to strike a balance between durability and flexibility.

Many of us will be contemplating more weeks or months, working from home. For some, it has become a routine that gives us back more time. For others, it has starkly shown how much we miss the interaction of office life. David Burrows considers the ups and downs on p26.

This year will bring some changes to *Transform*. We will be reducing the number of editions from 10 to six per year. We have listened closely to what you have asked for in terms of a more proactive service, and will be investing in a more frequent, web-based service of news that will provide you with regular, focused information. We will also be turning the entire back catalogue of *Transform* into a searchable, topic-led database. Do let us know if there is anything you would like to see from the new service – we are always keen to hear from members about what works for them, and what doesn't.

In the meantime, enjoy this edition and stay safe.

"Remarkable progress can be made when the world's best minds concentrate on a single problem"



IEMA Transforming the world to sustainability

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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ROUNDUP

ENVIRONMENT &
SUSTAINABILITY
NEWS AND VIEWS

INDUSTRY

Net-zero transition to disrupt 10m UK jobs

Up to 10m high-carbon jobs will be disrupted by the UK's transition to net-zero emissions during the next three decades, with poorer communities set to be the most impacted. That is according to analysis by think tank Onward, which highlights how two in five jobs in the UK's poorest regions are in high-emitting industries, compared to less than one in four in London.

The East Midlands has the highest proportion of jobs in such industries, at 42%, closely followed by the West Midlands at 41%. London and the South East have the lowest proportion, with 23% and 34% respectively.

Of the 10m workers forecast to be replaced or retrained by 2050, more than half are in the North, Midlands or Scotland. Moreover, the seats that make up the so-called 'red wall' in the North and the Midlands, which will form the key battleground at the next election, are likely to suffer the highest levels of disruption of any constituencies.

The researchers warned that there will increasingly be geographic, political and economic trade-offs that need to be better understood and mitigated if net-zero is to be delivered successfully. "It demands a plan that is not only practical, but which smooths the transition for those people and places whose livelihoods are based in the carbon economy," said Ted Christie-Miller, author of the report.

"The UK has an historic opportunity in advance of COP26 to develop lasting policies that can not only deliver net-zero, but which can carry the support of voters and companies through a titanic transformation of our economy and society."

MPs warned last year that failing to move quickly and raise climate ambitions could lead to the UK missing its net-zero target while worsening existing inequalities.

Working with a cross-party group of politicians, Onward will spend the next nine months researching how to decarbonise industries, retrain and upskill workers at risk of disruption, and create regulatory and financial conditions for innovation. It will use statistical research, polling and focus groups and engage with a wide range of stakeholders, led by Caroline Flint, who served as shadow energy and climate change secretary for four years, and Dame Caroline Spelman, who was environment secretary for two years.

"I look forward to working with Dame Caroline Spelman and the wide range of contributors," said Flint. "The challenge of net-zero is immense – the deadlines are rushing towards us. In cleaning up our act, no community should be left behind. They will all have to be part of the journey and share the benefits."

Read the full analysis at bit.ly/3i5PDrZ





CORPORATE SUSTAINABILITY

Prince Charles launches 'Terra Carta' for business

Prince Charles has called on businesses to sign up to Terra Carta - a charter which provides a framework for organisations looking to "bring prosperity into harmony with nature". Devising its name from the historic Magna Carta – which inspired a belief in the fundamental rights and liberties of people more than 800 years ago – the Terra Carta aims to give fundamental rights and value to nature, ensuring a lasting impact and tangible legacy for this generation.

Signatories, which already include BlackRock, Unilever and AstraZeneca, will agree to take almost 100 actions to become more sustainable by 2030. These include supporting international agreements on the climate, biodiversity and desertification, and backing efforts to protect half of the planet by 2050. Another action of the charter was initiated at the One Planet Summit in Paris earlier this year with the creation of a Natural Capital Investors Alliance, which intends to raise US\$10bn by 2022.

The charter provides a framework for the Sustainable Markets Initiative, Prince Charles launched last year, and marks 50 years of environmental campaigning by the royal. "The 'Terra Carta' offers the basis of a recovery plan that puts nature, people and planet at the heart of global value creation – one that will harness the precious, irreplaceable power of nature combined with the transformative innovation and resources of the private sector," Prince Charles said.

BIODIVERSITY

UK criticised for approving pesticide that harms bees and pollinators

The UK government is to allow farmers to use a bee-harming pesticide on crops this year, despite it being banned in the EU. Defra agreed to the National Farmers Union's application to use neonicotinoid insecticides on sugar beet seeds. Neonicotinoids are known to wash off seeds and be absorbed by wildflowers, through which they poison bees and other pollinators. They also travel through the soil and pollute rivers, harming mayflies and other aquatic invertebrates.

Defra said that farmers must try to prevent harm to bees and other pollinators by destroying flowers "in and around sugar beet crops", and it's not clear how the proposal will prevent

neonicotinoids getting into rivers. As recently as 2016, the River Waveney was acutely and chronically polluted with neonicotinoid insecticides that had washed off sugar beet seeds.

A similar application in 2018 was refused after the Expert Committee on Pesticides advised that the proposal would harm bees, birds, mammals and aquatic insects.

"This is an environmentally-regressive decision by Defra," said Matt Shardlow, CEO at conservation organisation Buglife. "The new question is how will increased use of herbicides on field margins and hedgerows add to the onslaught being experienced by insect populations?"



BUSINESSWATCH



Tesco removes one billion pieces of plastic

Tesco has announced that it has removed one billion pieces of plastic from its UK business through its '4Rs' packaging strategy: to remove plastic where it can, reduce where it can't, reuse more and recycle what's left.

The strategy has seen a business-wide programme of change that assesses every piece of packaging and removes all unnecessary and non-recyclable material.

bit.ly/3sgibE3



Unilever to make self-cleaning surfaces a reality

Unilever and Innova Partnerships have launched a company, Penrhos Bio, to commercialise a technology that could see self-cleaning surfaces become a reality. The patented technology is developed from natural chemicals in seaweed biology and can block, or prevent, bacteria and mould on everyday surfaces.

Cleaning products use a huge amount of resources. Unilever said Penrhos Bio could "help to tackle some of the biggest societal and environmental challenges of the 21st century".

bit.ly/3skoRRK



OnePlanetCapital launches climate change fund

Venture capital firm OnePlanetCapital has launched a fund to invest in sectors such as green technology and fintech, as well as broader business-to-consumer businesses tackling climate change. The enterprise investment scheme fund targets investments that will have a positive environmental impact, aiming to deliver market rate returns and support the emerging green economy.

Target companies include those promoting renewable energy and efficiency, biodiversity, agricultural technology and sustainable pollution management, with investments underpinned by a new environmental, social and governance framework.

bit.ly/38B15Ja

JUST PUBLISHED

A Circular Economy Handbook 2nd ed.

Written by IEMA member and Rethink Global director Catherine Weetman, this book is a guided tour through the concepts and the practicalities underpinning the transition to a circular economy. The new edition includes extensive updates, builds on the latest research on circular business models, and has a new chapter on packaging and more than 100 new examples. It is available in print and e-book/Kindle versions at all good booksellers, and you can save 20% when you buy the book from publisher Kogan Page (shipping worldwide, free to UK and US) by using code **CIRCL20** at the checkout (bit.ly/3q6J2R0).

Become a Registered Environmental Practitioner

We are delighted to announce that, in partnership with the Society for the Environment (SocEnv), IEMA is offering a streamlined route to Registered Environmental Practitioner (REnvP) status for practitioner members of IEMA.

As an existing PIEMA member, you will evidence the necessary environmental knowledge to meet the competencies of the REnvP status and show application of this knowledge through your work. This new REnvP status is set to ensure that high standards of professionalism and proven competence are met by those who are working to enhance and protect the environment.

"Gaining REnvP status demonstrates an individual's skills and capability in the field of environmental protection and improvement," says IEMA's deputy CEO and director of policy and external affairs Martin Baxter, FIEMA CEnv. "REnvP registrants will play a key role in implementing transformative actions to tackle significant challenges such as climate change, biodiversity loss and air pollution."

For more information, go to bit.ly/REnvPTran

To apply for REnvP status, please email info@iema.net to request the application forms.

Apply before 21 March 2021 and receive a 50% discount on the SocEnv application fee.



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ANDY WHYLE

IEMA Circular Economy Steering Group chair

Demystifying the circular economy

The expert practitioners of the IEMA Circular Economy Network strive to develop and embed the principles of the circular economy into their sectors. Representing a wide range of organisations, and operating in different sectors and industries, network members have followed the principles set out in IEMA's *The Value of Collaboration for Corporate Sustainability Outcomes* to help advance good circular economy practice.

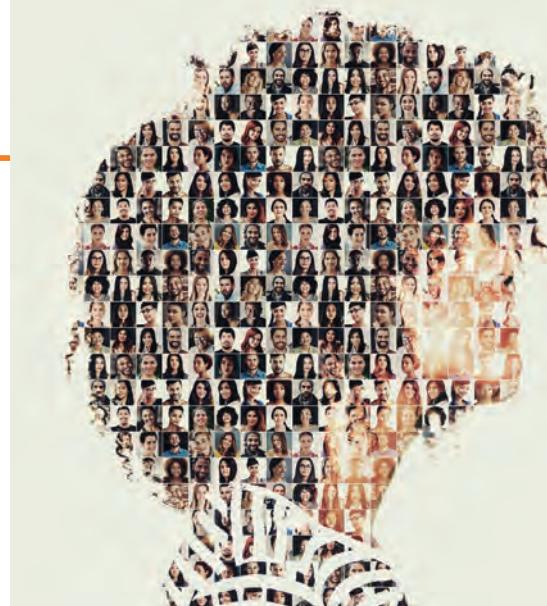
Conceptual models are excellent at explaining why we should rethink what we do and how finite materials should flow to maintain circularity. However, to engage more people, a more simplistic practical approach is required.

A few years back I contributed to the UK government's *From Waste to Resource Productivity* report (bit.ly/2XwRgWd). As part of this process I created a short list of aspects for a sustainable manufacturing organisation, which was included in the report as the Extended Resource Ownership (ERO) model. I subsequently used visualisation to simplify the model, and shared it with Circular Economy Network Steering Group experts to make it even clearer and more applicable.

The model provides practitioners with a simple process flow for engaging 'non-believers', with real-world examples and explanations at each part of the process flow. It demystifies terminology for non-specialists, enabling practitioners and academics to share it with them. Initially focusing on manufacturing, our next steps are to consider construction, the water industry and agriculture, with a view to incorporating any sector that needs to engage in the circular economy.

One of my own lessons from developing this model was the importance of design – designing in circularity at the beginning solves a great many issues later on. After highlighting the importance of circular economy design in the model, we are looking to hold a webinar on this in 2021, to engage designers in this critical phase of the process flow. The Circular Economy Network will continue to increase the awareness and engagement that is necessary to embed this model into everyday operations, further enabling us to 'Build Back Better'.

You can watch the launch webinar for this resource at bit.ly/2MPcw7z. If you have any suggestions or comments, or would like to support development of the model or join us on Circular Economy Network, please get in touch at cenetwork@iema.net. Read a more in-depth version of this article at bit.ly/DemystifyCircEcon



DIVERSITY

Introducing the Diverse Sustainability Initiative

Our commitment to diversity ranks highly in our priorities. We have spent the past few months gathering information on diversity in our sector, hearing experiences from BAME IEMA members and working with organisation leaders to create a plan of action.

We are now pleased to launch the Diversity Sustainability Initiative, a sector-wide initiative that aims to transform diversity within our profession. It will do this through education, connection and transparency in order to support current professionals and increase appeal and access for future professionals. The initial focus will be on racial diversity, before expanding into LGBTQ+, gender and physical ability.

We invite organisations to make a public commitment to diversity. This will outline your objectives that directly impact diversity and will be presented on a new Diverse Sustainability Initiative website, to launch at the end of February. The website will feature case studies and

blogs, showcasing individual experiences and shining a spotlight on diversity in sustainability projects.

Further plans for 2021 include the launch of a BAME professionals network and the development of an education programme for professionals that will explore topics such as unconscious bias, being an ally, and anti-racism. We will continue to conduct research into challenges faced by BAME members, and hold member and CEO roundtables accountable for our actions.

Improving diversity will take a generation, as it requires a wholesale mindset and system change to engage a new generation. However, we hope our approach will ensure that consistent, iterative solutions are enacted, and progress made at different milestones.

Are you interested in making a public commitment to diversity, becoming a funding partner, or sharing a blog or case study about your experiences? Contact Lisa Pool at l.pool@iema.net for more information.

DAVID HOARE

IA Steering Group chair, associate director at WSP

Impact Assessment Steering Group update

The end of 2020 saw four of our members step down, having completed their three years' service. Peter George vacated his role as chair after leading the group through challenging times with great passion. Josh Fothergill gave many significant contributions and considerable support to members, Becky McLean brought fantastic knowledge and innovation, and Karem Randall provided a valuable insight from a regulator perspective. I would like to thank them all, and hope they will continue to be involved.

We also welcome five new members: Stephanie Ball from Highways England, Urmila Jha Thakur from Liverpool University, Stefan Boss from Stantec, Lewis Jenkins from Arcadis and Owen

Cahill from MKO. Their diverse backgrounds will help us go from strength to strength.

We have a bumper programme of webinars, Outlook Journals and guidance documents lined up, so check the IEMA website regularly for updates. The best way to stay abreast of our activities is to join the IA Network: email ia@iema.net to let us know you want to join. You'll receive regular IA Network news, including links to articles and guidance, and opportunities to get involved in network groups and tasks.

This edition of *Transform* sees the start of a regular feature, 'QIA'. In each issue, we will give answers to a selection of the questions posed by participants of last year's 'EIA Back to Basics' webinar. You can find the first QIA at bit.ly/3qahri0

NET-ZERO

IEMA lead joins Race to Zero group

Race To Zero is a global campaign to rally leadership and support from businesses, cities, regions and investors for a healthy, resilient zero-carbon COVID-19 recovery. It mobilises leading net-zero initiatives representing more than 454 cities, 23 regions, 1,397 businesses, 74 major investors and 569 universities. These 'real economy' actors join 120 countries in the largest ever alliance committed to achieving net-zero carbon emissions by 2050.

Led by the High-Level Climate Champions for Climate Action, Nigel Topping and Gonzalo Muñoz, Race To

Zero mobilises actors outside national governments to join the Climate Ambition Alliance, launched at the UN Secretary-General's Climate Action Summit 2019 by Sebastián Piñera, the president of Chile.

The Champions have established an Expert Peer Review Group to review Race to Zero partner applications and provide recommendations to the Champions. IEMA fellow and policy lead Nick Blyth (*left*) has joined the group, adding an IEMA contribution to this initiative in the build-up to COP26.

Find out more about the Expert Peer Review Group at bit.ly/3oMxEF6



EVENTS

'How to' series

This new year will bring an ongoing opportunity for change – and we can all take action for a more sustainable future.

We're delighted to launch a new members-only series of digital events to support you in your career. These will be delivered by environment and sustainability experts from within the industry, including IEMA CEO Sarah Mukherjee and representatives from organisations such as Arcadis and Wyse Sustainability.

This new 'How to' series is designed to help environment and sustainability professionals further develop their skills and knowledge, as well as confidence in profiling their innovative work. Each session accounts for one hour of CPD and is designed to upskill professionals on topics such as project management, presentations, media skills, and tips for CVs and interviews. No matter what stage you are at in your career, we're here to support you.

Access the webinars at iema.net/how-to-series

'A Day in the Life' series

In February IEMA launches its 'A Day in the Life' series, which digitally shadows IEMA members, looking at their roles and innovative work in the environment and sustainability sector.

This exciting new video series will include representatives from Jacobs, WSP, RPS Group and Aecom among others, and aims to provide insight and inspiration – whether you are starting out or looking to progress to the next stage in your career.

The series will help bridge the gap between theory and practice, and will provide career development tips and guidance. Look out for more information in upcoming emails and on our social media channels, where there will be video previews of what each session will cover.

Find out more and book at www.iema.net/events

Ieadership, inspiring collaboration and cooperating to deliver sustainable innovation are some of the requirements the IEMA Skills Map lists as being key for a sustainability leader. Sustainability problems are complex and interlinked, so we can only achieve effective solutions through collaboration, working across disciplines, professions, sectors and issues.

COVID-19 has created a perfect storm for organisations, making the case for collaboration even more pressing. The IEMA *Build Back Better Mission Statement* made it clear that sector and cross-sector leadership and collaboration must be central to a green recovery. As a result, the pandemic has brought about collaborations at a pace that would have been considered unachievable only a few months ago.

Indeed, an increasing number of public and private sector organisations have come forward with commitments to carbon neutrality, while collaborative initiatives such as the Pledge to Net Zero (www.pledgetonetzero.org) have helped encourage bolder action on climate change.

"The environmental sector has to be a leader for its own environmental performance," says David Symons, UK director of sustainability at WSP and a case study provider to the IEMA Fellows Working Group on Collaboration for Corporate Sustainability. "Pledge to Net Zero provides a simple way for organisations to take action."

Fellows Working Group

The Fellows Working Group on Collaboration for Corporate Sustainability was formed in 2020 to develop a thought piece that would

highlight the value of these initiatives and provide case study perspectives and recommendations on how collaborative solutions at organisational level can help achieve systemic change for corporate sustainability. Meeting several times throughout the year, the group shared their experiences and helped reveal common stumbling blocks to collaborative systems transformation. These included competitive self-interest, lack of shared purpose and lack of trust.

Using lessons learnt in their own organisations, the group has highlighted four common drivers of collaboration, which have helped organisations to face these challenges together. These four drivers are: changing societal expectations and the need for ethics and purpose-driven organisations; technological developments; the changing regulatory environment and the growth of sustainable finance; and network organisations and the response to government efficacy.

Building on these, IEMA Fellows set out their own recommendations on the success factors and scalability of their collaboration in a range of case studies. Pulling these recommendations together, the resulting thought piece was released on 4 December with a webinar launch led by working group members.

The document supports sustainability professionals in driving positive change regardless of the organisation they work for – whether it is an SME, a multinational or a local authority. Containing a wide variety of case study inputs, it makes clear that perspectives on collaboration differ depending on the type of organisation or sector that an organisation operates in.

"The beauty of a locally built network is that it understands local nuances and culture in a way national and international networks cannot," says Green Arch Consulting founder Emma

Common cause



Marc Jourdan introduces a thought piece from the Fellows Working Group on Collaboration for Corporate Sustainability

Knight-Strong, a case study provider to the working group. "This is a long-term project that is fundamentally built on the foundation that the most effective way to drive sustainability in SMEs is to speak the right language, which is why the group governance includes a significant proportion of small business owners."

Member case studies

Covering issues from modern slavery to circular economies, the member case studies show that organisations venture into collaboration for different reasons, with each providing support specific to that organisation. In one case, it could be a form of knowledge exchange that progresses a specific topic; in another, it could be financial and technical support helping to bring a project to completion and eliminate food waste.

Due to the range of factors that must be considered, working group members have created a diagram (*Figure 1*) illustrating the thought process that sustainability professionals should go through when they think about collaboration, and how it should be approached at each stage. Using the UN Sustainable Development Goals as a tool for mapping the topics considered in the list of case studies, the working group has provided practitioners with a road map for successful collaborations that resolve sustainability dilemmas in their organisations.

The insights provided show the degree of positive and transformative change that can come from strategic collaboration with peers and other stakeholders across the value chain. Given sustainability's complexity and interconnected nature, collaboration is vital – both now and in the future.

"During the past 20 years I have had the privilege to work with an unbelievably diverse range of stakeholders (from The Wildlife

IMAGES GETTY

Figure 1: Collaboration Decision Diagram

WHO is driving the need for collaboration?	Government and civil society	Investors	Clients	Customers	Employees	Continual improvement
WHAT are the desired outcomes?	Influence (policy/papers etc)		Learning (bringing knowledge into your organisation)		Innovation (R&D: new products/services)	
	Teaching (sharing knowledge outside your organisation)			Change (practical outcomes in a specific context)		
WHY is collaboration being considered?	Networks		Efficiency	Business continuity		Morals
	Risk and compliance		Skills/tech	PR		Regulation
WHERE are the knowledge gaps? Where does the impact need to be targeted?	Technical		Governance	Risk		Finance
	Local		Regional	National		Global
HOW should collaboration be approached?	Sector-specific		Topic-specific		General	
WHEN should it be completed by?	Short-term (task and finish)		Medium-term (eg commitment over a few years to influencing change)		Long-term (eg policy change or sectoral evolution)	

"COVID-19 has created a perfect storm, making the case for collaboration even more pressing"

Trusts to BEIS), sharing objectives, creating solutions, and applying them to develop and deploy best practice," says working group chair Andy Whyte. "This IEMA thought piece clearly shows that I am not the only one to recognise this as an effective way of working. The diverse expertise, dedication and passion of

this working group highlights the benefits of organisational collaboration. What we have created (through collaboration) is a reference point for others to follow, allowing them to take the first steps on a journey of collaboration that will engage more and more people and organisations on the path to sustainability. Sharing best practice and working collaboratively towards the UN Sustainable Development Goals is far more efficient and effective than just tackling them as a 'lone champion' organisation."

The IEMA thought piece is available to download by IEMA members from the IEMA Reading Room, non-members can download it from the IEMA Shop. [T](#)

MARC JOURDAN is IEMA policy and engagement lead.

NEWREGULATIONS

THE LATEST

■ LEGISLATION ■ GUIDANCE ■ CONSULTATION



1 JANUARY 2021

Emissions trading

The Greenhouse Gas Emissions Trading Scheme Order 2020 is the UK successor to the EU Emissions Trading System (EU ETS). As the UK has left the European Union, it is no longer a participant of the EU ETS.

☞ cedr.ec/7ez



28 DECEMBER 2020

Energy efficiency

The Energy Performance of Buildings (England and Wales) (Amendment) Regulations 2020 update the requirements for assessments of air-conditioning systems. Inspections must now consider the capabilities of systems to optimise performance under typical operating conditions.

☞ cedr.ec/7f0



11 JANUARY 2021

Packaging waste

Producer Responsibility Obligations (Packaging Waste) (Amendment) Regulations 2020 have been published separately for each UK country to set new recycling targets for all materials, and to take into account the fact that no recovery targets are being set.

☞ cedr.ec/7f1



18 DECEMBER 2020

Waste

The Waste (Circular Economy) (Amendment) Regulations (Northern Ireland) 2020 implement the EU Circular Economy Package through amendments to domestic waste legislation, and includes changes to hazardous waste, waste management licensing and packaging waste.

☞ cedr.ec/7f4



14 FEBRUARY 2021

Dangerous substances

The Environmental Protection (Disposal of Polychlorinated Biphenyls and other Dangerous Substances) (Scotland) Amendment Regulations 2020 require that equipment containing PCBs of more than 0.005% and volumes greater than 0.05 dm³ should be identified and removed as soon as possible, and no later than 31 December 2025.

☞ cedr.ec/7f3



1 JANUARY 2021

Waste

Technical Guidance WM3: Waste Classification Guidance on the classification and assessment of waste has been updated to reflect changes to chemicals legislation as a result of the UK's exit from the EU on 31 December 2020.

☞ cedr.ec/7f5



14 DECEMBER 2020

Energy

A consultation seeks views on bringing forward the deadline for phasing out unabated coal-fired generation to 1 October 2024. This proposal is part of the government's drive to go further and faster on decarbonising the power sector, as it works towards net-zero by 2050.

☞ cedr.ec/7f6



14 DECEMBER 2020

Greenhouse gases

The Department for Business, Energy and Industrial Strategy is consulting on greenhouse gas removal methods and views on policy mechanisms that could incentivise and facilitate their development and deployment. This builds on its Vivid Economics study from 2019.

☞ cedr.ec/7f7

John Bruce dumped, buried and burned 25,000m³ of waste at Ridgeway Park Farm, Throckmorton



IN COURT

ILLEGAL WASTE

Waste "career criminal" ordered to pay £2.1m

A convicted waste crime offender has been ordered to pay £2,101,708 following a confiscation case at Worcester Crown Court, which concluded on 22 December 2020.

John Bruce, from Pershore, was ordered to pay the amount following a case brought by the Environment Agency under the Proceeds of Crime Act 2002. He has been set a three-month deadline to pay and faces seven years in jail if he fails to do so.

Bruce received a 26-month custodial sentence in May 2018 for operating an illegal waste site at Ridgeway Park Farm, Throckmorton between 2011 and 2014.

He was initially prosecuted for six offences where waste totalling 25,000m³ was being dumped, buried and burned at the farm. The court heard how Bruce had grown his business and invested in various properties, land and cars. He also owned a large selection of

expensive items of heavy plant, which he hired, bought and resold.

The judge ruled that a trust set up by Bruce was a sham, and that the money held in a bank account operated by it was for criminal benefit. It was also determined that a bank account operated by a proxy company was used to hide ongoing unlawful activity.

James Puzey, prosecuting counsel for the Agency, said: "The defendant is a dedicated career criminal who has ignored planning and environmental law to run a waste haulage and processing business."

A spokesperson for the Agency said: "This is one of the biggest orders the Environment Agency has gained. The case shows that we're not just content to prosecute those who run illegal waste sites, we'll also come after them to get back the profits they made from their illegal activities and to recoup taxpayers' money spent on pursuing them."

OTHER NEWS

UK sets out climate adaptation approach ahead of COP26

The government has set out the UK's approach to preparing for climate change effects at home and supporting those impacted overseas, fulfilling a Paris Agreement commitment.

Through an Adaptation Communication, the UK is setting out how it is enhancing climate change resilience and is one of the world's first countries to publish its plans ahead of COP26 in Glasgow this year.

The Communication will be submitted to the UN Framework Convention on Climate Change alongside the enhanced Nationally Determined Contribution and the Biennial Finance Communication. These set out the UK's commitments under the three pillars of the Paris Agreement – mitigation, adaptation and climate finance.

"We must adapt to these impacts at home and overseas," said environment minister Rebecca Pow. "That is why the UK is fulfilling a key commitment of the Paris Agreement and asking others to do the same both at the Climate Ambition Summit, and ahead of COP26 in Glasgow as we come together for our planet.

"We can't rest on our laurels, which is why, as well as implementing the bold actions set out, we're developing a long-term vision and framework to help us ensure resilience to climate risk up to 2050 and beyond."

Read the full Adaptation Communication at cedr.ec/7ey

CASE LAW

Judicial review application on kerosene waste refused

In *Safety-Kleen UK Ltd v Environment Agency*, the claimant applied for judicial review of an Agency decision regarding the point at which used kerosene became 'waste' under Directive 2008/98/EC.

Safety-Kleen provided engine cleaning services, using kerosene as a solvent. It collected used kerosene from customers' drums and replaced it with clean kerosene. The drums were taken to a depot, emptied into a reservoir and



rinsed out with used kerosene from the reservoir, to which the re-used kerosene was returned. From there the kerosene was pumped into 'dirty' tanks, cleaned, and placed into clean drums for customers. It was held that within the Directive, kerosene was 'waste' when it reached the 'dirty' tanks and remained so until it was cleaned.

The Agency decided that kerosene became waste when collected from customers, making it 'hazardous' under the Directive. It said the kerosene

was removed from customers' premises because it had become redundant, and its use to rinse out drums was different from its original purpose. Safety-Kleen said the Agency misunderstood the process because the used kerosene had the further purpose of rinsing the drums.

It was concluded that using the used kerosene to rinse out the drums was beneficial but not the same as customers' use of it, and was not part of a continuous beneficial use by the customer. It was also concluded that the Agency's judgment should be given considerable weight. The application for review was refused.

Jane Davidson's career has always been centred around caring for future generations, whether as minister for environment, sustainability and housing in the Welsh government, or as the nation's education secretary.

The former politician was instrumental in delivering the first piece of legislation in history to place regenerative and sustainable practices at the heart of government: the Well-being of Future Generations (Wales) Act 2015 – blazing a trail for the rest of the world.

Her latest book, *#futuregen: Lessons from a Small Country*, details how the ground-breaking Act came to be, and how other countries can move towards a more sustainable future.

A lightbulb moment

In July 2010, the UK's coalition government announced that it would stop funding the country's Sustainable Development Commission, despite having promised to be the "greenest government ever".

The move attracted widespread criticism from politicians and NGOs,

with environmentalist Jonathon Porritt describing the decision as an "act of ideological vandalism". Davidson was equally outraged. "It was the 10th anniversary of the commission, which was such an authoritative body, totally non-political, and so well respected – for it to be dispensed with overnight was just an extraordinary wake-up call for me," she explains. "The means for achieving the best evidence-based outcomes was removed, and it was at that point that I realised we needed legislation to protect the very idea of thinking sustainably into the future."

Devolution of powers 12 years earlier had led to the creation of the National Assembly for Wales, which proposed embedding sustainability in all of its activities through the Government of Wales Act 1998. "It always felt to me like a founding constitution, a constitution for devolution, for a new Wales, so I was incredibly proud that sustainability was at the heart of that," Davidson says. "If it had been successful, you may well have been having this conversation not with me, but with the architects of that original proposition."

Leading the world

Jane Davidson tells Chris Seekings how one small nation is harnessing the power of politics for sustainable development



"If democracy is going to be sustainable, it needs to find a framework that encourages future generations to vote and engage"

Failing to deliver

Davidson was one of the first members of the assembly, where she served as deputy speaker – a role she describes as "extraordinary". "We were the people creating all the laws of this new body, and we had fewer laws already in place than Scotland or Northern Ireland. We adopted the Brundtland definition of sustainability, and for over seven years wrestled with how to deliver while working with civil society."

After seven years as education minister, she became minister for environment and sustainability in 2007, and two years later was responsible for the Welsh government agreeing to make sustainable development its central organising principle, enshrined in the One Wales: One Planet scheme. "Once the proposition was agreed by the cabinet, I thought my job was done – but I was wrong; it didn't feel it had changed anything," Davidson says. "A report from the Wales Audit Office said that the civil service had not disseminated our political commitment throughout the whole organisation, and that we were still actively adding to Wales's ecological footprint, even though we had never technically failed in our duty to promote sustainable development in everything we did. I realised we were on the wrong playing field – we could technically comply with our duty, even if we didn't deliver effectively."

A new approach

The problem, she explains, was a lack of clarity when it came to what was to be delivered, how it was to be delivered and who was to deliver it. These lessons were learned during the next six years, finally culminating in the Well-being of Future Generations (Wales) Act 2015. "The 'who' is all the public services for the Welsh government, including the Welsh government itself, while the 'what' is our Seven Well-being Goals and how they are mapped against the Sustainable Development Goals (SDGs)," Davidson explains. "Finally, the 'how' was getting the mechanism for delivery into law – the Five Ways of Working: long-term

thinking, collaboration, integration, involvement and prevention."

The Act explicitly instructs the Welsh government and all its public services to integrate the seven goals and the five ways of working, looking always to maximise opportunities for sustainable outcomes for future generations. "It is a total break from the traditional way of thinking for government and public services – it's all about thinking upstream rather than downstream."

Davidson ended her ministerial career four years before the adoption of the Act, as she had planned, but her role in delivering the legislation is hard to overstate. "I think the best thing I did was to leave government, because the agenda had become so associated with me," she says. "When agendas become associated with individuals, there is a danger that that automatically sets up some kind of resistance. It's about using the opportunity of being the right person in the right place at the right time. It was civil society that originally set up the proposition that Wales promote sustainability in all of its activities, and proposing a more comprehensive piece of legislation felt like we had a *carpe diem* moment with the Act, after years of groundwork."

Uniquely Welsh

Wales remains the only country in the world with a legal mechanism to deliver on the SDGS, and Davidson believes size may be a contributing factor. "It might be because Wales is a nation within a nation, and that small countries can be more flexible – we have much more in common with New Zealand or Iceland than many larger countries."

She says that large nations or blocs such as the US or EU are in a much better position to deliver outcomes that will be beneficial for the whole globe, but that "there is something about being large enough to matter, and small enough to be flexible". Her work as minister for environment and sustainability saw the introduction of the plastic carrier bag charge in 2011, adopted by the rest of the UK four years later. Similarly, the

Interview



recycling targets she introduced in 2009 are among the best in the world, with many other countries looking at similar proposals. Davidson was the third most influential environmentalist in the UK for the *Independent on Sunday* in 2009, and was *Resource* magazine's number one and two individual in 2009 and 2010 for her work on waste.

"You can be a testbed when you are a country the size of Wales," she explains. "Scaling up can be a different proposition, but it's been interesting to see Canada, New Zealand and Europe move to the language of future generations – and president Biden in the US, too."

Culture, along with ecology, economy and society, are the central pillars of the Well-being of Future Generations Act, and Davidson believes this was key for attracting cross-party support. "The Act is a vision for a harmonious society that plays to the strengths of Wales, its people, languages, culture and landscape. There are many natural opportunities for new sustainable industries," she says. "Wales' legacy might be coal, iron and steel, but there

Davidson: the government must legislate to protect future generations

are now major opportunities for wind and water; it was one of the first UK sites for major offshore wind, is already at the cutting edge of hydroelectric power, and has major opportunities for tidal power. These natural low-carbon advantages need to be played to."

A good ancestor

COVID-19 has shown the importance of long-term thinking and the dangers of failing to take preventative action. The

"Wales is a nation within a nation, and small countries can be more flexible"

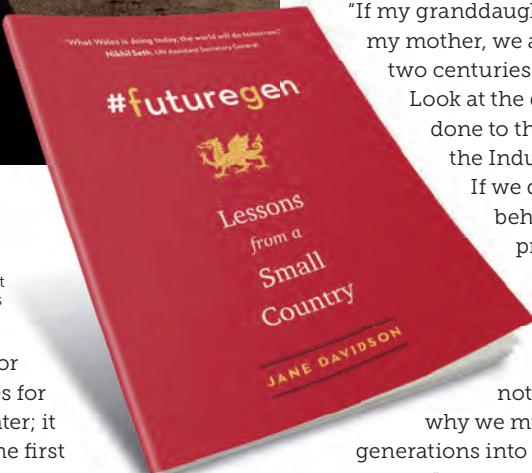
NHS adopted a pandemic simulation exercise in 2016, but no follow-up document was written detailing how to deal with such an outbreak. "The current reactive short-term role of politics is broken, and if democracy is going to be sustainable, it needs to find a framework that encourages future generations to vote and engage. Before COVID-19, when you looked at polling across the world, the most important issue was climate, and yet governments are still not doing enough.

Davidson's 90-year-old mother has been living with her since the start of the pandemic, and her daughter-in-law gave birth in lockdown last November.

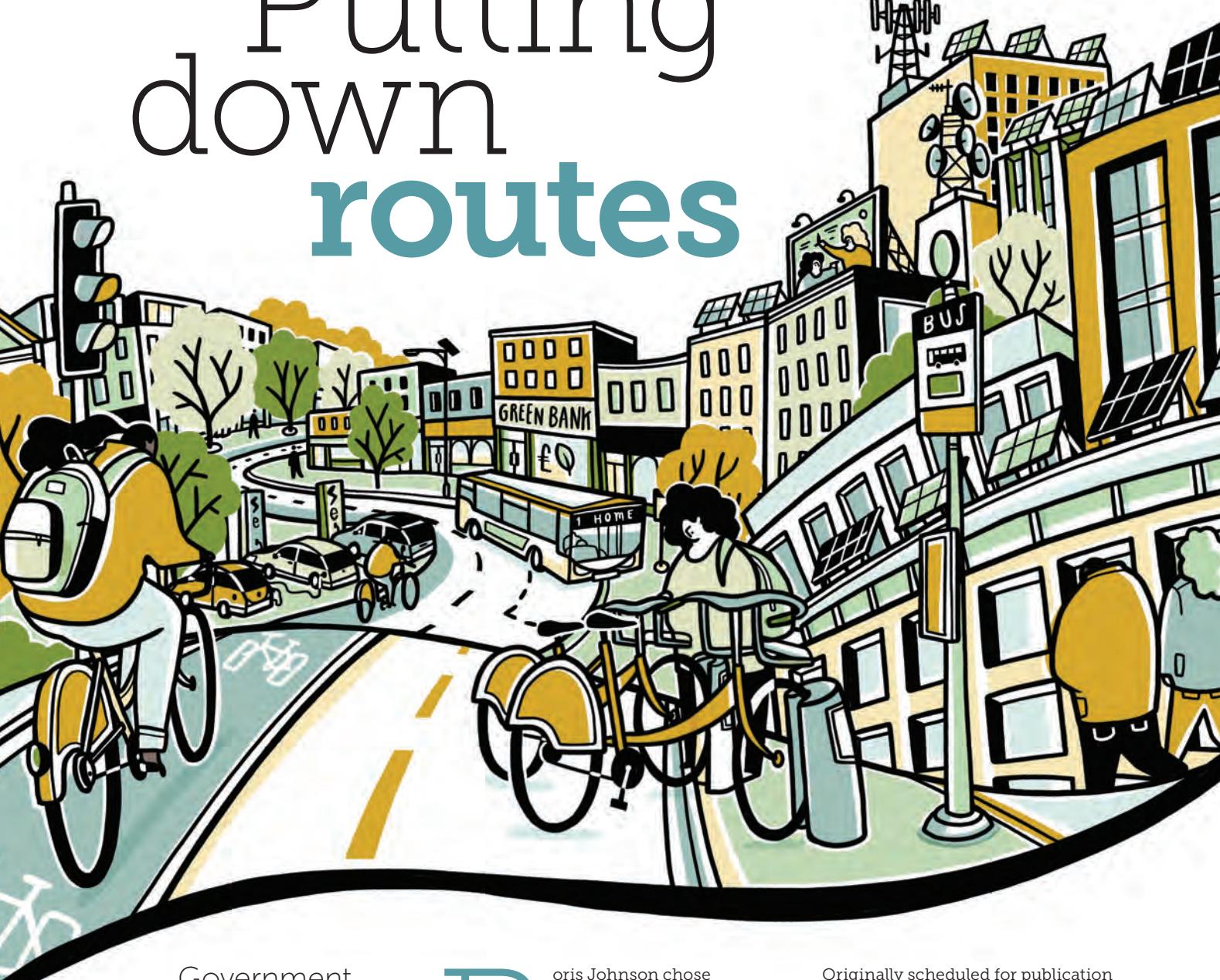
"If my granddaughter lives as long as my mother, we are looking at almost two centuries of life between them. Look at the damage we have done to the environment since the Industrial Revolution. If we don't change our behaviour now, the prospects for my new granddaughter – and every grandchild anywhere – are not good, which is why we must factor in future

generations into law and policy now," she says. "The younger that people are taught about climate change, the angrier they will rightly be with older generations. I want to be a good ancestor."

Davidson believes that the single most important thing the UK government can do, once agreeing to the Committee on Climate Change's sixth carbon budget, would be to create legislation to protect future generations. Leading on nationally determined contributions is also critically important, which is why she says the UK must seize the opportunity that comes with hosting the COP26 climate summit later this year. "The best thing to happen to the climate change debate in the UK is us being the host of COP26 – it could be another *carpe diem* moment, but we must turn rhetoric into rumbustious action." ^{TP}



Putting down routes



Government announcements on infrastructure reveal a direction of travel but key details are still unknown, says **Huw Morris**

Boris Johnson chose another optimistic metaphor when announcing the UK's National Infrastructure Strategy (NIS). In his introduction to the 100-page document, the prime minister says it "will put the calcium into our national bone structure and the collagen in our national skin tissue". But what is the NIS? What does it herald for the years ahead? And will it do what it says?

Originally scheduled for publication last March and finally unveiled in November alongside the Spending Review, the NIS sets out how £100bn will be spent on economic or 'networked' infrastructure – chiefly energy, transport, flood management and digital communications – during the financial year 2021–2022. The aim is to deliver "an infrastructure revolution" in line with net-zero and levelling up the country.

The government acknowledges that it is fully or partially following 80% of the



DETAILS, DETAILS, DETAILS

The NIS, Ten Point Plan and Spending Review are important steps, according to the Institution of Civil Engineers (ICE), but "a lot of detail is yet to be seen".

That detail will be in a panoply of forthcoming strategies and consultation documents, including:

- The Integrated Rail Plan, to be published by February, covers phase 2b of HS2, Northern Powerhouse Rail and other planned rail investment in the Midlands. We also expect to see the Union Connectivity Review this month.
- The Net Zero Review is set to report by May on how the government intends to approach distributional issues on decarbonising the economy. This will be accompanied by a Hydrogen Strategy.
- The Offshore Transmission Network Review report, on connecting offshore wind, will be published this year.
- The Transport Decarbonisation Plan is to be unveiled by May, and will set out the sector's contribution to carbon budgets and meeting net-zero.
- The Industrial Decarbonisation Strategy, on business models for hydrogen and carbon capture and storage to attract private investment, is to be published by November.
- The EV Charging Infrastructure Strategy is to be unveiled by November, as is the English Devolution and Local Recovery White Paper.
- A Cross-modal Freight Strategy and a 5G Supply Chain Diversification Strategy are expected in 2021, as is designation of new national parks and Areas of Outstanding Natural Beauty. The government also intends to develop a National Strategy for Disabled People to make the future infrastructure inclusive.

"This is an integrated challenge," says ICE director general Nick Baveystock. "We need joined-up plans to achieve change, for example to ensure polluting forms of transport get phased out as greener sources of electricity come online, alongside the introduction of measures to replace the evaporation of fuel duty receipts. Connecting these dots is an area where policymakers should now focus their effort and attention."

recommendations of the National Infrastructure Commission made in 2018 – ironic, given that one of the NIS's aims is to speed up major schemes.

The NIS incorporates the *Ten Point Plan for a Green Industrial Revolution* unveiled by Johnson earlier in November. Together with the Spending Review, it shows a direction of travel, but not a route map. Key issues on decarbonisation and the levelling up agenda must wait for a battery of other government announcements (see box, 'Details, details, details').

The NIS gives policy certainty in some areas, but others have been "kicked down the road", says David Diggle, a senior director at planning consultants Turley. "With any strategy, long-term commitment and review is necessary for success," he says. "It is encouraging to read that the NIS is only the first step of a 12-month process to deliver 15 separate papers on key areas of infrastructure policy to advance further development. These documents, we hope, will provide the absolute clarity

required to allow all component parts of the infrastructure industry, from developers to consultants and everyone in between, to come together with a clear set of guidelines to allow us to deliver this vision. Let's see what the next 12 months brings."

Other commentators offer caution. "Now that there is a strategy, the focus will move to how quickly these plans can be delivered," says Alison Ring, director for public sector at the Institute of Chartered Accountants in England and Wales. "This concern is clearly shared by the Office for Budget Responsibility, which increased its expectation of underspends against capital budgets and cut back on forecasts for capital expenditure by local authorities, as they retrench spending following the pandemic. The government will need to redress both the deliverability and local government capital funding if it is to fulfil its ambitions of an investment-led economic recovery and a levelling up across the country."

"The government will need to redress deliverability and local government capital funding"



Putting the NIS, Spending Review and Ten Point Plan together

Investment Bank: A national infrastructure bank will be set up in the North of England to plug the hole left by the European Investment Bank. Local authorities and metro mayors will bid for a share of a £4bn 'levelling up' fund meant to help cities, towns and regions improve infrastructure and skills.

Flooding: The NIS doubles the money ringfenced to combat flooding to £5.2bn. This will deliver 2,000 defence schemes to protect 336,000 properties over six years, and reduce national flood risk by up to 11% by 2027.

Transport: Controversially, the government backs a £27bn roads programme as well as support for HS2; Green Party MP Caroline Lucas argued that "the biggest ever investment in new roads does not deliver a greener future". The NIS confirms an accelerated rollout of electric vehicle (EV) charge points, with the government expecting a high-powered charging hub at every

REFORMING NATIONAL INFRASTRUCTURE PLANNING

Last summer the Treasury's Project Speed initiative looked at improving the lifecycle of infrastructure schemes. The result will be the launch of a National Infrastructure Planning Reform Programme. This aims to reinvigorate the Nationally Significant Infrastructure Planning (NSIP) regime, bring government departments together and deliver better and faster outcomes. Under the programme:

- Timescales should be slashed by up to 50% for

motorway service area by 2030. Some £950m will go to futureproof grid capacity for EVs along key roads and motorways, and a £90m local EV charging fund will support on-street charging. The Spending Review confirmed more than £5bn for public transport and cycling infrastructure.

Renewable energy: Around 65% of electricity generated in the UK will come from renewable sources by 2030, although the NIS says this is not a strict target. Floating offshore wind, solar and onshore wind can take part in the contracts for difference auctions.

Four carbon capture and storage clusters will be supported to the tune of £1bn by the end of the decade to meet the government's target of capturing 10 megatonnes of CO₂. A £240m Net-Zero Hydrogen Fund will tackle 'blue' hydrogen produced through CCS and 'green' hydrogen from electrolysis. The government is aiming for 5GW of low-carbon hydrogen capacity by 2030.

Nuclear: December's Energy White Paper outlined the government's intention to "bring at least one large scale nuclear to the point of final investment decision by the end of this parliament". Separately, the government will hold talks with EDF over the £20bn Sizewell C nuclear plant, with the focus on funding,

some projects entering the planning system from September 2023

- A project 'acceleration team' of planning experts is to speed up infrastructure schemes
- The regime's performance will be monitored, there will be co-ordination with government departments on reviewing National Policy Statements (NPSs), and 'effective engagement' with infrastructure departments, statutory consultees, the Planning Inspectorate and industry will be ensured.

The NIS suggests the government may review all NPSs. By May, the Infrastructure and Projects Authority will publish more details on the roadmap to delivering major schemes, while the government is also developing a national underground assets register.

All major infrastructure projects will have a design champion at board level by the end of this year, according to the NIS, and would be supported where appropriate by design panels.

The white paper suggests "additional nuclear" will be needed beyond Hinckley Point C, the only nuclear plant under construction. The Ten Point plan and the NIS pledged £525m towards large-scale nuclear and advanced nuclear research and development.

Buildings: By the 2030s, the UK needs to install 1.7m new heating systems a year, up from 30,000 currently. The NIS confirms the government's launch of a £320m Heat Networks Investment Project, but only says the Future Homes Standard will be introduced in "the shortest possible timeframe before 2025". The government aims to deliver 600,000 domestic heat pump installations by 2028 and will invest £81m into a hydrogen-powered neighbourhood and village. T



Climate change politics went into overdrive in 2019. Born out of a desire to limit warming to 1.5°C, and pushed hard by radical activist groups such as Extinction Rebellion, politicians raced to adopt net-zero targets. By the time Joe Biden takes control of the White House, most of the world's largest economies will have some type of net-zero target in place, representing well over 60% of global emissions.

These long-term targets are being supplemented by interim targets for 2030 and 2040. In late 2020, Boris Johnson committed the UK to reduce emissions by 68% by 2030, relative to 1990 levels. In 2021 the EU will endeavour to adopt a Climate Law committing the bloc to achieve reductions of "at least 55%" by 2030, and climate neutrality by 2050.

The problem is that these efforts are just targets. The UN Environment Programme's 2020 emissions gap analysis underlines the need for "strong near-term policies and action" to ensure interim and net-zero targets remain "feasible and credible". At present there is a yawning gap between long-term

targets and existing policies. New policies that reduce emissions from industry, transport and homes are urgently required. As Greta Thunberg put it, "distant hypothetical targets are being set, and big speeches are being given" – but when it comes to the action we need, "we are still in a state of complete denial". In its 2019 net-zero report, the Climate Change Committee (CCC) sounded a warning, stating that current UK policy was "insufficient for even the existing targets".

Boris Johnson's 10-point plan on the road to net-zero and the EU's 2019 European Green Deal contain myriad policy promises but are essentially vision statements. The UK has since published an energy white paper, and in 2021, the Treasury will release a net-zero review alongside government strategies on forestry, national infrastructure, industrial decarbonisation, aviation, heat and buildings. However, much more will be needed.

Andrew Jordan and **Brendan Moore** explain why climate policy must strike the right balance between durability and flexibility

For the long haul



Built to last

Current policy efforts are deficient on two grounds. First, there are not enough specific policies. Academic research such as Shaikh et al.'s 'Reduction in greenhouse gas emissions from national climate legislation' has revealed that although global adoption of climate laws grew rapidly before the Paris Summit, it has since tailed off alarmingly. The CCC returned to the matter in its sixth carbon budget report, devoting one of two background reports to setting new policies and concluding that the delivery of net-zero "requires major policy strengthening across the economy".

The second deficiency is the lack of policy durability. A durable policy is one that endures and is influential over time. Although there is no widely accepted minimum time threshold, it is often taken to be at least one electoral cycle, ideally two. However, in relation to a really long-term challenge such as climate change, even two electoral cycles is an insufficient threshold. Unlike the constant churn characterising many areas of policy development, climate policies must nurture a society-wide expectation that total decarbonisation has not only commenced, but will persist to the end of this century: a tall order.

In the past, too little policy has been durable. In our book *Durable by Design?* we document the constant changes that have affected EU policies on emissions trading, car emissions and biofuels since 1990, some of which have sapped investor confidence and confused consumers. In the UK, the Science and Technology Parliamentary Select Committee documented 10 key areas in which UK policy had "delayed, cut back or undermined carbon reductions".

The natural response to these two deficiencies is to make new policies as durable and 'locked in' as possible. This could be done by making targets legally binding, then backfilling them with new policies that contain more binding targets, pegged as far into the future as possible. More control could be taken out of politicians' hands and given to independent agencies such as the CCC.

In our view, though, this strategy risks making policy inflexible, in danger of being overtaken by new scientific information or technologies. Removing the opportunity to revise policies increases the odds of 'policy drift' – when policies struggle to keep up as the world changes around them.

Flexibility devices

If the ideal solution is policy that is both durable and flexible, how can the right balance be achieved in practice? In the past, the UK was locked into the EU's approach. Durability was facilitated by first establishing long-term targets, then putting together a suite of new policies to achieve them. Policymaking and target setting thus went hand in hand.

working parts, ranging from long-term high-level targets to the selection and calibration of specific policy instruments such as regulation. We call this approach 'active durability' – combining different policy elements to ensure the overall package (rather than any individual policy element) is durable enough to absorb some modifications and still accomplish desired targets.

The UK is no longer a member of the EU, and now has an opportunity to craft its own approach to balancing policy flexibility and durability. The building blocks will soon be in place: a binding net-zero target, an interim target for 2030 and a system of carbon budget setting overseen by the CCC. The next challenge is to find a way to tie these

"Constant changes to EU policies on emissions trading, car emissions and biofuels have sapped investor confidence and confused consumers"

Moreover, the task of formulating new proposals was passed to independent bodies such as the European Commission, supported by reporting from the independent European Environment Agency.

Flexibility was introduced via two routes. First, specific policies included review clauses that triggered a policy evaluation at a fixed point in time, leading to a new round of policy formulation. In *Durable by Design?* we call these 'flexibility devices'. These encourage formulators to regularly revisit and revise a policy's design without completely disrupting it. Second, broader policy packages were adjusted every time the EU set a new long-term policy objective. This process is under way right now; throughout 2021 the Commission will review EU climate policies to ensure they align with and support the bloc's net-zero target.

The EU approach makes a virtue of the fact that policy has many different

building blocks to the long list of policies referenced in the 10-point plan.

The UK could borrow from the EU's strategy ('active durability'), or invent its own way, to paraphrase the futurist Alvin Toffler, of 'thinking about the big policy things while doing the small things, so that all the small things continue to go in the right direction'. Whichever it selects, speed is of the essence. The 2020s will be a critical decade for climate change policy. T

More information

- Read the 10 areas of policy shortfall identified by the Science and Technology Parliamentary Select Committee at bit.ly/35m1ZqK

ANDREW JORDAN and **BRENDAN MOORE** are associate director and senior research associate respectively at the ESRC Centre for Climate Change and Social Transformations, and co-authors of *Durable by Design? Policy Feedback in a Changing Climate*

Taking account of the sustainability challenge

Robert Mostyn and **Graham Dalrymple** report on the growing need to choose products and services based not only on cost, but also on their lifetime ecological impact

Our impact on the planet is being tackled on several fronts. In recent years, there has been an increased focus on climate change and the need to reduce the emissions of greenhouse gases measured and reported as the amount of CO₂ equivalent emissions (CO₂e). However, when it comes to emissions associated with consuming products and services, there is little data available from manufacturers and providers.

One of the challenges is to understand better how we are consuming the earth's resources and the overall ecological cost to the planet. Our approach to reducing consumption and its environmental impact has been through traditional routes of legislation and enforcement, and financial incentives such as loans or grants or a reduction in costs.

Empowering the consumer

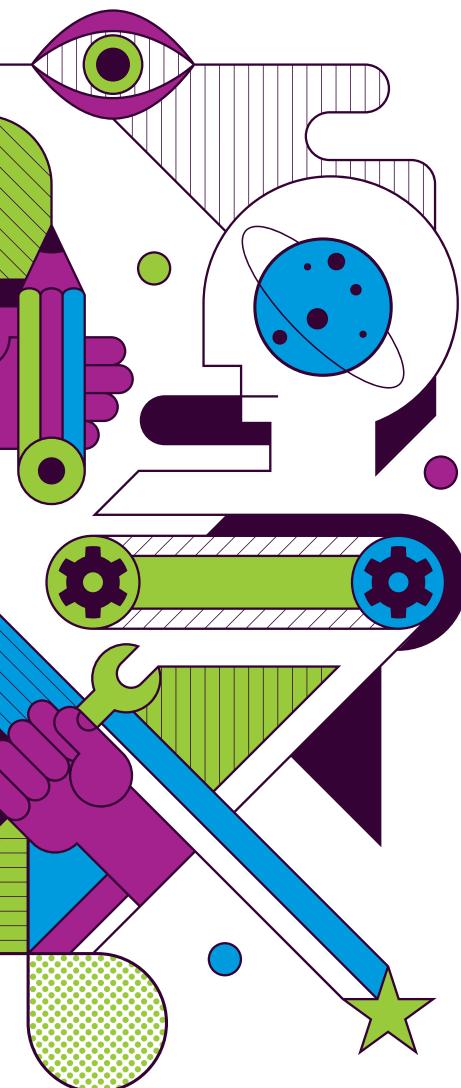
What if consumers could make buying choices based on the ecological cost of products and services? This would put the power to make these decisions in the hands of the consumer, rather than with the manufacturer or service provider.

There is a group of consumers who base their purchasing choices around the Lifestyle Of Health And Sustainability (LOHAS) demographic, which forms 8%-10% of the market. However, its power to help them make informed choices is limited by the lack of information about the lifetime environmental impact of the products and services they choose.

Research and development of a universal ecological accounting method was the subject of a European Commission research grant running from 2012-2015, involving nine consortium members with three

industrial partners, including The Boots Company, Ecover and an organic farmer. A software prototype of this method has now been developed. A dynamically calculated ecological cost (eco-cost) of a manufactured product can be produced from component products and sent to a customer automatically, based on the financial invoice issued to the customer from the financial accounting system. The eco-cost is then picked up by the customer and used in a subsequent eco-cost calculation to create an updated certificate for this stage of the supply chain, ready to be transmitted to the next customer.





Money talks

The dominant metric in the world is money. It is used to measure human activity at all levels of society, including the cost of global warming. What makes this metric so potent is the act of accounting for money at every business step as each company adds its value, resulting in a price for the final consumer. The basis of this measure is the double entry book-keeping standard. Two attributes combine to make this practice so effective: the unit of measure, and an accounting method where debit entries must equal credit entries.

An equivalent method for ecological accounting is being developed. The unit of measure is the eco-cost, and the method for accounting is a mass balance for all inputs and outputs to a

manufacturing operation. The inputs and outputs include all materials taken from nature, whether it's earth extracted for mining or oxygen from the atmosphere to burn fuel (and subsequent emission back to nature). Each business in a value chain receives an eco-cost for goods and services purchased. The eco-cost is entered into their eco-accounts. Each business reflects their business operations in the eco-accounting system so that as 'work is done', an eco-cost is calculated for the product being manufactured.

An equivalent to calculations is done for service-based businesses. The end result is an eco-cost for the product this company is going to sell to its customers. As customers are invoiced financially, the eco-cost for the purchased product is automatically sent to the customer.

Lifecycle inventory

The eco-accounting system is installed into a business's network and interacts with the financial accounting system via an application programming interface. The three fundamental steps, currently signalled in existing business systems, of 'buy goods, make goods and sell goods' has an eco-accounting equivalent: 'receive eco-cost, calculate eco-cost, send eco-cost'. This means that once the eco-accounting software has been configured, the eco-accounting function runs automatically. The only maintenance is keeping eco-cost calculations up to date as business processes change, and the validation of eco-cost calculations from an independent third party each year.

Some innovations here include:

- An incremental enhancement to the lifecycle inventory (LCI) that makes the whole method possible, the LCI becoming the eco-cost
- An ecological equivalent to double entry accounting is introduced that has been developed in software
- Dynamic calculation of eco-cost. As supply chains change, an authentic eco-cost is calculated automatically;
- Connected to existing business

systems automates the method – 90% of infrastructure is already in place;

- Individuals are the final customer where point of sale systems capture an individual's myEcoCost account details for the eco-cost of purchased items to get sent to; and
- The provision of personal sustainable budgets that are derived from planetary boundaries. An individual's cumulative eco-cost can be compared to a sustainable budget for a personal sustainability indicator. This indicator can be updated within minutes of a person's purchase (for example, buying a train ticket will update the figure on a personal device minutes later).

"The inputs and outputs include all materials taken from nature"

This method of eco-accounting is a comprehensive measurement of earth's resources. It is designed to capture all chemical compounds, not just greenhouse gases and water, so that other issues such as the nitrogen cycle and loss of biodiversity can be actively measured as well.

Using this approach, the ecological accounting method would run alongside financial accounting. This would allow consumers to make informed choices about the products and services they buy, allowing individuals to reduce their own impact on the planet. [①](#)

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*For more details, you can visit
www.myecocost.org/iema*



As professionals, we know the production and consumption of goods contributes enormously to our environmental impact. With the world's population estimated to exceed nine billion by 2050, and the global middle class expected to reach 5.3bn by 2030, consumption behaviour is expected to lead to increases in demand for food, water and energy by approximately 35%, 40% and 50% respectively by 2030 (bit.ly/3owYHZh). It is estimated that consumption accounts for 74% of Scotland's carbon footprint, and this only fell by 8% between 1998 and 2015, according to

the Scottish government's report *Scotland's Carbon Footprint: 1998-2015* (bit.ly/33BR3V5).

Our globalised economy has made communities reliant on the movement of goods and materials from around the world, resulting in significant carbon footprints. This also applies to the materials we collect for recycling, much of which is shipped elsewhere – in some cases to parts of the world that do not have the infrastructure to deal with it responsibly.

A circular economy could drive change: Zero Waste Scotland's *Corporate Plan* (bit.ly/37A7Bhs) states that actions to develop more circular economies could reduce Scotland's carbon footprint by a fifth by 2050.

World trade is expected to fall by between 13% and 32% in 2020 as a result of COVID-19. While in many ways this is depressing, the resulting reduction in emissions, and the changes to many working practices, may have created space in which we can consider the value of more circular business models.

Donna Wood, Brian Menzies and Terri Vogt look at examples of Scotland's circular economy in action, and discuss what it will take for this approach to be more widely adopted

Such models often involve reducing waste, reusing, repairing, remaking and finally recycling materials. A growing number of businesses are recognising the value this approach can add, both to themselves and to their customers.

Zero Waste Scotland's cities and regions programme is an example of an initiative supporting change; it works with local companies and individuals to help them develop more circular business models. Case studies from the Circular North-east programme in Aberdeen and Aberdeenshire show this (see box, right). In many cases, these business models rely on shorter, local supply chains that carry less risk than importing from abroad and are less susceptible to supply chain shocks.

Community benefits

Circular business models bring consumer and community benefits as well as business benefits. The repair and remanufacture economy is growing, and provides a reliable supply of local products. Scotland's 2016 circular economy strategy, *Making Things Last*, reported that 17,000 people in the nation were employed in remanufacturing, contributing £1.1bn to annual economic activity. It also stated that: "Across 16 manufacturing sub-sectors, there is the potential to create an additional £620m turnover and 5,700 new jobs by 2020."

XS Resources, a community interest company in north-east Scotland, is one example, collecting unwanted electricals and technology for re-use through the UK's Recycle Your Electricals campaign. Electrical waste is the fastest-growing waste stream in the world. Waste charity

Wrap estimates that re-using electrical equipment can save six times as much carbon as recycling it, and that hoarded household electricals cost the UK economy £370m per year in lost valuable raw materials such as gold, copper, aluminium and steel. Working with local charities and local authorities, XS Resources ensures appliances are kept in use for longer and provides lower-cost alternative to new items, as well as employment and volunteering opportunities. Items that cannot be re-used are recycled.

Another example is the Scotland Excel procurement framework, which enables local authorities across Scotland to buy pre-owned furniture through a charity provider network. This has increased

"There is significant opportunity for the circular economy to grow in construction, bioeconomy and capital projects"

furniture quality in temporary accommodation, reduced carbon emissions, and helped grow the third sector.

Looking to the future

These examples show that the circular economy presents new economic opportunities which can help us build a new, greener economy. In October 2020, Zero Waste Scotland released its report *The Future of Work*, which highlighted that nearly one in 10 Scottish jobs is already related to the

NORTH-EAST SCOTLAND: CASE STUDIES

Origin – developing local micro-circular economies to recycle plastic

Origin uses local plastic waste in the design and manufacture of new products, reducing pollution as well as associated carbon impacts from shipping. It also connects users to its product development by showcasing its design workflow and associated injection moulding process.

● **Origin says:** "We create 'micro-circular' economies within localised communities, with a heightened consumer buy-in that results from

transparency and accessibility. We believe that 'micro-circular' adds up to 'macro-impact'."

Legasea – promoting reuse through decommissioning

Legasea works in the oil and gas decommissioning sector as a subsea specialist. It realises the value of recovered subsea systems through disassembly to component parts, which can be refurbished, recertified and reused.

● **Legasea says:** "We help drive demand for reuse, both in the oil and gas industry and more widely, as companies seek to

reduce the carbon footprint of their operations accelerating the move towards net-zero."

KR Cladding – diverting waste from landfill

KR Cladding is developing a business model to produce remanufactured and recertified insulation products, sourced from demolished and refurbished buildings.

● **KR Cladding says:** "We struggled watching large amounts of waste steel cladding go to landfill and are looking to develop a new product stream to prevent this and add value to our business."

circular economy. Many of these are in core areas such as repairing and recycling goods, but there is significant opportunity for growth in construction, bioeconomy and capital projects, including decommissioning oil rigs and wind farms.

A number of start-ups are recognising these opportunities. Innovation is taking place: insect farming is generating feed from food waste, which reduces the need to import crops such as soy; chemicals are being extracted from algae or seaweed to replace oil-derived alternatives; crops are being grown for materials such as insulation.

Despite this, there are still challenges when it comes to mainstreaming many circular products. Consumer concerns remain about using refurbished or recycled products over new ones, and recycled materials must compete with the low cost of 'virgin' alternatives. For existing companies, there is the challenge of facilitating change; you might be part of a complex supply chain, with limited control over materials sourcing or aspects such as packaging. Organisations are starting to address this by

incorporating circular economy requirements into procurement.

Programmes such as Zero Waste Scotland's circular economy cities and regions programme and the London Waste and Recycling Board's business support programme have been important in raising awareness and supporting businesses to move towards a circular economy.

However, we need bolder fiscal, policy and regulatory changes if we are to accelerate uptake and enable faster commercialisation of the ideas that are being developed. [①](#)

More information

● Information about ZWS support for companies looking to make changes, or for those looking to start up a circular business, can be found at zerowastescotland.org.uk/circular-economy/investment-fund

DONNA WOOD is project manager at XS Resources.

BRIAN MENZIES, MIEMA CENV, is director at XS Resources and Enscape Consulting.

TERRI VOGT, MIEMA CENV, is project manager at Circular Economy North-east.

Out of office



David Burrows reports on how working patterns changed in 2020, the impact on worker wellbeing, and how employers can support those who are working from home

Sales of flour have surged this year, according to statistics published by Nielsen. In the UK, US and Italy they were up more than 40% year-on-year, as tweets encouraged people to make the most of lockdown by baking bread and cakes.

Freed from their average 65-minute commute, some probably have. Others may have taken up running, dusted off their 'learn Spanish' CDs or spent more time with family. Slowly but surely, however, the novelty has worn off. Indeed, while this period of enforced home working may have begun with talk of 'banana bread benefits' in early April, the narrative nine months on is one of burnout.

"What really stands out is the number of people saying: 'I am exhausted,'" says Gemma Dale, wellbeing manager at the University of Manchester, lecturer at Liverpool John Moores University and a human resources consultant. "We are predicting a mental health crisis."

Perhaps this newfound freedom to work wherever, whenever, is not all it was cracked up to be. How are organisations helping to keep staff stress-free?

At home, trying to work

First, an important point: this has not been a normal home working experience. As Zero Waste Scotland chief executive Iain Gulland noted in an interview with *Transform* last year: "This period is not 'working from home'; this is 'at home in a pandemic, trying to work'." Personal restrictions, combined with school closures, have heightened levels of anxiety, isolation and stress.

For many, working from home is not the panacea some claimed it would be. During the pandemic, working days have increased across Europe, North America and the Middle East by almost 49 minutes, according to a recent

study by the US nonprofit National Bureau of Economic Research. This was "partly due to increases in emails sent after business hours", the experts wrote. (Less time is being spent in meetings, though).

It is unclear whether this increase is a benefit or drawback to employee wellbeing. The flexibility to choose working hours may be affording staff some freedom and allowing them to balance household and personal demands. On the flip side, the change may be a consequence of a "blurred distinction between work and personal life".

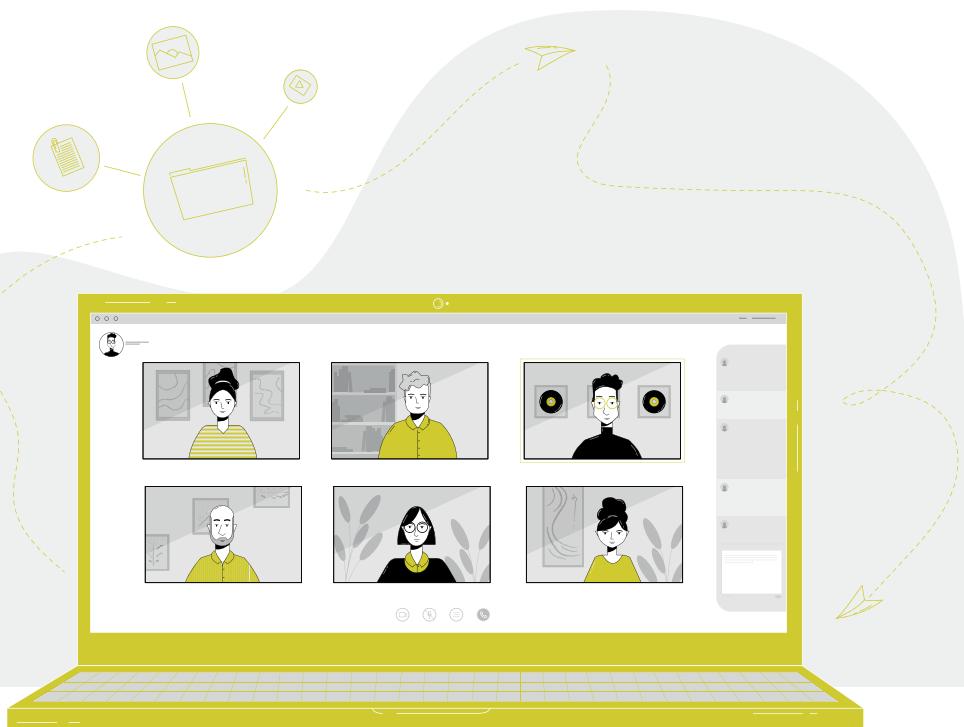
'Digital presenteeism' is a problem. Suddenly, it's fine to request a meeting outside the nine-to-five. Some people might want to work early or late so they can, for example, take a longer lunch or do the school run; others won't. "People are at home, but that doesn't mean they are always at work – and yet there's a temptation to feel that way," says Roberta Cucchiaro, global product marketing manager at ManpowerGroup Talent Solutions.

In a December *Harvard Business Review* article, 'Where did the commute time go?', academics detailed new research showing what Americans are doing with the time they have gained from not commuting. Those with no managerial responsibilities allocated much of it to personal activities – and good for them. However, managers just worked longer hours and spent more time in meetings – in fact, their working day has increased by 56 minutes. As Tomas Chamorro-Premuzic, psychologist and chief talent scientist at ManpowerGroup put it recently: "We used to work from home, now we live at work."

Building a new work culture

Manpower's recent report *The future for workers, by workers* (go.manpowergroup.com/futureforworkers), based on data from 8,000 workers in eight countries, showed that more than 30% of workers are now combining teacher, employee and caregiver roles – all while working longer days. Women have been disproportionately affected, and companies need to think carefully about this.

Chamorro-Premuzic notes that remote or hybrid working approaches can mean things that "men have been better at" – presenteeism and politicking, "sucking up to the boss" – fall away. However, some data has shown that men are the first to return to the workplace



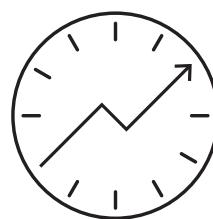
"We used to work from home, now we live at work"

because "they see an opportunity to exploit politics by being in the office". Hopefully, he continues, organisations will use the opportunity created by the pandemic to "decontaminate" these politics from their culture, move past presenteeism and learn to "evaluate what people contribute to their teams and the organisation".

None of this will be easy, but those that shy away from it will be found out. "Employees will remember how their employers have behaved during this crisis," says Cucchiaro. Asking staff what they want will be key. The consultancy Arcadis has completed internal surveys every four months so that it can track how staff are feeling and adapt accordingly. The longer people stayed at home, the more strain there was on family relationships.

Changes to working patterns have also fuelled anxiety among workers around how things might have changed, explains Karen Meager, an organisational psychologist and co-founder of Monkey Puzzle Training and Consultancy. "What has happened to their role, did they perform well enough, how did they get on with their line manager? These are the types of concerns that, if left to fester, will impact on wellbeing levels," she says.

Another apparent trend picked up in the Manpower research is that members of the



49

The average working day has increased by 49 minutes during the pandemic

Corporate social responsibility

"It's perfectly okay to say 'I'm struggling', because we all are"

younger generation ('Gen Z') are more eager to return to the office. They have, for example missed out on some of what Brad Blundell, managing director at consultancy Anthesis, calls the "over-the-workstation support – the mentoring and coaching support that informally happens in an office". Changes are being made and programmes adapted so that, from top to bottom, staff have the skills to work remotely. The World Economic Forum's *Future of Jobs* report, published in October, reported that 34% of all employers were taking steps to create a sense of community among employees online and were looking to tackle wellbeing challenges posed by remote work.

Silver linings

There is, needless to say, no silver bullet. "We are all feeling our way in terms of what 'good' looks like," says IEMA CEO Sarah Mukherjee. Mukherjee took up her post in June, during the first lockdown. She tells me that she doesn't feel any less part of the organisation than she would if she were in the Lincoln office two or three days a week; in fact, she feels she's had more time to meet staff and get to know them better. Video calls "take the formality out of conversations" she says (as her new dog barks in the background).

This is a point others make: in some ways, video calls have brought us closer together. CEOs have become dog owners taking calls in their kitchens. Journalists have become fathers. Inhibition – and attire – has loosened.

The pandemic has also emboldened businesses to try working patterns they'd previously been afraid to. "We are connecting and being innovative," says Lucy England, people director at Arcadis UK & Ireland. She is now able to "push boundaries" and be "more agile", and has seen that line managers who were reluctant to allow home working now want to lead in a different way. "Clients who were used to seeing someone five days a week also realised their service wasn't impacted."

Do people still want to work from home in



the long term? Yes. UK research in June by Sodexo, which provides catering and other services to corporates, showed that 79% wanted to continue working from home for at least part of the week. By October, this had increased to 88%. As Cucchiaro suggests, the pandemic has seen us "go from a world in which we had to beg to work from home to one where we were forced to", and for many, this has been "empowering".

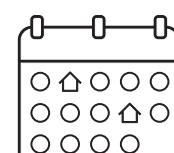
There are hopes that this will lead to staff talking more about their feelings. According to Accenture, 59% of employees in small companies and 24% in large organisations in the UK don't talk openly about mental health in their workplace. Mental health charity Mind recently warned of a "second pandemic" as it released data showing that the number of people experiencing a mental health crisis had reached record levels – unsurprising during a pandemic that is taking lives and livelihoods. "It's perfectly okay to say 'I'm struggling,'" says Mukherjee, "because we all are." T

DAVID BURROWS is a researcher and freelance writer.



30%

More than 30% of workers are combining teacher, employee and caregiver roles



88%

88% of employees would like to continue home working for at least part of the week

How green is your garden?

Simon Jones says the horticulturalist industry can help counter the climate crisis by looking at its own practices

Horticulturists produce and grow plants, conserve rare and endangered flora, and cultivate places of cultural and scientific significance – so it could be argued that we are conscious of our environmental impact.

What is not in question here are the important functional roles that plants play within global ecosystems – whether that be their restorative properties post-fen peat extraction, sand oil reclamation in boreal ecosystems, or even the role of Saharan desert dust in providing nutrients to the Amazon basin's tropical forests.

However, once we scratch the surface, horticulture has few intentionally positive environmental impacts. Our gardens and garden centres are awash with plastic, in pots, tools, machinery and more, which contributes to the overconsumption of a finite resource and wreaks devastation upon the planet.

The environmental impact of growing plants from seed is almost linear in their embodied carbon production, raw materials use, and harmful waste products such as greenhouse gases and effluent. They have environmental mitigation value in terms of their carbon sink or sequestration properties, but many use unsustainable peat as a growing medium.

A thorny issue

The embodied carbon footprint of 21st-century living is mind-blowing. Take a Valentine's Day red rose. There are not many roses in bloom on 14 February in the UK, so they are generally imported. A single red rose has a carbon footprint of 2.1kg CO₂e – the same as 4.5kg of bananas. At Heathrow airport in 2017, around eight million roses were imported, wrapped in multiple layers of plastic packaging, before being distributed by refrigerated land freight, sold, kept for a few days and then, perhaps, recycled and composted by local authorities.

Global demand sees 250m roses bought on Valentine's Day each year, with Ethiopia growing at least a quarter due to its climate,

cheaper land and labour, and low levels of regulation. This could be seen as human exploitation; the negative environmental impact affecting the country in terms of water for irrigation and runoff, infrastructure, transportation, waste, plastic packaging, pesticides and fertiliser.

Globalised food crops often travel huge distances; they could be produced locally in a bio-regional manner, disrupting the systems which ensure that food lorries account for more than a fifth of all traffic on our roads. The UK's top five food retailers have an annual turnover of £30bn, utilising land owned by only 0.5% of UK citizens. This does not exactly give the impression of food security. These figures become even more worrying when we consider that the UK wastes at least 50% of all food purchased. Food insecurity is not a foreign issue, and the problem will become greater; the National Farmers Union has stated that by the mid 2040s the UK will only be able to feed 53% of its population.

Radical shift

With food insecurity in mind, horticulture must radically shift away from unsustainable gardening resources and towards local food production, flood mitigation, clean air generation, habitat creation, contaminated land regeneration, and organic waste recycling that uses vermiculture, not heavy industry.

To impress the absolute need for change into our collective will and professional disciplines, I would suggest the creation of a national framework for sustainable horticulture that focuses on horticultural education in the national curriculum; carbon-neutrality in all plant production, including crops; and how horticulture can address social issues.

The horticultural industry can ensure future generations possess the ability to grow plants and mitigate the risks of food insecurity. This knowledge is part of the solution to complex societal issues in a changing climate. 

"A single red rose has a carbon footprint of 2.1kg CO₂e"





The SEC Glasgow will host the COP26 from 1-12 November

We are approaching COP26 – a pivotal event for climate action, the planet and, unquestionably, humanity. The science base has hardened and evidence from the Intergovernmental Panel on Climate Change shows that there is a clear imperative for a rapid transition during this decade. However, the upheaval of the COVID-19 pandemic has led to 'COP uncertainty'.

Some have suggested that a smaller, streamlined COP should be held, limited to critical decision-making commitments and driving progress on the Paris rulebook. Will the wider stakeholder community, with whom IEMA has increasingly engaged, see COP26 events run as virtual sessions and opened up to a huge global audience? Could this wider climate action community bring a momentum to the COP that can feed into international decision-making?

At COP26 we will need to see progress and visible commitments at real scale and pace. Campaigns such as Race to Zero are providing a society-wide movement that could push global leaders towards strong commitments. Changing the politics in the US is not insignificant, but would complete the global jigsaw puzzle that now sees all nations 'on board'. The Paris Agreement itself is recognised as being 'politically smart', and if the political will is there, the framework is ready to help realise the Agreement's ambition. Is a global political shift now possible? A successful formula was found at Paris, and all eyes are on Glasgow. [†]

NICK BLYTH, FIEMA, IEMA policy lead and convener of the ISO (TMB) Climate Change Coordination Committee

The delayed 26th UN Climate Change Conference is an opportunity to turn the Paris Agreement's ambition into action

What outcomes would you like to see from COP26?



What do you hope to see achieved at COP26, and what do you think could pose problems? To publish your views, contact features@iema_transform.com

The big question



LOUISE PRYOR

President-elect, IFoA; chair, London Climate Change Partnership; director, Ecology Building Society

"The role of finance will be a key theme of the summit"

COP26 is an opportunity to manage climate change risks effectively – to move from talking about them to taking action. We need long-term policy frameworks so all actors can get behind solutions and pull in the same direction. We need to be sure we are working on adaptation to climate change that has already happened, as well as mitigating future change.

The role of finance and the financial sector will be a key theme of the summit. COP26 finance advisor Mark Carney is clear that companies and investors must have a plan for net-zero, to achieve a just transition. Central to these plans will be disclosure of climate-related risk, in line with Taskforce on Climate-related Financial Disclosure recommendations. Last year, IFoA and IEMA members developed A user guide to climate-related financial disclosures (bit.ly/3oGd4uL), outlining how stakeholders can understand companies' disclosures and suggesting follow-up questions.

I would like COP26 to be the impetus for all finance to become green finance, with actuaries and other finance professionals playing their part in partnership with a broad range of stakeholders.

This year, we've seen the difficulties of a global crisis. Climate change is more far-reaching and long lasting than any pandemic – global collaboration is more important than ever.



STEVE MALKIN

CEO and founder of The Planet Mark

"We need a regulatory framework for the business community"

The biggest challenge is the perception that defeating climate change is a long-term goal. The 2015 Paris Agreement and UN Sustainable Development Goals provide a framework for halving emissions by 2030. We cannot wait until 2050, and must persuade countries with longer term targets to bring their ambitions forward. If COVID-19 has taught us anything, it's that governments need to listen to science, learn from the people and act urgently.

The appointment of Alok Sharma to work full-time on COP26, and climate change UN special envoy Mark Carney's role as advisor to the prime minister, is a sign the UK government takes this seriously, but it needs to provide a regulatory framework for the business community. Carney's proposal that banks, insurers and investors can profit from "changing consumer preferences and new climate policies" is a step forward in transitioning to a zero-carbon, regenerative economy.

We need to deliver climate legislation across nations. This will help us accelerate funding and business commitments to meet these goals, and deliver the necessary innovation and sustainable growth.

My hope is that COP26 leads to a greater understanding of how we are connected to the natural world, and how solutions harmonise the best of people, technology and nature.



WANJIRA MATHAI

Vice president and regional director for Africa, World Resources Institute

"We must focus on getting commitment on adaptation"

The adaptation agenda is the most important one for Africa, and we must focus on building and investing resources and getting commitment. The biggest challenge has been the quantity of resources going into adaptation, the quality and integrity of those resources, and accounting for climate finance and its impact.

COVID-19 has shown that when push comes to shove, equity and multilateralism are first to evaporate. We need to work on that. Most developing countries are not responsible for the emissions we are seeing and their impacts.

There must be a call to recommit to resolving article 7 within the Paris Agreement, which concerns adaptation. There was a commitment of \$100bn a year for adaptation by 2020, which was not met; by 2020 it was supposed to rise further. The 2020-2025 targets need to see those commitments made and met.

A lot of developed countries have committed to net-zero by 2050, but that number needs to rise, especially among higher emitters. We also need countries to show how they will get there. Long-term commitments need to be matched by short-term Nationally Determined Contributions – five-year chunks of commitment that set the trajectory for the net-zero target.

Those are my hopes – big hopes, but these are big times.

CONNECT

SOCIAL AND COMMUNITY NEWS FROM IEMA



Casting shadows

Matt Tompsett explains his concept of the 'carbon shadow', and why it should prompt us to take personal action to combat climate change

I watched my children opening their Christmas presents, blissfully unaware of the energy and resources that had gone into the production and transportation of every gift, and found myself contemplating the carbon footprint of all presents from Christmases past – and Christmases yet to come.

I started to visualise not only my children's carbon footprint, but also their 'carbon shadow'. If their carbon footprint represents the amount of CO₂ already

released into the atmosphere as a result of their consumption and activities, their carbon shadow would represent the carbon they are yet to consume.

At the moment we are born we have no carbon footprint, but we all have a carbon shadow, which will vary depending on where we're born: the carbon shadow of a new-born baby in North America will be almost 20 times bigger than that of a new-born baby in some developing countries. It will also vary depending on our upbringing and

"We all have a carbon shadow, which will vary"

lifestyle – how much meat we eat, how many holidays we go on, which cars we drive. As soon as a baby starts to consume, their carbon shadow starts to shrink and their carbon footprint starts to grow.

The carbon shadow of children today will be impacted by government legislation, business commitments and technological innovation. China has committed to being carbon-neutral by 2060; the new US administration, the EU and the UK have set 2050 net-zero carbon targets; and the UK has committed to banning production of cars run on fossil fuels by 2030. In addition, the UK Sustainable Aviation coalition has committed to achieve net-zero carbon emissions by 2050.

What will be my children's quality of life when they are adults? Consumption is directly linked to our quality of life, but its carbon cost affects health and wellbeing through extreme weather events and wildfires, decreased air quality, and resource, food and water scarcity. The quality of life we enjoy today is ruining that of our children.

I'm in my early 40s, so about halfway through my life, and see my carbon footprint and shadow as being roughly the same size as each other. I don't think we can wait for government or business action, and have already made changes: I have switched to a hybrid car and a renewable energy provider, given up eating red meat, and eat a plant-based diet four days a week. We all need to make changes now to reduce our carbon shadows. **T**

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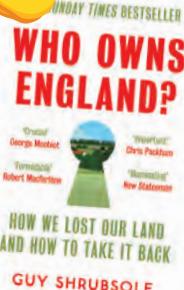
Late post but really loved reading the Sep edition of @IEMA_Transform. Great articles from @CraigBennett3 @volansjohn & others. Thank you @iemonet for a very well-rounded & well collated edition #sustainability #environment #economy #society @DASMEGHNA



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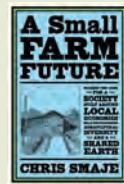


Yay! My review of the brilliant #WhoOwnsEngland by @guyshrubsole has been published in this month's @IEMA_Transform. Find out why I believe this book is essential reading for sustainability professionals. @MAREKBIDWELL



The reading room

New books to be inspired by...



A Small Farm Future: Making the case for a society built around local economies, self-provisioning, agricultural diversity, and a shared earth
Chris Smaje

The COVID-19 pandemic has shown the fragility of our globalised food system. We have seen how important farmers are – and how scary it can be when supply chains break down. This book plants a flag at the intersection between economics, agriculture and society during a time of immense crisis, and makes the case for organising human societies around small-scale, local and ecological farming in order to meet the environmental and political challenges of our times.



Bringing Back the Beaver: The story of one man's quest to rewild Britain's waterways
Derek Gow

Farmer-turned-ecologist Derek Gow gives a first-hand account of how rewilding beavers into the UK landscape is the single most dramatic and subversive nature conservation act of the modern era. In the face of opposition from many quarters, he imported, quarantined and assisted the re-establishment of beavers in waterways across England and Scotland. The book makes a passionate case for why the return of one of nature's great problem-solvers will be critical as part of a sustainable fix for the UK's flood problems, while creating essential landscapes that enable the UK's wildlife to thrive.

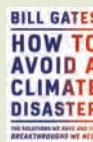
COMING SOON...



The Nature of the Future
Under a White Sky: The nature of the future
Elizabeth Kolbert
(Feb 2021)



The Data Detective: Ten easy rules to make sense of statistics
Tim Harford
(Feb 2021)



BILL GATES
HOW TO AVOID A CLIMATE DISASTER
Bill Gates
(Feb 2021)



The New Climate War: The fight to take back our planet
Michael E. Mann (Feb 2021)

The READING ROOM would like to hear from IEMA's many industry professionals and luminaries about what you are reading and which books you highly recommend. What has informed your thinking? Get in contact at

features@iema-transform.com



@LORDREDESDALE

Myself and @lorddeben last year at @EMEXLONDON on the @iemonet stand. I for one have really missed face to face live events this year, but here's to them being back next year. #liveevents #energycommunity #sustainability #environment



Why did you become an environment and sustainability professional?

I wanted to do something meaningful that motivated me and used my talents to make a difference.

What was your first job in this field?

As a management consultant with Accenture, where I specialised in organisational change and technology innovation. When I saw the impact I could have in the third sector, I became

passionate about working with these clients and my career grew from there.

How did you get your first role?

I took a secondment to work with Oxfam on an organisational change project to restructure its IT department and 'green' its IT strategy.

What does your current role involve?

I lead Amazon in the Community for Europe – with the mission to "harness Amazon's unique spirit of innovation, limitless grit, and infinite heart to help build strong communities".

How has your role changed/progressed over the past few years?

My role changes constantly, as Amazon's culture is built around solving 'impossible' problems and making a difference using a more hands-on approach than traditional corporate philanthropy.

What's the best part of your work?

I work hard with my fellow Amazonians to dive deep with our community partners and find solutions to the world's most pressing problems.



CAREER PROFILE

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

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

Working part-time in the corporate world and part-time on an eco-friendly smallholding with my family, constantly improving how I 'live my best life' within planetary boundaries.

What advice would you give to someone entering the profession?

Follow your passion because it will keep you motivated. Surround yourself with people who give you energy. Be clear about the impact you want to have, and keep focus.

How do you use the IEMA Skills Map?

I was part of the consultation group that helped to develop the Skills Map and think it's a great way to build on your strengths as a change agent.

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

Mother, eco-warrior, STEMivist.

What motivates you?

Mentoring and coaching others.

Tackling difficult projects and solving complex problems.

Coming up with creative ideas to improve something.

Learning new things.

What would be your personal motto?

"Dewys bewnans", which is Cornish for "embrace life".

Greatest risk you have ever taken?

Moving with my husband and young children to Kenya for a year to work on addressing gender-based violence in **urban slums**.

If you could go back in history, who would you like to meet?

Kenyan social, environmental and political activist

Wangari Maathai – the first African woman to win the Nobel Peace Prize. ^T





3–4 FEBRUARY

CONFERENCE

Partner event: Trees, People and the Built Environment 4 International Urban Trees Research Conference

Trees, People and the Built Environment sees researchers from across the globe showcase their work in urban greenspace. This is an online conference.

☞ [Book at www.charteredforesters.org/event/tpbe4](http://www.charteredforesters.org/event/tpbe4)



DATES FOR YOUR DIARY

iema.net/events

11 FEBRUARY 9AM–9:45AM

WEBINAR

How to: Tell stories that stir hearts, move minds and make a lasting impact

How do you effectively communicate environment and sustainability needs to spark change? This session is designed to give professionals the skills and confidence needed to make a powerful case.

☞ [Register at bit.ly/3byWrNU](http://bit.ly/3byWrNU)

5 FEBRUARY 12:30PM–1:30PM

WEBINAR

Pillars of Environmental Auditing: the core competencies of planning, scoping and resourcing

In order to ensure audits are being carried out properly, it is important to know that the auditors are competent. But what does that mean? Join this webinar for to find out.

☞ [Register at bit.ly/2Lq2ycy](http://bit.ly/2Lq2ycy)

11 FEBRUARY

CONFERENCE

Partner event: Managing Plastic Waste Digital Conference

20% discount available to IEMA members:
IEMA – Affinity Partnerships

This Digital Conference will help delegates develop and implement strategies for reducing polluting plastic waste and making products more durable and easier to re-use and recycle.

☞ [Book at bit.ly/3q7chmG](http://bit.ly/3q7chmG)

9 FEBRUARY 12:30PM–1:30PM

WEBINAR

A Day in the Life of a graduate working on environmental impact assessment

Join the first episode of our new 'A Day in the Life' series, where we will virtually shadow graduates in environmental impact assessment jobs, helping students and graduates bridge the gap between theory and practice.

☞ [Register at bit.ly/39iKHvS](http://bit.ly/39iKHvS)

23 FEBRUARY 12:30PM–1:30PM

WEBINAR

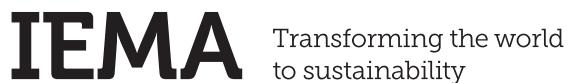
A Day in the Life of a practitioner working on environmental impact assessment

Join our second episode of our 'A Day in the Life' series, where we will virtually shadow three practitioners in their environmental impact assessment jobs.

☞ [Register at bit.ly/3ie3kW8](http://bit.ly/3ie3kW8)

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