

TRANSFORM

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Economy ●
Society ●

FOR ENVIRONMENT AND SUSTAINABILITY PROFESSIONALS

Jun/Jul 2021
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A sense of urgency

COVID-19's lessons for those fighting climate change

PLUS

Fossil fools Michael E Mann on big business's delay tactics

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bit.ly/3uL9mmr



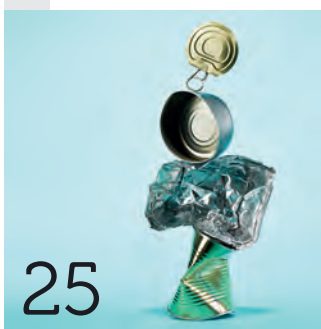
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MARTIN BAXTER, IEMA DIRECTOR OF POLICY AND EXTERNAL AFFAIRS

Facing the future

Hello, and welcome to another edition of *Transform*. It is now more than a year since we moved the whole of the IEMA team to home working in response to the COVID-19 pandemic. Everyone responded magnificently and has rapidly adapted to new ways of working and to changes in lifestyle. Across the organisation we saw a significant drop in business travel, which in 2019 was a large part of IEMA's carbon footprint. On page 22, Huw Morris explores the lessons that the COVID-19 pandemic can teach us about tackling climate change.

We recently recorded our first IEMA podcast, in which I joined Alec Tang, director of sustainability at Kāinga Or, and our CEO Sarah Mukherjee for a fascinating conversation about how the pandemic has affected our profession, and how we can build back better. Darren White discusses some of the sustainability issues facing the construction sector on page 18, including the need to tackle the workforce shortage and address the status of the sector's sustainability professionals.

The UK government has recently accepted the Climate Change Committee recommendation for the Sixth Carbon Budget and will enshrine in law a 78% greenhouse gas emissions reduction target by 2035, compared to a 1990 baseline. Achieving this will require a whole-of-government approach to ensure the rapid transition to a net-zero and sustainable future. Policies and decisions that are incompatible with our net-zero ambition will be thrown into sharp relief; on page 19, Quintin Rayer explores the arguments behind proposals for a new coal mine to support UK steel production. Scotland's net-zero ambition is five years earlier than the UK target, and on page 20 Katie MacMillan explores some of the issues the nation's policymakers will need to consider, including transport issues for rural and remote communities, as it aims to reach net-zero by 2045.

I hope you enjoy these and other articles in this issue. As always, please send us your thoughts and comments about what you like and what you think we could improve. We are always delighted to hear from you!

"Policies that are incompatible with our net-zero ambition will be thrown into sharp relief"



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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DECARBONISATION

Soaring renewable energy installations the 'new normal'

The International Energy Agency (IEA) has revealed that global renewable electricity capacity will expand at a “much faster pace” than prior to the COVID-19 pandemic.

The agency's latest market update shows that capacity rose by 45% in 2020 to 280 gigawatts (GW) – the largest year-on-year increase since 1999. This is set to become the “new normal”, it says, with 270GW on course to be added in 2021 and 280GW in 2022. Renewables accounted for 90% of the global power sector's expansion last year as governments auctioned record levels of renewable capacity and companies signed record-level power purchase agreements.

“Governments need to build on this promising momentum through policies that encourage greater investment in solar and wind, additional grid infrastructure, and other key renewable technologies such as hydropower, bioenergy and geothermal,” said Fatih Birol, IEA executive director.

Global wind capacity additions almost doubled to 114GW last year, and although that growth is forecast to slow in

2021 and 2022, the increases are still expected to be 50% larger than the average expansion during 2017-19.

The IEA says that solar PV installations will continue to break new records, with annual additions forecast to reach more than 160GW by 2022. This would be almost 50% higher than the level achieved in 2019.

Last year, China accounted for half of the world's renewable electricity capacity for the first time, due to a rush to complete projects before government subsidies were phased out. Although this is set to stabilise during the next two years, additions will still be 50% above the 2017-19 period. Any slowdown in China is forecast to be compensated for by strong growth in Europe, the US, India and Latin America, where government support and falling prices for solar PV and wind continue to drive installations.

However, the IEA warned that carbon dioxide emissions are set to rise this year because of a parallel rise in coal use, underscoring the major policy changes and investments in clean energy that are needed. Birol added: “A massive expansion of clean electricity is essential to giving the world a chance of achieving its net-zero goals.”





BUSINESSWATCH

TRANSPORT

EVs to be cheaper than fossil fuel models by 2027

Electric vehicles (EVs) will be cheaper to make than fossil fuel models across Europe by 2027, Bloomberg New Energy Finance analysis suggests.

Falling battery costs, new designs and dedicated EV production lines are expected to bring manufacturing costs below those of fossil fuel models. The findings suggest EVs could account for all new car sales by 2035 if governments introduce stronger emissions targets and support charging infrastructure.

Transport and Environment, which commissioned the research, called on the EU to tighten emissions targets in the 2020s, and to make 2035 the end date for selling new polluting vehicles. Senior director for vehicles and

mobility, Julia Poliscanova, said: "With the right policies, battery electric cars and vans can reach 100% of sales by 2035 in western, southern and even eastern Europe."

Meanwhile, separate research commissioned by Centrica Business Solutions has found that UK firms spent £10.5bn on EVs and on-site charging points in the past 12 months, and that this is set to increase by 50% to £15.8bn over the next year. Meeting corporate sustainability targets is the biggest driving factor, followed by reducing disruption caused by low and zero-emission zones. Two-thirds of companies are now "well-prepared" to operate a fully electric fleet by 2030.

WASTE

'Major shake-up' to UK recycling unveiled

Every home in England will receive easier and more consistent recycling collections under recent proposals unveiled by the UK government.

The plans include free garden waste collections and separate, weekly food waste collections from 2023. Ministers are also set to introduce statutory guidance on minimum service standards for collections, subject to a consultation. This could include a minimum collection of residual waste at least once a fortnight, alongside the weekly collection of organic waste.

The government described its proposals as a "major shake-up" and has published a list of materials that local authorities and waste firms must collect from homes and businesses, ending the confusion around different collections in different areas. Funding will be available through packaging sector reforms, which will see firms cover the full net cost of managing their waste – helping to eliminate avoidable waste by 2050.

Environment secretary George Eustice said:

"Householders want more frequent recycling collections.

Regular food and garden waste collections will ensure that they can get rid of their rubbish faster, at no additional cost to them. Our proposals will boost recycling rates, and ensure that less rubbish is condemned to landfill."



IKEA launches buy-back scheme for old furniture

IKEA has launched a new scheme that allows

shoppers to trade in old chairs, shelves, chests of drawers and other furniture for vouchers that they can spend in stores across the UK and Ireland. Shoppers will receive a voucher worth up to 50% of their furniture's original price.

"We hope to make circular consumption mainstream, making it easier for customers to acquire, care for and pass on products in circular ways," said Peter Jelkeby, chief sustainability officer at IKEA UK & Ireland.

bit.ly/3tLyjZX



UK retailers halve carbon emissions

Data from the British Retail Consortium (BRC) has revealed that the

UK's leading retailers, covering a quarter of the retail sector by turnover, have slashed their emissions by 49% since 2005, exceeding the 25% target. Emissions in stores and from deliveries have fallen by 46% and 84% respectively, when controlled for growth.

BRC members have committed to achieve net zero by 2040, and the consortium has commissioned research under its Climate Action Roadmap to help the industry decarbonise further.

bit.ly/3fbhBl3



Co-op's food and drink to be carbon neutral by 2025

The Co-op has unveiled a 10-point plan to help it become the world's first supermarket to sell fully carbon-neutral own-brand food and drink by 2025. This includes price matching own-brand plant-based foods to meat-based equivalents, and investing millions of pounds of carrier bag levy proceeds to support natural restoration projects and carbon reduction research.

"Now when our members buy Co-op branded products and services, we give local causes a helping hand, and we'll be addressing the urgent need to tackle the climate crisis," said Co-op Food CEO Jo Whitfield.

bit.ly/2RHd2qH

REFORESTATION

Forests the size of France regrown in just two decades

Nearly 59m hectares of forests – an area larger than mainland France – have regrown worldwide since 2000, giving hope that reforestation can help tackle nature loss and climate change.

The finding comes from the Trillion Tree campaign, which said that the regrown forests could store 5.9bn tonnes of carbon dioxide equivalent.

One success story is Brazil’s Atlantic Forest, where 4.2m hectares have regrown in the past two decades. This was made possible through reforestation projects, responsible industry practices and migration trends towards cities.

“The data shows the enormous potential of natural habitats to recover

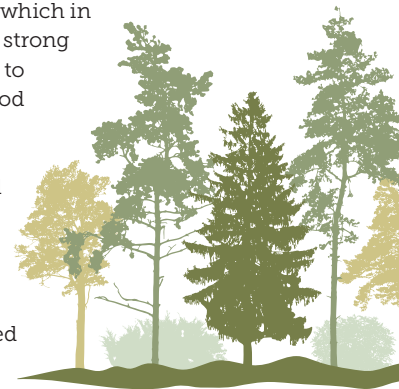
when given the chance to do so,” said John Lotspeich, executive director of Trillion Trees.

The study involved examining more than 30 years’ worth of satellite imaging data, and surveying experts with on-the-ground knowledge.

In Mongolia, 1.2m hectares of forest have regenerated in 20 years, in part thanks to Trillion Trees partner WWF and government emphasis on protected areas. Other hotspots include central Africa and Canada’s boreal forests.

Researchers warned that this success must not be taken for granted, as deforestation claims millions of hectares every year – far more than is regenerated.

“To realise the potential of forests as a climate solution, we need support for regeneration in climate delivery plans and must tackle the drivers of deforestation, which in the UK means strong domestic laws to prevent our food causing deforestation overseas,” said William Baldwin-Cantello, WWF director of nature-based solutions.



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 (exact dates TBC)

Register at iaia.org/resources.php

1 day course over 2 days
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October 13-14

Register at planning.org.au/events/planet

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Tanya Burdett, Director, Essential Planning Ltd (UK/EU)

Margaret Harvie, Director, PlanCom (Australia)



Tanya and Margaret are both Licensed IAP2 Trainers with over 60 years combined experience in engagement. Together they have trained more than 1,500 participants from over 40 countries since 2008.

essentialplanning.uk

MEMBERSHIP

Policy and practice governance review

Earlier in 2021, the IEMA Board greenlit a governance review concerning the way it develops policy and practice content. The review is being progressed to ensure the processes used to generate this content are accountable and transparent to the membership.

The review is being delivered by a member-led steering group, chaired by IEMA Board member Louise Nicholls.



To inform its findings, a range of membership engagement activities have been initiated, including member workshops, engagement with existing policy and practice steering groups, and the seeking of expert peer review from other membership organisations in relation to their own governance arrangements.

The review will report to the IEMA Board in 2021. More information regarding its scope can be found at bit.ly/3vEr6Qv

PUBLICATION

The Value of Environmental Auditing: an IEMA Senior Management Briefing

At the end of March, the IEMA Working Group on Environmental Auditing launched *The Value of Environmental Auditing: an IEMA Senior Management Briefing*. The document builds on the previous IEMA briefing papers on this topic, which have focused on professionals responsible for managing environmental audit programmes.

This senior management edition provides a concise overview of the value of environmental auditing for those with responsibility for audits. It includes an overview of the organisational benefits of internal and external audits, the financial value that audits can bring, and a list of key approaches to auditing, plus a breakdown of requirements for the successful completion of internal and external audits.

"Environmental auditing can be a key driver of effectiveness and resilience, supporting senior management in fulfilling their organisational goals to transition to a low-carbon, resource efficient future," says IEMA policy and engagement lead Marc Jourdan. "This briefing showcases to senior management, who have responsibility for the audits, how an environmental audit undertaken by skilled professionals can reduce risks while adding greater social and environmental value."

The document was launched via webinar by the working group, with industry insights from Skanska and a regulator's perspective delivered by the Environment Agency. If you missed the session, you can watch it again on the IEMA Watch Again page (bit.ly/3sppjgj), and you can download the report from the IEMA Reading Room (bit.ly/32mRHVM)



PUBLICATION

Principles for Cultural Heritage Impact Assessment

We are anticipating the launch of new *Principles for Cultural Heritage Impact Assessment* for the sector in July. This is a collaborative project between IEMA, the Chartered Institute for Archaeologists, and the Institute of Historic Building Conservation.

The project has been delivered by an expert project advisory panel. The panel believes there is a pressing need for guidelines that present a clear, well respected and authoritative view of what constitutes current good practice in cultural heritage studies for impact assessment. The primary purpose of the new guidelines is "to show how the broad principles and key assessment requirements of the impact assessment process apply to cultural heritage issues throughout the project lifecycle."

Following a consultation with the sector, the new principles are due to be published in July. Keep an eye on the IEMA events pages for a launch webinar that will provide an overview of the project and document, followed by a Q&A session with the panel. Once published, a copy of the principles will be available on the impact assessment pages of IEMA's website.



INITIATIVE

UK Business Biodiversity Forum launched

Businesses from across the UK's economy have come together to launch a new forum aimed at mainstreaming biodiversity throughout the private sector.

The UK Business Biodiversity Forum (UKBBF) was launched at a packed online event in March, with presentations from founding members including Barratt Developments plc and Skanska. There were also words of support for the initiative from Will Lockhart, Defra's deputy director and joint head of international environment negotiations.

The UKBBF is open to businesses of all shapes and sizes. In seeking to achieve its central aim of mainstreaming biodiversity into business planning and development, it will provide a platform for businesses to share knowledge and build networks. It will also play host to technical seminars in this field.

As the forum's membership grows, IEMA will begin to provide it with secretariat support. More information about the UKBBF can be found at its LinkedIn page at bit.ly/3eUeBtq

IMPACT ASSESSMENT

A decade of the EIA Quality Mark

As we celebrate the 10-year anniversary of the EIA Quality Mark, IEMA can announce that, during the past 12 months, the scheme has undergone a thorough review of practice, including stakeholder consultation with registrants and assessors, in order to improve it. The amendments include a broadening and strengthening of the interview process, additional review procedures, a move towards a digital platform, closer integration between registrants and Impact Assessment Network activities, and a broadening of opportunities to contribute to good practice.

The scheme has enhanced UK environmental impact assessment (EIA) by creating a strong community of practitioners who are working to maintain and improve standards, as well as sharing examples and working together to enhance knowledge and produce innovative solutions in practice. The scheme has already provided numerous benefits that have driven improvements. These benefits have been felt by consenting authorities, communities, wider stakeholders, developers and EIA practitioners.

At the scheme's launch on 18 April 2011, 38 organisations registered as founding members, including those that completed the transition from our

previous corporate EIA register and those that piloted the scheme's application process during 2010. We are proud to announce that 58 organisations are now registered. Further information on the registrants can be found at bit.ly/2RIQ48y

The revised EIA Quality Mark will continue to help ensure that the environmental impacts of new development are minimised, and that key environmental issues are fully integrated into decision-making.

"EIA is a critical tool in the implementation of sustainable and responsible development. The IEMA EIA Quality Mark is a leading example of professional good practice in the field of EIA, not just in the UK but globally, and something we should all be proud of."

– **Dr Rufus Howard, IEMA impact assessment policy lead.**

"Having been involved with the pilot in 2010 and an advocate of the EIA Quality Mark across the last 10 years, I have seen the quality of EIA in the UK substantially improve during this period. The EIA Quality Mark has significantly contributed to this." – **Andy Ricketts, director and head of EIA, Turley.**

"IEMA's EIA Quality Mark is the only UK-wide scheme to independently verify performance both in terms of environmental statement quality and EIA team operations – it has for the past 10 years helped organisations to improve and demonstrate competence in the field of EIA, something to be celebrated!"

– **Stef Simmons, Quality Mark assessor.**

Read more at bit.ly/3boyqI8



IN COURT

Director jailed for filling quarry with dangerous waste

A director who allowed thousands of tonnes of waste to be illegally deposited in a former quarry has been jailed for more than two years.

Mark Foley of Cardiff was jailed for illegally disposing of 100,000 tonnes of waste at Stowey Quarry, a former limestone quarry near Chew Valley reservoir. The offence happened within the first nine months of 2016, leading to an investigation by the Environment Agency.

Bristol Crown Court described the illegal operation, which accepted waste from around England, as one of the country's most serious risks of harm of the past 30 years. Foley was jailed for a further 18 weeks, served concurrently, for supplying false information to the Agency.

Trading as M E Foley (Contractors) Ltd, Foley operated the quarry under an environmental permit, which was only to accept non-hazardous material, such as soil and construction waste, in order to build bunds and embankments. He was responsible for checking the waste to make sure it was inert, but flouted the rules.

After repeated warnings, the Agency served his firm with a

suspension notice that cancelled its permit and stopped the site from operating in October 2016.

The Agency said that samples taken from trial pits and boreholes revealed a high percentage of chopped and shredded plastics, metals, foam and other man-made materials. About half the samples were hazardous and either carcinogenic or harmful to the environment. The



investigation included the monitoring of landfill gases and sampling of nearby streams, which showed an elevated concentration of gases, together with leachate breaking out onto the surfaces of some surrounding fields'.

Foley also lied about the amount of waste received. After checking waste transfer notes provided by waste producers and hauliers, it was estimated that in 2016 alone, almost 95,000 tonnes of waste was deposited – double the 44,950 tonnes Foley declared.

Foley pleaded guilty to two counts of breaching the Environmental Protection Act 1990, and ME Foley (Contractors) pleaded guilty to one breach of the Act. Foley was jailed for two years and three months, and the firm was fined £72,000.

CASE LAW

Appeal against upheld planning permission for holiday village dismissed

In *R. (on the application of Hudson) v Windsor and Maidenhead RBC*, the appellant appealed against a decision to uphold the local authority's grant of planning permission for the construction of a holiday village at the Legoland Windsor Resort.

The resort was situated within the green belt, and the development site was bordered on three sides by a site of special scientific interest and special area of conservation (SAC), which was home to the largest number of veteran oaks in Britain.

The officer's report for the authority's panel, recommended that planning permission be refused because the proposal constituted inappropriate development in the green belt, and it had not been adequately shown that the development could be achieved without causing harm to significant trees. Despite this, in 2018 the panel voted to approve the proposal in principle.

In 2019 the authority granted full planning permission subject to conditions for protection of significant/veteran trees, which should be read in conjunction with an agreement under the Town and Country Planning Act 1990 between the authority and interested party. The interested party prepared various plans that had to be approved before work could begin. It was this decision that the appellant had unsuccessfully challenged.

The appellant argued that the judge had erred in concluding that it was permissible to rely on the planning conditions included in the decision notice and the agreement when considering whether the authority gave adequate reasons for its decision; they stated there was no authority for the proposition that, when seeking to understand the reasons for a decision to grant planning permission, an interested member of the public could not look at components of the decision, such as the planning conditions or agreement.

On the contrary, planning conditions were part of the decision itself, and the conditions and agreement were automatically placed on the planning register along with the decision. All relevant material forming part of the 2019 decision was publicly available and



contained all an informed member of the public needed to know about why the authority had concluded that the mitigating measures would prevent harm to veteran trees.

The appellant claimed that no reasons had been provided to explain why the panel decided it was possible to avoid harm to veteran trees, and that there was nothing in the transcript of the meeting to show that a majority of the panel members agreed that such harm would be avoided. This argument was regarding the initial 2018 meeting, which was not part of the judicial review. In the 2019 meeting, the panel had concluded that there would be no harm to veteran trees provided that the relevant conditions were complied with. This was expressly stated in the planning permission.

Another argument for the appeal was that the authority had failed to carry out an appropriate assessment of the development's effect on the SAC under the Conservation of Habitats and Species Regulations 2017. Nevertheless, the judge found that the outcome would not have been substantially different if an appropriate assessment had been undertaken: "In my view, a fair reading of the documents as a whole confirms that the judge's conclusion was correct."

There was no argument about the seriousness of the breach, but the public had not been deprived of the opportunity to comment and object. The authority and interested party had discharged the burden of showing that, even if an appropriate assessment had been carried out, the planning application's outcome would not have been any different. The appeal was dismissed.

NEW REGULATIONS

THE LATEST

■ LEGISLATION ■ GUIDANCE ■ CONSULTATION



LEGISLATION

Hazardous substances

The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (Amendment) Regulations 2021 correct an error in Schedule A1 to the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012. The maximum concentration value for cadmium, which is 0.01% in Annex 2 to the RoHS Directive, was incorrectly specified as 0.1%.

▶ cedr.ec/7mr



LEGISLATION

Energy efficiency

The Energy Performance of Buildings (England and Wales) (Amendment) Regulations 2021 and the Energy Performance of Buildings (Certificates and Inspections) (Amendment) Regulations (Northern Ireland) 2021 update the fees for entering data in the register of energy performance certificates, display energy certificates and air conditioning inspection reports.

▶ cedr.ec/7mb

▶ cedr.ec/7me



LEGISLATION

Climate change and carbon accounting

The Climate Change (Interim Emissions Targets) (Wales) (Amendment) Regulations 2021

increase the 2030 interim emissions targets for reducing greenhouse gases in Wales to a 63% reduction. The 2040 target is increased to an 89% reduction. In addition, the Environment (Wales) Act 2016 (Amendment of 2050 Emissions Target) Regulations 2021 increases the minimum percentage by which the net Welsh emissions account for 2050 must be lower than the baseline, from 80% to 100%.

▶ cedr.ec/7mq

▶ cedr.ec/7mf



GUIDANCE

Biodiversity

The Countryside Code: Advice for land managers has been updated. It provides information on land managers' roles and responsibilities to ensure visitors can enjoy nature in a safe, responsible way. There is separate guidance for visitors.

▶ cedr.ec/7mc



CONSULTATION

Packaging waste reforms

Defra has published two consultations on packaging.

The first covers the introduction of a deposit return scheme in England, Wales and Northern Ireland. Producers and retailers of PET plastic, glass, aluminium and steel drinks containers would have to take part in take-back of empty containers, signing up to a deposit management organisation and reporting on how many containers were produced and recycled.

The second proposes a reform of the packaging waste system, and an extended producer responsibility scheme. It proposes minimum recycling targets for a variety of materials, where an overall recycling rate for all packaging waste in the scheme's scope would reach 73% by 2030.

▶ cedr.ec/7ms



CONSULTATION

Climate change

The Department for Business, Energy and Industrial Strategy has launched a consultation on mandating climate-related financial disclosures by publicly quoted companies, large private companies and limited liability partnerships. This builds on plans set out in 2019 Green Finance Strategy, which specified that all listed companies and large asset owners should disclose in line with the Task Force on Climate-related Financial Disclosure recommendations by 2022.

▶ cedr.ec/7mi



CONSULTATION

Household and business recycling

Defra is consulting on plans to increase consistency of materials collected for recycling in England. The consultation seeks views on how to improve consistency of materials collected for recycling, how such a policy should be implemented, and how powers introduced in the Environment Bill should be used to improve rates.

▶ cedr.ec/7n6

Fighting back

Michael E Mann tells Chris Seekings how fossil fuel companies have changed tactics to delay action on climate change – and how we can fight back

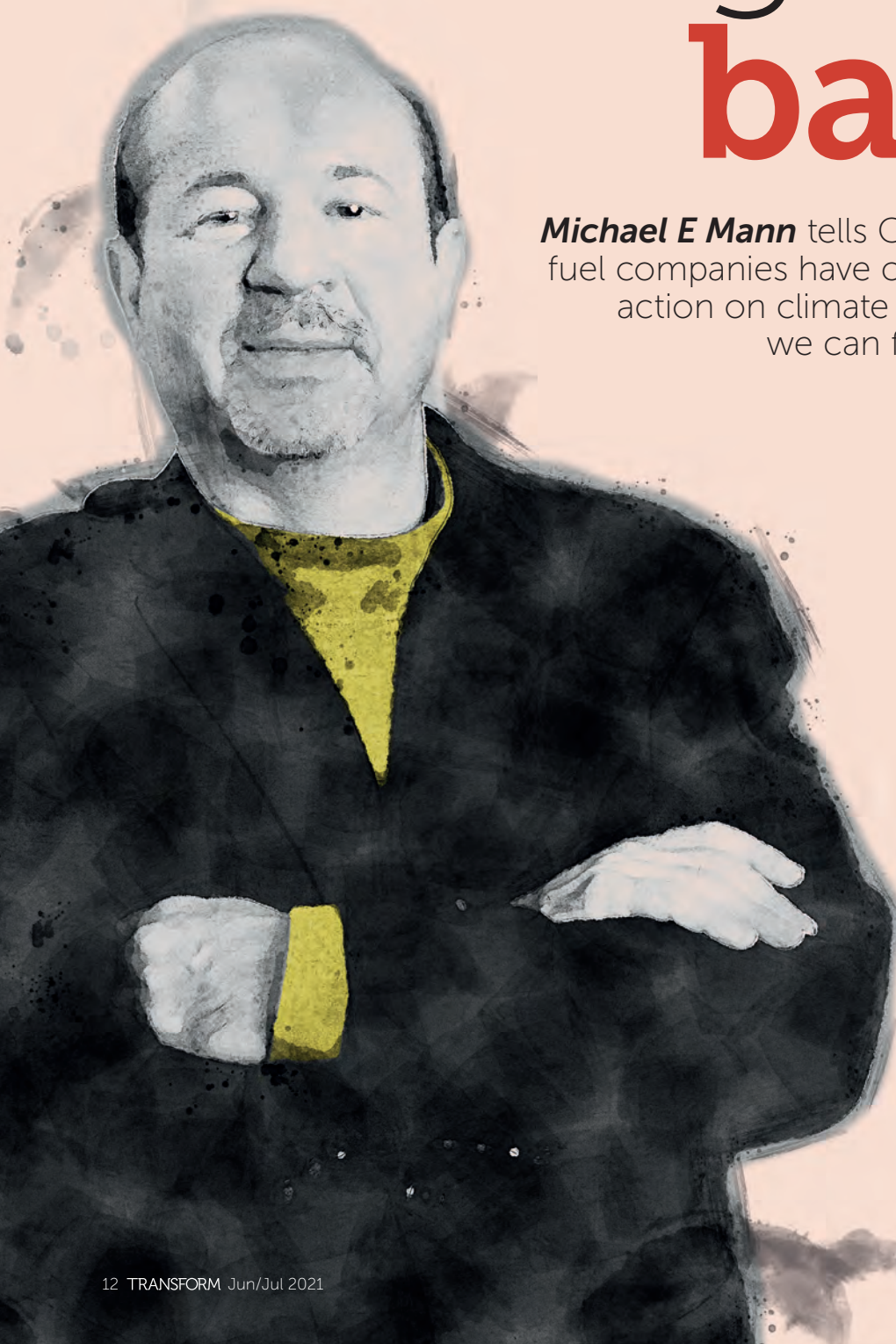
Dr Michael E Mann is one of the world's pre-eminent climate scientists – and also one of the most frequently attacked. Politicians, public figures and social media trolls have tried, and failed, to discredit his research during the past two decades – particularly his controversial 'hockey stick' graph charting global temperatures during the past thousand years, made famous in Al Gore's documentary *An Inconvenient Truth*.

With climate change denial no longer credible, his adversaries in the media, government and the fossil fuel industry have switched tactics, looking to blame individuals' actions for the crisis while promoting a vision of inevitable doom.

In his latest book, *The New Climate War*, Dr Mann explains how we can fight back against the vested interests of fossil fuels and deliver the systemic change needed to avert climate catastrophe.

An assault on science

Described by some as "the most controversial chart in science", Dr Mann's hockey stick graph, depicting a sharp increase in global



temperatures since the Industrial Revolution, was a prominent feature in the Intergovernmental Panel on Climate Change's (IPCC) third assessment report. This report was key in the awarding of the 2007 Nobel Peace Prize to the IPCC and Al Gore.

However, US fossil fuel lobbying groups have since attempted to cast doubt on the research behind the graph by making unsupported accusations of data manipulation, while Dr Mann was also a central figure in the 'Climategate' scandal, when hackers obtained a large number of scientists' emails in 2009. Despite several successful defamation lawsuits, these attacks have cast doubt on the science of global warming; he describes this as "an unfortunate distraction". "We are much further down this road than we ever should have allowed ourselves to get, as a consequence of this disinformation campaign," he says. "Regardless of how I might feel as a scientist, the much greater concern is how this assault on science has supported the fossil fuel industry's agenda of inaction, and we have all paid the price."

Dr Mann highlights how powerful vested interests have waged successful disinformation campaigns in the past – particularly the tobacco industry's efforts to discredit the health threats of cigarettes. "The science of black holes, dark matter and multiple universes – these are far more speculative areas of science, and yet they are not attacked because there isn't fundamentally a vested interest," he says. "Whenever the findings of science find themselves on a collision course with powerful vested interests, there has been an effort to undermine and attack the science."

However, with extreme weather becoming increasingly frequent, and new temperature records almost every year, it is no longer possible for the "forces of inaction" to credibly deny the science. "There is as much consensus among the world's scientists about climate change as there is about gravity. These vested interests can't deny the problem any more, so they've turned to

these insidious, and in many ways quite nefarious, new tactics in their effort to block meaningful action."

The new strategy

Recycling more, flying less and changing diets are just some of the ways we've been told we can slow climate change, but for Dr Mann, the inordinate emphasis on individual behaviour is the result of a marketing campaign to deflect blame away from fossil fuel companies and towards

"This assault on science has supported the fossil fuel industry's agenda of inaction"

individuals. While he believes behavioural changes are part of the solution, he says there is no way to tackle climate change without substantial policy solutions.

"Too often, vested interests have been successful in focusing attention almost exclusively on individual action – to the exclusion of the policies that will hurt their profits," he says. "We can't allow them to make out that these individual actions are the totality of the response that's needed, because we won't achieve massive reductions in carbon emissions without deep systemic change – and we will only get that from policies and politicians who are willing to act on our behalf, rather than the polluters' behalf."

In 2004, the oil and gas giant BP unveiled its 'carbon footprint calculator' so people could assess how their normal daily life was impacting emissions. Although this may have seemed a useful tool in the fight against climate change, Dr Mann believes it was just another way to deflect blame onto individuals. "They did it because BP and other companies



IMAGES: JOSHUA YOSPIN / AARON TOMLINSON / JULIAN MEEHAN / SYDNEY HERDLE

Interview

wanted us so focused on our own individual footprints that we would fail to notice theirs," he argues. "A hundred polluting companies are responsible for 70% of our carbon emissions – you can't make this stuff up."

He says that some journalists have been "actively promoting misinformation and disinformation about climate change", naming those connected to Rupert Murdoch's media empire in particular. However, even well-meaning sections of the media have placed considerable emphasis on what we can do as individuals. "It's not that they are acting as agents of the fossil fuel industry, it's that the forces of inaction have been so effective that even well-meaning media outlets fall victim to their framing," he explains. "You see that among climate scientists, too, because these forces have done such a good job of creating this echo chamber where their talking points are repeated over and over again, which ultimately penetrates into our mainstream discourse. It's important we look out for that, realise we are all being played by these forces, and do not fall victim to them."

Sowing division

Social media has become the new battleground for vested interests that are looking to delay climate action, Dr Mann says in *The New Climate War*, which argues that these vested interests have "pursued a divide-and-conquer strategy of sowing division among climate activists and advocates". Although it's not always clear who is behind certain social media accounts, he says, an increasingly large body of evidence suggests that state actors such as Russia are looking to shape climate policy using online bot armies. "Putin sees fossil fuels as Russia's main monetary asset, and has used this cyber tactic to interfere with climate politics in various countries," he says. "In France, there is some evidence that Russia played a role in the *gilets jaunes* uprising against carbon pricing, and you can see when armies are being mobilised online at particular moments."

"BP and other companies want us so focused on our own individual footprints that we fail to notice theirs"

He also suggests that Russia's alleged interference in recent US elections has been motivated by a half-trillion-dollar oil deal between Russia's Rosneft and the US's ExxonMobil that was being prevented by sanctions – which Donald Trump had promised to remove. "The agenda of fossil fuel extraction and monetisation seems to have been central to Russia's efforts to sow division in our global politics on climate."

Divisive language is also used online to get us arguing about each other's individual behaviour, such as whether we are vegan or not and how much we travel. "They get us arguing with each other using professional trolls, and once they get the argument going it is self-sustaining. That has been used very effectively in dividing climate advocates."

Another tactic used by the vested interests of fossil fuels, according to Dr Mann, is pushing so-called 'solutions' to the climate crisis that could actually be detrimental to the environment. Former US secretary of state and ExxonMobil CEO Rex Tillerson has described climate change as "an engineering problem", and Dr Mann says it's clear he was talking about geoengineering. "There is a wide array of interventions – from carbon capture and storage, which on some level is a fairly safe way of proceeding, to the other end of the spectrum, like injecting sulphur dioxide into the stratosphere to

reflect back sunlight, which comes with many unintended potential consequences. Some bad actors are using these as a crutch to take pressure off near-term emission reductions."

The battle plan

Taking a new approach to carbon pricing, allowing renewable energy to compete fairly against fossil fuels, and debunking false narratives are just three of the steps Dr Mann outlines in *The New Climate War* that could defeat the coalition of vested interests.



Speaking at the National Climate Emergency Summit, Melbourne, Australia in February 2020





our votes, pressurising politicians, speaking out and doing everything to raise awareness about the crisis.”

Another reason for optimism is the range of ambitious emissions-reduction targets set by many major economies – perhaps most significantly the Biden administration’s commitment to a 50% reduction by the end of this decade. “However, that is relative to a baseline of 2005, and the latest IPCC report states that we need to bring them down by a factor of two relevant to where we are now,” Dr Mann says. “It’s a great pledge, but the devil is in the detail, and we need to flush out those details – especially in the months leading up to Glasgow. I would much rather be in the position we are in now than where we would have been had Trump got a second term, a scenario that I characterised as potentially ‘game over’ for the climate. It’s a night and day difference.”

For Dr Mann, the COVID-19 pandemic has magnified the “deadliness of science denial”, which he says can be measured in the hundreds of thousands of human lives that have been lost unnecessarily. He also hopes that the pandemic will help facilitate a new conversation around the kind of society we want to live in once the crisis has passed. “A microscopic organism turned our world upside down, and it’s led us to ask questions about whether we are on a sustainable course,” he says. “I like to think that’s an ongoing conversation about how we can work principles of environmental sustainability into our long-term strategic thinking as a civilisation, as individual economies and as a global economy.”



THE NEW CLIMATE WAR: THE FIGHT TO TAKE BACK OUR PLANET by Michael E Mann (2021) is published by Scribe

This will involve pushing back against “doomism”: the idea that trying to tackle climate change is pointless because it’s already too late. “There are some at the top who are using that framing to lead people down a path of disengagement,” he says. “It’s important for people to know that the science in no way supports the narrative of doom. There

“It’s important for people to know that the science in no way supports the narrative of doom”

is still time to avert the worst impacts of climate change, but there is great need for agency and urgency.”

He says that there are strong reasons for “cautious optimism”, one of which is the youth climate movement spearheaded by Greta Thunberg, which has centred the conversation on fundamental issues of ethics. “It’s not just about science, economics, policy and politics, but ethics and our obligations to future generations,” he explains. “There is a moral authority that comes from children speaking out, and we need to support them to make sure their efforts are not in vain. They have cracked open the door for us and now we have to walk through it, which means using our voices and

Standards

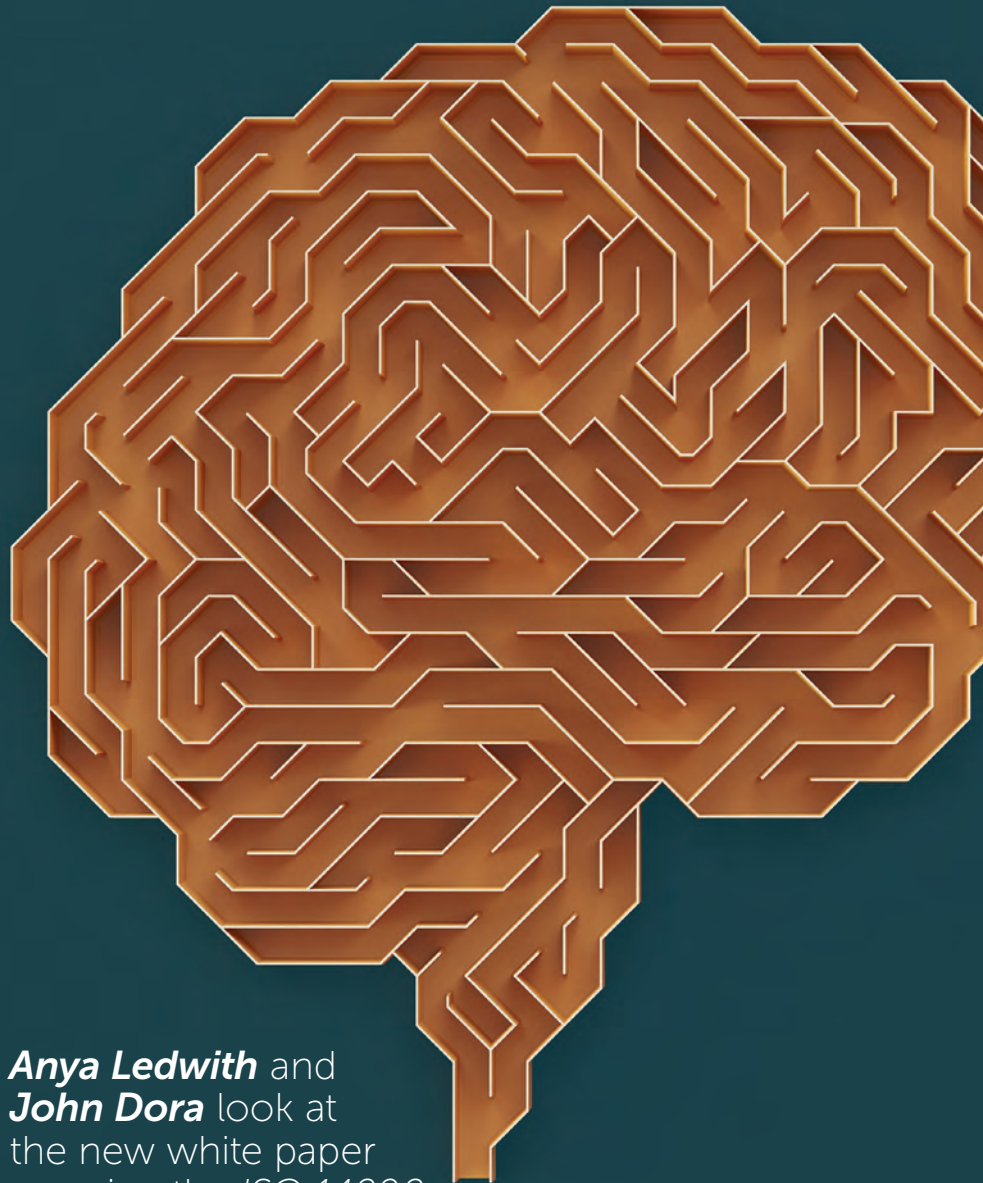
In the run-up to COP26, it seems the wider world is finally taking notice of the climate emergency. Climate change is already affecting us through different weather patterns, more extreme weather events, rising sea levels, flooding, storm surges, drought and erosion. We are seeing biodiversity loss, poor air quality, employee health and safety issues, and disruptions to operations and value chains. This is triggering changes in the way people vote, regulate, live and do business.

Countries, businesses, organisations and individual consumers are committing to net-zero targets to help them manage their carbon impact, set reduction goals and offset unavoidable emissions. While the focus of these plans is to reduce carbon emissions, it is also important that organisations consider climate change adaptation.

Experts from around the world have collaborated to develop an international standard on the subject and, in 2019, published *ISO 14090: Adaptation to climate change – Principles, requirements and guidelines*. The standard aims to help organisations assess climate change impacts and put plans in place for effective adaptation. It helps them to identify and manage risks, as well as seize any opportunities that climate change may bring.

Given that climate change will continue over a long period, *ISO 14090* considers adaptation efforts in the short, medium and long term. Organisations need to assess the timescales of potential adaptation actions, as well as their long-term consequences. The standard

"ISO 14090 has been written in a way that should make it relatively easy for users of ISO 14001 to adopt"



Anya Ledwith and **John Dora** look at the new white paper covering the *ISO 14090: Adaptation to climate change* standard

In perfect alignment

refers to indicators that help measure how climate change is affecting an organisation, and how the organisation itself is evolving to meet those challenges.

White paper

How does an organisation embed climate adaptation into its processes? A good place to start will be its environmental management system (EMS). This provides a framework for identifying and managing environmental aspects, considering not only the organisation's own impacts, but also how the external environment affects it. Climate change issues are already key in many EMSs.

ISO 14001 is the most widely used standard for EMSs, with more than 300,000 certificates issued worldwide. It makes sense, therefore, to align the two standards. Indeed, *ISO 14090* has been written in a way that should make it fairly easy for *ISO 14001* users to adopt.

To help users get started, ISO has recently published a white paper showing the alignments between the two standards. Using this, ISO hopes that users of *ISO 14001* can accelerate their adaptation to climate change and build resilience. It goes through the key clauses of *ISO 14001*, showing how *ISO 14090* supports them and provides further assistance, all laid out in a helpful table. For example, *ISO 14001* Clause 6: *Planning* requires an organisation to identify risks and opportunities, aspects, compliance obligations and so on, and then establish objectives and plans to achieve them.

The white paper shows the relevant *ISO 14090* clauses, as follows:

- **Clause 6: Assessing climate change impacts including opportunities** – notes a requirement to assess the organisation's climate change impacts and its capacity to adapt to these impacts.
- **Clause 7: Adaptation planning** and **Clause 8.2: Implementation plan** require the organisation to establish climate

"ISO 14090 aims to help organisations assess climate change impacts and put plans in place for effective adaptation"

adaptation priorities, identify adaptation actions, develop an implementation plan, and incorporate adaptation into its policies, strategies and plans.

ISO 14090 provides extensive guidance on impact assessment methods, plus identifying and evaluating potential actions (their suitability and potential impact) and developing the content and objectives of the adaptation plan. It notes how actions may be soft measures that improve capacity to adapt (for example, embedding climate change into policies and operational procedures, training and awareness raising), or hard measures (such as infrastructure/building design or flood protection zones).

Climate adaptation is clearly relevant in more areas of EMSs than this, as understanding climate impacts is not just for those who implement climate actions. Organisational decisions are made based on risks and opportunities, so understanding resilience is useful across the value chain, such as in purchasing, investment and insurance.

ISO 14090 in use

We have worked with several organisations that see benefits in using *ISO 14090*. Network Rail takes its responsibilities seriously and understands how *ISO 14090* is relevant to its preparations to address climate impacts. It has published Weather Resilience and Climate Change Adaptation Plans for all its routes, outlining climate hazards, vulnerability assessments and measures to respond to these.

The National Trust is another good example; it is actively using *ISO 14090* for its adaptation and resilience building to address current and future climate impacts. *ISO 14001* is already part of the Trust's 'toolkit', so the linkages featured

in the white paper give added strength and credibility to its governance arrangements to address longer-term climate changes.

The diversity of interest across sectors is further demonstrated in Canada by a government department that is keen to promote adaptation and is learning more about how *ISO 14090* could be used throughout its diverse organisation.

Further guidance

The *ISO 14090 – 14001* white paper is available to download for free from the ISO website at bit.ly/3avHqL7

In 2018, IEMA produced guidance in its publication *Driving Climate Actions through Environmental Management Systems* (bit.ly/3tVjWWN). This goes through *ISO 14001* clause by clause, showing how each contributes to climate mitigation and adaptation.

ISO 14090 is the first of a series of standards on climate adaptation, including *ISO 14091* on impacts and risk assessment, and *ISO 14092* on adaptation planning for local governments and communities. Each of these publications is a useful resource for any sustainability professional responsible for embedding climate change mitigation and adaptation into their organisation. 🌱

ANYA LEDWITH, FIEMA is founder of Eshcon Ltd and a member of the ISO and BSI committees on Environmental Management System standards and managing greenhouse gases.

PROFESSOR JOHN DORA is director of Climate Sense and a visiting professor at the University of Surrey. He is a member of the ISO and BSI committees on environmental management system standards and managing greenhouse gases, chairing the groups that drafted *ISO 14090* and wrote the white paper.

Laying the foundations

Greater diversity is also needed in sustainability roles, currently dominated by white, middle-class, degree-educated individuals. The new apprenticeship standard for environmental practitioners being adopted by various colleges and universities will hopefully change this.

Darren White discusses some of the sustainability issues facing the construction sector

Construction is a major contributor to the UK's greenhouse gas emissions. According to the International Energy Agency report *Global Status Report for Buildings and Construction* (bit.ly/2PaVx12), the sector accounted for 36% of final energy use in 2018, 11% of which resulted from the manufacture of building materials such as steel, cement and glass. However, construction also has a vital role to play in delivering the infrastructure needed to support a zero-carbon economy, whether that's clean energy networks, low-carbon mass transit systems or zero-carbon housing.

While working to reduce energy use and emissions, the sector must also take strides to embed sustainability at all levels, as well as addressing workforce shortages.

Shaking up the workforce

In February, the Institute for Public Policy Research think tank released research on the construction skills required to deliver net zero, *Skills for a green recovery: A call to action for the UK construction industry* (bit.ly/3tGIYK4). It was endorsed by industry individuals and organisations such as Tideway and the Construction Leadership Council. They concluded that the industry needs radical change to achieve net zero by 2050.

The industry has, in general, an ageing workforce. The study shows that up to 750,000 UK construction workers will be retired or on the verge of retirement in the next 15 years – and that's without considering the impact of Brexit.

Government investment and policy is needed to tackle this skills gap, but it must start at company level. Traditionally, the industry has been 'male, pale and stale', and needs to be more appealing to a diverse population. Organisations such as Women into Construction are helping, but more needs to be done.

From top to bottom

Sustainability needs to be championed at all levels, but the role and seniority of the sustainability professionals varies throughout the industry. This is not the case in other sectors, such as retail or finance, which have started to appoint chief sustainability officers on their boards. It's encouraging to see several leading construction companies appoint directors of sustainability, but this seniority is often overlooked elsewhere.

These roles have evolved from sole environmental professionals to teams of specialists reporting to boards on key strategic environmental, social and governance issues. This approach is further strengthened if sustainability performance is directly linked to financing. This was the case during the construction of the Thames Tideway Tunnel, whereby £1.7bn of debt was raised through issuance of green bonds and sustainability-linked revolving credit facilities.

Firms must regularly assess their climate impact, and the governance and risk management that underpins it. Only a handful of infrastructure organisations have carried out such assessments; this needs to become the norm. COVID-19 has shown how we can mobilise resources to combat a major threat, and we need to treat climate change in the same way.

The role of sustainability must be championed at the highest levels if our industry is to take serious action, and steps taken to make the sector more appealing. Without green skills at all levels, it will not be possible to 'build back better'. 📌

DARREN WHITE, FIEMA is a freelance environmental, social and governance strategy consultant.



A dirty business



The argument that a new coal mine is needed to support UK steel production doesn't hold water, says **Quintin Rayer**

Environmental groups are opposing plans for a new coal mine at Whitehaven, Cumbria. The mine was initially approved by Cumbria County Council in October 2020, then reconsidered, and is now subject to a public inquiry.

The plans show a tragic lack of climate ambition – and the counter-arguments that steel manufacturing requires coking coal are weaker than they seem.

Steel manufacture

The coal used in steel manufacture is of higher purity than the coal used in energy generation, as the coke produced is nearly pure carbon. In steel production, coke has three roles:

- As a reducing agent to remove oxygen from iron ore (Fe_2O_3). A coke-free approach uses hydrogen to produce 'direct reduced iron', following the reaction $\text{Fe}_2\text{O}_3 + 3\text{H}_2 \rightarrow 2\text{Fe} + 3\text{H}_2\text{O}$. Hydrogen is more expensive, but the electrolysis of water using renewable electricity can ensure it is low carbon.
- Coke combustion heats the blast furnace. However, electric arc furnaces already exist, and renewable energy can power these.
- Steel requires added carbon for the correct alloy. Any source is sufficient, including sustainably managed wood.

Coke, therefore, is not needed to manufacture new steel. There is also the fact that steel can be readily recycled.

New UK coal and COP26

The mine could damage the UK's presidency of COP26, being held in Glasgow in November. In February, James Hansen, a former NASA researcher on global warming, wrote to Boris Johnson urging him to halt the mine. He remarked that the UK's emissions progress was to be congratulated, but warned the mine could damage UK leadership. Greta Thunberg has said it means UK pledges to reach net-zero by 2050 mean nothing.

Climate economics

Low-carbon steel manufacture would be more expensive – but coke combustion has costs that operators externalise by dumping carbon dioxide into the atmosphere. A study of the 2017 north Atlantic hurricane season attributed five-sixths of that year's damages – amounting to 1-2% of the combined value of seven major carbon extraction companies – to human-generated climate change. And this was one type of weather in one locality in one year.

To meet the UK's 2050 net-zero target, the Climate Change Committee (CCC) has said the UK steel industry needs to

be using clean technologies by 2035 – but the Whitehaven mine had consent for use until 2049. CCC chair Lord Deben wrote to planning minister Robert Jenrick to warn that the mine would increase UK emissions by 0.4m tonnes of carbon dioxide equivalent per year – greater than the annual emissions level projected for all open coal mines to 2050 (bit.ly/3eITREC). He also said it would "commit the UK to emissions from coking coal, for which there may be no domestic use after 2035".

According to local mayor Mike Starkie, opposition to the mine has provoked anger. He believes local people support it as it would "underpin an economic revitalisation" by providing jobs.

In March, Cumbria County Council announced it would reconsider the mine's approval, resulting in West Cumbria Mining seeking a judicial review; the government announced a public inquiry, and Mr Jenrick noted that the application raised issues of "more than local importance". The inquiry is scheduled for 7 September, and ministers will have the final decision following its recommendation.

Intergenerational injustice

The economic inconvenience of forgoing coal extraction will prove insignificant compared with the climate change consequences. The 'business as usual' approach shifts the burden onto future generations and is morally wrong. We must now make necessity the mother of invention. 🌱

DR QUINTIN RAYER is head of research and ethical investing at P1 Investment Management.

The Scottish government's commitment to reach net-zero emissions by 2045 may seem aeons away. However, to deliver the substantial restructuring needed to reach this goal, policymakers will have to be proactive and meet demanding intermediary targets. With complex problems to overcome, addressing the energy and transport needs of urban and rural communities in 24 years looks ambitious.

A vision of the future

Imagine Scotland 24 years from now. Clean energy is keeping the lights on. Renewable energy use is approaching 100%, as technology improvements and high adoption rates have driven down prices. Artificial intelligence, sensors and machine learning are supporting energy efficiency, as are physical improvements to insulation, piping and heat recovery systems. Old, carbon-based infrastructure has been replaced through the circular economy.

Scotland has pioneered hydrogen power, and it is lowering building and vehicle emissions, providing low-carbon heating and fuel – including for boilers and cookers (see Frazer-Nash's 2018 report for the Department of Business, Energy and Industrial

Strategy on domestic hydrogen conversion, available at bit.ly/3gzW6Nk). Hydrogen-powered and electric planes and ferries connect the mainland and islands, bringing communities closer to employment, health and leisure opportunities. The use of electric and hydrogen vehicles has improved air quality, particularly in urban areas, while new technology and infrastructure that can adapt to peak demand patterns is enabling electric transport. A utopian vision – how will Scotland deliver it?

Addressing the obstacles

Delivering clean energy will require investment, infrastructure and enablers – but the journey could be bumpy. Rural homes and businesses will face a greater challenge in accessing clean energy than those in urban areas. In its report

Katie MacMillan explores some of the issues Scottish policymakers will need to consider as the country aims to reach net-zero emissions by 2045

The decarbonisation of heat (bit.ly/3gFTnSk), non-profit energy expertise centre Regen says “any solution to heat decarbonisation must consider the impact on the fuel poor and vulnerable consumers” and “must be taken in the context of a wider package of actions to address fuel poverty, improve energy efficiency and ensure a just transition for all consumers”. There is a danger that rural communities could fall behind due to lack of public transport, distance from the grid, and limited charging point infrastructure.

One solution to support energy delivery in rural areas would be micro-grids. If renewably powered – ideally by a variety of methods to increase reliability – these grids could support other emission-reducing measures, such as electric vehicle (EV) charging. Operating with their own storage, they would offer a cost-effective option to deliver energy locally while reducing pressure on the national grid. The potential for hydrogen to fuel vehicles and heating should also be explored. It works on the small scale needed by rural communities, and could be distributed, as Regen suggests, by “repurposing ... the



Against the clock



◀ Delivering clean energy and transport to rural communities will be a significant challenge in Scotland's net-zero transition



existing safe and reliable gas network”, or through new systems that replace existing older infrastructure.

Collaboration would be key in enabling the provision of clean energy in rural areas: local partnerships would need to be created, and governance structures between communities, public and private sectors set up, to unlock opportunities for all stakeholders.

Equality of access

For transport, enablers would need to support individuals and businesses to switch to lower-emission travel modes. Incentives could increase installation of residential and commercial charging points but, to ensure viability for longer journeys, infrastructure including EV charging stations and hydrogen fuel pumps would be needed across Scotland. A strategic review would ensure the locations of these charging points and hydrogen pumps were optimised to best meet travellers’ needs.

Those living in rural areas are more reliant on personal transport than those in urban areas. The Scottish government’s *National Transport Strategy* ([bit.ly/3noxV5D](https://www.gov.scot/publications/national-transport-strategy/pages/100-to-150.aspx)) notes that “many disabled people feel trapped due to the lack of accessible transport, particularly on islands and in remote and rural areas”, and acknowledges the challenge for those on low incomes in rural areas. Making public transport more viable in these areas would require additional funding and subsidies, but would help address inequalities.

In urban areas, low emission zones and better bus and bicycle infrastructure may encourage more people to use public transport, walk or cycle – with the latter offering mental and physical

“With complex problems to overcome, 24 years looks ambitious”

benefits as well as reducing pollution. Incentivising collaboration between public transport companies could enable joined-up coverage, enhancing the experience and encouraging greater use.

It is also important that rural residents have equal access to the energy efficiency grants available to those in urban areas, used to install insulation or environmentally friendly pipes and valves. Low-carbon heating may mean higher energy costs, so steps must be taken to ensure those in fuel poverty are not further marginalised, and others are not pushed into it. Rural communities may also face additional costs and logistical challenges in implementing newer technologies and green fuels. Hydrogen, for example, may be more difficult to deliver to rural, less densely situated areas. Early planning will be needed to ensure rural areas can reap the benefits that these new technologies and fuels offer. One solution might be

seawater-sourced green hydrogen from repurposed offshore rigs, as is being considered by exploration and production company Neptune Energy.

Capturing the benefits

If emissions are not falling fast enough, or natural gas is used for mass hydrogen production, carbon capture and storage (CCS) technologies may need to be introduced at scale. While significant research and investment would be required to determine this technology’s feasibility, this would give Scotland the opportunity to become a world leader in CCS. CCS could also give new purpose to disused oil rigs, which could be used to pump carbon dioxide back into the cavities from which oil was extracted. Edinburgh University researchers suggest this could be 10 times cheaper than decommissioning rigs, and a trial – the Acorn CCS project, led by Pale Blue Dot Energy – has been proposed.

Scotland’s 2045 commitment will require significant investment, but would deliver social and environmental returns. Pioneering CCS and hydrogen would allow Scotland to export its expertise and create more jobs. Updated infrastructure would offer employment, and businesses could drive operational efficiencies, growth and profitability through adoption of electric transport and clean energy sources.

There is no one approach to reaching net-zero: all solutions put forward must be forward-thinking and long-lasting, and involve country-wide collaboration. Initially, it may be beneficial to investigate how current infrastructure can be adapted, rather than focusing on expansion. With the formation of the Just Transition Commission, the Scottish government is aiming to ensure the road to decarbonisation culminates in a net-zero economy that is inclusive, resilient and fair. With commitment, planning, investment and action, Scotland can achieve its goal. 📍

KATIE MACMILLAN, GradIEMA is an environmental and sustainability engineer at Frazer-Nash Consultancy.

Action stations

What lessons can the COVID-19 pandemic teach us about tackling climate change?

Huw Morris talks to the scientists who are coming to some striking conclusions

Like many people in March 2020, Piers Forster unexpectedly found himself with plenty of time on his hands.

The professor of physical climate change at the University of Leeds and director of the Priestley International Centre for Climate suddenly saw his work trips and public engagements evaporate. He and his colleagues were yet to discover the joys of Zoom and Microsoft Teams as the COVID-19 pandemic exploded. Then, unconnected developments came together.

Forster decided to use this free time to teach himself to code Python computing language – which brought his attention to Google’s mobility data, released in April 2020, and similar information provided by Apple. At the



“COVID-19 and climate change share a marked similarity: the worst damage is only averted when society commits to decisive and early action”

same time, his daughter Harriet's A Level exams were cancelled, meaning she also found herself free. "Harriet asked me one day about what the climate impact of the pandemic would be, and I said something like, 'I don't know, but let's try and find out,'" he says.

What started as a home-school project soon triggered a stampede in major research.

Lockdown's effect on emissions

Using methods developed by the University of East Anglia and Stanford University, Forster and colleagues from across the UK, Europe and the US investigated trends in road transport, industry, power generation and other activities. They deduced that, using Google and Apple's mobility data, they could find out the amount of greenhouse gases emitted by these sectors, and how much their activity dropped during lockdown. They could then estimate any emissions change.

Ultimately, this meant looking across the 123 countries responsible for 99% of global emissions. The team then considered how any changes would influence the global temperature during the two years between the start of China's lockdown and the end of 2021.

The project looked at carbon dioxide emissions, the biggest cause of human-made global warming, but also nitrous oxides produced by fossil fuels, which fell due to lower road transport use. Sulphur dioxide emissions from heavy industry and power plants dropped, too.

This led to an unexpected insight: the temporary fall in carbon dioxide emissions during lockdown was effectively negligible. According to the research, even if some lockdown measures were to stay in place for the best part of two years, global temperatures would only be 0.01°C lower than they would otherwise have been.

"This is for two reasons," says Forster. "The first is that, because carbon dioxide is so long in the atmosphere, making a cut – even a big cut – for one year doesn't really have a lasting effect. We need to get emissions all the way to zero and keep them there to halt global warming.

"The effects of big drops in short-lived pollution, especially nitrous oxide from cars, sulphur dioxide from reduced coal use and reduced contrails from less flying, did have short-term effects on climate. But they acted differently and, to some extent, cancelled each other out. Reduced sulphur dioxide pollution caused warming as clouds became less reflective, cancelling out the cooling effects of less car and plane travel."

Put bluntly, lockdowns had no dramatic effect on climate change.

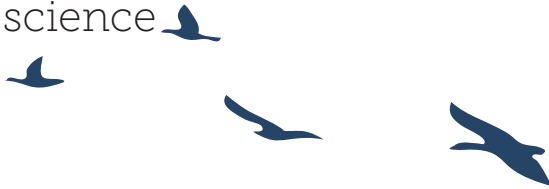
COVID-19 and climate change

These findings complement the work of another team of scientists at Oxford University and the European Commission's Joint Research Centre. This looked at comparisons between COVID-19 and climate change, and the implications for mitigation policy.

"COVID-19 and climate change share a marked similarity: the worst damage is only averted when society commits to decisive and early action in the face of a seemingly abstract threat," says Franziska Funke, research assistant at the Environmental Change Institute and a visiting doctoral student at Oxford University's Institute for New Economic Thinking. "There are good reasons to believe climate change will be even harder to defeat, even though – or precisely because – there is more time to confront it. The current pandemic is an exceptional opportunity to understand where the real challenges lie for progression on climate action: in garnering political will and public support."

In their research published in *Environmental and Resource Economics*, the Oxford University and European Commission team drew five lessons for mitigation policy from the pandemic:

- Delay is costly
- Policy design must overcome biases to human judgment
- Inequality can be made worse without timely action
- Global problems require multiple forms of international co-operation
- Scientific policy advice must transparently balance fact with value judgments on social, economic or



ethical trade-offs. This must be effectively communicated to counter misinformation.

Linus Mattauch, also of Oxford University's Institute for New Economic Thinking and a team member, says it is crucial to realise that when comparing COVID-19 and the climate crisis, the cost to society of transforming to a low-carbon economy is far cheaper.

"Politically, there are reasons to believe, however, that climate change is harder to stop than COVID-19," he adds. "Tackling both issues inevitably creates 'losers', and policy action is inevitably constrained by public opinion and polarisation. But since the threat from the climate crisis is less immediate and the damaging impacts on societies are more indirect, it is more difficult to mobilise public support for the changes required for decarbonisation – especially in those sectors where the changes are very visible to citizens, such as low-carbon urban transport or agriculture."

"Most importantly, perhaps, we can learn from government responses to the pandemic that climate change mitigation measures must be designed to take account of citizens' concerns. Protecting affected communities and low-income households from severe price increases and making visible the many benefits of climate protection, such as cleaner air, can build support and avoid public opposition to phasing out fossil fuels."

Sustainable change

Forster agrees, pointing out that investing 1.2% of GDP in a green recovery could reduce emissions by 50% and halve warming between now and 2050. Lockdowns showed that society can change quickly and cut

"Because carbon dioxide is so long in the atmosphere, making a big cut for one year doesn't have a lasting effect"

DATA'S ROLE IN ACCELERATING SCIENCE

Forster points out that most climate projections align to seven-year cycles of the Intergovernmental Panel on Climate Change Reports. Emission data for carbon dioxide takes a couple of years to finalise, he adds, while for other gases, data takes five years or so to produce.

"Think if we had waited for five years of COVID-19 data before analysing it to invent vaccines," says Forster. "By putting data and code instantly online for researchers to explore, we had a massive acceleration of the science to understand the disease and develop treatments. I think this helped far more than any cash injection,



although you need both. Think how much faster we could develop climate solutions with the same speed of research and access to data.

"The Google data that we used, provided in near-real time, was a real boon for our research into emissions trends.

However, there are no guarantees that Google will continue to provide it. They are also sitting on data for earlier years that would provide a proper baseline to make our results far more accurate.

"I really want these companies to see the worth in giving much more of our data back to us for the benefit of both health and climate research."

emissions substantially, he argues. Some changes – digital meetings, active travel such as cycling and walking, and working from home – are likely to remain.

"However, lockdown also showed that solving climate change by giving up everything – such as travel, eating out and shopping – is not a workable long-term answer for our societies or economies. People have lost jobs.

"Behaviour change only gets you so far. You need to build the zero-carbon infrastructure so that our travel, homes and workplaces are all zero-carbon. This will also create great, well-paid jobs in burgeoning green industries and create a healthier more resilient world, so that societies can thrive."

Sobering as the respective teams' findings are, one footnote should be added: Harriet Forster received an author credit alongside her father and 12 other climate experts when their research was published in *Nature Climate Change* last August, ironically when her exam results were due. Her A-levels might have been cancelled, but she is now a credited scientist. 📌

HUW MORRIS is a freelance journalist.



The government has just published its consultation on a new waste prevention programme (WPP) for England, with seven sectors targeted. The consultation's 70 pages of policy contain the strategy that's meant to show how government intends to reduce waste – the first thing it's legally obliged to do according to the waste hierarchy.

However, the WPP is a Rorschach test for proponents and critics of voluntary agreements. Supporters see an industry-led, disruptive approach (with varying degrees of government intervention). "I think they have a real role in waste prevention," explains Debbie Hitchen, who leads the sustainable production and consumption team at consultancy Anthesis. She suggests that voluntary agreements can even take businesses "beyond compliance".

Sceptics see a "smokescreen" used to delay regulation. "They are meaningless unless there is an effective way to enforce companies to comply with them," noted Changing Markets, a group that exposes irresponsible corporate practices, in an assessment of the plastic agreements published last year. It calls them "a tactic to successfully prevent effective regulation".

As with all Rorschach tests, there is no one correct assessment. Indeed, proving the effectiveness of these commitments is far from straightforward. Some contain targets and commitments to measure and publish results; others amount to little more than a press release and a few roundtables. Some struggle to even get off the ground. Others, such as the Electrical and Electronic Equipment Sustainability Action Plan (esap) have not reached a consensus on targets. Many more fail to meet their goals.

If such agreements are going to remain a popular political choice during the next decade, don't we need to know if they work or not?

Rose-tinted glasses

Around a decade ago, Wrap – a charity associated with resources and waste agreements in the UK – commissioned research to evaluate waste agreements. It never saw the light of day. "Over the many years and many different voluntary agreements we have managed, Wrap has regularly published extensive evidence of the difference they make," says a spokeswoman.

Are voluntary commitments enough to make the private sector act on waste?

David Burrows explores the issues

Willing participants



Waste prevention

In its 2021 WPP the government noted that the agreements in place during the previous programme, which ran from 2013-19, produced “good results”. There are nods to the Sustainable Clothing Action Plan (SCAP – “well supported by business”), the Courtauld Commitment for food and packaging (saved “624,000 tonnes of waste”) and the Plastics Pact (“industry has shown its willingness to lead and take action”). There is recognition of the struggles of other initiatives (such as *esap*), but the picture painted is generally rosy. Some experts have noted that the review was conducted by Wrap, which specialises in voluntary agreements.

According to the review, at least 387,000 tonnes of waste were prevented between 2013 and 2019 due to actions taken by organisations collaborating with government. That’s about 64,500 tonnes a year, 17,200 of which was attributable to government intervention. Libby Peake from think tank Green Alliance has noted that England generated 188m tonnes of waste in 2016, so the actions taken had “virtually no material impact”.

Proponents argue that 387,000 tonnes is better than zero tonnes. But an equally valid point is that voluntary agreements’ impact has been too small and too slow. “I’m not a fan,” says Colin Church, CEO at the Institute of Materials, Minerals and Mining, and a former director at Defra. “In the worst case, all they do is provide a smokescreen for a few years.” However, he notes, “you do get the odd one that is extremely successful”.

Arms around industry

Politicians have used the Courtauld Commitment as a pin-up for a decade. Lord Henley, a Defra minister in 2010, has called voluntary schemes “an important part of the drive towards a zero-waste economy,” and cited Courtauld as a model. That it reportedly had a multi-million-pound budget and up to 10 staff to manage it certainly helped. So too did the target sector: around 75% of the grocery market could be captured with just a handful of signatories from the major supermarkets.

A voluntary agreement tends to work best when, in Church’s words, the government can “put its arms around industry” – and having a few major players (or a powerful trade association) makes this easier. Those involved in Courtauld also quickly realised the dual benefits of the initial scheme’s focus: reducing their packaging weight saved both money and the planet. The focus on packaging weight led food brands to use

the more flexible plastic packaging that is now proving hard to recycle. There is also an argument that the financial incentives would have delivered similar reductions regardless of the agreement.

Indeed, determining exactly how much waste a voluntary commitment prevents is tricky. Wrap believes 2.7m tonnes of waste were reduced between 2015 and 2020 due to “actions which were being taken in the context of Courtauld 2025” (the latest iteration). Around a quarter of this – 624,000 tonnes – would not have been prevented without the agreement.

Liz Goodwin, director of food loss and waste at the World Resources Institute, was CEO at Wrap between 2007 and 2016. She says it took two years to encourage organisations to sign up to Courtauld. “There’s a ‘building trust’ phase when you need to demonstrate the ‘why’ to businesses,” she explains. This is easier to do now than 10 years ago, she adds, with companies “falling over themselves” to reduce plastics.

A place to hide

Voluntary agreements on plastic have popped up everywhere in the past couple of years. Changing Markets calls these “all talk and no action”. Of the UK Plastics Pact, run by Wrap under the Ellen MacArthur Foundation’s plastic economy global commitment, it says: “While promoters of the pact promised great ambition from its 127 signatories, a progress report from Wrap in 2019 (one year into the initiative) only provided updates on 45 of those companies.”

Some businesses do use such agreements as a “hiding place”, notes Goodwin, “but the vast majority are trying to do the right thing”. Aggregated data is often a bone of contention: critics say businesses can enjoy PR without publishing progress; those running agreements say it builds confidence. At some point, “comfort zone needs to be broken”, Goodwin says.

That doesn’t always happen. Wrap has been trying to encourage more businesses to publicly report food waste, but most are reluctant. Soon they will have to: the WPP reiterates the government’s commitment

“Voluntary agreements are meaningless unless there is an effective way to enforce companies to comply with them”





624k

The Courtauld
Commitment saved
624,000 tonnes of waste

100Mt

Improving the textiles,
food and plastic packaging
sectors' resource use
could save 100MtCO₂e
from 2023-2032

2/3

Almost two thirds of voluntary
schemes published
in 2018 failed to meet
most of their targets

to introduce mandatory annual food waste reporting, with a consultation expected.

Voluntary agreements have arguably helped prepare businesses for this regulation. There is less of a shock to the system when regulation is preceded by industry-led commitments, says Jamie Fry, policy analyst at Zero Waste Scotland. "When there is a clear policy direction or intention to regulate, voluntary commitments can thrive – at least in the short term," he says.


Dominic Hogg, director at environmental policy consultancy Equanimator, is sceptical of voluntary agreements – especially those that permit companies to sign up when targets or scope are yet to be agreed. However, he admits, those that are closely monitored, ambitious and align with upcoming regulation do have potential. "There is a responsibility on government to make it clear what they want to see happen," says Fry.

Virtuous circles

This is what the WPP sets out to do. One agreement for 2021-2030, Textiles 2030, has just been launched for textiles. It builds on SCAP 2020 and will help prepare companies for extended producer responsibility. There are also powers in the Environment Bill that will allow government to set minimum clothing standards, and labels will help consumers choose sustainable clothes.

Textiles, food and plastic packaging are just three of the sectors targeted in the new WPP (the others being construction, vehicles, furniture and electronics). Together, they generate 77.1m tonnes of waste. Improving these sectors' resource use could save more than 100m tonnes of carbon dioxide equivalent between 2023 and 2032. The government wants voluntary agreements to play a crucial role, but they remain a 'Marmite' approach.

On the whole, they have "very limited impact", noted RSPB in an assessment of voluntary schemes published in 2018. Almost two thirds failed to meet most targets. Schemes implemented as part of a policy mix – for example alongside complementary regulations – or under a "credible threat" of regulation performed better.

"The world has problems governments can't solve; we need the innovation of business," noted Knut Haanaes, head of sustainability at the International Institute for Management Development in Lausanne, Switzerland, in April's sustainable business report by *Raconteur*. "Industries collaborate, governments start to regulate and it becomes a virtuous circle." 

DAVID BURROWS is a freelance writer and researcher.

HAVE YOUR SAY

Do you think voluntary commitments are enough? To have your say contact: media@iema-transform.com

Inger Andersen has a thriller writer's ability to grab attention. When asked to sum up global food waste, the United Nations Environment Programme (UNEP) executive director immediately cuts to the chase: "If food loss and waste were a country, it would be the third biggest source of greenhouse gas emissions," she says. She points to the *UNEP Food Waste Index Report 2021* (bit.ly/2RZDegm), which displays a series of unpalatable truths – not least that the drive for deliver net-zero carbon emissions will be much harder than previously thought.

The scale of the problem

Vast amounts of food end up in bins instead of on plates: around 931m tonnes of food waste were generated in 2019. "The weight roughly equals that of 23m fully loaded 40-tonne trucks – bumper-to-bumper, enough to circle the Earth seven times," says Wrap international engagement director Richard Swannell, who worked on the research.

Of this waste, 61% came from households, 26% from the food service industry and 13% from retail. That is equivalent to 121kg for every person on the planet, UNEP says. Around 17% of total global food production may be wasted – 11% in households, 5% in food service and 2% in retail.

UNEP's analysis also shows problems with supply chains. Food is wasted from field to fork; around 14% is lost before it even reaches stores. At the same time, around 690 million people are hungry, with more than three billion unable to afford a healthy diet. Food waste also accounts for 8-10% of global greenhouse gas emissions, while intensive farming is major cause of biodiversity loss.

The UK has the highest recorded level of waste by households in northern Europe, at 5,199,825 tonnes a year. However, in terms of food waste per person, the UK (77kg) is below France (85kg) or Norway (81kg). Greece is Europe's most profligate waster, squandering 142kg per person per year.

Food for nought

From field to fork, food is wasted on a global scale. **Huw Morris** looks at a landmark UNEP probe into the issue



UNEP's research is, to date, the most comprehensive data collection, analysis and modelling on the issue. It looked at data from 54 countries, although just 14 compile information in line with UNEP's index. Estimates were derived from existing data points for the rest.

There are other gaps in the data. The countries surveyed are home to 75% of

the world's population, with little known about the situation in other nations.

Only 23 countries provided estimates for food losses by restaurants or grocery stores. In short, most countries have yet to quantify their food waste.

Such shortfalls aside, the findings are still alarming. The amount of food wasted by consumers may be double the previous analysis by the UN's Food and



931m

931m tonnes of food waste was generated globally in 2019

3bn

More than 3bn people worldwide are unable to afford a healthy diet

8-10%

Food waste accounts for 8-10% of global greenhouse gas emissions

FOOD SYSTEMS AND COP26

November's COP26 climate summit must tackle food systems to get the world on track for net zero, according to a coalition of campaigners.

More than 30 NGOs, academics, local authorities and industry bodies have written to COP26 president Alok Sharma calling for food systems to be made a priority at the Glasgow summit.

The letter, co-ordinated by Nourish Scotland, warns that net zero is unachievable without a transformation "in what we eat, how we farm, and how much food we waste". Food is not one of COP26's priority themes and, as host, the UK has an opportunity to show global leadership, it argues.

"We have to invest in the food and farming transition – and we have to start now," says Nourish Scotland director Pete Ritchie.

CAMPAIGNING AGAINST FOOD WASTE

In the UK, Love Food Hate Waste raises awareness via Food Waste Action Week and helps people cut waste with tools and support.

These cover options such as planning shopping lists, being mindful about portion sizes, and learning how to store food and interpret label dates. Swannell argues this helped slash edible food waste by 31% per person from 2007-2018.

Meanwhile, the Courtauld Commitment 2025 is a Wrap initiative for food system organisations; they sign

voluntary agreements to make production and consumption more sustainable. The move aims to cut the carbon and waste associated with food and drink by at least a fifth, and to reduce water stress.

A similar agreement exists in South Africa, where 12.6m tonnes of food is wasted each year – a third of the food available – and 60% of households are at risk of or experiencing hunger. Under the Food Loss and Waste Agreement, spurred by the Consumer Goods Council of

South Africa and the nation's Department of Trade, Industry and Competition, signatories commit to adopt SDG 12.3. The top priority is to prevent and reduce food loss and waste while redistributing edible nutritious surplus food.

In Mexico, where more than 35% of total food production is wasted, the Pact for Food is working with companies, trade associations, public institutions and consumer groups to reduce food waste by 50% in 10 years.

Agriculture Organisation in 2011, which used data from fewer countries.

A truly global issue

A second revelation is that food waste is not confined to rich nations. Households in high-income countries waste an average of 79kg of food a year; in lower-middle income nations, that figure is 91kg. UNEP says there is insufficient data to track the problem in low-income countries.

"This was a big surprise, as previous research had suggested household food waste was largely a rich world problem," says Swannell. "The report finds that in nearly every country that has measured food waste, it was substantial – regardless of income level."

The findings cast doubt over whether Sustainable Development Goal (SDG) 12.3, which aims to halve food waste and reduce supply chain food loss by 2030, will be achieved. "Some countries and private sector actors have taken SDG 12.3 to heart," says Andersen. "There is growing evidence of success in reducing food waste, though not at the scale needed to achieve the target."

Swannell acknowledges that while UNEP's research did not investigate the causes of food waste, other studies – particularly from Europe – suggest "a key factor is that most of us do not

think we waste food in our homes and, as such, people do not think the issue is relevant to them". Several international campaigns are now under way to tackle this problem (see *Campaigning against food waste*, above).

The findings should help countries to set food-waste reduction targets and create ways to track progress, UNEP says. But few countries have included reducing waste in their planned submissions under the Paris climate agreement, as highlighted by campaigners recently (see *Food systems and COP26*, left).

"Even if every other sector of the economy decarbonised, without addressing the climate damage caused by the food system we cannot remain below 1.5°C of warming," says Martin Bowman, senior policy and campaigns manager at Feedback, which lobbies to transform food systems. "Tackling food waste is the low-hanging fruit, but there has been continued failure to take meaningful action.

"The reality is individuals do not want to waste food, but large food businesses profit from selling us more than we need. Over-purchase, and subsequent waste, are an integral part of the supermarket business model." ❗

HUW MORRIS is a freelance journalist.

Despite being one of the UK's most long-standing ecological consultancy firms, your company, EPR, has had to turn down work due to a lack of skilled workers. As managing director and an IEMA Practitioner, tell me, how has it come to this?

The 2008 financial crash was the cause of the problem. Ecological consultancies weren't hiring anywhere near as many juniors to train up as they needed, so all the people who should now be more senior ecologists don't exist.

This is combined with the significant growth in the development sector and consultancy market that has occurred since – it's basically a 'time lag' whereby a temporary decline in recruiting is working its way through the system. It's relatively easy to find very senior people or those who are just starting out in their career, but the people in the middle who you'd want to manage medium-size projects are in short supply.

Did the government ignore ecologists during the crisis?

All the skills needed to facilitate its aspirations for sustainable development and a new green economy seemed to be an afterthought, and it's the same now.

Ben Kite talks to Chris Seekings about how the UK's skills gap threatens to undermine the country's environmental ambitions

Politicians say we need to 'build, build, build' without thinking about the expertise that's needed down the line to plan properly and make sure it works.

There needs to be greater awareness of delivery capacity and all the supporting human resources infrastructure that's needed. Ecologists need to understand development as an industry and how it affects the environment, not just the ecology of animals and plants; it takes a lot of time to develop a person with all those skills and that experience. That can't be created overnight – it has to be a long-term investment.

Is this lack of skills an industry-wide problem?

Yes. I sit on a consultation panel for the Chartered Institute of Ecology and Environmental Management, which represents professional ecologists, and

my fellow members all seem to be in the same boat. I know from discussions in meetings that junior people are relatively straightforward to find, but it's really hard attracting and finding experienced people who you can just hand a job to and say, "oversee that and get it done".

What can be done to address this?

It's about getting employers together with educational institutions so that the courses they offer are not just producing ecologists who have a set of scientific skills, but no idea how to use them in the world of work. If I recruit a new graduate, I can't usually expect them to know about development and planning policy and consultancy, so this must be taught on the job. They've got the science, but no experience whatsoever in applying it.

One of the things we've done as a consultancy is a placement arrangement

Closing the skills gap



with the University of Reading, where we take their masters students on and they do a year of salaried work for us, assisting our ecologists in the field. The government must provide more support to run those sorts of placements.

Do you think education providers also need to change?

I would like a school curriculum that's more focused on British natural history. We have biology GCSEs and A Levels, but they're very broad and tend to cover all the mechanics of biology. There hasn't been any focus on the need for a natural history GCSE or something that focuses on the habitats and species we have in this country, what the constituent parts are, and how they all interact.

If you had people going into university with a basic understanding of all this, universities could take those students, develop their scientific skills and show them how they can be applied in the world of work, such as in ecological consultancy. Employers could then find ways to recruit people, hone their skills and develop their experience.

This skills gap must have been particularly challenging given the fluctuating demand during the COVID-19 pandemic?

We've gone from a situation where we had too many people for the work available when COVID-19 first impacted the construction sector, to a situation where we are struggling to keep up with requirements. Unfortunately, that has historically been the pattern that's contributed to the skill shortage. We need more support so we're not cutting ourselves back when work is less available and then having to quickly expand capacity when work is available.

There is little point in the government demanding that developers and local authorities aim higher with their environmental aspirations if there are no ecologists in local government, or at regulators such as Natural England and the Environment Agency, to check that this is happening. I want my reports for developers to be checked and read by

skilled ecologists working for decision makers and regulators who demand a high standard. It helps to build a sector where high standards are the norm and the expectation. If nobody is checking reports, poor practice can creep in.

“Politicians say we need to ‘build, build, build’ without thinking about the expertise that’s needed”

IEMA has called on the government to produce a strategy for green jobs and skills. Is that the sort of thing needed?

We need a sector-wide skills strategy and a long-term strategic approach, but we also need co-ordination between sectors. There is a mismatch between environmental ambition and other policies coming out for other sectors.

For example, the planning white paper is all about simplifying the process and removing tiers of environmental assessment – but that's at odds with delivering more green development, because there needs to be greater environmental analysis and guidance. Without the ecologists needed to design and plan sustainable development, I think there is a risk of greenwashing a non-green economic recovery.

The incoming Environment Bill includes many environmental ambitions, such as a biodiversity net gain requirement for all new developments. Is that possible, given the current skills gap and lack of joined-up planning?

It's going to be challenging for a number of reasons. The biodiversity metric that Defra has come up with isn't easily applied to small sites, and its value will be lost if there isn't a counterpart to me in the local authority who understands how to read the metric – but a lot of authorities don't even employ an ecologist any more, because we've been through a decade of austerity and posts have been cut left, right and centre. The bill also introduces a requirement for

local authorities to produce a local nature recovery strategy for their area, which sets out what their aspirations are for creating and restoring habitats.

There could also be an issue with quality. There are some people

purporting to be ecologists who will, frankly, produce a piece of paper that says whatever the client wants it to say. There aren't many, but they do exist. Life will be easier for them if there are lots of desperate clients and too few skilled ecologists to choose from, so I hope that we can plan to create a skilled-up and more regulated profession.

The government has also said it will create 250,000 green jobs. Are you confident that the government and industry will deliver?

There's a difference between jobs that are connected to green industries, and jobs that actually involve an environmental qualification and the application of environmental skills. They're related – the more wind farms you build, the more ecologists you'll need to assess the impacts of those wind farms – which goes back to the need for more joined-up thinking.

The government tends to come up with headline-grabbing sound bites such as 'we need 250,000 green jobs'. Okay, how are you going to achieve that? What are you going to build? Who's going to build it? Who's going to maintain it? What skills do you need to do the environmental due diligence and get a planning commission? There's a chain of jobs there, because somebody's got to design it and do the environmental assessments on it, then somebody's got to build it, then somebody is going to maintain it and then decommission it. Unless you have that holistic picture, you can't really match your aspirations to reality. 🍷

CONNECT

NETWORK AND COMMUNITY NEWS FROM IEMA

Thriving in the virtual workplace

Daisy Lavington shares the main talking points of a recent webinar concerning changing employment patterns in a post-COVID-19 world

Virtual workplaces are a concept we all need to grapple with. In light of this, IEMA held a 'Thriving in the Virtual Workplace' webinar on 12 May (bit.ly/3tNh5zc).

According to the Office for National Statistics, 12.5% of the UK's workforce worked from home in April 2019; by April 2020 that figure had risen to 46.6%. At first, sending employees home was the government's emergency solution to stop COVID-19 spreading in workplaces. As we emerge from lockdown, full-time virtual working, or a hybrid office and home approach, seems to be the way many are proceeding.

The webinar explored a company case study and provided a legal perspective on working arrangements post-lockdown. Nick Bloomfield, PIEMA, a member of the IEMA East of England Region Committee and global lead for quality and environmental certifications and standards at DXC Technology, shared his experiences of a 'virtual-first' approach. At DXC Technology, offices are being transformed into spaces for hot-desking and collaboration, and employees will primarily continue to work from home where possible.

Shona Newmark, partner at Jones Chase Employment Lawyers, gave an overview of things to consider when



continuing with a virtual-first approach in the long term. Key messages included:

- Implement an adequate home working policy and risk assessment protocol
- Terms of employment and contracts may need updating – expenses, insurance, security, technology, tax and so on
- Employees should be flexible: returning to the office for 'keep in touch' or training days will be valuable.

A further point for consideration is how to enable employees to thrive in an increasingly virtual workplace, and avoid creating a divide between long-term home-based employees and site-based employees who perform immobile roles. ¹

DAISY LAVINGTON, AIEMA is a member of IEMA Futures and the IEMA East of England Region Committee.

ESG in the Built Environment

Reporting on environmental management platform Qualis Flow's webinar

What ESG is not Panel members agreed that ESG (environmental, social and governance) is not a box ticking exercise. Historically, the focus has been on social impact, but the point is to address the three areas in a balanced way. Panel members have noticed a lack of attention given to the environmental and governance aspects.

What is ESG all about? ESG is the reimagining of a static asset into a flow of resources – a system of systems. In the built environment, it concerns being well informed about assets' environmental impact, communicating this across the value chain and taking responsibility. It must be integrated into a strategy and portfolio development.

Biggest challenges Retrofitting buildings to hit sustainability goals will be one of the construction's biggest challenges. There has also been a focus on embodied carbon across the built environment, but companies must also begin measuring lifecycle impacts of their buildings, and how they affect local ecology and people.

Opportunities and actions When health and safety became a priority in construction, it required a lot of effort to get the right systems in place. Companies can re-use the same processes to integrate ESG into operations. Staff upskilling and training will be key. Be mindful of your team's involvement and keep them in the loop. Being transparent, and open to collaboration, is key to making ESG a success.

Access the session recording at bit.ly/3f5QWWP
Contact Qualis Flow at bit.ly/3o3MQ5D or email polly.gourlay@qualisflow.com for more information.

Boots on the ground

Joe Nisbet considers whether a virtual COP26 would be better or worse for the environment

Given how adept we have become at working virtually, the irony of delegates flying around the world to discuss climate change is not

lost on many. A 2020 mock COP26 youth summit highlighted that their virtual event emitted only 39 tonnes of carbon dioxide equivalent (tCO₂e), compared to the 51,000 tCO₂e emitted by those attending COP25 in Madrid.

These are persuasive arguments for hosting virtual summits, given that avoid emissions from thousands of flights. However, with so much riding on COP26, it's not that simple.

Given the amount of media attention the summit has received, most people will appreciate how important COP26 is for galvanising countries to take a more ambitious, unified approach to the crisis. The event has been described as "pivotal" by UN secretary general António Guterres, and COP26 president Alok Sharma describes climate change as "the biggest challenge of our time".

It's worth bearing in mind that, while a non-virtual summit will have a carbon impact, the UN Framework on Climate Change (UNFCCC) requires all COP events to be carbon neutral – achieved through the purchase of UNFCCC-accredited carbon credits. However, carbon offsetting is controversial. Another way to contextualise the event emissions is in relation to Scotland's legally binding annual carbon targets. If we take COP25 emissions as a proxy, they represented about 0.1% of Scotland's



"There is an intangible aspect to event negotiations that can't be put in numerical terms"

annual carbon budget for 2021. Of course, COP26 may have a larger impact, but it seems fair to conclude that the event won't compromise the UK or Scotland's ability to meet targets.

Putting a figure on it

There is also an intangible aspect to event negotiations that can't be put in numerical terms. The words spoken, the mood of the room, the body language of negotiators and the 'buzz' generated will play a huge role. There is evidence that negotiating virtually can cause participants to feel less trust towards one another, with poorer outcomes than face-to-face negotiations. Additionally, relationships formed will be hugely significant in helping build trust among negotiators and nations.

It is also worth noting that COP26 represents the apex of months of virtual bilateral discussions. For example, governments will hold a three-week virtual meeting to begin negotiations

and get ahead on key areas before the event. At the point when imperative decisions will be finalised, COP26 seems too important to risk hosting virtually.

It's difficult to quantify the future potential emissions savings of successful in-person talks, though it seems reasonable to suggest that they could far outweigh the impacts of the event itself. However, the final form of the event is of course entirely dependent on COVID-19, and public health and safety should always take priority.

COP26 is also a huge opportunity for the UK and Glasgow to showcase their commitment to sustainability in the broadest sense, not just when it comes to reducing emissions. My hope is that Glasgow can live up to its name of 'Dear Green Place' by hosting successful in-person negotiations while managing event emissions, minimising waste, ensuring inclusivity and accessibility, prioritising sustainable supply chains, promoting sustainable behaviour and fostering a long-term legacy. 

JOE NISBET, GradIEMA is a graduate consultant at Arup and a member of IEMA Futures.

Why did you become an environment/sustainability professional?

It's because of my weird degree from Hatfield Polytechnic. My BSc was in manufacturing systems engineering but I added a minor in philosophy (they closed the loophole after me!). I ended up with this passion for marrying the moral and practical. I'm an engineer by profession but a dreamer by inclination.

What was your first job in this field?

My first job was in the IBM safety department. I worked opposite Kieran Myers, who has become an industry leader in sustainability at Sony. At the time, I'd never met anyone who had such a passion for sustainability, and the experience lit a flame. My first proper role was at Schrodgers – one of the first investment managers to include operational risks and sustainability in its annual reports and accounts.

How did you get your first role?

I was an engineer and safety professional in building services at Dresdner Bank when the Schrodgers role came up, in 1999. I took the role because they offered to let me train for the IEMA Foundation Certificate, and I could get involved with measuring performance. Health and safety and sustainability are complementary; I'd always encourage health and safety practitioners to learn about sustainability and vice versa.

What does your current role involve?

I am a multiskilled trainer and consultant, so I do what my clients need me to do – everything from helping



CAREER PROFILE

Stacey Collins

PIEMA

Self-employed consultant (Congruent Safety)

to build an ISO 14001 management system to teaching sustainability skills.

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

Becoming self employed is the biggest change. I know my impact better because I record accommodation, travel time and so on. Basic awareness of sustainability has also improved.

What's the best part of your work?

Helping to make a difference. A recent client was using an adhesive that was a serious pollutant. With guidance, it was able to devise a solution with no glue.

What's the hardest part of your job?

Ploughing through documents in a management system, trying to make sense of it.

What was the last development event you attended?

I've struggled to fit events into being self employed. It can be lonely on the road though, so I've promised myself I'll make time after lockdown.

What is/are the most important skill(s) for your job?

A sense of calm. I see clients daunted by the difference between what they think they

can achieve and the condition our world is in. You have to get them to take steps and not worry how big those steps are, and trust that the direction is right.

Where do you see the profession going?

We're going to be in increasing demand. It can't be any other way. You may dislike experts but try to do without them for a bit and you end up needing them more.

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

I'd like to have a better split between training and consultancy. It might also be nice to have some help.

What advice would you give to someone entering the profession?

Be tenacious – not in aggressive way, but don't ever give up. If you meet an obstacle, go around it. If you're evidence based, you'll eventually be proved right.

How do you use the IEMA Skills Map?

For career gap analysis.

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

Hands, face, space

What motivates you?

The new.

What would be your personal motto?

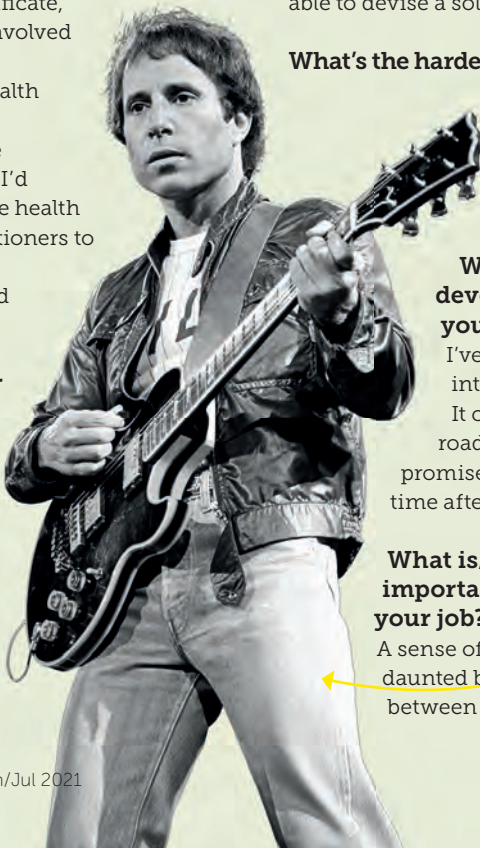
I know what I know (stolen from the Paul Simon song).

Greatest risk you have ever taken?

Having kids.

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

Rachel Carson – a person who made herself heard.



IMAGES: GETTY / SHUTTERSTOCK

The IEMA #BookClub

RECENT RELEASES



**Deep Adaptation:
Navigating the Realities
of Climate Chaos**
Jem Bendell and Rupert Read

Deep Adaptation discusses the changes that may help us prepare for climate-influenced

societal collapse. Writers from fields such as philosophy, psychology, education, leadership, facilitation, community development and private enterprise show the creative ways in which people are responding to this difficult realisation. Edited by the originator of the concept, Professor Jem Bendell, and a leading figure in climate activism, Professor Rupert Read, it brings together scholarship and practical measures for policy and action.



**Letters to the Earth:
Writing to a Planet
in Crisis**
Jackie Morris (illustrator)

Gathering more than 100 letters written in response to the climate emergency, each gives language to the unspeakable and shows how our collective power is present when we listen to each other. These letters are an opportunity to reflect on our connection to the planet and each other in times of crisis.

Includes contributions from activist Yoko Ono, actor Mark Rylance, poet Kate Tempest, novelist Anna Hope, environmental writer Jay Griffiths, Green Party MP Caroline Lucas, Booker Prize-winning author Ben Okri and actor Freya Mavor.



The Future We Choose
Christiana Figueres and Tom
Rivett-Carnac

Humanity is not doomed, and we can and will survive. The future is ours to create, and will be shaped by the people we choose to be in the coming years. This book is a passionate call to arms from Christiana Figueres, former UN Executive Secretary for Climate Change, and Tom Rivett-Carnac, senior political strategist for the Paris Agreement. Practical, optimistic and empowering, it shows us steps we can all take to renew our planet and create a better world beyond the climate crisis.



DATES FOR YOUR DIARY

iema.net/events

2 JUNE

ONLINE WORKSHOP

Review of the IEMA Environmental Auditor Register

The Environmental Auditing Working Group has summarised proposals for Environmental Auditor register reform, and is keen to test the proposals with members. This workshop is particularly relevant to those interested in environmental auditing.

➤ Register at bit.ly/3he2sST

7 JUNE

PUBLICATION LAUNCH

Cross Sector Insights: Smart Solutions for Sustainability

In this session, the IEMA Fellows network will launch a thought piece providing cross-sector case studies and recommendations by IEMA members and tech experts on how to ensure disruptive technologies can support a transformation towards sustainability.

➤ Register at bit.ly/2RitXjx

7 JULY

DIGITAL CONFERENCE

Waste Management in the Public Sector 2021

Hosted by the Institute of Government and Public Policy, this conference will explore how local authorities can rise to the challenge of meeting the environmental targets of the Resource and Waste Strategy, as well as redesigning and digitising their waste services to become more efficient and save money.

➤ Register at bit.ly/2RE2VTI

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13 JULY

DIGITAL CONFERENCE

Modernising and Decarbonising Energy in the UK

Join Westminster Insight's conference to explore the latest developments in low-carbon hydrogen, energy storage, carbon capture and storage, and new nuclear power. We will also discuss the policy, finance and infrastructure requirements to secure their success towards achieving our target to reach net-zero by 2050.

➤ Register at bit.ly/3uBn7nL

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